FINAL REPORT

STUDY TO EVALUATE THE EFFECTIVENESS OF INDEPENDENTLY ACCREDITED ASSURANCE SCHEMES AND THE ROLE THEY COULD PLAY IN THE DELIVERY OF OFFICIAL CONTROLS AT UK POINTS OF ENTRY

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Contents

Tables

Figures

Glossary

BRC	British Retail Consortium
BSE	Bovine Spongiform Encephalitis
CA	Competent Authority
CED	Common Entry Document
CHH	Central Clearing House
DG SANCO	Directorate General for Health and Consumers
EU	European Union
FBO	Food Business Operator
FCP	Food Control Plan
FDA	Food and Drug Administration
FNAO	Food of non-animal origin
FPC	Fresh Produce Consortium
FRESHFEL	European Fresh Produce Association
FSA	Food Standards Agency
FSMA	Food Safety Modernisation Act
FSSC	Food Safety System Certification
FVO	Food and Veterinary Office
GAP	Good Agricultural Practice
GFSI	Global Food Safety Initiative
GGN	GlobalG.A.P. Number
GOP	Good Operating Practice
HACCP	Hazard Analysis and Critical Control Points
IFOAM	International Federation of Organic Agriculture Movement
IFR	Imported Food Requirement
IFS	International Featured Standards
ISO	International Standards Organisation
LEAF	Linking Environment And Farming
MAF	Ministry of Agriculture and Forestry
MPI	Ministry for Primary Industries
MRL	Maximum Residue Level
MRP	Multiple Release Permit
NIFP	National Imported Food Programme
NVWA	Netherlands Food and Consumer Product Safety Authority
NZFSA	New Zealand Food Safety Authority
OGS	Organic Guarantee System
PRiF	Pesticide Residues in Food
RASFF	Rapid Alert System for Food and Feed
SQF	Safe Quality Food
TPPS	Tesco Produce Packhouse Standard

UK	United Kingdom
US	United States

Terms

Accreditation	The process used to define and enforce assured standards. Assurance describes the intended outcome, while accreditation describes the process used to achieve it.
Assurance	The provision of identified benefits to consumers and others through the application of standards governing the production, processing, marketing and sale of products.
Backward integration	Control over production / suppliers, either through partnership or direct ownership.
Certification	Part of the accreditation process. Refers to the inspection of scheme standards at the level of individual scheme members.
Food of non-animal origin	Any food product or substance not derived from animals or animal by-products.
Maximum residue levels	The maximum legal levels of a concentration of pesticide residues in or on food or feed based.
Small and medium-sized enterprise	A small and medium-sized enterprise (SME) is defined by the European Commission[1] as an organisation with 250 employees or less and either turnover of £42 million or less, or a balance sheet total of £36 million or less.
Standards	The obligations placed on scheme members, and accepted by them as a condition of membership. Standards usually consist of general rules of membership as well as more specific requirements of practices that must, or must not, be followed.

[1] http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/

Executive Summary

This is a summary of a study commissioned by the UK Food Standards Agency (FSA) from ICF GHK to evaluate the effectiveness of independently accredited assurance schemes and the role they could play in the delivery of official controls at UK points of entry.

The assignment examined existing assurance schemes in the supply chain for food of non-animal origin (FNAO) and evaluated the potential role they could play in informing a risk-based approach to controls at designated points of entry (DPEs). The assignment identified options to prioritise import controls and reduce the burden of controls on importers.

The study was conducted from January to May 2013, and included consultation with organisations involved in the UK FNAO supply chain. A total of 65 interviews were conducted with importers, DPEs, retailers and other organisations involved in the FNAO supply chain for imports to the UK. Interviews were also undertaken with assurance scheme operators and public authorities in other countries where assurance schemes (and other approaches) are used to prioritise FNAO import controls. A written response was received from officials in the European Commission Directorate General for Health and Consumers (DG SANCO).

The study found that assurance schemes are a common feature of the FNAO supply chain and include standards which overlap with legislative requirements

The study found that assurance schemes are:

- A common feature of the FNAO supply chain; and
- Have requirements that align closely with official control requirements, but are generally not considered by importers to be sufficient to address all potential food safety hazards and regulatory issues related to imported FNAO.

There is little empirical evidence that products produced to assurance scheme standards are more likely to comply with EU legislative requirements related to contamination.

Other countries use, or are planning to use, assurance schemes (and similar approaches) to inform FNAO import control and inspection priorities

The study included a review of initiatives in other countries to determine whether assurance schemes are used elsewhere to prioritise controls related to FNAO imports. The study team examined the inspection and control requirements in the United States (US), New Zealand, Australia, Canada, and European Union Member States. Evidence of assurance schemes informing the prioritisation of controls were identified in the Netherlands, New Zealand and the US.

The review of initiatives in the three countries found that:

- Officials in the Netherlands do not consider assurance schemes to be reliable enough for prioritising FNAO import controls. They use alternative methods to reduce the burden of controls on importers.
- New Zealand has revised its food safety legislation to prioritise FNAO controls based on the risk posed by the food product. Certification will inform the categorisation of food products.
- The US is currently revising its food safety legislation and is likely to include requirements for importers to verify suppliers, and also establish a voluntary programme to enable expedited importation for participating importers.

The FNAO supply chain is heterogeneous and its variance influences the nature of potential FNAO health safety risks and the existing measures in place to manage these risks

The features of the FNAO supply chain influence the type of private controls and systems in place. These features should be considered in any effort to prioritise import controls. They include:

- The final food business operator (FBO) – The final FBO influences the controls and processes in place along an FNAO supply chain. Supermarket retailers have specific requirements which typically go further than regulatory requirements.
- Traceability – FNAO supply chains generally have strong traceability systems in place. Traceability along supermarket retailer supply chains is typically more extensive than other supply chains.
- Testing – There is relatively frequent contaminant testing along the FNAO supply chain. The frequency of testing depends on the type of product and the source country, and testing and sampling protocols are not standardised.
- Payment arrangements – The arrangements between importers and producers to pay for consignments can be an important incentive mechanism to ensure products meet EU and UK import requirements.

Regulation (EC) No 669/2009 specifies the frequency of controls for 'high risk' FNAO products imported from non-European countries

Regulation (EC) No 669/2009 (hereinafter referred to as 'the Regulation') sets out rules concerning increased official controls for FNAO imports listed in Annex I of the Regulation. The purpose of the Regulation is to enable known risks to be addressed more effectively and to collect monitoring data on the occurrence and prevalence of unfavourable results from laboratory analysis to inform risk identification.

Annex I establishes the control frequency for certain categories of food and feed imported into the EU from specific third countries in relation to a defined hazard. As explained in Article 1 of the Regulation, the list is defined based on different information sources, including notifications received by the Commissions' Rapid Alert System for Food and Feed (RASFF) and reports from the Food and Veterinary Office (FVO).

The products included in Annex I are food and feed of non-animal origin and may include fresh fruit and vegetables, spices etc. Products containing or derived from a commodity listed in Annex I, such as juices and fruit mixes, are out of the scope of the Regulation. The Annex I list is regularly updated by the Commission: a review is conducted at least on a quarterly basis, as required by the Regulation.

Member State Competent Authorities are required to submit test results to the Commission on a quarterly basis. A review of the results of testing conducted at UK DPEs since Regulation (EC) No 669/2009 was introduced highlights that relatively few countries were responsible for the majority of non-compliant consignments.

The FSA implemented a pilot scheme in 2011 to collect information about the use of assurance schemes in the FNAO supply chain, but there was limited participation by importers

The evidence obtained during this study demonstrates that there was limited participation by importers in the FSA's 2011 pilot scheme. The majority of importers were unaware of the 2011 pilot and those who were aware of the pilot were uncertain about its objectives and requirements.

The information obtained from importers, DPEs and other stakeholders suggests that a future pilot would likely be more successful if communication about its objectives and requirements were improved, potentially by increasing engagement with industry representatives, importers, DPEs and others involved with the supply chain.

Two options have been identified for prioritising controls

Two policy options were identified to meet the FSA objectives with respect to prioritising FNAO import controls, and reducing the burden of official controls on importer checks and controls conducted under Regulation (EC) No 669/2009.

The options have been developed based on supply chain analysis (e.g. testing procedures, traceability systems and available documentation), consultation with stakeholders (including DPEs and importers), a review of initiatives in other countries which address similar issues, and the study team's analysis of the requirements of EU official control regulations.

In summary, the proposed options include:

- Option 1: An assurance scheme based approach.

  An assurance scheme based approach could draw on several different sources of information to prioritise controls of imported FNAO consignments:

  - Assurance scheme certification;
  - List of pesticides applied to a product;
  - Test results; and
  - Importers' previous compliance history.

- Option 2: Voluntary importer verification programme.

  A voluntary importer verification programme to categorise importers into groups depending on the potential food safety health hazards associated with the products they import. Categorisation would be based on several information sources:

  - Evaluation of an importer's hazard analysis programme;
  - An importer's compliance history; and
  - The known safety risks of the food product to be imported.

Both options have been assessed in terms of their effectiveness, efficiency and coherence

Each of the options was assessed against a set of criteria relevant to FNAO import controls. The criteria are:

- **Effectiveness –** the extent to which the option can ensure that information is reliable, timely and independent and relates to relevant products, hazards and countries of origin.
- **Efficiency –** the extent to which the option will minimise administrative burdens and financial costs associated with its implementation, including the one-time development of the necessary systems and processes and on-going costs to government and industry.
- **Coherence –** the extent to which the option will meet the policy objectives of the FSA, the UK government and the European Commission.

Option 1 is likely to perform reasonably well in terms of efficiency, but slightly less well in terms of effectiveness and coherence

The option's effectiveness is undermined by issues related to reliability and timeliness; information related to assurance scheme certification and test results may be insufficiently reliable to serve as the basis for prioritised controls.

The burden on importers of providing the additional information to DPEs is likely to be relatively limited as much of the information is currently available in the supply chain. But the burden of providing the information may be unevenly distributed between importers of different products. The burden is likely to be higher for spice and nut importers compared to fresh produce importers. The option could potentially increase the burden on DPEs as more time would be required to review and consider

additional information related to assurance schemes, contaminant test results, and lists of applied pesticides.

The option scores poorly on coherence in terms of related and wider EU objectives; Regulation (EC) 669/2009 does not currently permit the prioritised controls in the manner described under Option 1.

Option 2 is likely to perform well in terms of effectiveness, reasonably well in terms of coherence, but poorly in terms of efficiency

The assessment of Option 2 indicates that it performs well in terms of effectiveness. The option would have positive impacts on controls in terms of reliability, timeliness, independence and completeness relative to the current system.

Option 2 is also likely to be coherent with FSA and UK objectives but less so with EU requirements under the Regulation.

The option performs poorly in terms of efficiency, that is, it is likely to increase the burden of controls on government and industry. The low efficiency score reflects the additional effort which would be required by government and industry to establish a voluntary importer verification programme. Compiling the information required for a periodic assessment, changing processes and systems, and paying a fee for the assessment itself would increase the burden on participating FNAO importers. The burden may be relatively more significant for SME importers compared to larger importers. The voluntary nature of the verification programme would help to ensure that only importers who are likely to experience a net reduction in costs and delays (associated with controls) are likely to participate.

The potentially high burden on government relates to conducting periodic assessments of FNAO importers' hazard control programmes. There is also likely to be a burden associated with defining what constitutes an effective hazard analysis programme, and categorising FNAO products in terms of potential risks.

In terms of coherence, Option 2 scored well with respect to meeting FSA objectives, but less well with respect to UK government objectives and less well again with respect to wider and related EU objectives. The option would enable the FSA to follow a risk-based approach to prioritising controls. However the potential burden on business associated with the option would conflict with UK government objectives related to reducing the regulatory burden on businesses. That is, the option is likely to result in a greater regulatory burden on businesses relative to the current system. Lastly, the option would potentially conflict with EU objectives related to controls conducted under Regulation (EC) No 669/2009.

It is not possible at this stage to recommend one option over another due to uncertainties related to their potential feasibility, cost and reliability

The feasibility of the options is influenced by the products, source countries and contaminants listed in Annex 1 of the Regulation. Annex 1 of the Regulation is revised every quarter, changing the products, source countries and contaminants of regulatory interest and thus potentially changing the relative feasibility of the options.

Recommending one option over another is complicated by the potential implementation costs. There will be additional work necessary by the FSA, and to a lesser extent DPEs and industry, to determine which option (if any) to implement. Additional work would be necessary, for example, to establish the importer verification programme described under Option 2. Establishing a programme to assess importers' hazard analysis programmes could be a relatively onerous and resource intensive undertaking. FSA may determine that, at this stage, the costs of setting up a verification programme may be unlikely to exceed the benefits. Consultation with industry and DPEs may be necessary to establish whether there is sufficient demand for the options and whether the benefits are likely to outweigh the costs.

The likely success of a future pilot scheme could be improved if the FSA consider certain factors

Factors for the FSA to consider in the design of a future pilot scheme for Option 1 and Option 2 are described below. The factors were identified based on assessment of the issues that may have

reduced the 2011 pilot scheme's success and consideration of the information and actions which could help to improve a future pilot.

Factors to consider in a future pilot related to Option 1, an assurance scheme based approach:

- Engagement: The FSA could consult with DPEs and industry to assess likely demand and interest in participating. Consultation would also help to determine how information could be transmitted between importers and DPEs to facilitate the prioritisation of controls.
- Incentives: DPEs receiving high volumes of FNAO products listed in Annex 1 of the Regulation may have insufficient resources to increase the time dedicated to controls as part of a pilot scheme. Additional funding from FSA to cover the costs incurred as part of a pilot scheme could incentivise DPEs to participate.

  Incentives, for example, the opportunity for quicker or cheaper controls for participating importers, could encourage importers to participate in a future pilot scheme. If it is not possible to offer such incentives, a clear explanation about the objectives of the pilot scheme and the potential benefits to importers should the pilot prove to be successful, may also encourage participation.
- Scope: In the first iteration, a pilot scheme related to Option 1 could be limited to large importers of fresh produce and DPEs frequently receiving consignments of products listed in Annex 1 of the Regulation. Doing so could increase the likelihood that the pilot scheme would be capable of responding to changes to the products and countries in Annex 1, and be flexible enough to cope with the range of different types of importers.
- Information management: A centralised database to record information about importers, their previous compliance history, the results of FNAO product testing and the list of pesticides applied to products may help DPEs to implement an Option 1 pilot.
- Operating practices: Implementing an Option 1 pilot may require DPEs, importers and FSA to adopt new or adjusted working practices. An Option 1 pilot would involve industry providing and DPEs reviewing, new sources of information. Industry may have to work with DPEs / the FSA to agree standardise testing and sampling protocols.

Factors to consider in a future pilot related to Option 2, a voluntary importer verification programme:

- Engagement: Establishing a voluntary importer programme as described under Option 2 may benefit from consultation with interested parties to ensure that there is sufficient demand and also to identify and address potential problems.

  The FSA and industry may need to work together to determine how the importer verification programme would function in practice, for example, determining the assessment frequency for importers' hazard control programmes. It may be necessary for the FSA to seek independent advice about the assessment criteria necessary to determine whether an importer's hazard control programme is sufficiently rigorous.
- Incentives: Highlighting the potential benefits of participating, for example reduced frequency of controls for importers categorised as 'low risk', could help to incentivise importers to participate.

  The FSA could offer additional funding for participating DPEs to offset any additional costs incurred due to the pilot. In addition, a strategy paper setting out the objectives of the pilot scheme, including potential benefits to DPEs may help to incentivise DPEs to participate.
- Scope: Importers of high-value and highly perishable products are likely to be particularly keen to participate in a pilot scheme as delays can significantly reduce the value of their consignments.

  DPEs receiving large volumes of high-value and highly perishable products may be more appropriate for inclusion in an Option 2
- Information management: A centralised electronic database may help the FSA to implement an Option 2 pilot. Such a database could enable DPEs to easily review the risk-rating of importers, view their compliance history and determine whether the hazards control programme is suitable for the FNAO products under import.

  Operating practices: An Option 2 pilot would require that importers prepare a hazard control programme and make it available for assessment by a third party. DPE officials would have to

balance the reduced inspection frequency for low risk importers with the need to meet overall inspection frequencies set out in Annex 1 of the Regulation. The FSA may need to invest considerable time and resources to establish and maintain an Option 2 pilot.

Conclusions

Assurance schemes alone are unlikely to be suitable for the prioritisation of FNAO controls

Assurance schemes are a common feature of FNAO supply chains. They are used by retailers as a tool to ensure quality and safety at all stages of the food supply chain, including primary production. Although one of the aims of assurance schemes is to ensure compliance with official food safety legislation, the type and scope of private controls differ from those established by legal requirements. Many of the most common assurance schemes in the FNAO supply chain can be defined as 'process-based' schemes: their standards focus on the production process, and consist mainly in ensuring that producers have put in place an agreed set of quality assurance measures. This contrasts with official controls for imported FNAO which emphasise compliance controls on the final product – so called 'product based' standards.

Assurance schemes generally overlap with food safety legislation and, in some cases, go beyond legislative requirements. However, there is little evidence to support the proposition that products produced in accordance with assurance scheme standards are more likely to meet EU import requirements. Organisations working in the FNAO supply chain that were consulted for this study, importers, retailers and trade associations, indicated that assurance schemes can help to ensure compliance with food safety and other related legislative requirements. But these organisations were of the opinion that assurance schemes alone are an insufficient measure of compliance with food safety and regulatory issues related to imported FNAO.

In theory, prioritising FNAO controls could involve selecting consignments on the basis of whether or not products were sourced from producers certified to assurance scheme standards. In practice, relying on assurance scheme certification is likely to be problematic as assurance scheme certification alone is unlikely to be a reliable indicator of whether a product is more or less likely to comply with EU regulations for FNAO imports from non-EU third countries.

Options are available to the FSA to prioritise FNAO import controls

This report proposes two policy options to meet the FSA objectives with respect to prioritising FNAO import controls, and reducing the burden of official controls on importer checks and controls conducted under Regulation (EC) No 669/2009. There are advantages and disadvantages to both options and determining which is the most suitable will depend on their potential feasibility, cost and reliability. Implementing either option will require the FSA, DPEs and importers to undertake additional work to determine how the options would function in practice, and perhaps more importantly, establish the demand for the options.

The majority of importers and DPEs interviewed by the study team were unaware of the 2011 pilot and those who were aware of the pilot were uncertain about its objectives and requirements. A future pilot scheme would be more successful if communication about its objectives and requirements were improved, potentially by increasing engagement with industry representatives, importers, DPEs and others involved in the supply chain. Limiting the scope of a future pilot scheme, and including incentives to encourage participation by DPEs and importers, would also increase the likelihood of success.

1 Introduction

This is the final report of a study commissioned by the UK Food Standards Agency (FSA) from ICF GHK to evaluate the effectiveness of independently accredited assurance schemes and the role they could play in the delivery of official controls at UK points of entry. ICF GHK is working with the support of Techno Fresh.

The assignment examined existing assurance schemes in the supply chain for food of non-animal origin (FNAO) and evaluated the potential role they could play in informing a risk-based approach to controls at designated points of entry (DPEs). The assignment identified options to prioritise import controls and reduce the burden of controls on importers.

The study was conducted from January to May 2013, and included consultation with organisations involved in the UK FNAO supply chain. A total of 65 interviews were conducted with importers, DPEs, retailers and other organisations involved in the FNAO supply chain for imports to the UK. Interviews were also undertaken with assurance scheme operators and public authorities in other countries where assurance schemes (and other approaches) are used to prioritise FNAO import controls. A written response was received from officials in the European Commission Directorate General for Health and Consumers (DG SANCO).

1.1 Background to this study

1.1.1 The FNAO supply chain makes a significant contribution to UK GDP and employment

The UK imported approximately 73 per cent (by value) of fresh produce consumed in 2011 (Defra, 2013). Consignments imported from third countries are inspected to ensure the food is fit for consumption. In this context, FNAO must meet the minimum requirements set out in the legislative frameworks of the European Union (EU) and UK. Controls and inspection requirements for high risk imports are specified in EU Regulation (EC) No 669/2009 (hereafter referred to as 'the Regulation'). Their execution and enforcement in England is provided for by the Official Feed and Food Controls (England) Regulations 2009[2].

The Regulation recognises the product and supplier country as relevant risk factors in determining the appropriate inspection regime. It does not, at present, recognise producer certification to an assurance scheme's standards as a factor on which to inform the risk-based inspection regime.

The purpose of this study is to examine the role of assurance schemes operating in the global FNAO supply chain and assess their potential for better targeting inspection activity at UK points of entry. This study builds on a 2011 pilot scheme undertaken by the FSA, considering lessons learnt from the pilot and determining the potential scope and design of a future pilot study.

The objectives of this study are to:

1. Describe and evaluate how independently accredited certification schemes operate in the global supply chain and the extent to which they demonstrate compliance with EU food safety requirements, specifically those relating to imported food.
2. Identify what role independently accredited certification schemes may play in better targeting risk-based inspection activity with particular focus on the deployment of imported food checks at UK points of entry.
3. Establish what information would need to be provided to the regulator/port health authority (PHA) to ascertain whether products presented at the port are certified by the relevant independently accredited body.
4. Establish the reasons for the lack of participation in the 2011 FSA pilot scheme, which aimed to assess compliance between imported 'high risk' products which were grown

[2] SI 2009 No 3255

and/or exported by companies operating to independently accredited assurance scheme standards and those that were not.

5. Identify how a future pilot scheme to assess compliance between certified and non-certified products might be introduced and how the success of the scheme could be determined.

Horsemeat contamination in the European beef supply chain

During the course of this study the Food Safety Authority of Ireland published the findings of a targeted study examining the authenticity, or labelling accuracy, of a number of burger products, which reveals that some products contained horse and pig DNA. The FSA launched its own investigation into how a number of beef products on sale in the UK and the Republic of Ireland came to contain some traces of horse and pig DNA. The FSA found that there are two distinct types of case:

- Products that contain a significant percentage of horsemeat, suggesting adulteration by negligence or fraud.
- Traces of horse and pig DNA at very low levels potentially due to contamination in facilities which also process horsemeat.

This information has renewed focus on the integrity of food supply chains and the reliability of operator-led controls. The FSA requested the study team to consider the implications for this study of the discovery of unlabelled horsemeat in beef products. In response, the study team conducted additional research on:

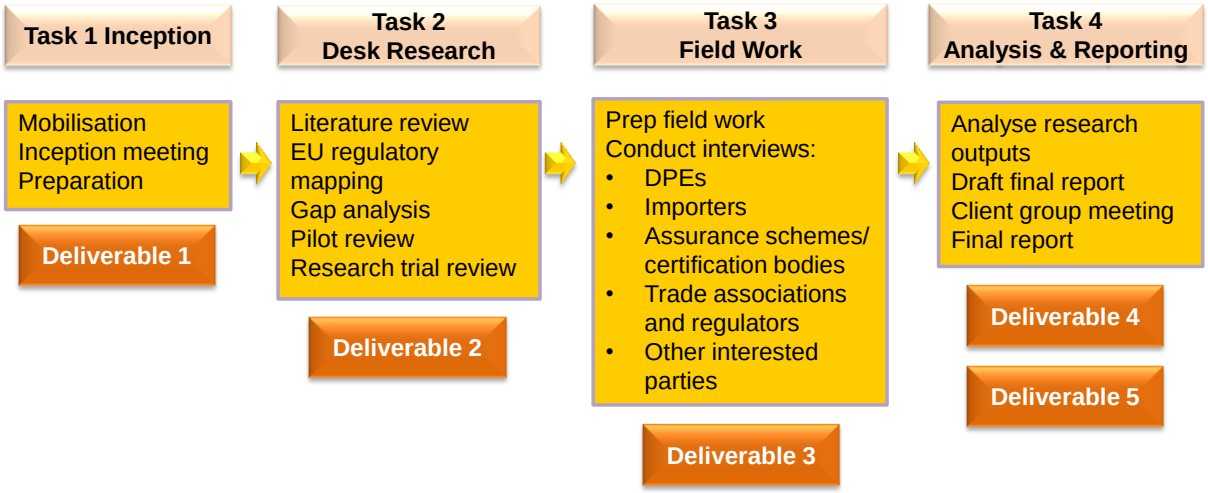
- Supply chain length, structure and stability.
- Product testing in FNAO supply chains.

The results of this research are included in the report and detailed in Annex 6.

2 Study method and approach

This section summarises Task 2 and Task 3, the evidence gathering phases of the study. The study workflow is illustrated in Figure 2.1. The evidence gathered in Task 2 and Task 3 informed the definition of two options available to the FSA to prioritise FNAO import controls.

Figure 2.1 The study included four tasks linked to five deliverables



The evidence gathering included two tasks.

- Desk research:
  - To assess the use of assurance schemes in the UK FNAO supply chain and determine the extent to which assurance scheme standards overlap with official controls.
  - To assess the use of assurance scheme certification to inform the prioritisation of FNAO import controls in other countries.
  - To analyse the test results conducted under Regulation (EC) No 669/2009.
- Stakeholder consultation through in-depth interviews with those likely to be affected by changes to FNAO import controls. The following stakeholder groups were consulted:
  - Assurance scheme operators.
  - Importers (SME and non-SME).
  - Supermarket retailers.
  - Trade associations.
  - DPEs.
  - Port companies.
  - Stakeholders involved in research / trials in other jurisdictions
  - Other stakeholders.

Details of the approach to evidence gathering are provided in Sections 2.2 and 2.3.

The evidence gathering phase of the study informed the assessment of:

- The role of assurance schemes in the UK FNAO supply chain.
- Assurance scheme requirements and the extent of the overlap with official controls.
- Examples from other countries using assurance schemes to inform the prioritisation of FNAO import controls.
- The structure of the UK FNAO supply chain.

- The requirements of Regulation (EC) No 669/2009 and the results of testing conducted in the UK under the Regulation.
- The results of the FSA's 2011 pilot scheme to test the use of assurance schemes in the FNAO supply chain.

Together, this information fed into the development and assessment of potential policy options for prioritising FNAO import controls.

2.2 Desk research

Desk research included a literature review of existing studies on the use of assurance schemes in the food chain, as well as research or trials in other countries to prioritise FNAO controls using assurance schemes. A complete list of references is provided in Annex 12.The literature review also helped to identify the set of potentially affected stakeholders that should be consulted for the study, and the issues to address during interviews.

2.3 Stakeholder consultation

The primary tool to gather information to inform the options for including assurance schemes in prioritisation of controls was direct consultation with DPE officials, stakeholder representatives and food business operators (FBOs) throughout the supply chain. Consultations were used to gather information on the FNAO supply chains, how information about products is transmitted along the supply chain from producers to importers, the use of assurance schemes, the implementation of controls and the scope for including assurance schemes in the prioritisation of controls.

2.3.1 Stakeholder identification

The main stakeholder groups and audiences were identified by assessing the type of organisations likely to be affected by Regulation (EC) No 669/2009. FSA officials involved with import controls and the Fresh Produce Consortium (FPC) were asked to review and comment on the proposed list of stakeholders. The FSA and FPC provided additional inputs to the list and identified individual institutions, companies and representative associations who:

- Are involved with FNAO product imports from non-EU third countries to the UK.
- Have experience and knowledge of processes and systems related to controls of imported FNAO products.

A set of interview prompts were developed, each tailored to different consultee groups. A letter of representation was drafted by the contractors, refined by the FSA and signed by the FSA project manager for the study; the letter described the study in brief and indicated that the contractors were commissioned to conduct the study on behalf of the FSA. This letter was used to ensure that potential consultees contacted by the contractors could verify the legitimacy of the study and their role as participants.

2.3.2 Stakeholder interviews

The stakeholder consultation included interviews with 62 stakeholders covering eight stakeholder groups (Table 2.1). Some stakeholders were reluctant to participate in the study, generally because they did not have sufficient time but some stakeholders considered that they did not have information or insight to offer.

Table 2.1 Interviews conducted by stakeholder group

Type	Number of organisations	Notes
Importers	34	■ Size: 16 large importers and 18 SMEs ■ Type of product: 29 fresh produce importers, 2 spice importers, and 3 nut importers

Type	Number of organisations	Notes
		■ Clients served: 14 serving big retailers primarily or exclusively; 2 serving primarily wholesale markets; 2 serving primarily processors; the remaining 16 serving a range of customers, including big and small retailers, food services, wholesale markets and processors. One importer interviewed is a caterer.
Supermarket retailers	3	■ Company names not included in the report.
Trade associations	3	■ Company names not included in the report.
Assurance scheme operators	5	■ Operator names not included in the report.
DPEs	12[3]	■ DPE names withdrawn from the report.
European Commission	2	■ Directorate General for Health and Consumers (DG SANCO) ■ Food and Veterinary Office
Port companies	1	■ Port operator name not included in the report.
Representatives from other jurisdictions	5	■ US Food and Drug Administration (FDA) ■ The Netherlands Food and Consumer Product Safety Authority (NVWA) ■ New Zealand Food Safety Authority (NZFSA)
Total	**65**	

3 Assurance schemes are a common feature of the FNAO supply chain and include standards which overlap with legislative requirements

This section describes the role of assurance schemes in the FNAO supply chain and the overlap between assurance schemes and legislative food safety requirements. It summarises the information provided in Annex 1.

The information provided here highlights that assurance schemes:

- Are a common feature of the FNAO supply chain; and
- Have requirements that align closely with official control requirements, but are generally considered by importers to be insufficient to address all potential food safety hazards and regulatory issues related to imported FNAO.

There is little empirical evidence that products produced to assurance scheme standards are more likely to comply with EU legislative requirements related to contamination.

3.1 Assurance schemes are used to assess and approve businesses in the FNAO supply chain

Assurance schemes are initiatives for assessing and approving businesses against a defined standard. Businesses that achieve 'approval' under an assurance scheme are considered to operate at a particular level or have achieved a certain status. Scheme participation is typically voluntary although many food businesses, including supermarket retailers, require their suppliers to obtain assurance scheme certification.

Assurance schemes are used by retailers as a tool to ensure quality and safety at all stages of the food supply chain, including primary production. There are a wide range of assurance schemes: in Europe alone, close to 400 private standards govern the food industry (de Battisti et al., 2009). The key elements of food assurance schemes include:

- The possibility to make a claim about processes and practices relating to how food is produced, transported or processed;
- Mechanisms for enforcement and certification, generally through third party accredited certification bodies;
- A set of established rules and procedures that might be accompanied by guidance documents concerning aspects such as the implementation of standards; and
- Traceability measures to enable products to be tracked along the food chain.

3.2 Assurance scheme requirements often overlap with official controls but are process-based rather than product-based

Although one of the aims of assurance schemes is to ensure compliance with official food safety legislation, the type and scope of private controls differ from those established by legal requirements. Many of the most common assurance schemes in the FNAO supply chain, such as GlobalG.A.P., the British Retail Consortium (BRC) Global Standard for Safe Food, and the International Featured Standards for Food (IFSS) can be defined as 'process-based' schemes: their standards focus on the production process, and consist mainly in ensuring that producers have put in place an agreed set of quality assurance measures. This contrasts with official controls for imported FNAO which emphasise compliance controls on the final product – so called 'product based' standards.[4]

[4] The requirements established by Regulation (EC) No 669/2009 do not concern the production process, but rather focus on the safety of the final product as it is imported into the EU. Imported FNAO might undergo

While the evidence is relatively limited, the literature review undertaken by the study team (Annex 1) suggests that assurance schemes generally overlap with food safety legislation and, in some cases, go beyond legislative requirements. Many of the most common assurance schemes operating in the FNAO supply chain include 'process based' standards which relate to food safety hazards included in Annex 1 of Regulation (EC) No 669/2009, and most frequently relate specifically to pesticides.

Although assurance schemes may overlap with legislative requirements, only one study was found which supported the hypothesis that products produced in accordance with assurance schemes are more likely to comply with legislative requirements. That is, there is little evidence to support the proposition that products produced in accordance with assurance scheme standards are more likely to meet EU import requirements.

3.3 Reported issues related to assurance schemes in the FNAO supply chain

Importers, retailers and trade associations interviewed for this study confirmed that assurance schemes are a common feature of the FNAO supply chain. In total, 28 of 34 importers interviewed stated that their trade includes assured products. The three supermarket retailers interviewed require that all imported FNAO must be sourced from assured producers. Importers stated that this is also the case for all of the major supermarket retailers. GlobalG.A.P. is the most widespread scheme: 25 of the 34 consulted importers source almost 100 per cent of imported FNAO from producers certified to GlobalG.A.P. standards. Importers who do not source FNAO from assured producers typically import spices and nuts.

The importers, retailers and trade associations consulted for this study indicated that assurance schemes are useful because they establish uniform requirements for safe handling and storage of pesticides, and also set standards related to food safety controls, including risk assessment of pesticide use. In their view, this helps to ensure compliance with food safety and other related legislative requirements.

Nonetheless, interviewed importers generally believe that assurance scheme certification alone is an insufficient measure of compliance with food safety and regulatory issues related to imported FNAO. Interviewees indicated that assurance scheme standards related to certain risk factors are inadequate to ensure that hazards are avoided (for example, that pesticide residues comply with EU regulations), and additional control measures are necessary to ensure products meet EU regulatory requirements and potential hazards. Specific issues mentioned include, for example, contamination due to pesticide drift from neighbouring fields and variable weather conditions impacting on the breakdown of plant protection products. Additionally, assurance schemes generally focus on specific steps in the supply chain: for example, GlobalG.A.P. covers primary production, but contamination may also occur during packing and transportation. Importers also noted that potentially weak audit procedures in some non-EU third countries may influence the reliability of assurance schemes.

Seven of the DPE officials interviewed for this study had heard of assurance schemes (GlobalG.A.P. in each case). Of the seven, six had a basic understanding about how assurance schemes worked and one had a relatively detailed understanding. The DPE official with a more detailed understanding stated that assurance scheme certification was unsuitable for prioritising controls as the certification was not consignment specific. That is, the certificate relates to a producer's operating processes but does not relate to how specific consignments of products have been produced. This would, in their opinion, limit the reliability of certification in the selection of consignments for controls.

Assurance schemes were described in summary to the other six DPE officials, who were then asked to consider whether the certifications might be useful in the prioritisation of controls. Three of the six DPE officials stated that assurance scheme certificates would

sampling analysis in order to verify that established thresholds for substances, such as pesticides, are not exceeded.

have be consignment specific to be useful. Two of the DPE officials stated that assurance scheme certificates issued to producers within 12 to 6 months would be acceptable, but only if the assurance scheme could be assumed to be reliable and robust. One DPE official did not think that assurance scheme certificates were likely to be reliable enough to include in the prioritisation of controls.

4 Other countries use, or are planning to use, assurance schemes (and similar approaches) to inform FNAO import control priorities

The study included a review of initiatives in other countries to determine whether assurance schemes are used elsewhere to prioritise controls related to imports of FNAO. The study team examined the inspection and control requirements in the United States (US), New Zealand, Australia, Canada, and other European Union Member States. Evidence of assurance schemes informing the prioritisation of controls were identified in the Netherlands, New Zealand and the United States. The initiatives in each of these three countries are summarised below and described in detail in Annex 4.

The study team's review of initiatives in the three countries included desk research and interviews regulators. It found that:

- Officials in the Netherlands do not consider that assurance schemes to be reliable enough for prioritising FNAO import controls. They use alternative methods to reduce the burden of controls on importers.
- New Zealand has revised its food safety legislation to prioritise FNAO controls based on the risk posed by the food product. Certification will inform the categorisation of food products.
- The US is currently revising its food safety legislation and is likely to include requirements for importers to verify suppliers, and also establish a voluntary programme to enable expedited importation for participating importers.

4.1 The Netherlands

The Netherlands Food and Consumer Product Safety Authority (NVWA) introduced risk based policy approaches to food safety enforcement in 2007 with the objective of reducing the burden of official controls on low risk food business operators (FBOs) and the competent authority.

The approach implemented by the NVWA involves categorising FBOs in one of three groups depending on their risk of non-compliance with food safety legislation. Each category varies in terms of the extent of monitoring and enforcement activity (i.e. where FBOs categorised as high risk are subject to closer monitoring and harsher enforcement). The NVWA recognises mandatory systems (such as hazard analysis and critical control points (HACCP) systems) and voluntary systems (such as assurance schemes) when determining the level of risk posed by FBOs.

The risk based approach to official controls has been applied primarily to domestic FBOs and has not yet been extended to FNAO imports / importers. The NVWA officials interviewed as part of this study considered that certification is insufficiently reliable for the prioritisation of FNAO import controls. Several issues were identified which undermined their confidence in assurance scheme certification. These include potential variability in the quality of auditors and the rigour of audits, the extent to which compliance is guaranteed in the period following an audit, and the potential for conflicted relationships between FBOs and certification bodies. In addition, the NVWA has previously identified instances of domestic FBOs maintaining very poor hygiene standards despite holding valid certification from assurance schemes with standards related to food hygiene.

The NVWA has no plans at this stage to incorporate assurance schemes into the prioritisation of FNAO import controls.

4.2 New Zealand

The current system to ensure the safety of imported foods in New Zealand has been under review for several years. A bill is before parliament to change the approach to food safety,

including the system and processes related to New Zealand food imports.[5] The new bill would increase the role of assurance schemes in the prioritisation of FNAO import controls.

4.2.1 The current system in New Zealand

The current system in New Zealand includes a list of high-risk prescribed foods (see Annex 4, Table A4.1) which require inspection (certification checks, sampling and testing). Unlisted foods do not require inspection. There are different options and clearance procedures, known as imported food requirements (IFRs), available for importers to demonstrate compliance. One of the options proposed would require inspectors to clear products for import when there is a government to government pre-clearance arrangement in place, or arrangements are in place to recognise manufacturer assurances. Under this option, testing and inspection is conducted at a reduced frequency. This option is usually reserved for high-value products with significant import volumes into New Zealand, for example meat imported from the EU.

The current system in New Zealand also includes an option for frequent food importers[6] to obtain a multiple release permit (MRP). The permit allows importers to import prescribed foods without obtaining approval for every consignment. The frequency of controls may be lower under an MRP (frequency is set on a case by case basis and is included in the conditions of the MRP). This 'trusted trader' programme is intended to recognise importers who frequently import prescribed foods and who have demonstrated good performance[7] and that they manage risks appropriately.[8] MRPs are issued with conditions and are subject to an annual verification (audit) by the Ministry for Primary Industries (MPI). The cost of the annual verification is borne by the importer.

4.2.2 The proposed system in New Zealand

The draft bill currently before parliament proposes a new system to regulate imports of food and food related products. The proposed system is intended to place more responsibility for managing food safety on the countries that export food to New Zealand, and to recognise importers who have mechanisms in place to ensure food imports are safe.

Under the proposed system, food will be categorised into three groups based on their risk level. The low risk category will encompass the majority of foods and will be the default category assigned to foods. Regulatory interest in foods in the low risk category will be minimal. The high risk category will include foods with inherently high food safety risks.[9] Import control and inspection activity will be focused on foods in the high risk category. A third category, called 'scanning', will be used for foods which are elevated above the low risk category because of issues such as contamination or a systems failure in the country of origin. The MPI may work with the processor(s) / country / region of origin to resolve issues, and once they are resolved, a decision can be made on which category is most appropriate for continued control.

Wherever practicable, high regulatory interest foods will require pre-clearance for import to New Zealand. The pre-clearance programme will develop and review arrangements with overseas countries and / or overseas commercial entities. This may include specific foods or

[5] Food Bill 160-2. The bill was introduced in May 2010 and is still before Parliament. http://www.foodsafety.govt.nz/policy-law/reform-nz-food-regulations/food-bill/

[6] A frequent food importer is defined as an organisation importing five or more consignments of a specific prescribed food within a six-month period.

[7] 'Good performance' means no history of fraud or attempted mis-classification of a product; compliance with Imported Food Requirements and conditions of an importers MRP.

[8] Appropriate risk management means they comply with the Food (Importer General Requirements) Standard 2008; the Importer (Listing) Standard 2008; Food Standards Code and the requirements of any applicable IFRs. In the future importers will be required to operate under a Food Control Plan (HACCP based for food not of animal origin) or Risk Management Programme (HACCP based for animal products – includes honey, dairy, meat, fish).

[9] Categorisation of the food product only considers food safety risks. It specifically excludes fraudulent adulterations, quality and non-food safety compositional and labelling requirements.

industries, or an entire country's / region's food safety regime. Pre-clearance may also be required for all foods from a particular country / region. MPI will require that the competent authority of the exporting country provides assurances through certification as to the compliance or equivalence with New Zealand food safety requirements. MPI will permit pre-clearance under three scenarios:

1. Overseas country / commercial entity meets New Zealand standards.
2. Overseas country / commercial entity systems are equivalent to New Zealand requirements (outcome-based).
3. Overseas country / commercial entity have a pre-existing arrangement with a third country that New Zealand has previously deemed as equivalent.

4.3 The United States

The United States Food and Drug Administration (US FDA) is currently preparing the implementation of the Food Safety Modernization Act (FSMA). The Act represents significant US food safety law reform and includes proposals for new rules to improve the safety of imported food. Three proposed rules are of particular interest to this study: foreign supplier verification, a voluntary qualified importer program, and the authority to require certification for imported food (mandatory certification).

Foreign supplier verification would require that importers in the US perform risk-based verification of foreign suppliers (exporters or producers) to establish that the food imported is produced in accordance with domestic requirements. The extent of the activities importers will be expected to follow will be informed by the risks associated with the specific type of imported food product. Potential verification activities which importers will be expected to implement may include monitoring records for shipments, lot-by-lot (per consignment) certification of compliance, annual on-site inspection of producer facilities, checking the hazard analysis and risk-based preventive control plan of the foreign supplier, and periodically testing and sampling shipments.

The proposed rule related to a voluntary qualified importer program would establish a program for the expedited review and importation of food for participating importers . The eligibility of importers to join the voluntary qualified importer program will be informed by the risk of the food to be imported.

The FSMA includes a proposal granting the US FDA the authority to require certification for imported foods, known as mandatory certification. Under the proposed rule certain high risk foods would be required to be accompanied by certification to demonstrate that the food product complies with domestic requirements, including produce safety standards with respect to residues. Certification would be recognised from an agency or representative of the source country for the imported food, or other organisations to provide such certification. The type of 'other organisations' is not yet determined but will be established in subsequent guidelines. Existing certification bodies could potentially offer this certification.

5 The FNAO supply chain is heterogeneous and its variance influences the nature of potential FNAO health safety risks and the existing measures in place to manage these risks

This section describes some important features of the FNAO supply chain which should be considered in any effort to prioritise import controls. More detailed analysis is provided in Annex 5. These features influence the type of private controls and systems in place along the FNAO supply chain to manage potential food safety risks. They include:

- The final food business operator (FBO) in the supply chain – the final FBO influences the controls and processes in place along an FNAO supply chain. Supermarket retailers have specific requirements which typically go further than regulatory requirements.
- Traceability – FNAO supply chains generally have strong traceability systems in place. Traceability along supermarket retailer supply chains is typically more extensive than other supply chains.
- Testing – there is relatively frequent contaminant testing along the FNAO supply chain. The frequency of testing depends on the product type and source country; testing and sampling protocols are not standardised.
- Payment arrangements – the arrangements between importers and producers for paying for consignments can be an important incentive mechanism to ensure products meet EU and UK import requirements.

5.1 The final FBO influences the controls and processes along the FNAO supply chain

The evidence gathered for this study suggests that similar products often have separate supply chains with different quality assurance processes .For example, green beans from Kenya may originate from different types of producer and may be imported to the UK by different types of importer. There are separate supply chains within source countries. Domestic markets often have separate supply chains to those supplying export markets. The difference between domestic- and export-market supply chains is likely to be more pronounced in countries with weak regulatory systems and public controls. More significantly, there are separate supply chains for products supplied to supermarket retailers and supplied to other final customers, for example, wholesale markets.

The product specifications required by supermarket retailers, for example with respect to food safety, have driven the development of private controls by producers. In some cases supermarket product specification requirements have contributed to the backward integration of importers with producers in source countries. The backward integration by importers provides them with control over how a product is produced, and as a result, increases the likelihood that a product will meet EU import requirements.

Backward integration by importers supplying supermarket retailers is common and appears to have a significant impact on the likelihood of a product exceeding pesticide MRLs. Analysis undertaken for this study[10] suggests samples taken from supermarket retailers are five times less likely to fail pesticide testing compared to samples taken from other points along the supply chain (see Annex 10).[11] The reasons for this difference may also relate to

[10] Defra's Expert Committee on Pesticide Residues in Food (PRiF) provided the study team with results of testing it had conducted during 2011 and 2012. This study team analysed the data to determine whether there are differences in compliance rates between samples taken by supermarket retailers and at other points along the supply chain. The complete analysis is included in Annex 10.

[11] This is likely to be an underestimate as samples taken from other points along the supply chain are likely to be destined for supermarket retailers. The data does not indicate whether sampled products were destined for supermarket retailers or other final customers, such as wholesale markets.

the different type of controls along the supermarket supply chain and / or the different type of products sold by supermarkets, such as ready to eat (washed and prepared) fresh produce.

5.2 Traceability systems are generally well developed along the FNAO supply chain but are more comprehensive in FNAO supply chains supplying supermarket retailers

Traceability is a process that enables trading businesses to track products as they move from the field through to the final customer (for example, supermarket retailers). Traceability typically functions on the 'one-up one-down' principle, that is, each business in the supply chain should be able to identify their supplier and customer for a product. The principal incentive for traceability across the FNAO supply chain stems from the requirements of the UK Food Safety Act 1990 for FBOs to exercise due diligence to ensure that food is safe for consumption.

Evidence gathered for this study indicates that traceability of FNAO imports back to specific producers is well developed. Traceability typically extends from supermarket retailers / food service operators to specific producers, or small producer groups. Traceability is based on a relatively simple system in which the producer numbers boxed produce by lot and batch. Combined with the producer's name, which is also present on the box, it is possible for importers to trace products back to a specific producer. The number on the box enables the producer to identify when produce was harvested, the pesticides applied to the product and the field in which it was grown.

The main difference between FNAO supply chain traceability systems is the extent to which information about production methods is recorded, and whether information is stored in an electronic or paper-based system. Large importers[12] generally require that producers maintain records detailing which pesticides have been applied, when they are applied, and in what quantities. Large importers also often require that traceability information extends to the particular field where a product was grown. This information is typically held electronically and can be accessed upon request. Smaller importers and producers are slightly less well organised, infrequently requiring such detailed information to be held and often relying on paper-based systems.

Importers supplying supermarkets require that, where necessary, it is possible to determine which pesticides have been applied, when they were applied, and in what quantities. This relies on producers maintaining accurate records and linking these records to the batch / lot numbers associated with consignments of exported fresh produce. The importer will conduct periodic 'trace back' exercises to determine whether the traceability system is functioning effectively and all relevant paperwork (such as spray records) is accurate and up to date.

5.3 Hazard testing is commonplace in FNAO supply chains but varies significantly between product types

There is a significant amount of product testing for food safety hazards underway in the supply chain for FNAO imported from non-European third countries. Product testing is one part of a broader system of hazard control and is used to monitor the effectiveness of a hazard management system. That is, product testing is not used to identify food safety hazards but is used to check that systems and controls in place to manage food safety hazards are working properly.

The scale and frequency of testing varies significantly between food business operators, country of origin and product, and is influenced by a variety of issues (for example, weather conditions in source countries). There are no common rules / procedures for this testing, since the timing and scope of product testing programmes is generally based on an

[12] 'Large importers' are importers that are larger than a 'small and medium enterprise' (SME). An SME is defined as an organisation with 250 employees or fewer and either turnover of £42 million or less, or a balance sheet total of £36 million or less.

assessment of suppliers and products to identify priorities and risks. Testing is conducted at different stages of the supply chain, including in the country or origin, the importer's premises, or the premises of the final customer.

Testing protocols differ between the three product groups (fresh produce, spices and nuts), but some similarities do exist:

- **Fresh produce** testing is undertaken to identify heavy metals, microbiological contaminants and pesticide residues, with the latter being by far the most frequent type of test undertaken. Testing is most commonly undertaken by large importers supplying supermarket retailers and used to monitor the effectiveness of practices agreed in advance with producers. Producers sometimes undertake testing and share the results with customers (exporters / importers) to demonstrate that products are likely to meet EU and UK import requirements. The frequency of such testing varies and depends on the type of crop and the extent of historical test results available to share with customers.[13] Test results may also be used by exporters / importers to inform their own pesticide residue testing programme and to demonstrate to their customers (supermarkets, for example) that products are residue free.

  The frequency and extent of pesticide testing conducted by importers is usually based on a risk assessment which takes multiple factors into account. The most significant factors influencing testing undertaken by importers is the length of the relationship they have with the supplier, and whether there have been any problems in the past. Local intelligence is also an important factor influencing the risk assessment, for example, if a pest is a particular issue in the region supplying the products.

- **Spices** are imported into the UK either processed (typically ground) or whole. Most testing undertaken on spices relates to mycotoxins (aflatoxins and Ochratoxin A) and to a lesser extent bacteria associated with food borne disease (such as *E. coli* and *Salmonella*), adulterants (such as Sudan dyes[14] and bulking agents) and pesticide residues. Whole spices are tested for mycotoxins and pesticides only.

  Spice production is typically very fragmented. Spices are most commonly grown on small farms and aggregated by middlemen before reaching processors. This reduces the influence processors and importers have over the production process, for example, the pesticides used and how products are dried / stored. Processors typically undertake frequent testing due to their indirect relationship with producers.

  Some spice importers in the UK import whole products (rather than processed products) to remove risks associated with adulterants and to provide themselves with full control over removing bacteriological contamination. Routine testing for bacteriological contamination is undertaken by processors to check the efficacy of sterilisation procedures.

  Imported whole spices are at risk of mycotoxin and pesticide contamination. Whole spices are typically tested for mycotoxins before export, and may be tested again upon import to verify the results. The frequency of pesticide testing depends on the length of the relationship with the exporter and also on whether tests have been conducted in the source country (and the results shared with the UK importer).

- **Nuts** are subject to testing for pesticide residues, heavy metals and mycotoxins. The majority of testing conducted on nuts (ground and tree) relates to mycotoxins (aflatoxins and Ochratoxin A).

  Every consignment of nuts is required to be tested for mycotoxins before it is shipped to the EU, and importers frequently undertake their own (additional) testing before products reach customers.

[13] More frequent testing may be undertaken by producers with less historical information available to share with customers.

[14] Sudan dyes are a hazard associated with ground spices but are not a hazard included under Regulation (EC) No 669/2009.

Pesticide and heavy metal testing is conducted less frequently, often on an annual basis by producers (who share the results with importers) or by importers. The testing is used to monitor whether producer controls are effective, and to demonstrate to customers that supply chain food safety risks are being managed.

Table 5.1 summarises information about the hazard testing conducted for each product type, and the factors influencing testing frequency.

Table 5.1 Hazard testing by product type

Product type	Hazard test	Frequency	Factors influencing testing frequency
Fresh produce	Pesticides	Regularly	Relationship between importer and producer Changing weather conditions Siting of crops (risk of contamination due to pesticide drift from adjacent crops) Local intelligence about potential contamination risks Results of supplier audits – 'riskier' producers subject to more frequent testing Commercial conditions – high prices may incentivise producers to harvest within harvest interval periods
	Heavy metals	Rarely	New business relationship with producer Suspected contamination issue
	Pathogenic bacteria	Rarely	Only if specific risk identified
	Aflatoxins	Never	Contaminant not usually associated with fresh produce
Spices	Pesticides	Rarely	Relationship between importer / processor and producer Processors' control over the agricultural practices of producers More frequent testing when relationship with processors is indirect
	Pathogenic bacteria	Regularly / Per consignment	Testing undertaken to check effectiveness of sterilisation procedures
	Adulterants	Regularly / Per consignment	Testing undertaken on processed products only Relationship between importer and producer
	Aflatoxins	Regularly / Per consignment	Whether testing has already been conducted in source country
Nuts	Pesticides	Rarely / Random testing on annual basis	Suspected contamination issue Random supplier selection

Product type	Hazard test	Frequency	Factors influencing testing frequency
	Heavy metals	Rarely / Random testing on annual basis	Suspected contamination issue Random supplier selection
	Pathogenic bacteria	Never	Contaminant not usually associated with nuts
	Aflatoxins	Regularly / Per consignment	Per consignment testing required by EU legislation

5.4 Payment arrangements can act as an incentive to ensure products meet EU and UK import requirements

Two payment arrangements were identified during the research for this study: upfront payment and 'cash on delivery'. Both are important as they influence importer incentives to ensure FNAO products pass through controls at UK DPEs. Upfront payments place the burden on importers to ensure that products pass import controls. Cash on delivery arrangements put the onus of controls on exporters / producers. Interviews with importers suggest that upfront payments are more likely to pass FNAO import controls.

- **Upfront payments**

  Importers purchase the produce in the source country and are responsible for shipping costs. The importer has a clear incentive for products to pass border controls. If a product does not meet EU / UK legislative requirements (such as MRLs) the importer bears the cost of consignment disposal (and revenue loss).

- **Cash on delivery**

  Importers pay an advance to exporters / producers with the balance paid once consignments have cleared border controls.[15] Disposal costs (and revenue loss) rest with the exporters / producers when consignments do not meet UK / EU legislative requirements. Exporters / producers have a clear incentive to ensure that products meet EU / UK legislative requirements.

Upfront payment arrangements are common for large importers, while cash on delivery is restricted to smaller importers. Smaller importers also offer upfront payments, but larger importers do not typically undertake cash on delivery arrangements.

[15] Shipping arrangements vary; the cost may be paid by the exporter / producer or the importer.

6 Regulation (EC) No 669/2009 specifies the frequency of controls for 'high risk' FNAO products imported from non-European countries

This section provides an overview of the requirements of Regulation (EC) No 669/2009, summarises the results of testing conducted at UK DPEs since the Regulation was introduced, and describes the problems reported by importers due to controls conducted under the Regulation. Additional information is provided in Annex 7.

The analysis highlights that relatively few countries were responsible for the majority of non-compliances since the Regulation was introduced, and within these countries the non-compliances corresponded to a limited number of products.

6.1 Annex 1 of the Regulation provides the list of 'high risk' FNAO subject to increased controls

The Regulation sets out rules concerning increased official controls for FNAO imports listed in Annex I of the Regulation. The purpose of the Regulation is to enable known risks to be addressed more effectively and to collect monitoring data on the occurrence and prevalence of unfavourable results from laboratory analysis to inform risk identification.

Annex I establishes the control frequency for certain categories of food and feed imported into the EU from specific third countries in relation to a defined hazard. As explained in Article 1 of the Regulation, the list is defined based on different information sources, including notifications received by the Commissions' Rapid Alert System for Food and Feed (RASFF) and reports from the Food and Veterinary Office (FVO).

The products included in Annex I are food and feed of non-animal origin and may include fresh fruit and vegetables, spices etc. Products containing or derived from a commodity listed in Annex I, such as juices and fruit mixes, are out of the scope of the Regulation (European Commission, undated). Due to the highly perishable nature of some of these products, derogations to the general rules for increased controls are foreseen when their implementation would cause 'serious risk to food safety or [in] the product being damaged to an unacceptable extent (European Commission, undated) .

The Annex I list is regularly updated by the Commission: a review is conducted at least on a quarterly basis, as required by the Regulation.[16]

6.1.1 Imports of FNAO from third countries must meet specific EU requirements in relation to food safety hazards included in Annex 1 of the Regulation

Annex I defines the control frequency for a range of food safety hazards. The food safety hazards included in the historical versions of Annex I can be categorised as additives, contaminants (e.g. mycotoxins, pathogenic bacteria), and pesticide residues. Tests are conducted to determine whether products meet EU regulatory requirements with respect to numerous listed substances and products used in food and feed. More detailed information about relevant EU regulatory requirements in relation to imports of FNAO from third countries is included in Annex 7.

Member State Competent Authorities are required to submit test results to the Commission on a quarterly basis. An analysis of the returns submitted to the Commission by the FSA reveals that non-compliance rates vary significantly between source countries, and between products from the same country.

[16] ICF GHK has collated the historical versions of Annex I to facilitate analysis and categorisation of food safety hazards, available in a separate excel file. The file sets out, for each historic version of Annex 1, the food products, the country of origin, the related hazard, and the frequency of physical and identity checks required.

6.2 FSA test results indicate that a few countries are responsible for most incidents of non-compliance

Over 36,500 consignments of products listed in Annex 1 were imported from 55 countries in the period from January 2010 – January 2012. Of these, the study team identified non-compliant consignments from 12 countries. Within this group of 12, the majority of non-compliant consignments (88 per cent) originated from three countries: India (59 per cent), the Dominican Republic (22 per cent) and Egypt (7 per cent). The volumes of Annex 1 consignments imported from these three countries (74 per cent in total) were also amongst the highest (26 per cent, 21 per cent and 27 per cent, respectively).

The data reveal that non-compliance rates differ significantly between countries, ranging from 55 per cent for consignments originating in Nigeria to two per cent for consignments from Turkey. India, the Dominican Republic and China each have both relatively high rates of non-compliance and high volumes of Annex I consignments.

Table 6.1 summarises DPE test results between January 2010 and January 2013. The sub-sections below provide a summary of test results for each hazard type (mycotoxins, pesticides, metals, Sudan dyes[17] and *Salmonella*).

Table 6.1 Summary results of tests conducted on consignments of Annex I products during the 2010 – 2012 period[18]

	No of consignments	No of laboratory tests	No of non-compliant checks	% non-compliant checks
India	9514	2584	423	16%
Dominican Republic	7516	2327	158	7%
Egypt	9700	950	50	5%
China	4396	459	30	7%
Thailand	544	120	17	14%
Argentina	2118	188	10	5%
Pakistan	830	211	7	3%
Brazil	595	111	7	6%
Nigeria	72	11	6	55%
Uzbekistan	6	4	2	50%
Ghana	220	35	1	3%
Turkey	444	49	1	2%
Total	**35955**	**7049**	**712**	**10%**

Source: Regulation (EC) No 669/2009 returns submitted by the FSA to the European Commission during January 2010 – January 2012

6.2.1.2 Mycotoxin test results

The rate at which consignments failed controls for mycotoxins (aflatoxins and ochratoxins) varied considerably during the 2010 – 2012 period (Table 6.2), ranging from 100 per cent (Nigeria) to 3 per cent (Pakistan) of tested consignments. The largest number of non-compliant consignments was from India. A total of 208 non-compliant consignments were

[17] Sudan dyes are no longer included in Regulation (EC) No 669/2009 and are subject to separate legislation. The results are included below because testing for Sudan dyes was conducted under Regulation (EC) No 669/2009 during the period described.

[18] The total number of consignments in the table (35,955) is less than the total number of consignments tested (36,500) as the table only includes countries where at least one incident of non-compliance was detected. Countries where no incidents of non-compliance were detected have been excluded.

identified during the 2010 – 2012 period, representing approximately 86 per cent of all consignments which failed mycotoxin testing conducted under the Regulation. The majority of consignments imported from India which failed mycotoxin testing were groundnuts (142 consignments), and the remainder were whole, ground or crushed chilli and curry (54 consignments), ginger (six consignments), nutmeg (five consignments) and peanut butter (one consignment).

Table 6.2 Mycotoxins testing, overall results

Country of Origin	No consignments	No of laboratory tests	No of non-compliant checks	% non-compliant checks
Nigeria	25	6	6	100%
Uzbekistan	6	4	2	50%
Ghana	26	4	1	25%
India	4904	1460	208	14%
Brazil	585	111	7	6%
Argentina	2114	188	10	5%
China	333	32	1	3%
Pakistan	784	205	6	3%
Indonesia	9	4	0	0%
Peru	8	3	0	0%
South Africa	31	7	0	0%
Turkey	53	6	0	0%
Vietnam	17	4	0	0%
Total	**8895**	**2034**	**241**	**12%**

6.2.1.3 Pesticide residue test results

Pesticide residue failure rates ranged from three per cent to 26 per cent (Table 6.3). The countries with the highest rates of non-compliance were India (26 per cent), China (20 per cent) and Thailand (14 per cent). Products imported from Egypt had a relatively low rate of non-compliance (five per cent), but some products (strawberries and peppers) failed more frequently than others (green beans and oranges).

Fresh produce from India represented the highest number of incidents of non-compliance. In total, 213 products from India exceeded pesticide MRLs, of which 176 were consignments of okra and 37 were consignments of curry leaves. The Dominican Republic was responsible for a high number of consignments which exceeded pesticide MRLs: 158 incidents of non-compliance were recorded, of which 56 were for aubergines, 41 for bitter melon, and 29 for yard long beans.

Table 6.3 Pesticide testing, overall results

Country of Origin	No consignments	No of laboratory tests	No of non-compliant checks	% non-compliant checks
India	4223	805	213	26%
China	828	91	18	20%
Thailand	533	119	17	14%
Dominican Republic	7514	2327	158	7%
Egypt	9698	950	50	5%

Country of Origin	No consignments	No of laboratory tests	No of non-compliant checks	% non-compliant checks
Turkey	345	40	1	3%
Total	**23141**	**4332**	**457**	**11%**

6.2.1.4 *Metals*

Over the period 2010-2012, tests for the presence of metals (aluminium, cadmium and lead) were conducted on consignments of dried noodles and additives[19] from China and feed additives and pre-mixtures from India (Table 6.4).

The majority of consignments eligible for metals testing were dried noodles from China (3,059), of which 11 (four per cent) were non-compliant. No incidents of non-compliance were detected for consignments of additives from China, or feed additives and pre-mixtures from India.

Table 6.4 Metals testing, overall results

Country of Origin	Commodity	No of consignments	No of laboratory tests	No of non-compliant checks	% non-compliant checks
China	Dried noodles	3059	304	11	4%
	Additives	54	16	0	0%
India	Feed additives and pre-mixtures	24	6	0	0%
Total		**3137**	**326**	**11**	**3%**

6.2.1.5 *Sudan dyes*

During the 2010 – 2012 period there were 1,419 consignments subject to testing for the presence of Sudan dyes.[20] The products subject to testing were dried chilli, whole or ground, and chilli products, including curry, red palm oil, and dried turmeric.

In total 449 samples were tested, of which three (0.67 per cent) were non-compliant. The three non-compliant results related to chilli (crushed or ground) products, two from India and one from Pakistan.

Sudan dyes were de-listed from Regulation (EC) No 669/2009 in April 2012 and are no longer included in the Regulation. The Sudan dye test results are included here to demonstrate the extent of contamination of spices imported to the UK.

6.2.1.6 *Salmonella*

The high risk / restricted products tested for the presence of *Salmonella* between 2010 and 2012 were fresh herbs (basil and coriander leaves) imported from Thailand[21].

In total, 111 consignments subject to *Salmonella* controls were received, of which 10 were tested. All samples were compliant.

[19] Defined as 'trace elements'

[20] Sudan dyes were de-listed from the food safety food safety hazards appearing in Annex 1 of Regulation (EC) No 669/2009 in April 2012. They are included here as tests were conducted under the Regulation (EC) No 669/2009 during the period from January 2010 to April 2012.

[21] The testing referred to here is conducted specifically under Regulation (EC) No 669/2009. Salmonella testing is also conducted as part of routine surveillance programmes.

7 The FSA implemented a pilot scheme in 2011 to collect information about the use of assurance schemes in the FNAO supply chain, but there was limited participation by importers

This section describes the pilot scheme introduced by the FSA in 2011. It includes a summary of the results and stakeholder views of the scheme. Additional details are provided in Annex 8.

The evidence obtained for this study demonstrates that there was limited participation by importers in the 2011 pilot scheme. The majority of importers interviewed by the study team were unaware of the 2011 pilot and those who were aware of the pilot were uncertain about its objectives and requirements.

The information obtained from importers, DPEs and other stakeholders suggests that a future pilot would likely be more successful if communication about its objectives and requirements were improved, potentially by increasing engagement with industry representatives, importers, DPEs and others involved in the supply chain.

7.1 There was limited participation by importers in the 2011 pilot scheme

When Regulation (EC) No 669/2009 was introduced, some FNAO importers expressed concerns about potential delays while consignments were detained pending the results of controls. Delays that result in product deterioration could reduce their value or render them unsalable.

In 2011, the FSA initiated a monitoring exercise to assess whether compliance with permitted levels of pesticide residues on products subject to increased import controls was improved if producers / suppliers in non-EU third countries participated in assurance schemes. The purpose of the pilot was to improve the risk-based approach to conducting import checks at UK points of entry by collecting information about compliance levels for certified and non-certified 'high risk' products.

Participation in the scheme was voluntary. Importers that wished to participate were requested to provide additional documentation to UK DPEs with their common entry document (CED). The additional documentation included:

- A certificate bearing a national accreditation symbol / certification body mark which would include a 'pesticide specification' for the particular type of product imported. This information always accompanies imports of organic produce, for example, in the form of a 'certification of inspection'.
- Information demonstrating the traceability of products from the point of origin to the point of export.

The scheme was supported by sector specific trade associations such as the Fresh Produce Consortium (FPC). The FPC publicised the scheme to their members via a regular newsletter and information published on the FPC's website. The FSA also consulted with UK DPEs prior to the launch of the scheme, and sent a follow-up letter clarifying the type of information the exercise was intended to collect.

The results of the scheme, and further specification details, are included in Table 7.1.

Table 7.1 Details of the 2011 FSA pilot scheme

Start date	1 April 2011
End date	30 December 2011
Participants	London Borough of Hillingdon (London Heathrow Airport) was the only DPE to receive assurance scheme / organic certification documentation accompanying

	'high risk' products. All other DPEs reported that no documentation was received from importers.
Results	Results from London Heathrow Airport only Approximately 3,875 consignments of 'high risk' products were imported during the period, of which 3,841 were consignments of perishable / fresh consignments. Of the 3,841 consignments, only 221 (6 per cent of 3,841) were accompanied by any form of 'additional certification' related to assurance schemes. Of the 221, 28 (0.72 per cent of 3,841) were subject to an identity and physical examination (including sampling). Of the 28 consignments examined, 27 (0.7 per cent of 3,841) passed and one (0.03 per cent of 3,841) failed due to high levels of pesticide residues (breach of maximum residue levels). ■ 11 certified organic consignments accompanied by assurance scheme documentation passed checks and tests. ■ 16 GlobalG.A.P. certified consignments passed laboratory checks. ■ 1 GlobalG.A.P. certified consignment failed laboratory checks.
Outcomes	There were insufficient data to determine whether products produced under an assurance scheme are more or less likely to be compliant with EU regulations for FNAO imports.

7.2 Reported issues with the 2011 pilot scheme

The majority of importers interviewed as part of this study were unaware of the 2011 pilot scheme initiated by the FSA: only six of the 34 importers consulted could recall being informed about the pilot by the FPC and only one of the importers took part in the scheme. The other five importers were not trading 'high risk' products (specified in Annex 1 of the Regulation) at the time when the pilot was conducted. Importers that were aware of the pilot stated that they did not understand why it had been initiated and what specific information they were expected to provide.

Importers were asked what type of information on assurance schemes typically accompanies consignments of FNAO. Responses highlighted that traceability systems used by importers vary widely, and the type of documentation on assurance schemes that can accompany consignments is not standardised and does not always travel with consignments. That is, the information may be passed directly between the producer and importer without being included with the product consignment. The only exception is consignments of organic products, which are required by legislation to be accompanied by organic certificates.

Importers suggested that limited information may have been collected during the pilot because information related to assurance schemes does not typically accompany products / consignments. Issues related to confidentiality were also cited by interviewees, that is, the pilot may have struggled to collect information as importers may have been unwilling to share potentially sensitive information with DPE inspectors. Sensitive information includes, for example, the lists of producers and importers dealing with a specific retailer. Lack of time and resources to take part in the study was also mentioned as an issue.

The FSA informed the FPC about the 2011 pilot and sought their input during the early planning stages. The FPC expressed frustration that their input was limited to the earliest stages in the design of the pilot and considered that they could have provided additional input and advice. The FPC suggested that they could have, for example, engaged directly with importers to identify issues which could potentially compromise the success of the pilot. The FPC stated that they could have contributed to communication materials intended to alert importers to the scheme and encourage their participation. Also, they could have helped to disseminate information about the pilot to importers, for example through their weekly newsletter. The FPC also commented that, without a full understanding of the objectives of the scheme, it was difficult to encourage importers to participate in the 2011

pilot. The FPC suggested that the organisation could play a more significant role in a subsequent pilot, providing input and guidance during the design and planning stages, facilitating communication between the FSA and industry, and assisting during implementation to encourage importers to participate.

Interviewees identified several steps which would, in their opinion, increase the likelihood that a future pilot study would be successful:

- Closer involvement of trade associations to develop the pilot scheme and ensure that information required will be relatively straightforward for importers to provide. Trade associations were also identified as a useful means to communicate to their members about a future pilot. Interviewees indicated that they should be included as early as possible in the development any future pilot.
- Focus a future pilot on specific countries / products / substances. Interviewees felt that this would increase the likelihood of success by helping to limit the scope of the pilot and concentrate efforts on particular groups of importers.
- To take into account the results of testing and controls undertaken by importers or other operators. This would enable the identification of riskier supply chains where less private controls are undertaken: interviewees believe that this would allow better targeted official controls.
- Involve supermarket retailers to provide importers with the incentive to participate.
- Ensure that the information required is clearly specified and described to importers. Importers suggested that removing any confusion about the information required would help to reduce the burden on participants.

Importers were also asked about the most effective measures to encourage participation in a future pilot. Over half of the 34 importers stated that the potential for quicker and cheaper testing at points of entry would be an effective incentive to encourage participation in a future pilot scheme. Importers also suggested that having a clear understanding of the purpose and possible benefits in the future (i.e. improved prioritisation of controls and reduced regulatory burden) would also be an effective incentive.

8 Two options have been identified for prioritising import controls

This section proposes policy options to meet the FSA objectives with respect to prioritising FNAO import controls, and reducing the burden of official controls on importer checks and controls conducted under Regulation (EC) No 669/2009.

The options have been developed based on supply chain analysis (e.g. testing procedures, traceability systems and available documentation), consultation with stakeholders (including DPEs and importers), a review of initiatives in other countries which address similar issues, and the study team's analysis of the requirements of EU official control regulations.

In summary, the proposed options include:

- Option 1: An assurance scheme based approach.

  An assurance scheme based approach could draw on several different sources of information to prioritise controls of imported FNAO consignments:

  - Assurance scheme certification;
  - List of pesticides applied to a product;
  - Test results; and
  - Importers' previous compliance history.

- Option 2: Voluntary importer verification programme.

  A voluntary importer verification programme to categorise importers into groups depending on the potential food safety health hazards associated with the products they import. Categorisation would be based on several information sources:

  - Evaluation of an importer's hazard analysis programme;
  - An importer's compliance history; and
  - The known safety risks of the food product to be imported.

8.1 Option 1: An assurance scheme-based approach

GlobalG.A.P. is the assurance scheme which is most commonly used in the FNAO supply chain, and is the most comprehensive with respect to the food safety hazards included in Annex I of Regulation (EC) No 669/2009. Prioritisation of FNAO controls could involve selecting consignments on the basis of whether or not products were sourced from producers certified to GlobalG.A.P. standards.

Consignments from GlobalG.A.P certified producers could be subject to less frequent controls, while inspection and controls could focus on consignments of products from non-certified producers. Importers could be requested to provide DPE inspectors with evidence, such as a certificate or GlobalG.A.P. number, to demonstrate the products were from certified producers. But relying only on assurance scheme certification is likely to be problematic for several reasons:

- Although assurance scheme standards overlap with legislative requirements, they do not include requirements for products to meet specific EU legislative standards for the food safety hazards included in Annex I of Regulation (EC) 669/2009. Assurance scheme standards are typically process-based and relate to good agricultural practice.
- Assurance schemes, particularly GlobalG.A.P. are a common feature of the fresh produce supply chain and as such are unlikely to be a significantly differentiating factor. All supermarket retailers in the UK require that imported fresh produce is sourced from GlobalG.A.P assured producers. Due to the influence supermarket retailers in the UK, all of which require that imported fresh produce is sourced from GlobalG.A.P assured

producers, the majority of fresh produce imports to the UK will be from GlobalG.A.P. assured producers.

- The quality of assurance scheme audit procedures is likely to vary between and within countries, reducing the reliability of certification as an indicator that good agricultural practice has been followed by producers.
- Certification is typically an annual event, increasing the likelihood that producer's practices could change between audits.

Assurance scheme certification alone is unlikely to be a reliable indicator of whether a product is more or less likely to comply with EU regulations for FNAO imports from non-EU third countries.

Interviews conducted for this study found that operators in the FNAO supply chain also accept that assurance scheme certification itself is not a reliable indicator of compliance, but that it could be used as part of a suite of available information to identify reliable and responsible producers. These other information sources could be combined with assurance scheme certification to prioritise FNAO import controls.

An assurance scheme based approach could draw on several different sources of information to prioritise controls of imported FNAO consignments:

- Assurance scheme certification – to demonstrate that good agricultural practices have been followed and as a result products may be more likely to comply with EU import regulations related to potential food safety hazards.
- List of pesticides applied to a product – to indicate whether pesticides of interest to DPE inspectors had been used during production[22].
- Test results – to demonstrate whether producer's controls and systems are effective in addressing potential food safety hazards.
- Importer's compliance history – to reveal whether an importer's controls are effective in managing potential food safety hazards related to EU legislative requirements.

DPE inspectors could use these sources of information to identify which consignments are less likely to comply with EU import requirements related to potential food safety food safety hazards.

Each of the information sources listed above is necessary for the option to function. The information sources are complimentary; each source has strengths and weaknesses which address the strengths and weaknesses of another source. For example, assurance scheme certification provides an indication that good agricultural practice has been followed by producers but does not provide evidence that the producer's practices have ensured that product will meet with EU import requirements. Including an FBO's test results would help to address this weakness and provide a DPE inspector with the information necessary to judge whether products are likely to meet EU import requirements.

This option may be best suited for prioritising import controls of fresh produce; assurance scheme certification and lists of applied pesticides are uncommon in the supply chain for other FNAO products, such as spices and nuts.

A central electronic data base could help to reduce the additional administrative burdens on DPE officials associated with the option. For example, an electronic database could reduce the additional DPE time necessary to review assurance scheme certification documentation and check test results.

Table 8.1 summarises the advantages, disadvantages, limitations and enabling factors associated with Option 1.

[22] The list of proposed pesticides would also be available but are likely to be less useful as different pesticides other to those originally planned for may be applied during a season.

Table 8.1 Option 1: An assurance scheme-based approach

Elements	Advantages	Disadvantages	Limitations	Enabling factors
Assurance scheme certification [GlobalG.A.P.]	Assured producers more likely to be responsible operators aware of food safety hazards /risks and to have taken steps to manage them. Relatively low burden for operators to provide information. Producers required to maintain records related to pesticide application.	Does not relate directly to food safety hazards of interest – process rather than product based standards. Reliability of certification is questionable – depends on quality of audit. Annual audit – circumstances on farm may change from the time of most recent certification.	Unsuitable for nuts / spices as assurance schemes uncommon in these supply chains. Unlikely to be a differentiating factor - majority of producers are assured.	Working with importers to ensure information can be submitted alongside commercial documents, e.g. what information and in what form. Potential for one certificate submission to cover all consignments (subject to renewal + resubmission). Working with assurance scheme operators to harmonise standards with EU regulatory standards.
Test results	Relate directly to food safety hazards of interest. Testing is occurring anyway, even if infrequently, across most product categories - opportunity to draw on information which already exists in FNAO supply chain. Testing often undertaken per consignment for spices (microbiological, mycotoxins). Testing undertaken per consignment for nuts (mycotoxins). Potentially large amount of data available from importers.	Testing protocols not standardised. Testing may be conducted by unaccredited laboratory (especially in third countries). Burden of providing test results may be high for operators. Burden of checking test results may be high for inspectors. Potentially expensive for operators to increase testing.	Testing not typically undertaken per consignment for fresh produce. Testing frequency varies significantly between and within operators.	Develop standardised testing protocols for various food safety hazards. Need to share data on on-going basis, whether results are positive or negative. Support accredited laboratory testing. Working to harmonise testing protocols among importers.
List of pesticides applied	Quickly inform inspectors whether products produced using chemicals of regulatory interest. Burden on operators of providing information likely to be low.	Potentially burdensome for inspectors to check through long lists of chemicals used and compare them with those of regulatory interest. Depends on operators providing correct information – independence	Risk of pesticide drift from neighbouring farms not addressed. Inadequately addresses risks associated with mislabelled pesticide products.	Develop a database or checklist of relevant chemicals to reduce burden on importers and inspectors.

Elements	Advantages	Disadvantages	Limitations	Enabling factors
		low as no third party involved. Does not reveal whether pesticides have been applied correctly – harvest interval or concentrations.	May only be possible for importers of fresh produce sourcing direct from producers.	
Importer's previous compliance history	Easy to identify operators likely to be low-risk. Utilising information which is already collected by inspectors.	Would not account for changes in local factors potentially influencing food safety hazards, for example, pest concentration and pesticide application. Potential problems for new importers due to absence of compliance history.	Relatively low number of consignments tested per importer could reduce ability to infer a pattern. New importers do not have a compliance history	UK-wide database would help to aggregate information from all DPEs, increase size of dataset, and improve reliability of results. Definition of a good track record for importers – e.g. no incidents of non-compliances in previous 6 months.

8.1.2 The pros and cons of using assurance scheme certification to inform the prioritisation of controls

Products from assured producers may be more likely to comply with EU import regulations related to potential food safety food safety hazards. DPE inspectors could request importers to provide evidence that products originate from assured producers.

Advantages

Although there are issues related to the reliability of certification as an indicator of good agricultural practice,[23] operators in the FNAO supply chain consider certification to be a *de facto* minimum requirement because they believe it indicates a certain level of producer professionalism. The majority of fresh produce imported to the UK from non-EU third countries is sourced from producers certified to GlobalG.A.P. standards. Producers certified to GlobalG.A.P. standards are required to maintain accurate records of which pesticides are applied, where, and in what quantities. Additionally, the standards related to good agricultural practice require that producers are aware of potential issues related to the use of pesticides and take steps to address them. This information is important to importers (especially those supplying supermarket retailers) as it indicates that producers are managing pesticide application and are less likely to apply pesticides incorrectly.

The burden of providing information about the assured status of products is likely to be low for importers of fresh produce. The majority of fresh produce imported to the UK from non-EU third countries is sourced from producers certified to GlobalG.A.P. standards, and the GlobalG.A.P number (GGN) is often, but not always, printed on the product box alongside traceability information, such as the grower's name and field identification code. Importers interviewed for this study stated that providing evidence that products were from GlobalG.A.P. certified producers would be straightforward. Importers could provide a GGN to the DPE alongside commercial documents typically submitted with consignments of FNAO imports. The GGN would enable the DPE inspector to determine whether a certificate was current or expired.

Disadvantages

The main disadvantage of using the assured status of a producer to prioritise controls is that certification does not relate directly to the food safety hazards included in relevant EU regulations. That is, assurance schemes do not include product standards for the food safety hazards typically of interest to DPE inspectors, but rather process-based standards which require that good agricultural practices are maintained. There is only anecdotal evidence to suggest that assurance scheme certification might increase the likelihood that fresh produce will meet EU import requirements.

The reliability of certification depends on the quality of the audit and the competence of the auditors. It is unclear whether audit quality is consistent between or within source countries. Several importers raised concerns that the quality of GlobalG.A.P. audits vary, and in some cases their own audits revealed that certified producers were not operating according to good agricultural practices set out in the standard. While GlobalG.A.P. has taken steps to improve both the consistency and quality of audits,[24] it is unclear at this stage whether certification can be considered a reliable indicator of good agricultural practice.

Another issue compromising the reliability of certification is the possibility that circumstances on farms may change following an audit visit. Several respondents interviewed for this study, including the Netherlands Food and Consumer Product Safety Authority (NVWA), believe that assurance schemes generally include an insufficient number of unannounced inspections to ensure that good agricultural practice was followed consistently between audit visits.

[23] For example, audit quality may vary between countries, or there may be a lack of unannounced inspections. A description of some of the limitations of assurance schemes is included in Annex 1.

[24] GlobalG.A.P. introduced its 'integrity program' in 2008 to ensure consistent delivery and implementation of the standard worldwide. The purpose of the program is to build confidence and trust among its stakeholders.

Limitations

Including assurance scheme certification in the prioritisation of FNAO import controls would be unsuitable for spice or nut imports because assurance schemes are not a common feature of spice and nut supply chains. None of the operators importing spices or nuts interviewed as part of this study sourced products from producers certified to assurance scheme standards.

Assurance scheme certification is a common feature of fresh produce supply chains and many of the fresh produce importers interviewed during this study sourced 100 per cent of their product from certified producers. As such, assurance scheme certification is unlikely to be a significantly differentiating factor between fresh produce imports.

Enabling factors

Utilising assurance scheme certification to prioritise FNAO import controls would require that the FSA work with importers to ensure relevant information can be submitted to DPE inspectors. This could entail, for example, establishing how information about certification should be provided and in what form.

The potential burden on importers and DPE inspectors could be reduced if importers could provide a certificate once, subject to renewal and resubmission, for each producer to cover all consignments imported from that producer.

There may be scope for the FSA to work with assurance scheme operators to address the factors limiting the utility of assurance scheme certification in the prioritisation of controls. This could include, for example, harmonising assurance scheme standards with the food safety standards included in EU regulations.

8.1.3 The pros and cons of using test results to inform the prioritisation of controls

Operators in the FNAO supply chain commonly test products to determine whether the controls and systems in place by producers are effective. Test results could be shared with DPE inspectors to inform the prioritisation of FNAO import controls. The usefulness of test results in the prioritisation of controls could potentially be improved if testing protocols were adjusted to reflect the contents of Annex 1 of the Regulation. Consultation with industry could help to determine the feasibility of changing testing procedures in this way.

Advantages

Testing is already being conducted by operators for food safety hazards such as pesticide residues, heavy metal contamination, adulterants, mycotoxins and pathogenic bacteria (see Annex 5, Section A5.4). Sharing these test results could utilise existing information to facilitate the prioritisation of FNAO import controls. This could reduce the burden on DPE inspectors by avoiding testing duplication, and reduce the burden on importers by avoiding the delays associated with secondary / additional testing.

Testing is typically undertaken on a consignment basis for certain products and related food safety hazards such as pathogenic bacteria in spices and mycotoxin contamination in nuts. The utility of the test results for these products / food safety hazards is likely to be higher to DPE inspectors as the results relate to specific consignments rather than a product batch / lot.

Pesticide residue testing conducted on fresh produce is not undertaken with the same frequency as testing undertaken in the spice and nut supply chains. The short length of fresh produce supply chains and the low number of participants mean that on-farm controls, rather than testing, are the focus of efforts to reduce pesticide residues. Unless a specific problem is suspected, pesticide residue testing is typically applied as a monitoring rather than a control procedure. Despite this testing irregularity, the results of pesticide residue testing could be shared with DPE inspectors to demonstrate the monitoring and control programmes employed by importers, and to facilitate the prioritisation of DPE import controls.

The scale of testing undertaken in the FNAO supply chain means that there is a large volume of data potentially available to DPE inspectors and the FSA. Exploiting this data

effectively could help the early identification of potential food safety hazards and over time could reveal trends and patterns with respect to FNAO imports.

Disadvantages

There are no standardised requirements as to when or how often testing is undertaken by operators; the frequency is informed by the (perceived) level of risk associated with a product or supplier. In addition, the comparability and reliability of testing undertaken in the FNAO supply chain may be compromised by the absence of agreed testing and sampling protocols. Widely divergent sampling and testing procedures could reduce the utility of test results to DPE inspectors in the prioritisation of FNAO import controls.

Testing conducted in non-EU third countries is not always performed by accredited laboratories and may be less reliable than test results from accredited laboratories. Ideally, only test results from accredited laboratories should be included in the prioritisation of FNAO import controls. A list of UKAS accredited laboratories is publicly available on the organisation's website.[25] Importers could be informed that only test results from UKAS accredited laboratories are acceptable, and written assurances could be requested from importers that only these laboratories are used. DPEs could undertake periodic checks, using the UKAS website, to determine whether accredited laboratories have been used. It may not be possible to have tests conducted by accredited laboratories in some non-EU third countries, however, reducing the potential for this information to be provided to DPE inspectors.

It may be difficult for importers to routinely provide test results to DPE inspectors, especially when tests are undertaken on an *ad hoc* basis, that is, when the scale and scope of the testing changes frequently. It may be difficult to develop systems to include information which is routinely available. Similarly, the burden on DPE inspectors of checking test results may be high, especially if the information is inconsistent and/or in a non-standardised format. Tests are often performed on a batch or lot basis, for example a test may be undertaken on each field of FNAO. The assumption is that all FNAO products from a field should have consistent test results. There may be scope to share the results from batch or lot testing, rather than consignment test results, with DPE officials.

Introducing a system to prioritise import controls based on test results could require importers to increase the number and extent of testing undertaken. This could increase the burden on importers without necessarily reducing the risks posed by potential food safety hazards. That is, increasing the number of tests would not by itself address the underlying issues influencing the extent of potential food safety hazards.

Limitations

Fresh produce importers do not usually test each product consignment or each lot / batch, and do not wait for test results before supplying a product (so called 'positive release'). Some products have a very short shelf-life and it is impractical to wait for test results before supplying clients.

Testing is usually a means to an end, undertaken to determine the effectiveness of measures employed by growers to produce products in compliance with EU regulatory requirements, for example without pesticide residues exceeding MRLs. As such, the testing frequency varies significantly between importers and other operators along FNAO supply chains. This variation may limit the practicality of using test results to inform the prioritisation of FNAO import controls. There may be scope for the FSA or the European Commission to work with importers to harmonise and standardise testing frequency and protocols, which could potentially increase the utility of test results to DPE officials conducting controls. There may also be opportunities for the FSA or the European Commission to work with the assurance scheme operators to harmonise testing undertaken by importers. However the varied nature of importer's operations, the range of imported products and source countries, and multiple external factors may limit the extent of harmonisation possible.

[25] http://www.ukas.com/about-accreditation/accredited-bodies/Testing-laboratories-schedules.asp

Enabling factors

The development of standardised testing and sampling protocols for food safety hazards,[26] and efforts to increase the use of accredited laboratories, could improve the reliability and comparability of test results provided by operators.

To ensure test results are useful it is important that they are shared on an on-going basis irrespective of whether they are positive or negative. Doing so could facilitate the prioritisation of FNAO import controls by providing DPE inspectors with insight about the actual incidence of food safety hazards occurring in the supply chain.

8.1.4 The pros and cons of using a list of applied pesticides to inform the prioritisation of controls

Information about which pesticides have been applied is commonly shared between operators in the fresh produce supply chain. This information is required by importers to ensure that fresh produce is likely to meet supermarket retailer product specifications and to identify whether pesticides restricted by EU legislation have been applied. Providing DPE inspectors with the list of pesticides applied to a product could facilitate the prioritisation of FNAO import controls by revealing whether pesticides of interest to inspectors had been used. The list of pesticides of regulatory interest would need to be kept up to date the requirements of Annex 1 of Regulation (EC) No 669/2009. A searchable online database could be an effective means for DPEs to access information about pesticides of regulatory interest.

Advantages

Providing DPE inspectors with a list of the pesticides applied to a particular product could quickly inform inspectors if pesticides of interest had been applied to products. Controls could be prioritised for consignments containing products to which pesticides of interest had been applied.

Information about which pesticides have been applied to a product is commonly available in the fresh produce supply chain. It would be relatively straightforward for importers to provide this information to DPE inspectors.

Disadvantages

It could be time consuming for DPE inspectors to check through long lists of chemicals used and compare them with those of regulatory interest. Prioritising controls on the basis of a pesticide list could require that pesticide lists for a large number of consignments are checked in order to identify a smaller number of consignments for inspection. There could be a significant increase in the burden for DPE inspectors due to the high volume of fresh produce imported into the UK. The lists of pesticides which have been applied are not currently standardised, potentially adding to the burden on DPE inspectors.

The reliability of applied pesticides lists depends on the integrity and honesty of exporters and producers. The absence of a third party verifying that the information is accurate reduces its reliability. There is also the scope for fraudulent claims as there is no mechanism available to check the veracity of the lists provided. The scope for fraudulent claims could potentially be reduced by performing random tests to compare residue levels with importers' pesticide lists.

A list of which pesticides have been used would not reveal whether pesticides have been applied correctly, for example in the correct concentration and whether the appropriate harvest interval has been observed. For this reason the pesticide list should only be used to identify whether pesticides of regulatory interest have been used, not how they have been used.

[26] Aflatoxin sampling protocols are described in Regulation (EC) No 178/2010.

Limitations

A list of applied pesticides would not address whether products could be contaminated with pesticides applied to neighbouring fields or crops. Pesticide drift may result in pesticide residues which do result from the pesticides applied intentionally by a producer.

Similarly, a list of applied pesticides would not address risks associated with the mislabelling of pesticide products. Importers interviewed for this study stated that there are issues related to pesticide mislabelling (e.g. in India) and counterfeit pesticides (e.g. in Egypt). Products could be inadvertently contaminated with pesticide residues above EU MRLs even if the correct application procedures had been followed.

The provision of pesticide lists is a common feature of the fresh produce supply chain, especially for products supplied to supermarket retailers. This practice is far less common for other FNAO products such as nuts and spices. As such, it is likely that this information could be provided only for fresh produce imports. In addition, only importers sourcing product directly from producers may be able to provide this information to DPE inspectors. Importers sourcing product from other sources, such as exporters, may be too many steps removed to obtain lists of pesticides used on products.

Enabling factors

Developing a database or checklist of pesticides of regulatory interest could help to standardise the information submitted to DPEs. Doing so could potentially reduce the burden on importers and DPE inspectors.

8.1.5 The pros and cons of using an importers' compliance history to inform the prioritisation of controls

There is a clear incentive for operators, especially along supermarket retailer supply chains, to ensure that products comply with EU and UK legislative requirements at the minimum.[27] Failure to do so could result in products being denied entry to the UK, or rejected by clients. Evidence of an importer's previous compliance history could help to reveal whether an importer's controls are effective in managing potential food safety hazards related to EU legislative requirements. This information could be used to prioritise FNAO import controls.

Advantages

Evidence of importers' compliance history could provide a straightforward means to identify operators likely to be low-risk with respect to food safety hazards subject to EU legislative requirements. Results of controls conducted under Regulation (EC) No 669/2009 indicate that the rate of non-compliance varies significantly between countries (Section 6.2). In addition, there is a significant difference in compliance rates between products supplied to supermarket retailers and products supplied to other operators[28] (Annex 10). Both factors indicate that compliance is likely to vary between importers, for example, depending on the country from which products are sourced, and depending on the final customer (e.g. supermarket retailers or wholesalers).

The burden of collecting importer compliance data is likely to be low as it is already collected by DPE inspectors. Some work may be necessary to standardise how data is collected by DPEs. Analysing the results of Annex I returns collected between January 2010 and January 2012 reveals that different names are often used for the same product (see Annex 7, section A7.1.2). Ensuring that a standardised form is used could help to simplify compliance data analysis, and information may be easier to exploit if it is held in a central database. A centralised database could enable DPEs to draw on a wider pool of information to prioritise

[27] Some testing may be undertaken to ensure that pesticides prohibited by supermarket retailers are not used. Such prohibitions do not necessarily relate to EU or UK legislative requirements.

[28] Analysis of results from Defra's Expert Committee on Pesticide Residues in Food indicates that products sampled in supermarket retailers are five times more likely to comply with pesticide MRLs compared to samples taken elsewhere along the supply chain. It is likely that the figures underestimate the difference in compliance rates between supply chains for supermarket retailers and other operators. See Annex 10 for more information.

controls, and it could help to increase the consistency of prioritisation between DPEs. That is, importers may be more likely to be treated in a similar way by different DPEs if information is accessed from a centralised database. The TRACES system, used to submit CEDs, may help to establish a centralised database.

Disadvantages

Depending on previous compliance history may not adequately account for changes in local factors influencing food safety hazards. For example, changes to the weather in source countries could increase pest infestations and consequently lead to an increase in pesticide use. However, these sorts of changes are regularly experienced and operators typically have systems and processes in place to ensure that changes in growing conditions do not have a negative impact on product quality.

Relying on previous compliance history could disadvantage new importers. Defining a similar 'minimum' compliance history could help to reduce the disadvantage for new importers.

Limitations

Large numbers of controls may be required for each importer to ensure that compliance history is a reliable indicator. The numbers of checks and controls operators are currently subject to may be insufficient to establish a reliable compliance history.

New importers do not have a compliance history and may be not be suitable for inclusion in a system relying on compliance history to inform prioritisation of FNAO import controls. However, it may be possible to rely on the other components of the option (assurance scheme certification, pesticide list and test results) until a compliance history is established.

Enabling factors

A UK-wide database including compliance data from each DPE, linked to importers identified with a unique code, could help to increase the size of the dataset and improve the reliability of importer compliance history.

It would be necessary to define what constitutes a 'good track record' for importers, for example, no incidents of non-compliance in the previous 12 months. This could be established during the course of routine controls or specific testing could be undertaken during a lead-in period prior to the implementation of the option.

8.2 Option 2: Voluntary importer verification programme

A voluntary importer verification programme could be established to categorise importers into groups depending on the potential food safety hazards associated with the products they import. Categorisation of importers could draw on several sources of information:

- An evaluation of an importer's hazard analysis programme;
- An importer's compliance history; and
- The known safety risks of the food product to be imported.

Periodic assessment of importers, drawing on the information above, could be used to categorise importers into high, medium and low risk groups. Import controls could be prioritised on the basis of this categorisation, that is, importers categorised as 'low risk' would be subject to less frequent controls.

As described in Section 4 (see also Annex 4), a similar approach has been introduced in the United States and New Zealand. The UK could establish a programme which draws on features of both. The programme could be voluntary, to avoid imposing burdens on business which may not benefit from participating in the scheme, and importers could be required to pay a fee for the periodic assessment necessary for inclusion in the programme in order to offset the costs to the CA.

Table 8.2 summarises the advantages, disadvantages, limitations and enabling factors associated with Option 2.

Table 8.2 Option 2: Voluntary importer verification programme

Elements	Advantages	Disadvantages	Limitations	Enabling factors
Evaluation of importer's hazard analysis programmes	Reduced burden and cost associated with controls for 'low risk' importers. Prioritisation of inspector's time / resources on 'high risk' importers.	Increase in burden for FSA with respect to annual audit of importers. Increase in costs for importers with respect to fee for annual audit. Could advantage large importers compared to smaller importers. Reliability of certification is questionable – depends on quality of audit. Annual audit – operator circumstances may change from the time of most recent certification.	Insufficient numbers of operators categorised as 'high risk' to meet the inspection frequency requirements of the Regulation.	A system of annual inspections of importers would be introduced. Definition of what constitutes an effective hazard analysis programme. Unannounced inspections to ensure standards maintained between annual audits.
Importer compliance history	Easy to identify operators likely to be low-risk. Utilising information which is already collected by inspectors.	Would not account for changes in local factors potentially influencing food safety hazards, for example, concentration of pests and pesticide application. Potential problems for new importers due to absence of compliance history.	Relatively low number of consignments tested per importer could reduce ability to infer a pattern. New importers do not have a compliance history	UK-wide database to aggregate information from all DPEs, increase size of dataset, and improve reliability of results. Definition of a good track record for importers – e.g. no incidents of non-compliances in previous 6 months.
Consideration of known safety risks for imported products	Will inform decision as to the adequacy of importer's internal systems and processes to identify and manage food safety risks.	Burden of maintaining an up-to-date list of the risks associated with FNAO products.	Significant numbers of FNAO products could reduce feasibility of conducting assessment	Requires the categorisation of food products in terms of food safety risk.

8.2.2 The pros and cons of using an evaluation of a company's hazard analysis programme to inform the prioritisation of controls

The Food Hygiene (England) Regulations 2006 require FBOs to undertake a hazard analysis programme, such as hazard analysis and critical control point (HACCP). Interviews conducted for this study indicate that, in general and to varying degrees, importers have implemented hazard analysis programmes to identify and manage potential food safety risks associated with FNAO imports.

Assessing the rigour of an importer's hazard control programme could facilitate the categorisation of importers into high-, medium- or low-risk groups. FNAO import controls could be prioritised for importers categorised as 'high risk'.

Components of FNAO hazard analysis programmes

Hazard analysis programmes should contain the following elements[29] to identify and manage potential food safety hazards:

Hazard policy and legal accountability

Importers should have a system for monitoring changes in legislation which ensures that the company's policy remains current and relevant. A hazard policy should be maintained that establishes the framework for how suppliers and raw materials are approved, how traceability is maintained, how laboratories are selected, and the procedures which should be followed in the event of health safety risk associated with a product, including the product recall policy. Formal accountability for an organisation's hazard policy and procedures should be clearly defined to ensure that the policy and procedures remain operational and effective.

Approval of suppliers

Suppliers could be approved according to a formal procedure, which includes a documented audit. Audits could assess supplier competence, expertise and training with respect to relevant food safety hazards associated with the food products being supplied, for example in the areas of pesticide management and application. Fast-track procedures could also be developed to ensure importers can respond to changing supply and demand while maintaining a system to vet and approve suppliers.

Supplier audits for different product groups could address certain issues:

- Fresh produce: Supplier audits establish which pesticides a producer proposes to use on each product supplied to the importer. Suppliers must notify the importer of any pesticides applied to a product which were not originally proposed and agreed.
- Spices: Supplier audits establish the testing protocols for mycotoxins and the steps taken to avoid mycotoxin contamination. Audits also cover how contamination with adulterants and pathogenic bacteria are addressed by the supplier.
- Nuts: Supplier audits establish the testing protocols for mycotoxins and the steps taken to avoid mycotoxin contamination.

Traceability

Regulation (EC) No 178/2002 requires that FBOs have robust traceability systems in place which are capable of tracking produce back to individual producers.

Importers could also have a system in place to track and identify stock as it passes from suppliers to customers. Records would be kept of consignment intake date, supplier name or code, consignment number and grower name or code. Lot identification details would

[29] The elements of a hazard analysis programme were identified during the stakeholder consultation and also in the FPC's Code of Practice for Control of Pesticides, 8th Edition.

be included on despatch records to ensure traceability extends to customers.

For fresh produce, producers would be required to have systems in place to record the lot / batch numbers associated with each field. It should be possible to link these records to the pesticide application records.

Pesticide application records

Fresh produce suppliers could be required to maintain detailed records of pesticide applications, both pre- and post-harvest, and these records could be made available to importers. Importers would inspect these records, cross-referencing them against the list of proposed pesticides, on a regular basis. Inspections could involve remote (paper-based) oversight or in-person site visits to producer farms. The latter is more important if producers are not members of assurance schemes such as GlobalG.A.P.

Criteria for hazard analysis

Hazard analysis includes testing for pesticide residues, mycotoxins, pathogenic bacteria, adulterants, and other contaminants as appropriate. The timing and scope of hazard analysis could be based on a priority assessment conducted by importers which reflects their suppliers and products, to identify priorities and develop an appropriate testing timetable.

Pesticide residue analysis

Residue analysis typically forms a core part of a hazard analysis programme, and testing at source can also play an important role in mitigating risks related to pesticide residues. Due to the extensive variation in the type of products imported, and the range of source countries, it is not practical to have standard procedures for the timing and scope for pesticide residue analysis. However hazard analysis programmes should at least state the circumstances under which residue testing is undertaken.

Advantages

The majority of 'high risk' / FNAO product subject to safeguard measures imported into the UK complies with EU legislative requirements with respect to potential food safety hazards. This is apparent from the test results for checks conducted under Regulation (EC) No 669/2009 (see Annex 7, Section A7.1.2) and testing undertaken by Defra's Expert Committee on Pesticide Residues in Food (PRiF) (Annex 10). It follows that the majority of importers are likely to constitute a relatively low risk in terms of potential food safety hazards. Determining which importers are likely to pose the greatest food safety risk, and prioritising controls accordingly, could reduce the burden on low-risk importers.

Evaluating an importer's hazard analysis programme to identify high risk importers could help to prioritise inspector's time and resources where they are likely to be most effective. A minority of importers are likely to be classified as high-risk, potentially reducing the burden on inspectors of conducting controls.

Disadvantages

Conducting importer audits would require time and resources for the organisation responsible for those audits, for example, the Food Standards Agency. The impact assessment related to the introduction of Regulation (EC) No 669/2009 estimated that there are approximately 600 organisations in the UK which could be affected by the regulation (FSA, 2009). The burden of conducting periodic audits of up to 600 organisations could be significant. There is the potential for recuperating some of the cost by levying a fee on importers to cover the cost of the audit. In addition, responsibility for conducting the audit could be contracted to an appropriately qualified organisation.

Charging importers a fee for a periodic audit, which would be necessary for the importer to take part in the voluntary programme, could represent an increase in the costs of doing business. The extent of the impact of the fee depends on its cost. Higher fees could unfairly disadvantage smaller operators (the fee would be higher relative to turnover / import

volumes). Maintaining the voluntary nature of the programme would ensure that the fee is only incurred by importers for which the benefits outweigh the costs.

The reliability of importer certification into low-, medium- and high-risk groups depends on the quality of the audit. Additional effort may be required to ensure that audits are conducted consistently and to a high standard over time and between importers.

An organisation's hazard analysis programme may change between audits and become less effective. This could reduce the accuracy of an audit with respect to the likely risk posed by an importer. Unannounced inspections can provide the incentive for operators to ensure hazard analysis programmes are maintained between audits.

Limitations

Regulation (EC) No 669/2009 specifies the frequency of controls which must be conducted for certain FNAO products from specific countries. There may be insufficient numbers of operators categorised as 'high risk' to meet the inspection frequency requirements of the Regulation. This could result in either the UK failing to comply with the Regulation, or operators being subjected to controls irrespective of how they have been categorised.

Enabling factors

It would be necessary to define what constitutes an effective or appropriate hazard analysis programme. An objective assessment of what constitutes an effective programme is likely to be complicated by the range of importers, supply chains, products, and potential food safety hazards. Definitions of what constitutes a low-, medium- or low-risk importer will also need to be developed.

Assessing an importer's hazard analysis programme would require a system to conduct annual audits. Evidence obtained during this study suggests that any certification or audit programme could require a system of unannounced inspections to ensure standards are maintained between audits. Both are likely to be significant undertakings and may require considerable investment in time and resources from public authorities (such as the FSA) and industry.

8.2.3 The pros and cons of using an importers' previous compliance history to inform the prioritisation of controls

Evidence of an importer's previous compliance history could help to reveal whether an importer's controls are effective in managing potential food safety hazards related to EU legislative requirements. This information could be considered during the audit of an importer's hazard analysis programme to identify the appropriate risk category.

The advantages, disadvantages, limitations and enabling factors associated with considering importers' previous compliance histories to prioritise FNAO import controls are described in Section 8.1.5 and summarised below.

Advantages

- Evidence of an importer's previous compliance history could provide a straightforward means to identify operators likely to be low-risk with respect to food safety hazards subject to EU legislative requirements.
- The burden of collecting importer compliance data is likely to be low as it is already collected by DPE inspectors. Some work may be necessary to standardise how DPEs collect data.

Disadvantages

- Previous compliance history will not reflect emerging issues, for example, counterfeit pesticides with mislabelled ingredients. That is, past performance does not necessarily guarantee future performance.
- Relying on previous compliance history could disadvantage new importers (as described in Section 8.1.5).

Limitations

- Large numbers of controls may be required for each importer to ensure that compliance history is a reliable indicator. The numbers of checks and controls operators are currently subject to may be insufficient to establish a reliable compliance history.
- New importers do not have a compliance history and may be not be suitable for inclusion in a system relying on compliance history to inform prioritisation of FNAO import controls. The strength of their hazard analysis programme could be used in the interim instead.

Enabling factors

- A UK-wide database including compliance data from each DPE, linked to importers identified with a unique code, could help to increase the size of the dataset and improve the reliability of an importer's compliance history.
- It would be necessary to define what constitutes a 'good track record' for importers, for example, no incidents of non-compliance in the previous 12 months.

8.2.4 The pros and cons of using the known safety risks for food product imports to inform the prioritisation of controls

Certain FNAO products are more unlikely to comply with EU import regulations due to where or how they are produced. For example, the inspection results for checks conducted under Regulation (EC) No 669/2009 reveal that 100 per cent of samples from Nigeria failed aflatoxin testing, and over 25 per cent of products imported from India failed pesticide controls. In contrast, only around five per cent of products imported from Egypt failed pesticide testing.

The type of products and their source countries should be included in the categorisation of importers into low-, medium- or high-risk groups. The majority of importers import more than one product, and as such the categorisation should be based on the full range of imported products.

Advantages

An importer's hazard analysis programme should reflect the risks associated with the products the organisation imports. That is, hazard analysis programmes should be tailored to the specific set of issues each importer is likely to encounter. For example, importers sourcing product in India should have systems and processes in place to manage the risks posed by high levels of pesticide use in India. Considering the known safety risks associated with a product could help DPE inspectors to determine whether importers are likely to merit frequent controls; importers with inadequate hazard analysis programmes are likely to require more frequent controls.

Disadvantages

The categorisation of FNAO products in terms of potential food safety hazards could be relatively burdensome. The list may have to be updated frequently to reflect changes to practices in non-EU third countries that affect food safety hazards.

Limitations

There are hundreds, potentially thousands, of FNAO products which may need to be assessed. The large number of products which may need to be assessed could place a significant burden on the FSA, potentially reducing the feasibility of the option.

Enabling factors

Considering the known food safety hazards associated with an FNAO product would require that food products are categorised in terms of potential food safety risk. This process could draw on information available from other sources, such as the Food and Veterinary Office of the European Commission and the EU rapid alert system for food and feed (RASFF). This may be in addition to the countries and products included in Annex 1 of Regulation (EC) No 669/2009.

9 Both options have been assessed in terms of their effectiveness, efficiency and coherence

This section provides an overall assessment of the options by drawing on information set out in the previous sections, including:

- The role and use of assurance schemes in the UK FNAO supply chain.
- Examples of assurance scheme use to prioritise FNAO controls in other countries.
- The UK FNAO supply chain structure and operation.
- The requirements of Regulation (EC) No 669/2009.
- The results of the FSA's 2011 pilot scheme.
- The potential options available to the FSA to prioritise import controls.

9.1 Criteria to assess the proposed options

Each of the options was assessed against a set of criteria relevant to FNAO import controls. The criteria are:

- **Effectiveness –** the extent to which the option can ensure that information is reliable, timely and independent and relates to relevant products, hazards and countries of origin.
- **Efficiency –** the extent to which the option will minimise administrative burdens and financial costs associated with its implementation, including the one-time development of the necessary systems and processes and on-going costs to government and industry.
- **Coherence –** the extent to which the option will meet the policy objectives of the FSA, the UK government and the European Commission.

Each criterion above includes several sub-criteria, and each option is scored against the sub-criteria on a four point scale.

- Positive impact **+**
- Neutral impact **0**
- Negative impact **-**
- Mixed impact **+ / -**

Expected impacts are scored based on a qualitative assessment. Options have been assessed with reference to a baseline scenario which involves no changes to the approach currently used by the FSA to control FNAO import hazards under Regulation (EC) No 669/2009.

The criteria are described in detail in Annex 9.

9.2 Option 1 is likely to perform reasonably well in terms of efficiency, but slightly less well in terms of effectiveness and coherence

Summary of Option 1: An assurance scheme based approach

An assurance scheme based approach could draw on several different information sources to prioritise FNAO import controls:

- Assurance scheme certification;

- List of pesticides applied to a product;
- Test results related to the hazard of interest; and
- An importer's compliance history.

DPE inspectors could use these information sources to identify which consignments are more or less likely to comply with EU import requirements related to potential food safety hazards.

The assessment of Option 1 reveals that it is likely to perform reasonably well in terms of efficiency but slightly less well in terms of effectiveness and coherence. The option's effectiveness is undermined by issues related to reliability and timeliness; information related to assurance scheme certification and test results may be insufficiently reliable to serve as the basis for prioritised controls.

The burden on importers of providing the additional information to DPEs is likely to be relatively limited as much of the information is currently available in the supply chain. But the burden of providing the information may be unevenly distributed between importers of different products. The burden is likely to be higher for spice and nut importers compared to fresh produce importers. The option could potentially increase the burden on DPEs as more time would be required to review and consider additional information related to assurance schemes, contaminant test results, and lists of applied pesticides.

The option scores poorly on coherence in terms of related and wider EU objectives; Regulation (EC) 669/2009 does not currently permit the prioritised controls in the manner described under Option 1.

A detailed assessment of the option is included in Table 9.1.

Table 9.1 Assessment of Option 1: An assurance scheme-based approach

Criteria	Sub-criteria	Assessment	Score
Effectiveness	Reliability	Overall, Option 1 is likely to reduce the reliability of the prioritisation of controls. Utilising a variety of information sources is likely to improve reliability, but several issues could potentially compromise the reliability of Option 1: ■ The quality of assurance scheme certification audits may vary between and within countries. ■ There are no agreed and standardised sampling and testing protocols. ■ Testing conducted in non-EU third countries may be performed by unaccredited laboratories.	-
	Timeliness	Overall, Option 1 is likely to increase time necessary for the prioritisation of controls. Information may not be available within a sufficient timeframe, and it will take DPEs time to consider the information in order to prioritise controls. ■ Test results may not be available to importers in time to provide these to DPE inspectors when a consignment arrives at a DPE. ■ It may take DPE officials a relatively long time to review test results, assurance scheme certification, lists of applied pesticides and previous compliance history.	-
	Independence	Overall, Option 1 is unlikely to affect the independence of the prioritisation of controls.	+ / -

Criteria	Sub-criteria	Assessment	Score
		The most common assurance scheme certification in the FNAO supply chain, GlobalG.A.P., requires independent third party verification. Test results are typically provided by accredited independent laboratories, and an importer's previous compliance history is recorded and maintained by DPEs. Only the list of pesticides applied to products is not independently verified. There is no third party to verify that the information is accurate. Overall, the option is unlikely to have an impact on the independence of controls.	
	Completeness	Overall, Option 1 is likely to increase the amount of information available for the prioritisation of controls. While assurance scheme standards do include some standards related to how pesticides are applied and how records are maintained, they do not include specific requirements related to hazards included in EU import controls. Assurance schemes, specifically GlobalG.A.P., are a common feature of fresh produce supply chains, but are far less commonly used in spice and nut supply chains. Lists of applied pesticides are similar: they are commonly available in fresh produce supply chains, but less so in spice / nut supply chains. The usefulness of the list of applied pesticides is limited to indicating whether a pesticide has been used or not, it does not indicate whether the pesticide has been used correctly, whether adequate harvest intervals have been observed, whether pesticides have been mislabelled, or whether there is pesticide drift from adjacent crops. An importer's previous compliance history, and results of contaminant testing, could address the shortcomings described above related to assurance schemes and lists of applied pesticides.	+
Efficiency	Administrative burden - FBOs	Overall, Option 1 is likely to reduce the burden of official controls for FNAO importers, reducing the administrative burden relative to the current situation. All of the information under Option 1 already exists to some degree in the FNAO supply chain. It is likely that providing this information to DPEs would be relatively straightforward. Available information currently varies between supply chains for spices, nuts and fresh produce. Requiring information that is not commonly available in a particular supply chain could increase the burden on FBOs as additional effort would be required to implement related systems and processes. Effort would be concentrated during the initial stages and would be reduced over time.	+
	Administrative burden - government	Overall, Option 1 is likely to increase government's administrative burden relative to the current situation. The opportunity to draw on a wider range of information to prioritise controls could reduce the burden on DPE	-

Criteria	Sub-criteria	Assessment	Score
		inspectors: ■ Drawing on industry test results could reduce the need for testing required by DPEs. ■ Lists of applied pesticides may facilitate a quicker assessment of whether more detailed inspection is required. ■ Previous compliance history is already recorded by DPEs (although effort may be required to standardise data between DPEs). However, the potential reduction in the administrative burden for government is likely to be offset by the increase in DPE resources necessary to inspect a consignment of imported FNAO: ■ Considerable time may be required to read and interpret test results provided by FBOs. There are no agreed and standardised sampling and testing procedures. Inspectors would have to determine whether the test results relate to the hazards of regulatory interest. ■ Checks to ensure that an assurance scheme certificate is up-to-date are likely to require additional time for controls. Using existing databases would keep the burden of checking assurance scheme certification to a minimum. ■ Reviewing lists of applied pesticides to identify whether any pesticides of regulatory interest have been applied is likely to require additional inspection time. Additional effort may be required from the FSA to create systems that reduce the time required for authorities to check whether the information provided is correct and useful.	
Coherence	FSA objectives	Overall, Option 1 is likely meet FSA objectives for prioritising FNAO import controls, including the application of a risk-based approach to control and inspection activity. The use of assurance scheme certification, test data, lists of applied pesticides and FNAO importer compliance history would help to identify which operators are more likely to import products that do not comply with EU import regulations. The potentially large volumes of information available could also help to facilitate the early identification of emerging food safety trends / patterns with respect to FNAO imports.	+
	UK Government objectives	Option 1 is likely to meet UK Government objectives related to reducing the regulatory burdens on businesses but it could increase the burden on SME operators. There is the risk that Option 1 could have a disproportionate burden on small and medium sized FNAO importers as these organisations are less likely to have the systems and processes in place to provide the	+ / -

Criteria	Sub-criteria	Assessment	Score
		information described.	
	EU objectives	Option 1 is unlikely to meet EU requirements under Regulation (EC) No 669/2009. The Regulation specifies the frequency of controls for FNAO imports for specific countries and there is minimal scope to include supply chain information in the prioritisation process. However, Regulation (EC) No 882/2004 (under which Regulation (EC) No 669/2009 operates) does include the scope of implementing risk based controls.	-

9.3 Option 2 is likely to perform well in terms of effectiveness, reasonably well in terms of coherence, but poorly in terms of efficiency

Summary of Option 2: Voluntary importer verification programme

A voluntary importer verification programme could be established to categorise importers into groups depending on the potential food safety hazards associated with the products they import. Importer categorisation could be based on several information sources:

- An evaluation of an importer's hazard analysis programme;
- An importer's compliance history; and
- The known safety risks of the imported food product.

A periodic assessment of an importer, drawing on the above information, could be used to categorise importers into high-, medium- and low-risk groups. Import controls could be prioritised on the basis of this categorisation, that is, importers categorised as 'low risk' would be subject to less frequent controls.

The assessment of Option 2 indicates that it performs well in terms of effectiveness. The option would have positive impacts on controls in terms of reliability, timeliness, independence and completeness relative to the current system.

Option 2 is also likely to be coherent with FSA and UK objectives but less so with EU requirements under the Regulation.

The option performs poorly in terms of efficiency, that is, it is likely to increase the burden of controls on government and industry. The low efficiency score reflects the additional effort which would be required by government and industry to establish a voluntary importer verification programme. Compiling the information required for a periodic assessment, changing processes and systems, and paying a fee for the assessment itself would increase the burden on participating FNAO importers. The burden may be relatively more significant for SME importers compared to larger importers. The voluntary nature of the verification programme would help to ensure that only importers who are likely to experience a net reduction in costs and delays (associated with controls) are likely to participate.

The potentially high burden on government relates to conducting periodic assessments of FNAO importers' hazard control programmes. There is also likely to be a burden associated with defining what constitutes an effective hazard analysis programme, and categorising FNAO products in terms of potential risks.

In terms of coherence, Option 2 scored well with respect to meeting FSA objectives, but less well with respect to UK government objectives and less well again with respect to wider and related EU objectives. The option would enable the FSA to follow a risk-based approach to prioritising controls. However the potential burden on business associated with the option would conflict with UK government objectives related to reducing the regulatory burden on

businesses. That is, the option is likely to result in a greater regulatory burden on businesses relative to the current system. Lastly, the option would potentially conflict with EU objectives related to controls conducted under Regulation (EC) No 669/2009.

A detailed assessment of the option is included in Table 9.2.

Table 9.2 Assessment of Option 2: Voluntary importer verification programme

Criteria	Sub-criteria	Assessment	Score
Effectiveness	Reliability	Overall, Option 2 is likely to improve the reliability of the prioritisation of controls. A periodic assessment of an importer's hazard analysis programme would provide robust information about the internal systems and processes in place to identify and manage potential food safety hazards. It is likely that the information obtained during an audit will be reliable as it will be conducted by the FSA or FSA-commissioned organisation. An importer's compliance history is also likely to be reliable as it is collected by DPEs and is the result of actual testing and controls. The reliability of categorising FNAO products and certain source countries with respect to potential food safety hazards is uncertain. Ensuring categorisations remain current and reflect actual risks may be problematic. However, evidence from New Zealand suggests product categorisation can be an effective mechanism to respond to changing food safety hazards.	+
	Timeliness	Option 2 is likely to reduce the time necessary for the prioritisation of controls. A periodic assessment of an importer's systems and processes to identify and manage potential food safety health hazards would determine whether they are sufficient with respect to the FNAO products imported. Once an assessment is conducted, the information would be readily available to DPE officials. The categorisation of FNAO products with respect to potential food safety health hazards will have to be reassessed at regular intervals to ensure it remains current. However once done, the information would be readily available to DPE officials.	+
	Independence	Option 2 is likely to improve the independence of the prioritisation of controls. The judgement about whether an importer's hazard analysis programme was sufficient, with respect to the potential food safety health hazards associated with its products, would be based on an objective assessment by a qualified inspector. This would help ensure that any judgement remains independent from an importer's interests. Previous compliance data and product-risk categorisation are determined independently.	+
	Completeness	Overall, Option 1 is likely to increase the amount of information available for the prioritisation of controls. Evaluating an importer's hazard analysis programme on a case-by-case basis will ensure that the most relevant	+

Criteria	Sub-criteria	Assessment	Score
		information for prioritising controls is considered. Similarly, products will be categorised in terms of issues that relate to import controls. Previous compliance data relate specifically to the issues related to import controls. They are likely to remain a reliable indicator of whether an importer's hazard analysis programme has been effective in the past.	
Efficiency	Administrative burden - FBOs	Option 2 is likely to increase the administrative burden on FBOs relative to the current situation, but the impact is uncertain. Overall, the administrative burden of Option 2 on FBOs is likely to be higher than the current situation. The option is likely to have a negative impact on some importers (who have not had and controls under the Regulation) but could be positive or negative on those importers who have been subject to controls. The extent of the impact will depend on how much it costs an importer to be categorised as 'low risk' relative to having to pay for a random check under the Regulation. Charging a fee to cover the cost of a periodic assessment could represent an increase in the administrative burden experienced by importers. However maintaining the voluntary nature of the programme would ensure that only importers likely to benefit (that is, experience a net reduction in the administrative burden associated with FNAO import controls) would take part. There could be a relatively significant administrative burden associated with collecting and collating the information required by a periodic assessment. The extent of the potential burden would depend on existing FBO systems and processes. There is a risk that the administrative burden associated with the option could be relatively higher for SME importers compared to large importers. An audit fee, and the time / resources associated with the audit, is likely to be relatively higher for smaller importers (the fixed cost would be spread across a smaller volume of consignments / annual turnover).	-
	Administrative burden - government	Option 2 is likely to increase the administrative burden on government relative to the current situation. Conducting periodic audits of FNAO importers with respect to their hazard analysis programmes is likely to require significant resources. While the responsibility for conducting the assessments could be sub-contracted to a private sector organisation, it is likely that it would be expensive to maintain.	-
Coherence	FSA objectives	Option 2 is likely to help the FSA meet its objectives related to prioritising FNAO import controls, including the application of a risk-based approach to regulatory activity. Assessing an importer's hazard analysis programme,	+

Criteria	Sub-criteria	Assessment	Score
		and considering previous compliance history and products imported, would facilitate the identification of importers at higher risk of importing contaminated products.	
	UK Government objectives	The impacts on UK Government objectives are uncertain. Option 2 is likely to facilitate improved prioritisation of import controls, potentially reducing the frequency of controls on the majority of businesses participating in the programme However, there is a risk that the regulatory burden of the programme could be disproportionately higher for SMEs. For example, the cost of the periodic assessment may be higher relative to the number of consignments imported. The voluntary nature of the programme should ensure that only importers likely to obtain a net benefit will participate.	**+ / -**
	EU objectives	Option 2 is unlikely to meet EU requirements under Regulation (EC) No 669/2009. The Regulation specifies the frequency of controls for FNAO imports for specific countries and there is minimal scope to include an assessment of hazard analysis programmes, previous compliance history, or the risks associated with FNAO products to prioritise controls. However, Regulation (EC) No 882/2004 (under which Regulation (EC) No 669/2009 operates) does include the scope for implementing risk based controls.	**-**

9.4 Summary results of the option assessment

The option assessment highlights the likely impacts of the two options.

The impacts of Option 1 are likely to be slightly negative compared to Option 2. While the regulatory burden of the option is likely to be relatively low, as much of the information already exists in the supply chain, the information may be too unreliable and not current enough to inform the prioritisation of FNAO import controls. For example, the absence of agreed testing and sampling protocols could undermine the comparability of tests conducted by FNAO importers. Similarly, annual assurance scheme certification audits may be too infrequent to be considered as a reliable representation of a producer's agricultural practices.

In comparison, Option 2 scores well in terms of effectiveness; the option is likely to produce reliable, timely and independent information closely relating to the hazards of regulatory interest. Option 2 scores less well in terms of likely administrative burden. The periodic assessment of importers' hazard analysis programmes is likely to be relatively resource intensive for government and the definition of what constitutes a 'good' hazard analysis programme would also require upfront effort to engage with industry. The potentially high administrative burden on FNAO importers relates to the potential fees levied to cover the periodic assessment, and also the time and effort to collect information required as part of the assessment. There is a risk that the administrative burden could be disproportionately higher for SMEs; the fee would cover a small number of consignments and (based on the interviews conducted for this study) SMEs may be less likely to have the systems and processes necessary for a comprehensive hazard analysis programme.

Each option is also assessed in terms of coherence, that is, the extent to which the option is likely to meet the wider and related objectives of the FSA, UK government and the European Commission. Options 1 and 2 are fairly similar in terms of coherence. Option 1 may, and Option 2 is likely to, meet with FSA objectives related to the prioritisation of import controls, including the application of a risk-based approach to regulatory activity. Similarly, both options may also help to meet UK government objectives related to reducing the regulatory burden on business, but there may be a relatively higher burden on SMEs.

Both options could potentially fail to meet EU requirements. Although Regulation (EC) No 882/2004 includes the scope for risk-based controls, Options 1 and 2 are unlikely to meet with the requirements of Regulation (EC) No 669/2009. It may only be possible to implement either option for products that are imported in significant volumes. High volumes would enable DPEs to meet the inspection frequency set out in the Regulation while also applying the prioritisation of controls as described for each option.

There may be increased scope to implement Option 1 and Option 2 in the future. The European Commission has recently announced changes that are expected to provide for a more consistent and effective approach to official controls across the EU, including:

- A requirement to extend mandatory control activity to all sectors and to implement risk-based controls.
- Changes relating to official controls financing. Currently, the system for funding and charging is under the discretion of individual Member States. Under the proposed plans, Member States would be required to recover the full cost of official controls from food businesses subject to controls.
- An increase in the number of controls which are subject to mandatory charging.
- A mandatory exemption for micro-businesses (for fees, not controls).
- Simplified and harmonised procedures for import controls.

Although the proposed changes are at an early stage, the prosed extension to risk-based controls may provide the opportunity to adjust the procedure for prioritising controls implemented under Regulation (EC) No 669/2009.

9.4.1 It is not possible at this stage to recommend one option over another due to uncertainties related to their potential feasibility, cost and reliability

It is not possible at this stage to recommend one option over another due to uncertainties related to their potential feasibility, cost and reliability.

The feasibility of the options is influenced by the products, source countries and contaminants listed in Annex 1 of the Regulation. Annex 1 of the Regulation is revised every quarter, changing the products, source countries and contaminants of regulatory interest and thus potentially changing the relative feasibility of the options.

Recommending one option over another is complicated by the potential implementation costs. There will be additional work necessary by the FSA, and to a lesser extent DPEs and industry, to determine which option (if any) to implement. Additional work would be necessary, for example, to establish the importer verification programme described under Option 2. Establishing a programme to assess importers' hazard analysis programmes could be a relatively onerous and resource intensive undertaking. FSA may determine that, at this stage, the costs of setting up a verification programme may be unlikely to exceed the benefits. Consultation with industry and DPEs may be necessary to establish whether there is sufficient demand for the options and whether the benefits are likely to outweigh the costs.

Section 10 describes factors for the FSA to consider in the design of a future pilot scheme for Option 1 and Option 2.

10 The likely success of a future pilot scheme could be improved if the FSA consider certain factors

This section describes factors for the FSA to consider in the design of a future pilot scheme for Option 1 and Option 2. The factors were identified based on assessment of the issues that may have reduced the 2011 pilot scheme's success and consideration of the information and actions which could help to improve a future pilot.

10.1 Factors which should be considered for an Option 1 pilot

Option 1 is an assurance scheme based approach which could draw on several different sources of information to prioritise controls of imported FNAO consignments:

- Assurance scheme certification;
- List of pesticides applied to a product;
- Test results; and
- Importers previous compliance history.

This section discusses factors which may help the FSA to implement an Option 1 pilot scheme. The factors are summarised in Table 10.1.

Table 10.1 Factors to consider in a future pilot related to Option 1: An assurance scheme based approach

Factor	DPEs	Industry	FSA
Engagement	Consult with importers, shipping agents and DPE staff to establish how information will be transmitted from importers to DPE officials. Work with the FSA to define the appropriate 'minimum compliance history'.	Trade associations engage with the sector. Work with FSA and DPEs to determine information which could be provided. Work with FSA and DPEs to determine how information could be provided, for example via the TRACES system. Engage with producers to determine whether information required for pilot can be provided.	Assess likely demand and participation with DPEs and industry. Establish with industry and DPEs the information that should be provided and how it should be provided. Establish the reliability of testing undertaken by UKAS accredited laboratories in third countries. Establish reliability of assurance schemes and determine which schemes should be included in the pilot. Determine with DPEs and industry whether information could be submitted via TRACES or whether an alternative is required. Establish with industry the feasibility of providing a list of applied pesticides with each consignment. In conjunction with DPEs, determine an appropriate 'minimum compliance history'. Engage FBOs which are not members of any trade association.
Incentives	Explore options to reduce the burden of controls for pilot scheme participants, for example quicker controls or reduced fees.	*No factors identified.*	Fund DPEs to cover additional work required by pilot scheme. Clearly outline objectives of pilot and potential outcomes if successful.
Scope	Initial participation by large DPEs receiving high volumes of Annex 1 products, such as Heathrow, Gatwick, and Manchester Airport and busy sea ports.	Participation by: ■ Importers of fresh produce. ■ Large, backward integrated importers.	*No factors identified.*
Information management	Work with FSA to prepare a common format / procedure to collect information from importers.	*No factors identified.*	Preparation of a central database to record information about importers.

	Work with FSA to prepare standardised electronic forms for submitting information to database.		Definition of a common format / procedure to collect information from importers. Preparation of standardised electronic forms for submitting information to database. Allocate unique identification number to importers.
Operating practices	Collect and record the results of controls to a standardised format, and submit the results to a centralised database. Review information submitted by importers about pesticides applied to products. DPE officials access assurance scheme databases to check the validity of certification numbers.	Provide test results, a list of applied pesticides and details of assurance scheme certification to DPEs, potentially via the TRACES system in the future. Work with others in the sector to harmonise product testing and sampling protocols. Ensure tests conducted in third countries are undertaken by UKAS accredited laboratories.	Work to standardise data collection and recording by DPEs to ensure comparability of importer information.

10.1.2 Engagement

Engagement with DPEs and industry prior to undertaking a new pilot scheme may improve scheme participation. The FSA could consult with DPEs and industry to assess likely demand and interest in participating. Trade associations could facilitate engagement by providing information to their members. The four trade associations interviewed for this study have indicated that they are willing to provide access to FBOs along the supply chain for FNAO imports. Many smaller FBOs are not trade association members, however, and FSA may need to make extra effort to reach these organisations. This could include, for example, contacting smaller importers directly to inform them about the pilot scheme.

The information required under Option 1 does not always travel along the supply chain with FNAO consignments. Further consultation may help to establish the information industry could provide to DPEs and how it could be provided. For example, it may be difficult for importers to provide a definitive list of the pesticides applied to a product. It may be easier for importers to provide an indicative list of pesticides which may have been applied, that is, a long-list of pesticides from which a selection have been applied. Similarly, this information could either be provided at the start of every growing season, or alternatively could be provided alongside each consignment. Consultation could also help to determine whether the TRACES system, currently used to submit CEDs, may be suitable for providing Option 1 information to DPEs or whether an alternative approach may be necessary (for example, a paper-based system).

FSA may wish to conduct additional research to evaluate which assurance scheme(s) should be included in any future pilot. This could include, for example, determining which schemes are considered by industry and DPEs to be the most robust, identifying the information from each scheme that could be provided to DPEs to confirm the 'certification status' of FNAO consignments (for example, the GlobalG.A.P certificate number), and evaluating whether certification and inspection processes are robust (e.g. whether unannounced inspections are frequently undertaken).

FSA may also need to establish the reliability of testing undertaken by UKAS-accredited laboratories in third countries before establishing a pilot. This could include, for example, re-testing consignments to determine whether the testing undertaken by laboratories in third countries is accurate. There may be scope for importers to adjust the type and range of testing they undertake to bring it more in line with the pesticides included in Annex 1 of the Regulation. Engaging with industry, for example through the Fresh Produce Consortium or other trade associations, could help the FSA determine the feasibility of importers adjusting testing regimes in line with the products and contaminants included in Annex 1 of the Regulation.

DPEs may need to consult with importers, shipping agents, and their own staff to establish the working arrangements for transmitting information from importers to DPE officials. For example, shipping / handling agents play an important role in the transmission of consignment documentation to DPEs and are likely to have a role under Option 1. FSA may also need to consult with DPEs to determine the appropriate 'minimum' compliance history to determine the 'risks' associated with an importer.

It is likely that industry would need to engage with producers and other organisations operating along the FNAO supply chain to determine whether the required information could be provided. For example, importers that are not backward-integrated with producers may find it more challenging to obtain a FNAO product's pesticide list.

10.1.3 Incentives

Incentives may be helpful to encourage organisations to take part in an Option 1 pilot scheme.

During the consultation undertaken for this study, it was apparent that DPEs receiving high volumes of FNAO products listed in Annex 1 of the Regulation may have insufficient resources to increase the time dedicated to controls. The lack of available resources could constrain DPEs' ability to engage with FSA and industry to establish and launch a pilot

scheme. Additional funding from FSA could incentivise DPEs to take part in a future pilot. This funding could, for example, be provided to compensate DPEs for the additional time required by a pilot scheme.

Importers consulted during this project expressed some frustration with the delays and costs associated with controls conducted under Regulation (EC) No 669/2009, suggesting that they may be keen to work with FSA and DPEs in a future pilot scheme. However the low levels of importer participation in the 2011 pilot scheme suggests that incentives to encourage participation may be helpful for a future pilot. Incentives could include, for example, the opportunity for quicker or cheaper controls for participating importers.[30] If it is not possible to offer such incentives, a clear explanation about the objectives of the pilot scheme and the potential benefits to importers should the pilot prove to be successful, may also encourage participation.

10.1.4 Scope

The complexities associated with designing a pilot scheme may reduce the likelihood that a future pilot scheme will be successful. For example, a future pilot should be capable of responding to changes to the products and countries in Annex 1, be flexible enough to cope with the range of different types of importers (in terms of size and backward integration, for example), and be appropriate for DPEs that receive different volumes of FNAO products. Limiting the scope of an Option 1 pilot scheme may help to increase its likelihood of success.

In the first iteration, a pilot scheme related to Option 1 could be limited to large importers of fresh produce. Importers of fresh produce commonly source the majority of their products from assured producers. In comparison, importers of spices and dried fruits and nuts do not typically source products from assured producers. Evidence collected for this study indicates that large importers have well-developed systems and processes in place to transmit monitoring and control information along the supply chain from producers to retailers. Some degree of 'backward integration' is also more common amongst large importers, potentially affording them more control over and access to information about how products are produced. In addition, large businesses may have a clearer incentive to participate in a pilot as they are more likely to be subject to controls under Regulation (EC) No 669/2009. They import significant volumes of FNAO products and also typically imported a more varied mix of products compared to smaller importers.

DPEs vary significantly in terms of the types and volumes of imported FNAO products they receive. Certain DPEs receive frequent and large volumes of products listed in Annex 1 of the Regulation. Other DPEs have only received small volumes of a limited number of Annex 1-listed FNAO products since the Regulation was introduced. The success of an Option 1 pilot may be greater if it includes DPEs, airports and seaports, frequently receiving consignments of products listed in Annex 1 of the Regulation.

10.1.5 Information management

New or adjusted approaches to information management may help FSA to minimise the burden of an Option 1 pilot scheme.

A centralised database to record information about importers, their previous compliance history, the results of FNAO product testing and the list of pesticides applied to products may help DPEs to implement an Option 1 pilot. A database would facilitate the sharing of information between DPEs and increase the volume of information available to DPE officials. A common information collection format / procedure may also facilitate the sharing of information between DPEs. An Option 1 pilot may also benefit from the inclusion of standardised electronic forms to collect and record information. The forms would help to reduce the burden on importers / DPEs of providing and receiving information under the pilot scheme. For example an electronic checklist form, completed by importers about the

[30] Participating importers could be offered a reduction in the fees charged by DPEs, or could be prioritised in the queue for physical and document checks.

pesticides applied to FNAO products, would help DPEs to quickly assess whether consignments merit a more detailed inspection.

Allocating a unique identification number to importers would help to ensure that a centralised database can function correctly. It would help to avoid double entries and ensure that information can be easily collated from different DPEs.

10.1.6 Operating practices

Implementing an Option 1 pilot may require DPEs, importers and FSA to adopt new or adjusted working practices. As described in Section 8.1, an Option 1 pilot could involve DPEs collecting and recording inspection results in a standardised format and submitting the results to the centralised database. As part of an Option 1 pilot scheme, DPEs may also review the pesticide list supplied by importers to determine whether any of regulatory interest had been used. DPE officials may also need access to assurance scheme databases to check the validity of certification numbers provided by importers.

Importers currently submit CEDs alongside consignments of FNAO products listed in Annex 1 of the Regulation. An Option 1 pilot scheme would involve importers providing test results, the pesticide list and details of FNAO product's assurance scheme certification to DPEs. To ensure that the results of FNAO testing are comparable between importers, and are useful to DPEs, it may be beneficial for importers to work together to standardise testing and sampling protocols. If implemented by FSA, the component of Option 1 requiring that all tests are conducted by UKAS accredited laboratories may require changes to the operating procedures of some importers.

10.2 Factors which should be considered for an Option 2 pilot

Option 2 is a voluntary importer verification programme to categorise importers into groups depending on the potential food safety health hazards associated with the products they import. Categorisation would be based on several sources of information:

- An evaluation of an importer's hazard analysis programme;
- An importer's compliance history; and
- The known safety risks of the food product to be imported.

Inspection frequency would vary between the categories with lower risk importers subject to less frequent controls.

This section discusses factors which may help the FSA to implement an Option 2 pilot scheme. The factors are summarised in Table 10.2.

Table 10.2 Factors to consider in a future pilot related to Option 2: Voluntary importer verification programme

Factor	DPE	Industry	FSA
Engagement	Engage with FSA to establish how the verification programme would function, assess likely demand, and determine if import volumes are sufficiently high to revise prioritisation and control process. Work with the FSA to define the appropriate 'minimum compliance history'.	Engage with FSA to establish how the verification programme would function, assess likely demand and set appropriate fee.	Consultation with DPEs and industry to determine demand, and identify / address potential issues. Determine fee to charge importers to participate in the programme. Consultation with DPEs, industry and external experts to establish how the programme will function, e.g. assessment criteria, hazard control programmes, protocols for unannounced inspections. Consultation with DPEs to establish whether volumes of products are sufficiently high to prioritise controls based on the verification programme. Consultation with DPEs to ensure verification programme is robust. In conjunction with DPEs, determine an appropriate 'minimum' compliance history.
Incentives	Explore options to reduce burden of controls for pilot participants, for example quicker controls or reduced fees.	*No factors identified.*	Provide financial incentives for participating DPEs, for example funding from FSA to offset additional costs associated with the pilot. Identify and explain the benefits for participants of the verification scheme categorised as low risk, for example, less frequent controls. Clearly outline objectives of pilot and potential outcomes if successful. Provide DPEs with an explanation of the objectives of the verification programme, including the potential benefits to DPEs.
Scope	Initial participation by large DPEs receiving high volumes of Annex 1 products, such as Heathrow, Gatwick, and Manchester Airport and busy sea ports.	Participation by importers of large volumes of high-value and highly-perishable products.	*No factors identified.*

Information management	Work with FSA to prepare common format / procedure to collect information about importers.	*No factors identified.*	Centralised database to record information about importers and their risk rating. Standardised electronic forms for submitting information to database. Allocate unique identification number to importers.
Operating practices	Access centralised database to determine importers' risk rating and previous compliance history. Review FNAO consignments in terms of their known safety risks. Submit results of controls to centralised database.	Prepare a hazard control programme and provide information so it can be assessed by a third party. Facilitate unannounced inspections of their hazard control programme.	Establish how the verification programme would function and operate on-going assessments of importers' hazard control programmes. Establish and maintain a risk categorisation of FNAO products / countries. Ensure DPEs collect and record information in a standard format.

10.2.2 Engagement

Establishing a voluntary importer programme as described under Option 2 may benefit from consultation with interested parties to ensure that there is sufficient demand and also to identify and address potential problems.

The FSA and industry may need to work together to determine how the importer verification programme would function in practice, for example, determining the assessment frequency for importers' hazard control programmes. Due to the potential costs associated with establishing an importer verification programme, the FSA may decide that it is necessary to levy a fee on participating importers. Discussing the potential fee with importers during the early stages of consultation may help importers to decide whether to participate in the pilot.

DPE officers prioritising inspection and control activity on the basis of an importer verification programme may need to be reassured about the programme's reliability. Working with DPEs may help the FSA address their concerns and design the pilot accordingly. For example, DPEs may be concerned that importers' behaviour will change following the initial assessment, that is, importers may not follow their own hazard control programme. This concern could be addressed by including unannounced inspections in the pilot scheme.

The FSA and DPEs may also need to work together to determine whether consignment volumes of products listed in Annex 1 of the Regulation are sufficient to prioritise controls on the basis of an importer's risk-categorisation. Volumes will have to be sufficiently high to facilitate the prioritisation of controls under the Option and meet the inspection frequency set out in the Regulation.

While consultation with importers and DPEs is likely to be useful to define the verification programme, certain elements may require the FSA to seek independent advice. For example, it may be necessary for the FSA to seek independent advice about the assessment criteria necessary to determine whether an importer's hazard control programme is sufficiently rigorous. The FSA could draw on the experiences of regulators with establishing programmes containing elements similar to those described under Option 2, for example the United States, New Zealand and the Netherlands.

10.2.3 Incentives

An Option 2 pilot scheme may require relatively significant upfront effort by the FSA, DPEs and industry to establish how the verification programme would function in practice. Incentives for industry and DPEs may help to encourage their participation in the pilot.

Option 2, as described in previous sections, would include a voluntary importer verification programme. Importers will participate in the pilot if the costs of doing so are outweighed by the benefits. Highlighting the potential benefits of participating, for example reduced frequency of controls for importers categorised as 'low risk', could help to incentivise importers to participate.

Providing DPEs with a clear incentive to incorporate the risk rating of participating importers into the prioritisation of controls may also help to implement an Option 2 pilot. DPE interviews conducted for this study revealed that they are often resource constrained, especially the DPEs receiving high volumes of products listed in Annex 1 of the Regulation. Financial incentives may help to encourage DPE participation in an Option 2 pilot. For example, the FSA could offer additional funding for participating DPEs to offset any additional costs incurred due to the pilot. In addition, a strategy paper setting out the objectives of the pilot scheme, including potential benefits to DPEs, may help to incentivise DPEs to participate.

10.2.4 Scope

It is likely that larger importers will be more willing than smaller importers to participate in an Option 2 pilot scheme. The costs of working with the FSA and DPEs to establish the importer verification programme would be relatively lower for large companies and even more so for companies which import significant volumes of high value FNAO. Importers of high-value

and highly perishable products are likely to be particularly keen to participate in a pilot scheme as delays can significantly reduce the value of their consignments.

DPEs receiving large volumes of high-value and highly perishable products, such as Heathrow, Gatwick, Manchester airports and busy sea ports, may be more appropriate for inclusion in an Option 2 pilot. High consignment volumes would facilitate the prioritisation of controls on the basis of an importer's risk rating, while also meeting the requirements of the Regulation.

10.2.5 Information management

A centralised electronic database may help the FSA to implement an Option 2 pilot. Such a database could enable DPEs to easily review the risk-rating of importers, view their compliance history and determine whether the hazards control programme is suitable for the FNAO products under import.

Allocating unique identification numbers to importers could help to avoid multiple entries for the same importer importing consignments at multiple DPEs, contributing to the accuracy of data collection and recording. Similarly, standardised data collection and recording by DPEs may also help to improve the comparability of an importer's compliance history, irrespective of the DPE that performed the control activities.

10.2.6 Operating practices

Implementing an Option 2 pilot may require DPEs, importers and the FSA to adopt new or adjusted working practices.

DPE officials would have to ensure that the requirements of the Regulation are met while implementing an Option 2 pilot. That is, DPE officials would have to balance the reduced inspection frequency for low risk importers with the need to meet overall inspection frequencies set out in Annex 1 of the Regulation.

As described in Section 10.2.5, a centralised database may help DPE officials to quickly determine an importer's risk rating, previous compliance history and review FNAO products in terms of their known safety risks. In addition, an Option 2 pilot may require that DPE officials submit inspection results to the centralised database.

An Option 2 pilot could involve importers preparing a hazard control programme. While many importers may already have such a programme in place, making it available for assessment by a third party may require a change to current operating practices. An Option 2 pilot, if it includes unannounced inspections of importers' hazard control programmes, may require importers to change their operating practices. For example, importers may be required to maintain consignment records in a format amenable to assessment by a third party.

The FSA may need to invest considerable time and resources to establish an Option 2 pilot, for example determining how the verification programme would function. The FSA may also need to allocate resources to maintaining an Option 2 pilot, for example providing the resources necessary to assess importers' hazard control programmes, and maintaining an up-to-date risk categorisation of products / countries. The FSA may also have a role to play in ensuring that DPEs collect and record information in a standard format.

11 Conclusions

This section describes the conclusions of the study. The conclusions are based on the research conducted as part of the study and relate to the analysis described in other sections of the report.

11.1 Assurance schemes alone are unlikely to be suitable for the prioritisation of FNAO controls

Assurance schemes are a common feature of FNAO supply chains. They are used by retailers as a tool to ensure quality and safety at all stages of the food supply chain, including primary production. Although one of the aims of assurance schemes is to ensure compliance with official food safety legislation, the type and scope of private controls differ from those established by legal requirements. Many of the most common assurance schemes in the FNAO supply chain can be defined as 'process-based' schemes: their standards focus on the production process, and consist mainly in ensuring that producers have put in place an agreed set of quality assurance measures. This contrasts with official controls for imported FNAO which emphasise compliance controls on the final product – so called 'product based' standards.

Assurance schemes generally overlap with food safety legislation and, in some cases, go beyond legislative requirements. However, there is little evidence to support the proposition that products produced in accordance with assurance scheme standards are more likely to meet EU import requirements. Organisations working in the FNAO supply chain that were consulted for this study, importers, retailers and trade associations, indicated that assurance schemes can help to ensure compliance with food safety and other related legislative requirements. But these organisations were of the opinion that assurance schemes alone are an insufficient measure of compliance with food safety and regulatory issues related to imported FNAO.

In theory, prioritising FNAO controls could involve selecting consignments on the basis of whether or not products were sourced from producers certified to assurance scheme standards. In practice, relying on assurance scheme certification is likely to be problematic as assurance scheme certification alone is unlikely to be a reliable indicator of whether a product is more or less likely to comply with EU regulations for FNAO imports from non-EU third countries.

11.2 Options are available to the FSA to prioritise FNAO import controls

This report proposes two policy options to meet the FSA objectives with respect to prioritising FNAO import controls, and reducing the burden of official controls on importer checks and controls conducted under Regulation (EC) No 669/2009. There are advantages and disadvantages to both options and determining which is the most suitable will depend on their potential feasibility, cost and reliability. Implementing either option will require the FSA, DPEs and importers to undertake additional work to determine how the options would function in practice, and perhaps more importantly, establish the demand for the options.

The majority of importers and DPEs interviewed by the study team were unaware of the 2011 pilot and those who were aware of the pilot were uncertain about its objectives and requirements. A future pilot scheme would be more successful if communication about its objectives and requirements were improved, potentially by increasing engagement with industry representatives, importers, DPEs and others involved in the supply chain. Limiting the scope of a future pilot scheme, and including incentives to encourage participation by DPEs and importers, would also increase the likelihood of success.

ANNEXES

Annex 1 Assurance schemes

A1.1 Assurance schemes in the FNAO supply chain

Assurance schemes are initiatives for assessing and approving businesses against a defined standard (Greenstreet Berman Ltd 2011). Businesses that achieve 'approval' under an assurance scheme are considered to operate at a particular level or have achieved a certain status.

Food assurance schemes help to provide consumers and businesses with guarantees that food has been produced to particular standards (HM Government, 2013). Schemes are typically voluntary arrangements although many food businesses, such as supermarket retailers, make certification in an assurance scheme a requirement for their suppliers.

A1.2 The role of assurance schemes in the food chain

Over the last 10-15 years, private food safety standards have been established both in industrialised and developing countries alongside food quality, environmental and social standards (Codron et al., 2005; Henson and Reardon, 2005; Henson and Humphrey, 2009). Henson and Reardon (2005) suggest that the global concentration of the food retail sector is the most significant force behind these developments. The concentration of the sector has reduced the number of economic players, increased their respective share of the agricultural and food markets, and increased their ability to set production standards along supply chains. Competition amongst these players is increasingly focussed on product differentiation, with food quality and safety playing a key role in differentiation strategies. Food standards emerged in response to the difficulties supermarket retailers encounter (as operators at the end of the food supply chain) in controlling production standards. Food standards are used by retailers as a tool to ensure quality and safety at all stages of the food supply chain, including primary production.

The main drivers behind private certification can be summarised as follows (Tallontire et al., 2012; Henson and Humphrey, 2009):

- Weaknesses in public food safety regulations;
- Increased official food safety requirements; and
- Strategic objectives to differentiate food products.

Increasing consumer concerns over a wider range of food attributes, including food safety (for example, pesticide residues) plays a key role in the development of official and voluntary standards (Codron et al., 2005; Henson and Humphrey, 2009).

The growing role of private certification has led to the proliferation of standards: in Europe alone, close to 400 private standards govern the food industry (de Battisti et al., 2009). Collective standards have been developed by industry organisations or standards coalitions alongside firm-specific standards. The prevailing trend is towards internationalisation and benchmarking of national firm or collective standards, as in the case of the Global Food Safety Initiative (GFSI) (Henson and Humphrey, 2010).

The key elements of private food safety standards include (Henson and Humphrey, 2009):

- The possibility to make a claim about processes and practices relating to how food is produced, transported or processed;
- Mechanisms for enforcement and certification, generally through third party accredited certification bodies;
- A set of established rules and procedures that might be accompanied by guidance documents concerning aspects such as the implementation of standards; and
- Traceability measures to guarantee that standards are met at all stages of the food chain.

The literature on private food standards includes potential detrimental impacts, particularly on developing countries and small businesses where the costs of meeting such standards might lead to the exclusion of small producers from the market (Graffham et al., 2007).

Operators that wish to supply different companies may need to comply with more than one assurance scheme, and therefore be subject to multiple audits. Major global retailers, manufacturers and food service operators have promoted an initiative (the Global Food Safety Initiative, GFSI) which is intended to support the mutual recognition of food safety schemes by companies and reduce audit duplication. The GFSI has established a benchmarking model for existing food assurance schemes, according to which only assurance schemes including a defined set of minimum standards are recognised. The GFSI has developed a guidance document[31] that sets the recognition requirement and benchmarks existing global assurance schemes against these requirements.

Currently, three food safety schemes are recognised by the GFSI:

- Safe Quality Food (SQF);
- British Retail Consortium (BRC); and
- International Featured Standards (IFS).

Additionally, eight schemes are in the benchmarking process:

- Food Safety System Certification (FSSC 22000) Food Products;
- Global Aquaculture Alliance Seafood Processing Standard;
- GlobalG.A.P.;
- Global Red Meat Standard (GRMS);
- PrimusGFS;
- Dutch HACCP;
- Synergy 22000.

A1.2.1 Control of compliance and traceability along the food chain

Although one of the aims of assurance schemes is to ensure compliance with official food safety legislation, the type and scope of private controls differ from those established by legal requirements. Collective assurance schemes such as GlobalG.A.P., British Retail Consortium (BRC) and International Featured Standards (IFS) can be defined as 'process-based' schemes: their standards focus on the production process, and consist mainly in ensuring that producers have put in place the necessary measures to guarantee legislative compliance with food safety requirements. By contrast, official controls on imported food products can be defined as 'product based', as they emphasise the compliance controls carried out on the final product.

Some collective schemes (e.g. GlobalG.A.P. and PrimusGFS) focus on primary production. GlobalG.A.P. standards, for example, require farmers to base their production processes on 'Good Agricultural Practices' aimed at reducing risks such as contamination and excessive pesticide residue levels. Other collective standards focus on the successive stages of the food supply chain. This is the case with BRC and IFS standards, for example, where requirements are targeted at food processors and pack houses. These schemes require the development of food safety plans based on the Hazard Analysis Critical Control Point (HACCP) approach for the management of food safety risks. The standards are focused on the initial stages of the food supply chain and are intended to verify that all production process requirements are in place. Examples of control and traceability procedures for two collective private assurance schemes – GlobalG.A.P. and IFS – are described in more detail in Annex 2. These are leading assurance schemes operating globally at the farming and packing stages, respectively.

[31] http://www.mygfsi.com/gfsifiles/GFSI_Guidance_Document_Sixth_Edition_Version_6.2.pdf

Conversely the requirements established by Regulation (EC) No 669/2009 do not concern the production process, but rather focus on the safety of the final product as it is imported into the EU. Imported FNAO might undergo sampling analysis in order to verify that established thresholds for substances, such as pesticides, are not exceeded.

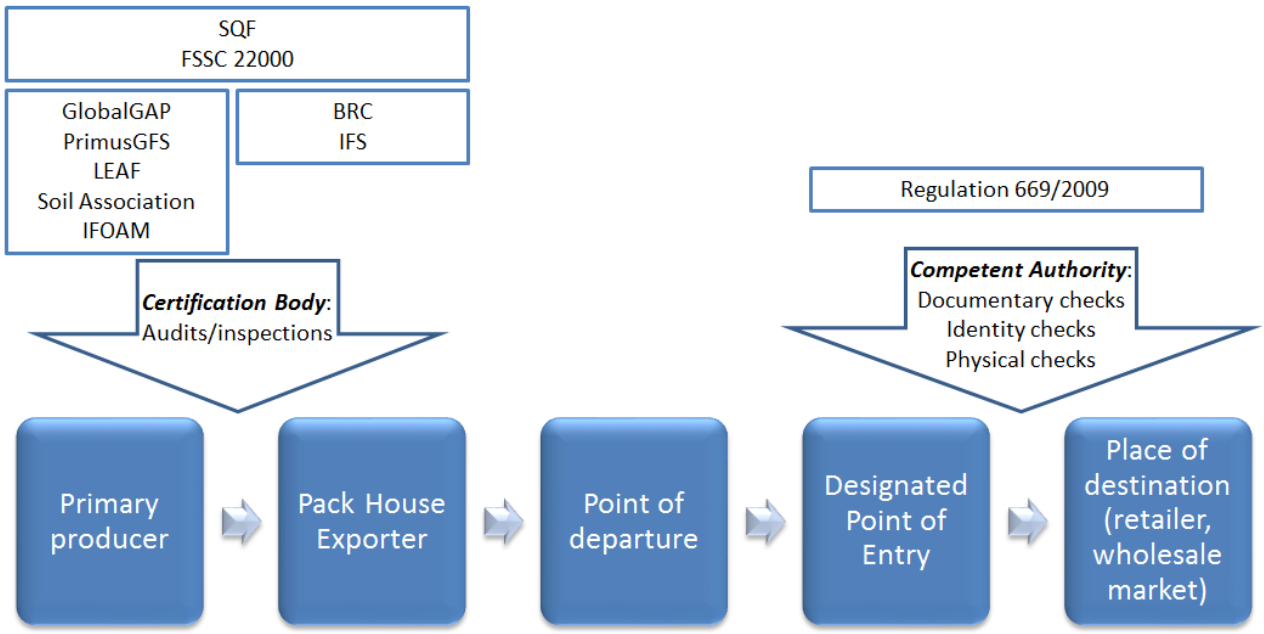
More specifically, controls required by the Regulation are carried out by Competent Authorities and consist of:

- Documentary checks, to be carried out on all consignments in order to verify the presence of all commercial documents and documents required under feed or food law.
- Identity and physical checks, to be carried out at the frequencies defined in Annex I of the Regulation. Identity checks consist of visual inspections to ensure correspondence between consignment certificates, labelling and content. Physical checks include sampling for analysis and laboratory testing.

The checks listed in the Regulation must be carried out at Member State's Designated Points of Entry (DPE). Under 'special circumstances' defined by the Regulation, these checks may also be carried out at the premises of a feed and food business operator.

The positioning along the food supply chain of private food standards and official controls required under Regulation (EC) No 669/2009 for FNAO are illustrated in Figure A1.1.

Figure A1.1 Private certification and official controls along the food chain



Source: ICF GHK

A1.3 Respondents views and opinions about the role of assurance schemes in the supply chain

This section summarises the stakeholder responses about the use of assurance schemes in the FNAO supply chain. Consultees included different operators active in the FNAO supply chain: importers, retailers and food industry associations. Stakeholders were asked about the assurance schemes used for products imported from extra-EU countries, the reasons for sourcing products from certified producers and the type of information collected by importers to verify that products come from certified producers.

A1.3.1 Assurance schemes are a common feature of FNAO supply chains

Of the 34 importers interviewed for this study, 30 source products from producers certified to at least one type of assurance scheme. Only two spice importers, both relatively small,

declared that they do not use any type of certification. The remaining two interviewees, both spice importers, stated that they did not import products from assured producers. Both stakeholders stated that assurance schemes are not a common feature of spice production, and that there is little demand for spices from assured producers from their customers.

GlobalG.A.P represents the most widespread scheme used by interviewees; 25 of the consulted importers source almost 100 per cent of product from GlobalG.A.P. assured producers. In most cases, interviewees declared that more than 95 per cent of imported products are GlobalG.A.P certified, with the remaining 5 per cent of products coming from farms that are in the process of certification.

In terms of the size of importers, 14 of the 16 large importers and 11 of the 18 small importers interviewed declared that they use GlobalG.A.P certification.

GlobalG.A.P is sometimes used alongside with BRC certification, which covers packaging, storage and distribution: 7 fresh produce importers and 1 importer of nuts out of the 34 interviewed importers sourced products from BRC certified pack houses.

All major supermarket retailers have developed their own assurance schemes for primary food production, and require retailer-specific certification in addition to GlobalG.A.P. The standards included in retailer-specific schemes build on those in GlobalG.A.P. and typically include additional requirements in terms of the pesticides which can be used, and may also include social / ethical standards. Retailer-specific certification is common among interviewees: 17 importers stated that they are required to source products which comply with retailer-specific assurance schemes.

Other types of certification include organic (such as Soil Association) and Leaf, which generally cover 5-10 per cent of the products imported from extra-EU countries by interviewed importers. Organic certification in some cases is product-specific and required by a specific client, e.g. supermarket retailer. Less than one third of interviewees import organic products (9 out of 34) and only 3 import products from Leaf-certified producers.

The numbers of interviewees who source product from each assurance scheme are summarised in Table A1.1 and Table A1.2.

Table A1.1 The role of assurance schemes, company size

	Total interviewees	GlobalG.A.P.	BRC	Organic	Retailer specific	Leaf
Importer (Large)	16	14	4	7	9	2
Importer (SME)	18	11	4	2	8	1
Total	**34**	**25**	**8**	**9**	**17**	**3**

Source: ICF GHK

Table A1.2 The use of assurance schemes, by product type

	Total interviewees	GlobalG.A.P.	BRC	Organic	Retailer specific	Leaf
Fresh produce	29	25	7	9	17	3
Nuts	3	0	1	0	0	0
Spices	2	0	0	0	0	0
Total	**34**	**25**	**8**	**9**	**17**	**3**

Source: ICF GHK

A1.3.2 Reported reasons for sourcing certified products

Importers, retailers and trade associations interviewed for this study stated that assurance schemes are generally adopted for two main reasons: they are a customer requirement and they offer some guarantee that good agricultural practice has been followed by the producer.

The latter is considered to increase the likelihood that products will meet the requirements of food safety legislation. Consultees considered that assurance schemes are clearly defined, and that there is a relatively strong link between assurance scheme standards and contamination risks associated with pesticides, additives and other undesirable substances.

Importers supplying organic products stated that certification is an important indicator that a producer is complying with agreed standards.

Interviewees identified several other benefits associated with assurance schemes:

- Assured producers typically have a comprehensive understanding of good agricultural practice, and employ experienced personnel to decide about pesticide application.
- Pesticides are likely to be handled and stored correctly in order to avoid contamination.
- Recordkeeping about the proposed and actual use of pesticides is required.
- 'Appropriate' (producer specific) controls are required to be in place to manage relevant contamination risks.
- There is a minimum level of controls and standard agronomic practices in place.

While assurance schemes are considered by supply chain participants to play an important role in ensuring a higher level of compliance, they are not considered to be sufficient on their own. Consultees stated that additional measures are necessary to control factors such as contamination due to pesticide drift from neighbouring fields, and variable weather conditions impacting on the breakdown of plant protection products. Additionally, the most common assurance scheme, GlobalG.A.P. covers only a limited part of the supply chain, that is, it focuses on primary production only. Additional controls are required to address potential contamination can occur during packing and transportation. Importers also reported that the quality of assurance schemes depends on the quality of auditors, and considered that audit procedures in some extra-EU countries are less robust than others.

A1.3.3 The type of assurance scheme information which typically accompanies consignments and could be submitted with a CED

Information collected by importers to verify that products come from certified producer includes:

- A copy of the assurance schemes certificate and audit report: this documentation is either provided directly by growers or by the intermediary dealing with the importer, such as marketing agents or shippers. Importers can also check the status of certification of each grower by accessing assurance schemes' online databases. Importers stated that they could be able to provide without difficulties a copy of the certificate together with the CED. However, this would need to be explicitly required, as certificates are generally collected only once a year and/or at the beginning of the harvesting season and do not travel together with products, except from organic certificates which are normally provided with consignments. The format (paper or electronic) may vary depending on importers' traceability systems, although most interviewed importers collect electronic copies of the certificates.
- The identification numbers related to certification, such as the GlobalG.A.P. number (GGN): when available, this information is reported on each box. However, identification of products with the GGN does not represent a mandatory requirement of GlobalG.A.P. certification: as such, not all importers adopt this form of identification. One importer, for example, explained that they don't require the GGN when dealing directly with large farmers with good traceability systems. Among interviewed importers, 25 import GlobalG.A.P. certified products and 14 of them declared that some or all boxes of imported products bear the GGN and that this information could be easily provided at DPEs.

In addition to documentation on assurance schemes, importers suggested that other relevant information related to Annex 1 of Regulation (EC) No 669/2009 include:

- Lists of third country suppliers, to be combined with certificates: retailers require this type of information from importers, and therefore it should be is easily available in most cases. However, such information is highly sensitive, and therefore it may be difficult to obtain.
- Lists of permitted / proposed / used pesticides: several interviewees provide their growers with the lists of approved suppliers, based on the relevant legislation and on clients' requirements. Retailers have their own lists of approved pesticides, with stricter requirements as compared by official legislation. Growers may be also required to provide a list of proposed pesticides to be checked by importers before the application of such substances. Finally, a list of the pesticides actually used should be sent to importers. Such documentation does not generally travel with the product: it may be required by importers, for example, during farm audits. However, one importer explained that pesticide analysis reports have to be available with consignments of organic products.
- Testing results: some importers stated that testing results can be easily provided, but must be specifically requested as such information is only collected when testing is carried out and not with each consignment. Additionally, it may be difficult to provide testing results for fresh products before shipping them due to the highly perishable nature of such goods.

Responses are summarised in Table A1.3

Table A1.3 Information on certification

Type on information	Who provides importers with this information?	When is this information collected?	Can this information be provided to DPEs together with a CED?	In what form?
Copy of the certificate	Growers, when they deal directly with the importer Other intermediaries, such as marketing agents or shippers, who deal directly with the importer	On a yearly basis/on request of the importer	Yes, but it must be explicitly required as this information does not normally travel with the product, with the exception of organic certification	Electronic or paper copy
Assurance scheme identification number	Growers/packers	With each consignment	Yes, when available: it is not a mandatory requirement of assurance schemes	Physical check of boxes Electronic or paper copy of products listings
Lists of pesticides (approved by importer – proposed by growers – actually used) and spraying protocols	Approved lists are provided by importers. Proposed lists and spraying records are provided by growers.	At least yearly, when audits are conducted	Yes, but it must be explicitly required as this information does not normally travel with the product, with the exception of organic certification	Electronic or paper copy
Results of pre-export testing	Growers or laboratories	Depends on the frequency of testing	Yes, but they might only available when products have already reached the final point of sale	Electronic or paper copy

Type on information	Who provides importers with this information?	When is this information collected?	Can this information be provided to DPEs together with a CED?	In what form?
List of suppliers		Regularly updated	Yes, but it represents sensitive information	Electronic or paper copy

A1.4 Assurance schemes and official controls

This section describes the relationship between assurance schemes and regulatory requirements in the food chain. It presents evidence of the impact of assurance schemes on food safety and considers studies that assess assurance scheme outcomes. Finally, it compares the food safety hazards included in Annex 1 of the Regulation with the standards of existing assurance schemes in the FNAO supply chain.

A1.4.1 Reviews of assurance schemes against official requirements

According to IFS, food safety certification results in significant improvements with regulatory compliance for the food industry. The results of a German food industry survey published by IFS in 2010 shows that IFS certified food processing companies obtain benefits such as a 51 per cent reduction in regulatory non-compliances and a 27 per cent reduction in customer claims/complaints related to food safety and food quality (IFS, 2010).

Research on organic agriculture indicates that pesticide residue levels in organic food products are significantly lower than those found in 'conventional' agricultural products. A literature review of EU-focused studies that assess organic food safety conducted by the French Agency for Food Safety highlights that from 94 to100 per cent of organic foods do not contain detectable levels of pesticide residues (Lairon, 2009). Non-organic food products might show higher levels of contamination: a report by the EU Directorate General for Health and Consumers (DG SANCO, 2007) found that 41 per cent of a total of 62,500 samples collected in EU Member States were contaminated, with five per cent reporting levels above the legal MRLs[32]. Organic crops also have up to 86 per cent lower nitrate levels than other crops (Lairon, 2009) while mycotoxin levels can vary greatly depending on crop type and mycotoxin analysed, with some cases of higher contamination in organic crops, as reported by a study conducted in Korea (Ok, 2011).

Private controls have also been recognised by the European Commission. The European Commission Food and Veterinary Office (FVO) perform audits and inspections during missions to Member States and third countries which are aimed at assessing compliance with EU food safety legislation. A Commission review of Food and Veterinary Office missions observes that 'private controls of pesticides use and pesticide residues […] largely facilitated compliance of exported produce with EU MRLs' (European Commission, 2010).

A1.4.1.1 Reviews of the content of assurance schemes

Although private food standards have been recognised for helping to ensure regulatory compliance, some studies have highlighted the scarcity of literature on the impact of such standards on compliance with official food safety legislation (Albersmeier et al., 2009; Wright et al., 2011). Wright et al (2011) reviewed more than twenty studies on private assurance schemes that evaluate compliance with food safety legislation. Although this review was based on UK animal product supply chains, it demonstrates that some assurance schemes do have a degree of equivalence with UK and EU regulatory requirements. Wright et al (2011) explains that previous assurance scheme evaluations have focused mainly on content and process, or on the views of businesses and consumers. Few studies have assessed outcomes such as contamination and food borne disease resulting from adherence to assurance scheme standards.

[32] This study did not differentiate between organic and non-organic foods. Samples were taken randomly from a variety of different food types. Due to the relatively low volumes of organic food in the food chain it is assumed that the results demonstrate that non-organic foods are more likely to exceed pesticide MRLs.

An assessment of the requirements in 14 UK crop assurance schemes (Lewis et al., 2010) concludes that the objective of high water quality, including minimising the presence of contaminants, is not a priority in most of the analysed schemes, although it is a high priority for some schemes.

Wright et al (2011) identified eight studies that assess assurance scheme requirements against official requirements. Some of these studies compared the content of the standard with a requirement in the food safety legislation, while other studies focused on other legislative areas (for example, environmental legislation). These reviews identify some differences between assurance schemes and official requirements, but conclude that private schemes generally overlap with food safety legislation and, in some cases, go beyond legislative requirements. Table A1.3 summarises several sources which have compared assurance scheme standards with EU food safety legislation.

A1.4.1.2 Reviews of assurance scheme performance

A limited number of studies have assessed assurance scheme performance against food safety legislation. Two studies reviewed by Wright et al. (2011) provided an objective assessment of assurance schemes based on defined principles and a rating system, while the other studies consisted of subjective reviews based on surveys or self-reported assessments. Additional information on these two studies (Bailey et al., 2008 and FSA, 2004) is provided in Table A1.5.

Although the studies presented in Table A1.5 mostly focus on animal products, they are included in the analysis because they provide useful information about the extent to which assurance schemes may demonstrate equivalence with official requirements, food safety audits and inspections.

The research conducted as part of this study did not identify any additional evidence that FNAO produced under assurance schemes is safer, for example in terms of pesticide residues, than FNAO that was not produced under assurance schemes. Consultation with assurance scheme operators did not identify any information about the outcomes of the assurance scheme (such information was not held by the assurance scheme operators).

A1.4.2 Existing assurance schemes include requirements related to food safety hazards included in Annex 1 of Regulation 669/2009

Assurance schemes cover different aspects of food safety, including standards related to the food safety hazards listed in Annex I of the Regulation. Although the Regulation does not provide any formal recognition of assurance schemes, the European Commission has specified that Member States may take them into account 'when setting priorities within the context of the organisation of official controls'.[33]

Some schemes focus mainly on food production and/or processing, setting requirements that aim to ensure compliance in both the production and destination country. Other schemes include food production standards that are stricter than EU legislative requirements. This is the case for organic assurance schemes, for example. All organic assurance schemes operating in the EU, such as the Soil Association, must comply with the EU legislative standards for organic agriculture (Council Regulation (EC) No 834/2007). EU legislative standards for organic farming restrict the use of certain products and substances including many pesticides. More specifically, EU legislation sets out the specific products and substances that are authorised for use in organic production. The lists are stricter than those included in other EU legislation: for example, the majority of pesticides that are included in the list of authorised active substances for 'conventional' agriculture are not authorised in organic agriculture. Additional details on the substances and products that have restricted use under EU organic standards and the relationship between EU organic requirements and standards for organic agriculture in third countries are provided in Annex 2.

[33] http://ec.europa.eu/food/food/controls/increased_checks/docs/QandA_paper_en.pdf

A list of assurance schemes and a summary of their requirements is provided in Table A1.4. The assurance schemes identified include those which:

- Cover products imported into the UK;
- Relate specifically to FNAO; and
- Include standards relevant to the food safety hazards identified in Annex 1 of Regulation (EC) No 669/2009.

The list includes:

- Collective food safety assurance schemes: in particular, the schemes that are currently recognised or subject to the benchmarking process promoted by the Global Food Safety Initiative (GFSI) are examined. More details about the GFSI initiative and GFSI recognised schemes are provided in A1.2;[34]
- Company-specific food assurance schemes adopted by major UK retailers; and
- Schemes for organic and sustainable production: such schemes do not have a primary focus on food safety but they include requirements on substances such as pesticides and additives that are relevant for the food safety hazards identified in Annex I of the Regulation.

The table describes the schemes in terms of the products covered, the issues covered by the scheme and any requirements related to the food safety hazards included in Regulation (EC) No 669/2009. The table also notes which schemes include accreditation by a third party.

This study investigated in detail whether assurance schemes include specific standards related to particular products and concluded that assurance schemes do not include any 'product-based' standards. That is, they do not include specific standards for different product types. For example, assurance schemes do not include standards related to acceptable maximum pesticide residue levels. Rather, assurance schemes include standards intended to ensure that pesticides are used correctly, such as keeping records to ensure the appropriate concentration is applied.

[34] The following standards have not been included as they are not in the scope of this study: CanadaGAP, Global Aquaculture Alliance Seafood Processing Standard, and the Global Red Meat Standard (GRMS).

Table A1.4 Overview of selected assurance schemes and their requirements related to the food safety hazards included in Annex 1 of Regulation 669/2009

Assurance scheme	Countries in which the scheme operates	Products covered	Products and practices covered by the scheme	Detailed requirements related to food safety hazards	Standard reference	Accreditation
			Food safety			
GlobalG.A.P.	More than 100 certification bodies worldwide	Agricultural products	Standards cover: ■ Integrated farm assurance ■ Compound feed manufacturing ■ Livestock transport ■ Plant propagation materials ■ Risk assessment on social practice ■ Chain of custody	■ The producer must demonstrate that information concerning the MRLs of the country of export are available, including a list of all applicable MRLs; ■ The producer must demonstrate that the MRLs are taken into account; ■ A risk assessment of compliance with MRLs must be completed; ■ Evidence of residue test based on the risk assessment must be available; ■ If residue analysis has been done: – Evidence that correct sampling procedures have been followed and that an accredited laboratory has been used for testing must be provided; – A documented procedure must be in place in the event that a MRL is exceeded.	GlobalG.A.P. Integrated farm assurance. Divided into all-farm. crops, . fruit and vegetables.	Third party certification by accredited certification body
PrimusGFS	Worldwide	Agricultural products	■ Food safety management system ■ Good Agricultural Practices (GAP) ■ Good manufacturing practices ■ HACCP	■ There shall be a scheduled testing program based on risk assessment for raw materials, work in progress and packaging and finished goods that have an impact on product safety. This testing program could include microbiological, chemical and physical tests as identified in the risk assessment performed by the organisation for the operation(s). ■ Supplier control procedures shall ensure	PrimusGFS Standard v1.6; PrimusGFS - Checklist - v 1.6. Module 2 - GAP Option (Sections 2.01 to 2.15) Good Agricultural Practices Requirements.	Third party certification by accredited certification body

				that product pesticide residues do not exceed the published MRLs. ■ GAP option: – Availability of information concerning the MRLs of the country of destination; and – All necessary measures to comply with such MRLs are taken.		
Safe Quality Food (SQF)	Worldwide	All foods: primary producers and manufacturers	■ Fundamental food safety controls appropriate for low-risk products ■ HACCP and ISO based food safety program recognized by the Global Food Safety Initiative (GFSI) safety and quality management systems	The person making decisions on chemical application shall: ■ Demonstrate knowledge of and access to information regarding chemical applications and the maximum residue limits allowable in destination markets; ■ Use only chemicals approved for cultivation of specific grains or pulses, and approved for use in the intended market; ■ Demonstrate competence and knowledge of chemical application and crop withholding periods; ■ Maintain a current chemical register and keep records of all chemicals used.	SQF Code A HACCP-Based Supplier Assurance Code for the Food Industry. Level 2. 7th Edition. July 2012	Third party certification by accredited certification body
British Retail Consortium (BRC)	Worldwide	Food processing companies and pack houses	■ Senior Management ■ HACCP ■ Food Safety and Quality Management System ■ Site Standards ■ Product Control ■ Process Control ■ Personnel	Monitoring systems and procedures for the prevention of risks must be in place.	■ BRC Global standard for food safety. Issue 6.[35] ■ Global Standard for Food Safety – Guideline for Category 5 Fresh Produce	Third party certification by accredited certification body

[35] Draft version is available at http://www.veillealim.eu/doc/BRC_food_v6.pdf

International Featured Standards (IFS)	Worldwide	Food processing companies and pack houses	■ Senior Management Responsibility ■ Quality and Food Safety Management System ■ Resource Management ■ Planning and Production Process	Measures to prevent/minimise the risk of product contamination must be in place, and detailed requirements are established in areas such as: ■ Protective clothing for personnel, ■ Cleaning products, and ■ Food storage.	IFS Food Standard for auditing quality and food safety of food products. Version 6. January 2012	Certification by accredited certification body
FSSC 22000	Worldwide	All steps of the food and feed chain	■ Food safety management system ■ Prerequisites programmes for the control of food safety food safety hazards	Requirements and guidelines for the design, implementation, and documentation of prerequisite programmes for the control of food safety food safety hazards.	FSSC 22000, October 2011	Third party certification by accredited certification body.
Food safety – supermarket specific[36]						
Co-operatives Pesticides Policy	Worldwide	Primary producers	Based on GlobalG.A.P. with additional requirements for certain pesticides. A list of banned and prohibited pesticides is established.[37] A programme of residue testing is undertaken annually.	Co-op requested that specific details of their pesticide policy are excluded from this report.	N/A	Compliance auditing includes desk-based traceability audits, site audits, agronomic audits and pesticide analysis on a monthly basis by an independent laboratory.[38]
Field to Fork (Marks and Spencer)	Worldwide	Primary producers	Includes a code of practice for all suppliers about pesticide use and	Marks and Spencer were unwilling to share details of their scheme.	N/A	

[36] Many of the supermarkets were unwilling to share information of their assurance schemes with the project team. The supermarkets were concerned about confidentiality and considered that their assurance schemes included proprietary information. Supermarket retailers may be more willing to share information directly with the FSA rather than with consultants.

[37] The list is available at: http://www.co-operativefood.co.uk/ethics/Environmental-impact/our-approach-to-pesticides-and-chemicals/pesticides-banned-and-prohibited-by-the-Co-op/

[38] http://www.co-operative.coop/Corporate/sustainability-report-2011/downloads/sr2011-ecological-sustainability.pdf

			acceptable levels of pesticide residues.			
Good Natured (Tesco, ASDA, Morrisons)	Worldwide	Primary producers	Works with LEAF. Good Natured products are expected to be pesticide residue-free: natural predators like ladybirds are used to control pests.	Information not available as Tesco, ASDA and Morissions declined to take part in the study.	N/A	
Nurture (Tesco)	Worldwide	Primary producers	Standard for farmers that supply fresh produce. Ensures rational use of artificial pesticides and encourages the use of natural methods for pest eradication.	Information not available as Tesco declined to take part in the study.	N/A	Third party certification by GlobalG.A.P. accredited certification body[39]
Tesco Food Manufacturing Standard	Worldwide	Manufacturers, excluding food packers of fresh produce	Requirements for food manufacturing in: ■ Base factory areas where the product is fully enclosed or packaged; ■ Areas of the factory where food is open or exposed to contamination ■ Areas that are identified as handling or processing high-risk or high-care products	Information not available as Tesco declined to take part in the study	Tesco Food Manufacturing Standard, Version 5	Regular audits by Tesco at factories manufacturing/packing the product
Tesco Produce Packhouse Standard (TPPS)	Worldwide	Pack houses (fresh produce)	NA	Information not available as Tesco declined to take part in the study	NA	NA

[39] http://www.nsf-cmi.com/service.asp?service_id=certification&servicepage_id=145&subservice_id=11

Organic and sustainable farming						
IFOAM Organic Guarantee System (OGS)	Worldwide	All foods; covers primary producers and manufacturers	Organic farming	IFOAM norms for organic production and processing include a list of approved pesticides and additives. General requirements are established for avoiding contamination.	The IFOAM norms for organic production and processing, Version 2012	Third party certification by accredited certification body.
Soil Association		Worldwide	Organic farming	Standards based on EU Regulations for organic production, which establish a limited list of approved pesticides.	Soil Association organic standards farming and growing, Revision 16.7 August 2012	Certification by the Soil Association, which is accredited by UKAS.
Linking Environment And Farming (LEAF) Marque Standard	Worldwide	Primary producers.	Integrated Farm Management to reduce inputs, including reducing pesticide application.	Producers must ensure that all pesticide applications comply with the statutory conditions regarding the specific crop, maximum permitted total dose, maximum number of treatments and latest time of application as indicated on the product label or by authorised extension of use (e.g. by a 'specific off-label approval').	LEAF Marque Global Standard Version 10.0, issued 01/10/12	Third party certification by approved certification body.

Table A1.5 Reviews of private certification schemes against food safety legislation

Study	Scheme assessed	Area covered by the assessment	Review objectives	Conclusions
Content reviews				
FSA (2006) *Assessment of certain UK Farm Assurance schemes against the requirements of the EU Food Hygiene Legislation.*	■ Assured British Pigs (ABP); ■ Assured British Meat (ABM); ■ Assured Chicken Production (ACP); ■ Assured Combinable Crops Scheme (ACCS); ■ Assured Produce (AP); ■ Genesis Quality Assurance (GQA);	Food hygiene legislation	Assess the coverage of food hygiene legislation requirements by a number of farm assurance schemes	'Variations do exist between schemes in their approach to food hygiene regulations but the overall overlap with the legislation has generally been comprehensive, and goes beyond the legislative requirements in many instances.'

Study	Scheme assessed	Area covered by the assessment	Review objectives	Conclusions
	■ Quality Meat Scotland (QMS); ■ Farm Assured Welsh Livestock (FAWL); ■ Northern Ireland Beef/Lamb Farm Quality Assured Scheme (NIBLFQAS); ■ Scottish Quality Cereals (SQC)			
Wright et al. (2011) *Assessment and comparison of third party assurance schemes in the food sector: Towards a common framework*	29 schemes	Food hygiene legislation	Evaluate schemes operating in the food sector with focus on non-primary production and assess the potential to take into account such schemes in setting inspection frequencies and the design of alternative interventions by local authorities and other enforcement.	The 29 standards assessed adequately cover food safety and hygiene regulations. Most schemes complete business assessment at a fixed interval, generally once a year. Some schemes include "performance based risk assessment" when setting assessment frequency. Whilst this is not equivalent to a risk based approach to inspection, recognition could be earned for an annual assessment.
Assessment results				
Bailey A, Aikman P, Deaville E, Garforth C and Jukes D. (2008) *A technical assessment and comparison of the inspections carried out by Animal Health Dairy Hygiene and Audits undertaken by Assured Dairy Farms.*	UK Assured Dairy Farms	Official controls in milk production holdings	Assess and compare the approaches of both official Animal Health Dairy Hygiene (AHDH) inspections and Assured Dairy Farms (ADF) audits with regard to monitoring and verifying compliance with the food hygiene legislation at milk production holdings.	Evidence from the analysis provided a good case for AHDH to take into account the outcome of ADF audits when assessing the appropriate inspection interval for AHDH low risk farms. However, the analysis did not support a similar approach for AHDH high risk farms, where ADF assessments were not a good indicator of future compliance.
Food Standards Agency. (2004) *Report of the survey of Salmonella contamination of UK produced shell eggs on*	Lion Egg	*Salmonella* contamination in eggs	Establish the prevalence of *Salmonella* contamination in shell eggs	There were no statistically significant differences in *Salmonella* prevalence between Lion Code and non-Lion Code eggs

Study	Scheme assessed	Area covered by the assessment	Review objectives	Conclusions
retail sale.				

A1.4.3 The relationship between assurance schemes and the food safety hazards included in Annex 1 of Regulation 669/2009

Table A1.6 and Table A1.7 provide an overview of the food safety hazards covered by the different process- and product-based assurance schemes analysed. Most of the schemes include a general requirement that products must comply with the legislation in place in the destination country, and therefore implicitly also cover hazard control requirements for the food safety hazards listed in Annex I of Regulation (EC) No 669/2009. Some schemes explicitly refer to the country of destination requirements for such food safety hazards: for example, GlobalG.A.P. sets specific standards related to MRLs in destination countries. Some schemes have stricter standards, and this is particularly the case for organic and sustainability schemes that restrict the use of certain products such as pesticides and additives and typically go beyond legal requirements.

Information obtained during the stakeholder consultation confirms that assurance schemes reviewed for this study do not include standards which relate specifically to EU requirements for food safety hazards included in Regulation (EC) No 669/2009. That is, assurance schemes generally relate to varying definitions of 'good agricultural practice' but do not have systems in place to determine whether products produced to the assurance scheme standards comply with EU regulations. No information was identified about the outcome of assurance schemes with respect to the food safety hazards in Annex I of the Regulation. Interviews with assurance scheme operators confirmed that such data is not collected.

Additional information about supermarket retailer's assurance schemes was sought during the stakeholder consultation. Each of the three supermarkets retailers interviewed stated that their proprietary assurance schemes were additional to global gap requirements. Importers supplying products to the other supermarkets retailers (that is, the supermarket retailers not interviewed for this study) confirmed that other supermarket retailer assurance schemes were similar in this respect. The main difference between supermarket retailer assurance schemes with respect to pesticide residues appears to be in terms of which pesticides are permitted for use during production. Interviews with supermarkets and importers supplying supermarkets indicate that requirements and standards related to agricultural practice are not significantly different between supermarket retailer assurance schemes, or between those schemes and GlobalG.A.P.

Table A1.6 Gap analysis – process based standards

	Pesticide residues	Additives	Contaminants	Comments
GlobalG.A.P.	✓	✓	✓	Specific requirements as related to MRLs in the country of export. Other food safety hazards: general requirement to comply with legislation in the destination country.
PrimusGFS	✓	✓	✓	Pesticides: documented policies for crop protection must be in place. General requirements for testing, hazard analysis and risk management for other food safety hazards.
Safe Quality Food (SQF)	✓	✓	✓	Pesticides: requirements concerning the person making decisions on chemical applications. Other food safety hazards: general requirement to comply with legislation in the destination country.
IFS	✓	✓	✓	General requirement to comply with legislation in the destination country. Specific measures must be in place for preventing

	Pesticide residues	Additives	Contaminants	Comments
				contamination.
BRC[40]	✓	✓	✓	Pest control documentation is required. Risk management and prevention/minimisation of food contamination requirements.
FSSC 22000	✓	✓	✓	Requirements for food safety management and control of food safety hazards.
Leaf	✓	×	×	A set of measures must be in place to ensure appropriate pesticide use. Other food safety hazards: out of scope.

Table A1.7 Gap analysis – product based standards

	Pesticide residues	Additives	Contaminants	Comments
IFOAM	✓	✓	✓	Stricter requirements: restricted lists of authorised pesticides and additives are established. General requirements are established to avoid contamination.
Soil Association	✓	✓	✓	Based on EU organic Regulations:[41] limited lists of authorised pesticides. Other food safety hazards: general requirement to comply with relevant legislation.
Co-operatives Pesticides Policy	✓	*Information unavailable*	*Information unavailable*	Stricter requirements: list of banned and prohibited pesticides published on The Co-operatives' website (The Co-operative, n.d.). *Specific requirements for other food safety hazards are not publicly available.*
Field to Fork (Marks and Spencer)	✓	*Information unavailable*	*Information unavailable*	*Specific requirements on other food safety hazards are not publicly available.*
Good Natured (Tesco, ASDA, Morrisons)	✓	*Information unavailable*	*Information unavailable*	Stricter requirements: encourage use of natural pesticides. *Specific requirements on other food safety hazards are not publicly available.*
Nurture (Tesco)	✓	*Information unavailable*	*Information unavailable*	Stricter requirements: encourage use of natural pesticides. *Specific requirements on other food safety hazards are not publicly available.*

[40] BRC (2011) Global Standard for Food Safety, Issue 6 (Draft), http://www.veillealim.eu/doc/BRC_food_v6.pdf (accessed on 08/05/2013).

[41] Regulations (EC) No 834/2007 and No 889/2008.

Annex 2 Method and approach

A2.1 Stakeholder consultation

The field work phase commenced on 4 February 2013. Stakeholders were identified during the desk research phase, internet searches, and by contacting relevant trade associations. The Fresh Produce Consortium publicised the study to its members via its regular newsletter and also provided the study team with contact details for some of its members.

It was not possible to meet targets for some stakeholder groups, such as assurance scheme operators and supermarket retailers, as organisations declined to take part in the study, or did not respond to multiple requests and phone calls.

Approximately 232 organisations were contacted for interview, from which 65 interviews were completed. The coverage of interviews across stakeholder groups is presented in Table A2.1.

- Assurance scheme operators

  A total of 5 organisations operating (or closely involved with) assurance schemes in the FNAO supply chain were interviewed by the study team.

  Importers

  A total of 16 interviews were conducted with non-SME importers, and 18 interviews were conducted with SME importers.

  It was not possible to reach the target of 25 SME importer interviews despite contacting 160 organisations. Many SME importers stated that they did not have the time to participate, others were just unwilling to do so.

- Supermarket retailers

  Interview requests were sent to 8 supermarket retailers but only 3 agreed to interview. The other 5 did not respond to interview requests.

- Trade associations

  Out of 10 requests to trade associations for interview a total of 3 interviews were completed.

  Three of the trade associations which declined participate stated that they did not have an opinion on controls conducted under Regulation (EC) No 669/2009 and referred us to their members. The other 4 trade associations did not respond to the interview request.

- DPE

  A total of 16 DPEs were contacted to request an interview. Interviews were conducted with a total of 12 DPEs..

- Port companies

  A total of 3 port companies were contacted to request an interview. One port company did agree to interview.

- Stakeholders involved in research / trials in other jurisdictions

  Interviews were conducted with 2 officials from the Netherlands Food and Consumer Product Safety Authority, 2 from New Zealand Ministry of Primary Industries, and 1 from the US Food and Drug Administration.

- Other

  An interview was completed with the European Commission's Food and Veterinary Office. DG SANCO of the European Commission declined a formal response but did provide a written response.

Table A2.1 Targets for some stakeholder groups were not met despite persistent efforts

Stakeholder group	Interviews Target	Interviews Requested	Interviews Declined	No response	Interviews Completed
Assurance scheme operators	7	7	0	2	5
Importer (non-SME)	7	19	0	3	16
Importer (SME)	25	160	25	117	18
Supermarket retailer	8	8	0	5	3
Trade association	4	10	3	4	3
DPE	16	16	4	0	12
Port company	2	3	2	0	1
Other	5	4	2	0	2
Stakeholders involved in research / trials in other jurisdictions	6	5	0	0	5
Total	**80**	**232**	**36**	**131**	**65**

Annex 3 EU rules for organic production and GlobalG.A.P. and IFS certification process

A3.1 EU rules for organic production7

Certification schemes for products placed on the EU market as organic must comply with EU organic production rules. EU rules on organic production are laid down in Regulation (EC) No 834/2007, and detailed implementing rules are established by Regulation (EC) No 889/2008 and Regulation (EC) No 1235/2008. The rules apply to products including feed, unprocessed agricultural products and processed food products.

Lists of authorised substances and products are established for:

- Plant protection products;
- Non-organic feed materials of plant origin, feed material of animal and mineral origin and certain substances used in animal nutrition;
- Feed additives and processing aids; and
- Products for cleaning and disinfecting buildings and installations used for plant production.

Preventative pest control measures must be adopted where possible to replace pesticides. Pesticide use must be particularly restricted when there is a risk of residues on agricultural products.

Member State Competent Authorities are responsible for controlling compliance with the EU rules for organic production. Producers are subject to compliance verification at least once a year (Article 27(3), Regulation (EC) No 834/2007). Competent Authorities may delegate control tasks to control bodies so long as they meet impartiality criteria, and are accredited and approved by the Competent Authority. Competent authorities are responsible for the supervision and audit of control bodies. Any operator who produces, prepares, stores, or imports products must be subject to compliance controls.

Two general recognition regimes currently exist for products that are imported from third countries and compliant with EU organic production rules (Regulation (EC) No 834/2007):

- 'Compliant products': imported products can be marketed as organic in the EU if they comply with EU rules on organic production and are subject to the same controls. The European Commission is responsible for supervising the control process, and establishes a list of recognised control authorities and control bodies responsible for verifying compliance in third countries.[42] Importers of these 'compliant products' must hold a Defra organic import authorisation.
- Products 'providing equivalent guarantees': the European Commission can also recognise and list third countries where production rules are equivalent to the EU legislation. The countries judged to have 'equivalence' with EU standards include Argentina, Australia, India, Israel and New Zealand, among others.

Different parts of the organic certificate are completed by the local authority or port health authority depending on the recognition regime a product is produced under.

[42] European Commission (2008) Commission Regulation (EC) No 1235/2008 of 8 December 2008 laying down detailed rules for implementation of Council Regulation (EC) No 843/2007 as regards the arrangements for imports of organic products from third countries.
http://www.caeq.ca/sites/documents/pdf/reglement%20EU%201235-2008%20EN.pdf

A3.2 Certification process for GlobalG.A.P. and IFS

A3.2.1 Certification process: GlobalG.A.P.

Producers applying for GlobalG.A.P. certification must first choose a GlobalG.A.P. approved certification body, which is responsible for undertaking inspections and verifying compliance with food safety standards. The certification body carries out yearly inspections on each producer. Additionally, unannounced inspections must be carried out on at least 10 per cent of operators. At least once a year, the producer must perform either an internal compliance assessment or internal inspections in addition to those carried out by the certification body.

GlobalG.A.P. compliant producers are issued a paper certificate by the certification body which is valid for one year. The assessment report and all information concerning the inspections are also uploaded to the online GlobalG.A.P. Database[43] (2013) through which interested operators such as retailers and suppliers can monitor certification progress for each producer.

Each certified producer (or producer group) is identified by a GlobalG.A.P. Number (GGN), which is associated with all information concerning the producer in the GlobalG.A.P. database. The GGN can be displayed on the final product at the point of sale by holders of a valid GlobalG.A.P. certificate. Retailers might require that a registration number is displayed on the final product for traceability purposes. The registration number can only by used where authorisation has been granted by the certification body.

Certification bodies may apply sanctions in case of producer non-conformance. Such sanctions may consist of warnings, or certification suspension or revocation.

A3.2.2 Certification process: IFS

The IFS certification process is similar to GlobalG.A.P., although it targets a different stage of the food supply chain. GlobalG.A.P.'s standards for fruits and vegetables concern primary producers, while IFS standards address pack houses and food processing companies.

Operators willing to be certified to ICF standards must choose an IFS-approved and accredited certification body. The audit frequency is annual, and the audit certificate is valid for 12 months after the date of issue. Audit results, including the audit report and the IFS certificate, are uploaded to a database available from the IFS website. This information is available to IFS registered retailers, IFS certification bodies and IFS certified food companies.

Certified companies and supporting companies, such as retailers and manufacturers, can use the IFS logo for marketing purposes, but the IFS logo does not appear on the final product sold to the consumer.

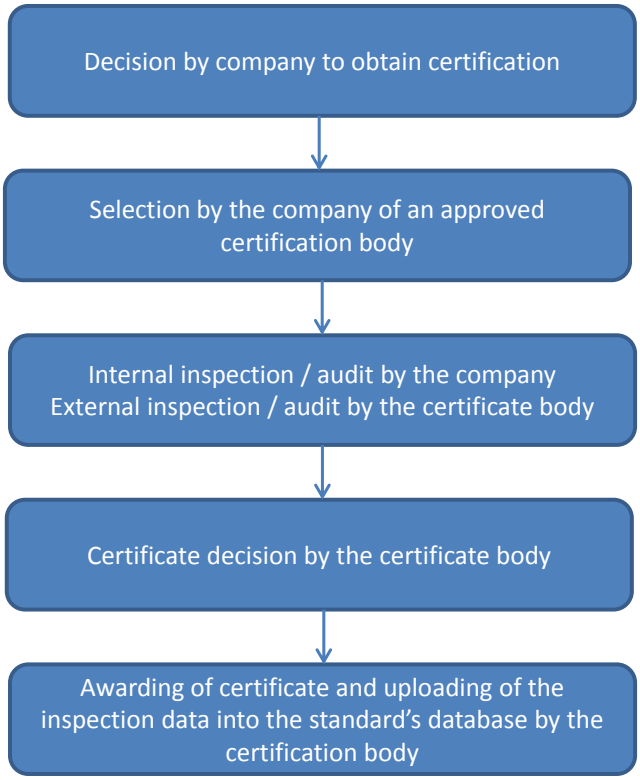
The diagram in Figure A3.1 summarises the certification process for GlobalG.A.P. and IFS assurance schemes. The activities carried out by third party certification bodies are defined as 'audits' by IFS standards, and as 'inspections' by GlobalG.A.P. standards, and in both cases they refer to control activities that assess production processes. Such terms must not be confused with 'audits' and 'inspections' as defined by EU legislation on official controls. According to EU legislation, 'audits' are official controls on production processes, while 'inspections' include physical controls of product attributes, such as visual examination, sampling and testing. More specifically, the EU legislation on official controls distinguishes between the following (Regulation (EC) No 882/2004):

- 'Audit' refers to a systematic and independent examination to determine whether activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives; and

[43] https://database.GlobalG.A.P..org/GlobalG.A.P./indexJSF.faces

- 'Inspection' means the examination of any aspect of feed, food, animal health and animal welfare in order to verify compliance with the legal requirements of feed and food law and animal health and animal welfare rules.

Figure A3.1 Certification process for GlobalG.A.P. and IFS



Source: ICF GHK

Annex 4 Examples from other countries

A4.1 The Netherlands

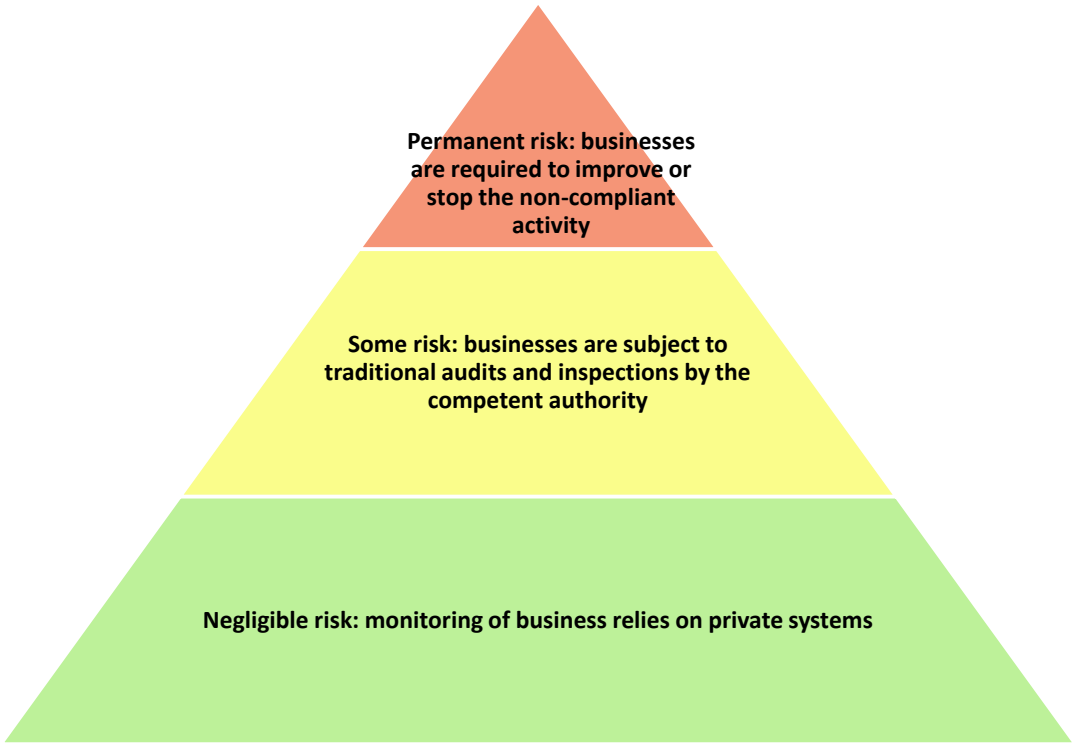
The Netherlands Food and Consumer Product Safety Authority (NVWA) introduced a risk based policy for food safety enforcement in 2007. The move to risk-based enforcement involved:

- Requiring that food business operators (FBOs) are responsible for food safety.
- Taking a risk-based approach to surveillance.
- Taking an incentive / penalty approach to inspections.
- Relying more on private systems.

The policy objective is to reduce the burden on the competent authority (CA) and low risk food business operators (FBOs), and focus enforcement activity on high risk FBOs.

'Risk' is defined in terms of non-compliance. The three categories include those businesses posing a 'permanent' risk, some risk and negligible risk. The consequence of each classification varies, from close monitoring and harsh enforcement of high risk FBOs to minimal monitoring of low risk operators (Figure A4.1).

Figure A4.1 Under the Dutch system the level of control and inspection activity importers are subject to depends on the level of risk they pose



Source: ICF GHK, adapted from Beuger 2011.

The approach implemented by the NVWA recognises systems implemented by an FBO which are mandated by legislation, such as a hazard analysis and critical control point (HACCP) systems, and private meta-systems that include multiple FBOs and are not required by legislation, such as assurance schemes operating across supply chains. Assurance schemes are only recognised to prioritise controls for food produced in the Netherlands, and not for imported food products.

The assurance schemes recognised by the NVWA are typically private (no government role), voluntary, subject to independent auditing and include self-correcting mechanisms (such as excluding organisations which breach agreed standards). The NVMA undertook a series of

activities to improve its confidence in relying on assurance schemes to inform the prioritisation of risk-based controls:

- Agreeing the qualification requirements for auditors;
- Registering certified FBOs;
- Requiring that audit information from private schemes is available to the NVWA;
- Requiring that the results of private scheme audits are shared with the NVWA; and
- Providing the scope for sanctions for certified FBOs that do not meet the established requirements.

The private schemes recognised by the NVWA for controls of Dutch establishments are only those that are recognised by the Global Food Safety Initiative (GFSI) and Dutch HACCP certificate. They include:[44]

- The BRC Food Standard,
- FSSC 22000,
- IFS Food, and
- The SQF Code.

Only GFSI recognised schemes are included as GFSI ensures that the assurance schemes cover the appropriate food safety regulations, either directly or indirectly, by including the relevant compliance obligation.

Representatives from the NVWA interviewed for this study indicated that before assurance schemes can play a role in prioritising controls of imported FNAO, assurance scheme operators will have to strengthen several elements, including: increased use of unannounced audits, more in-depth requirements and more effective self-correcting mechanisms.

The NVWA considers FBOs in the bottom (green) area of the pyramid in Figure A4.1 to have effective management control systems and that traditional audits and inspections of these businesses have little added value. The NVWA began a pilot in 2011 with a group of FBOs classed as posing a negligible risk to determine if a less burdensome inspection system would be effective. Businesses participating in the pilot were required to sign a memorandum of understanding setting out what the NVWA expects of operators, such as the notification of incidents, and what the NVWA can offer as an incentive, for example one annual visit for all control and inspection activity. The pilot scheme will be evaluated in late-2013.

A4.1.2 RiskPlaza

As part of efforts to reduce the burden of food safety requirements, the NVWA has supported the development of 'RiskPlaza', a database of information about the food safety of ingredients.[45] The information obtained through RiskPlaza is also used to inform the frequency of official controls and inspections of food produced in Dutch establishments that participate in RiskPlaza as a RiskPlaza Audit+ supplier. This system does not cover official controls of imported goods.

The database relates to raw products supplied to the participating sectors (bakery, confection, meat products, snacks, vegetables and fruit, coffee and tea, and poultry processing). The database includes information about the food safety hazards which may be associated with ingredients and the measures which can be taken to control the food safety hazards. This includes information about European and Dutch legislation and regulations related to food safety. The Agricultural Product Board, in conjunction with sector experts, the NVWA and the certifying bodies involved, work together to ensure that the database contains the most up-to-date information. Participants are informed of changes to regulatory

[44] The NVWA still recognises the Dutch HACCP scheme, which was previously recognised by GFSI.

[45] http://www.riskplaza.nl/

requirements or risks associated with a food product. RiskPlaza currently includes a relatively limited number of FBOs (about 50), but the system is growing.

The RiskPlaza system includes an audit of participating suppliers to check how food safety is assured. A RiskPlaza audit is conducted in addition to any audits as part of existing food safety certification requirements (one of the GFSI recognized schemes). The purpose of the RiskPlaza audit is to provide assurance that food safety hazards in raw materials are managed effectively. During the audit a company must demonstrate that systems / processes are in place to control food safety hazards within scope of RiskPlaza. If such a system is in place then the company is included in the list of audited and approved companies. Customers obtaining products from RiskPlaza approved companies do not have to conduct their own food safety checks on these raw materials.

The NVWA officials interviewed for this study believe that critical success factors for systems like RiskPlaza include:

- A balance between 'trust' and 'check'. Self-checking systems should be recognised by regulators but audited and monitored by competent authorities (or a suitably qualified third party) on a regular basis.
- The quality of third party controls and checks.
- Self-correcting measures implemented by FBOs taking part in the system.
- Measures built into the system to avoid 'free-riders'.
- Open communication between the competent authority and FBOs is required to ensure that problems related to a specific establishment, and the system as a whole, are solved as they arise.
- Open communication with the public about the purpose of the system and how it functions.
- Incentives to encourage FBOs to participate are important and can include, for example, a reduction in the number of audits and a reduction in the burden associated with those audits through increased cooperation between industry and competent authorities.

A4.1.3 Prioritisation of controls for imported products

The NVWA does not currently recognise assurance schemes when setting the frequency of controls on imported food. Product sampling under Regulation (EC) No 669/2009 is based on a randomised selection at frequencies specified in the legislation. Information on certification of imported products is only provided to officials when specifically requested during inspections, information on assurance schemes is not collected on a regular basis.

The NVWA officials interviewed during this project indicated that there are several important issues that reduce the potential usefulness of assurance schemes for prioritising FNAO import controls:

- Assurance scheme audits of participating FBOs are predictable, which may result in businesses complying with standards for a short period before the audit. There is a risk that, once the audit has been conducted, compliance will decrease.
- The quality of auditors is variable, which reduces the robustness and reliability of certification.
- The duration and depth of audits may be insufficient to detect all food safety issues.
- The commercial relationship between FBOs and certification bodies may imply a conflict of interest and prevent auditors from taking necessary measures.
- The NVMA has previously found that some certified FBOs (in the Netherlands) maintained very poor hygiene standards (which should have been identified and addressed through the assurance scheme).

A4.2 New Zealand

A4.2.1 Background

Food Safety was formally the responsibility of the New Zealand Food Safety Authority (NZFSA). In July 2010 NZFSA merged with the Ministry of Agriculture (MAF) and BiosecurityNZ into a single agency. In July 2011 MAF merged with the Ministry of Fisheries and on 30 April 2012 the new combined agency became the Ministry for Primary Industries (MPI).

A4.2.2 System to ensure imported food safety

The system to ensure the safety of imported foods to New Zealand was under review for several years and in 2013, a bill was placed before parliament to change the approach to food safety, including the system and processes related to food imports.[46] This section describes the previous system and the proposed changes included in the draft bill.

A4.2.2.1 The current system

The current system consists of a prescribed list of high-risk foods that require inspection at the border (including certification checks, sampling and testing) (MAF 2012). Prescribed foods are only allowed to pass through the border once they have received clearance from the Central Clearing House (CCH) of the Ministry for Primary Industries. The current list of prescribed foods is included in Table A4.1

Table A4.1 Current list of prescribed foods in New Zealand

Food type	Food product	Hazard
Dairy	Raw milk products	Pathogenic organisms
	Soft cheese	*Listeria monocytogenes*
Fish	Fish – species susceptible to production of histamine ■ Tuna (all species) ■ Mackerel (Scomber scombrus, Scomber australasicus, Scomber japonicus) ■ Jack and Horse Mackerel (Trachurus spp.) ■ Amberjack (yellowtail kingfish) (Seriola lalandei) ■ Mahi mahi (Coryphaena hippurus) ■ Bluefish (Pomatomas saltatrix) ■ Sardine including pilchard (Sardinia pilchardus, Sardinops spp., Sardinella spp.) ■ Herring (Clupea harengus, Clupea pallasii) ■ Chilled and frozen fish ■ Whole, headed and gutted, fillets ■ Smoked, dried, in brine, in oil, in sauce or salted ■ Retorted product in cans, jars or pouches ■ Fish pastes and pates	Histamine
	Fish – manufactured fish products (surimi and marinara mix)	*Listeria monocytogenes*
	Fish – smoked (vacuum packed)	*Listeria monocytogenes and Clostridium botulinum Type E*
	Puffer Fish	Tetrodotoxin

[46] Food Bill 160-2. The bill was introduced in May 2010 and is still before Parliament. http://www.foodsafety.govt.nz/policy-law/reform-nz-food-regulations/food-bill/

Food type	Food product	Hazard
Meat	Bovine meat and bovine meat products ■ Bone-in and deboned (boneless) skeletal meat ■ Blood and blood by-products ■ Any food commodities prepared from/containing specified risk material (SRM) ■ Mechanically recovered meat ■ Tallow (non-protein-free) ■ Tallow derivatives made from non-protein-free tallow ■ Dicalcium phosphate-containing protein or fat.	Bovine Spongiform Encephalopathy (BSE) agent
	Fermented meat products, meat paste and pâté	*Listeria monocytogenes, Salmonella sp.,Campylobacter sp., coagulase producing Staphylococcus and Clostridium Perfringens*
Nuts	Peanut butter	*Salmonella sp*. and Aflatoxins
	Peanuts and pistachio nuts	Aflatoxins, mould and insects
Processed foods	Desiccated coconut	*Salmonella sp*
	Hijiki seaweed	Inorganic arsenic
	Tahini or crushed sesame seeds or any products containing these	*Salmonella sp*.
Seafood	Bivalve mollusc shellfish	Metal contaminants, biotoxins, pathogenic bacteria and pathogenic viruses
	Crustaceans – lobsters, crabs, bugs and their products	*Listeria monocytogenes and Salmonella sp.*
	Crustaceans – shrimps and prawns	*Salmonella sp., Listeria monocytogenes* and other pathogens
	Spices – pepper, paprika and cinnamon	*Salmonella sp.*

MPI (2013)

Prescribed foods are monitored for specific food safety hazards. They may only be imported into New Zealand if the importer has satisfied a Food Act Officer that the food complies with applicable food standards. There are different options and clearance procedures, known as Imported Food Requirements (IFRs), available for importers to demonstrate compliance.

The clearance options include recognised assurances / certification or sampling and testing of the prescribed food. The following three options are available:

1. Pre-clearance arrangement (acceptance of recognised assurances / certification)

   Where a government to government pre-clearance arrangement exists, or specific overseas manufacturers are recognised, approved assurances may be accepted with imports of a prescribed food under a specific arrangement.

   In addition to a document check, a food product imported under a specific pre-clearance arrangement is required to be inspected (physical, or sampling and testing) at intervals to verify assurance. Specific IFRs identify the type of inspection activity applicable to each country arrangement and inspection rates.

2. Clearance without assurances

In the absence of approved assurances, prescribed foods may be sampled and tested according to regulatory requirements. Foods are released once test results confirm they are safe and meet New Zealand regulatory requirements.

3. Multiple release permit

   A multiple release permit (MRP) may be allocated to a frequent food importer.[47] These importers could also be regarded as 'Trusted Traders'. MRPs allow importers to import prescribed foods into New Zealand without obtaining approval (a permit) for every consignment. The importer must be listed with MPI and ensure compliance with general regulatory requirements for food importers. A MRP may be issued to importers who frequently import prescribed foods and who have demonstrated that they manage risks appropriately[48] and have good performance.[49] MRP's are issued with conditions and are subject to an annual verification (audit) by MPI Verification Services. The annual verification represents an additional cost to the importer.

   Sampling and testing is still required under a MRP but is the responsibility of the importer to arrange. The MRP specifies the sampling and testing frequency, as well as the documentation requirements and inspection frequency for any prescribed foods requiring approved assurances in the relevant IFR. The importer is responsible for ensuring that these requirements continue to be met.

A4.2.3 The proposed system

The New Zealand Food Safety Authority (NZFSA) began a domestic food review in 2003 covering all aspects of the safety and suitability of food produced, processed, manufactured, traded, transported and imported to New Zealand. The review resulted in an overhaul of the Food Act 1981 and the preparation of a Food Bill, introducing a risk-based approach to the regulatory regime (MPI 2013).

The draft bill currently before parliament proposes a new regime to regulate food and food related product imports to ensure they are safe, suitable for consumption / use and compliant with relevant standards in New Zealand (NZFSA 2007).

The system moves away from relying on controls at the New Zealand border towards a system that assesses and recognises controls in place overseas to ensure they meet or are equivalent to New Zealand's domestic food standards. The revised system is intended to place more responsibility for managing food safety off-shore to the countries that export food to New Zealand, and recognise importers who have mechanisms in place to ensure food imports are safe. The revised system is likely to involve four components:

1. Import Management Decision Making Framework, which incorporates the required science, risk management decisions, and the resulting applicable standards. Foods will be categorised into high or low regulatory interest using four steps:
   - Step 1: Preliminary risk management activities;
   - Step 2: Identification and selection of risk management options;
   - Step 3: Implementation of control measures; and
   - Step 4: Monitoring and review.

[47] A frequent food importer is defined as an organisation importing 5 or more consignments of a specific prescribed food within 6 months.

[48] Appropriate risk management means operators comply with the Food (Importer General Requirements) Standard 2008; the Importer (Listing) Standard 2008; Food Standards Code and the requirements of any applicable IFRs. New legislation will see them required to operate under a Food Control Plan (HACCP based for food not of animal origin) or Risk Management Programme (HACCP based for animal products – includes honey, dairy, meat, fish).

[49] 'Good performance' means no history of fraud or attempted product misclassification; compliance with our Imported Food Requirements and conditions of their MRP.

2. Import system, which details the requirements that must be met to facilitate food imports and ensure compliance with all relevant standards.
3. Monitoring and review mechanisms, which ensure the regime is not static but responsive to change.
4. Communication programme, which ensures effective communication of standards and systems to stakeholders.

A4.2.3.1 Import management decision making framework

Under the new system, food will be categorised based on the known risks posed by particular food / hazard combinations, and other factors (for example, economic and social) are also considered. Three categories have been defined:

- Low risk: The low risk category will include the majority of foods and will be the default category assigned to foods. There will be minimal regulatory interest in the food as food safety food safety hazards are typically low.
- High risk: The high risk category will include food commodity / hazard combinations with inherently high food safety risks. Risk assessments / risk profiles will be commodity specific, and will assist in developing risk management options.
- Scanning: A temporary category called 'Scanning' will be used for foods that have been elevated above the low interest category because of issues such as contamination or a systems failure. MPI may work with the processor(s) / country / region to resolve any issues, and once resolved, a decision can be made on which category is most appropriate for continued control. The scanning list may also be used to collect information about food imports and used to inform the categorisation process.

Standards and import requirements have been prepared for each of the categories under the new system (Table A4.2).

Table A4.2 Regulatory interest categories and associated standards for each food risk category

Category	Standard
Low	Generic imported food standards will apply to **all** foods regardless of the level of regulatory interest. All food importers will be required to meet statutory obligations with regard to safe and suitable food that meets applicable New Zealand food standards. Examples of generic standards include ensuring products are produced under good operating practice; effective control of shipping, storage, and distribution; appropriate documentation and labelling; and a recall process.
High	High interest standards apply to foods in the high regulatory interest category. They are 'add-ons' to generic standards and apply to exports from all countries.
All	Emergency food standards apply to any foods as required. Emergency food standards will be put in place immediately to respond to urgent food safety issues and expire after six months. If the issue is not resolved in six months then the food will need to be re-categorised, with additional standards that require additional assurances.

A4.2.3.2 Import system

Importer Registration

All food importers will be required to register with MPI. Work is currently underway to enable the linking of Customs Clearance Lodgements with this Registration.

Food control plan vs. national programme

Importers will be required to operate under the risk management option applicable to their domestic operation (food control plan or national programme or risk management plan for animal products, or wine standards management plan for wine) and verified by their domestic verifier. Their import activities must be included and verified by that same verifier.

Pre-clearance programme

Wherever practicable, high regulatory interest foods will require pre-clearance. The objective of pre-clearance is to encourage importers to source from countries and associated systems that meet or are equivalent to relevant New Zealand standards.

The pre-clearance programme will develop and review arrangements with overseas countries and / or overseas commercial entities. This may include specific foods or industries, or an entire country's / region's food safety regime. Pre-clearance may also be required for any food from a particular country / region.

MPI will require that the competent authority of the exporting country provides assurances through certification as to the compliance or equivalence with New Zealand food safety requirements. MPI will permit pre-clearance under three scenarios:

1. Overseas country / commercial entity meets New Zealand standards.
2. Overseas country / commercial entity systems are equivalent to New Zealand requirements (outcome-based).
3. Overseas country / commercial entity have a pre-existing arrangement with a third country that New Zealand has previously deemed as equivalent.

Approvals and verification

Approvals and verification procedures will be used to ensure compliance with each of the above import system components.

Verification activities may also include sampling, testing and documentation checks at the border. These may apply to imports under a pre-clearance arrangement and therefore relate to compliance of overseas systems (not the importer). Documentation checks will also assist in verifying importer compliance.

A4.2.3.3 Scanning list

A scanning list will be used by MPI to increase the monitoring of foods relative to the monitoring required by the food's category of regulatory interest. This will, for example, enable MPI to increase monitoring of foods categorised as low risk.

Scanning includes monitoring imports at the border, intelligence gathering and monitoring specific products or programmes, for example, the routine programme of food residue surveillance. The scanning list may be based on multiple data sources, including data on food complaints, food-borne illness, food recalls, rejections at the border, microbiological contamination of food identified by private laboratories, information held in international databases, overseas public health alerts and reports on imported foods.

Removal of foods from the scanning list will occur once sufficient additional information has been gathered to inform a risk management decision that addresses the food safety issue. This may involve re-categorising the food into a different regulatory interest group as appropriate.

A4.3 The United States

The United States Food and Drug Administration (US FDA) is preparing to implement the Food Safety Modernization Act (FSMA). The FSMA was signed into law in January 2011 and is intended to shift the focus of federal regulators from responding to contamination to preventing it. It is a significant reform of food safety law in the US and requires a number of new rules (also called regulations) and guidance.

As part of this rule-making process the FDA is issuing a number of rules including a produce safety rule which will apply to domestic and foreign farms. The proposed produce safety rule, currently undergoing public consultation, will establish science-based standards for growing, harvesting, packing and holding produce on domestic and foreign farms. The proposed rule will apply to farms that grow, harvest, pack or hold most raw / unprocessed fruits and vegetables[50] and focus on commonly identified routes of microbiological produce contamination:

- Agricultural water;
- Farm worker hygiene;
- Manure and other additions to the soil;
- Animals in growing areas; and
- Equipment, tools and buildings.

There are also specific proposed standards for bean sprouts.

Several additional rules are proposed under FSMA to improve the safety of imported food. These include:

- Foreign supplier verification

  The proposed rule[51] would require that US importers perform risk-based verification of foreign suppliers (exporters or producers) to establish that the food imported is produced in accordance with domestic requirements.

  An importer's foreign supplier verification programme will have to establish that imported food is produced in compliance with domestic processes and procedures, including reasonably appropriate risk-based preventative controls that provide the same level of public health protection as domestic requirements. The foreign supplier verification programme may also have to include other requirements, as deemed necessary, to ensure that food imported into the US is as safe as food produced and sold within the United States.

  The extent of the activities importers will be expected to follow will be informed by the risks associated with the specific type of imported food product. Potential verification activities which importers will be expected to implement may include monitoring records for shipments, lot-by-lot (per consignment) compliance certification, annual on-site inspection of producer facilities, checking the hazard analysis and risk-based preventive control plan of the foreign supplier, and periodically testing and sampling shipments.

  Similar requirements were introduced in 2001 for fruit and vegetable juice importers. The requirements are discussed in section A4.3.1 below.

- A voluntary qualified importer program

  The proposed rule[52] would establish a program to provide for the expedited review and importation of food imported by importers which have agreed to participate, and would also establish a process for issuing a facility certification to accompany food imported by importers participating in the program.

  The eligibility of importers to join the voluntary qualified importer program will be informed by the risk of the food to be imported. This risk will be based on a variety of factors, such as:

[50] It would not apply to produce which is not commonly consumed in its raw state (such as potatoes), produce which will be processed and include a 'kill step' to remove microbiological contaminants, or produce for personal or on-farm consumption.

[51] See Section 301 – 'Foreign supplier verification' at this link: http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm247548.htm#TITLE_III

[52] See Section 302 – 'Voluntary qualified importer program' at this link: http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm247548.htm#SEC302

- Known safety risks of the imported food.
- The compliance history of foreign suppliers used by the importer, as appropriate.
- The capability of the regulatory system in the exporting country to ensure compliance with United States food safety standards for a designated food.
- Importer compliance with the domestic requirements.
- Recordkeeping, testing, inspections and audits of facilities, traceability of articles of food, temperature controls, and sourcing practices of the importer.
- The potential risk for intentional adulteration of the food.
- Any other factor deemed appropriate.

Importers participating in the program will be evaluated at least once every three years to determine whether they meet the eligibility requirements. Importers that do meet the requirements and are part of the program will be subject to less burdensome controls at US ports of entry.

- The authority to require certification for imported food (mandatory certification)

The proposed rule[53] would establish a requirement for certain 'high risk' foods to be accompanied by certification, or other such assurances as deemed appropriate, to demonstrate that the food product complies with domestic requirements included in FSMA, for example in terms of produce safety standards.

A food will be determined to be 'high risk' based on known safety risks associated with the food, and known food safety risks associated with the country, territory, or region of origin. The level of assumed risk will also be informed by scientific, risk-based evidence that the food safety programmes, systems and standards in the country, territory, or region of origin are inadequate to ensure that the food product is as safe as a similar food product manufactured, processed, packed or held in the US with respect to FSMA requirements.

Under the proposed rule, certification will be provided by an agency or representative of the government of the source country for the imported food, or other organisations accredited to provide such certification.

The proposed rules described above are currently under consultation and may be subject to revisions. More detailed guidance about implementation will be published in coming years.

A4.3.1 Importer verification within existing juice HACCP regulations

The importer verification provision within existing juice HACCP regulations provides an example of an importer verification scheme. In response to the risks posed by fresh fruit and vegetable juice with respect to pathogenic bacteria, the US FDA established a regulation requiring that juice for human consumption is subject to HACCP systems to control human health risks.[54] The requirements extend to imported juice and are implemented via an importer verification program. The programme requires that importers:

- Obtain juice from a country with an active memorandum of understanding (MOU) or similar agreement with the FDA. The MOU should document the equivalence or compliance of the inspection system of the foreign country with the US system.
- Have and implement written procedures for ensuring that the juice imported was processed in accordance with domestic requirements. This includes that the product

[53] See Section 303 – 'Authority to require import certifications for food' at this link: http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm247548.htm#SEC303

[54] Hazard Analysis and Critical Control Point (HAACP); Procedures for the Safe and Sanitary Processing and Importing of Juice. A Rule by the Food and Drug Administration on 01/19/2001 https://www.federalregister.gov/articles/2001/01/19/01-1291/hazard-analysis-and-critical-control-point-haacp-procedures-for-the-safe-and-sanitary-processing-and

specifications are designed to ensure that juice is not adulterated or processed under unsanitary conditions.

Importers must take the following steps to ensure that imported products were processed under controls that meet domestic standards:

- Obtaining the HACCP plan and prerequisite programme of the standard operating procedure records relating to the specific lot of food being imported from the foreign processor.
- Obtaining either a continuing or lot-specific certificate from an appropriate foreign government inspection authority, or competent third party, certifying that the imported food has been processed in accordance with domestic requirements.
- Regularly inspecting the foreign processor's facilities to ensure that the imported food is being processed in accordance with domestic requirements.
- Maintaining a file on copy of the foreign processor's hazard analysis and HACCP, and a written guarantee from the foreign processor that the imported food is processed in accordance with domestic requirements.
- Periodically testing the imported food, and maintaining on file a copy of a written guarantee from the foreign processor that the imported food is processed in accordance with domestic requirements.
- Other such verification measures as appropriate that provide an equivalent level of assurance of compliance with domestic requirements.

Annex 5 The FNAO supply chain

A5.1 The FNAO supply chain is characterised by a wide variety of participants

The FNAO supply chain is not homogenous. The evidence gathered as part of this study suggests that there are at least two *de facto* supply chains: those supplying supermarket retailers and those supplying other final customers such as the wholesale market. The product specifications required by supermarket retailers, for example with respect to food safety, have driven the establishment of private controls along the supply chain to producers. In some cases, supermarket product specification requirements have contributed to the backward integration of importers with producers in source countries. Backward integration provides importers with control over how a product is produced, reducing the risk that it will not comply with supermarket product specifications. Different elements of the FNAO supply chain are discussed in detail in the sections below.

A5.1.1 Producers

The FNAO supply chain is characterised by three producer groups: large, small to medium, and emerging / traditional.

Large producers

Typical farms are 50 to 100 hectares (ha) or larger. Farming methods are characterised by the use of best available technologies with tight controls on costs and scientific planning of inputs, such as pesticide and fertiliser application. Farmers procure their own inputs and maintain accurate records of how and when they are used. Farms are typically owned by medium to large exporters or by individuals on contract to large exporters.

Small to medium producers

Often these producers work directly with an exporter or intermediary to produce product that meets strict specifications. Producers are typically grouped into economically viable units to share expertise and ensure a harvest is sufficiently large to justify the investment of time and resources from exporters.

Farm inputs are often provided by the exporter, for example seeds, pesticides and fertiliser, alongside farm extension services to provide technical assistance about how to use the inputs most effectively. This often includes supervising spraying schedules and ensuring accurate record keeping.

Emerging / traditional producers

These producers are characterised by small plots of land where multiple products may be produced and some products used as cash-crops. Products are typically produced for the domestic market (where product specification standards may be less onerous) but may be directed towards the export market too. Crops are sold to an agent / broker and may pass through several middle-men before reaching an exporter. Technical expertise is typically limited and record keeping is likely to be non-existent.

A5.1.2 Exporters

Exporters are generally responsible for purchasing products from the producer, grading into the appropriate categories, packing and shipping to a buyer in Europe.

Large exporters

Large firms are typically highly integrated with final customers (that is, supermarket retailers) and with producers. Large exporters act in partnership with producers, holding contracts with large producers or contracting with small to medium producers via producer groups.

Large exporters typically supply supermarket retailers and work with producers to ensure that supermarket product specifications are adhered to. Product traceability systems extend to particular production fields or to groups of fields when product is sourced from producer

groups. Traceability systems include records of where the product is from, and also how the product was produced, for example, which plant protection products were used, when, and in what quantity. All produce is accredited to at least the GlobalG.A.P. standard, and often to supermarket retailer schemes as well.

Products are usually tested for pesticides on (at least) an annual basis. Additional testing is also undertaken depending on the risk that a product may not meet EU import requirements or supermarket retailer product specifications. Additional information about product testing is included in section A5.4 below.

Small to medium exporters

Small to medium exporters are typically domestic organisations with varying degrees of integration with producers, but there is generally no integration with supermarket retailers. Product is generally obtained from contracted producers but the provision of technical assistance or farming inputs (for example, pesticides or seeds) to producers is the exception rather than the norm. Products may also be sourced from markets, which in turn source products from a range of producers. This increases the likelihood that consignments will include products from a variety of sources. Traceability records are sometimes maintained but not always. Testing for residues and other contaminants is not commonly undertaken.

Occasional exporters

Part-time firms operate during the peak-season only. Products are secured from agents / brokers and shipped directly to buyers in Europe. Traceability is low, and testing is rare.

These products are likely to enter the UK via wholesalers and are unlikely to be sold by supermarket retailers.

A5.1.3 Importers

Importers in the UK can be split into two distinct groups. The first are large organisations which are often vertically integrated into FNAO production, or have close long-term relationships with large producers or groups of small / medium size producers. Large importers generally supply supermarket retailers and may also supply the food service and wholesale market too. The second type of importer is typically a smaller organisation which sources products directly from large producers, groups of small / medium producers, or (via agents / brokers) from emerging producers. The two groups are described in more detail below.

Large importers

Large importers typically have a close working relationship with producers, sometimes a formal partnership or sometimes an informal partnership established over years of cooperation. Product may be sourced directly from large producers, or may be sourced from cooperative groups of smaller producers, depending on the type of production system common in the source country. Large importers are often the UK arm of international organisations which are also responsible for the product exports from source countries (as described under ‘exporters – large firms’ above.

Large importers’ principal customers are supermarket retailers, but occasionally product may also be supplied to wholesale and food service customers. Supplying supermarket retailers requires that large importers maintain strict traceability and ensure that products meet supermarket specification with respect to residue levels and pesticides used during production (including specifications outside the scope of this study such as product appearance). GlobalG.A.P. is considered to be a minimum standard for all products, and often products are required to meet with the standards of supermarkets’ own schemes.

Large importers often work closely with producers to develop agreed production protocols in order to ensure that products meet supermarket specifications. This includes, for example, agreeing in advance a list of permissible plant protection products which can be used during the growing season. Importers often provide technical support to producers to ensure that products will meet supermarket specifications. For example, some large importers provide

plant protection products directly to producers to ensure that only approved products are used, and large importers may also provide trained agronomists to work with small / medium producers to ensure that best agricultural practice is followed.

Large importers typically undertake some sort of product testing to ensure that product will meet supermarket specifications. Testing is used to ensure producers follow agreed protocols and is usually risk-based (described in section A5.4). Annual testing, following the first harvest, is also undertaken by large importers.

Small / medium importers

The most significant difference between the second category of importers (small / medium importers) and the first (large importers) is the degree of integration with other supply chain participants. Small and medium sized importers often have long-term relationships with producers but are not involved in the production process. They are not involved in providing technical advice to producers about production methods and may have a limited financial stake in the products until they reach the European Union. In addition, small and medium sized importers mainly supply the wholesale and foodservice markets and do not (usually) supply supermarket retailers.

Small and medium sized importers source products from a variety of sources including exporters, directly from large producers, or directly from groups of small / medium producers. Testing for pesticides and other contaminants is usually conducted less frequently compared to the products supplied to large importers. Testing may be conducted periodically by producers and the results shared with small / medium importers to demonstrate that products will meet EU import requirements with respect to permitted residue levels.

The majority of products imported by small / medium importers are not destined for supermarket retailers and as a result the product specifications are less strict compared to products imported by large importers for the supermarkets. Traceability along supply chains supplying products to the food service and wholesale market is less consistently developed compared to large importers supplying supermarket retailers.

Depending on the characteristics of the supply chain and the farming system in the source country, products sourced from exporters may have originated from numerous producers and passed through several intermediaries before they are finally exported. This can increase the risk that products will not meet EU import requirements.

A5.2 The final FBO influences private controls along the FNAO supply chain

The final FBO for imported FNAO has a significant influence on the measures undertaken by importers. There are effectively two separate supply chains for FNAO entering the UK: one supply chain is destined for supermarket retailers and the other is destined for the wholesale market. Foodservice businesses utilise products from both supply chains and no particular patterns of use in this sector were identified during this study.

Supermarket retailers have exacting product specifications for FNAO. The particular requirements of different supermarket schemes are only shared with organisations supplying products for sale by a retailer. Interviews with importers supplying supermarket retailers indicate that the requirements are relatively similar across the main supermarkets in the UK. They include restrictions on the type of plant protection products which can be used during production and require full product traceability to producers (or small groups of producers, if appropriate). Fresh produce importers supplying supermarket retailers are typically larger organisations with some degree of backward integration to production in source countries. These importers usually undertake product testing to monitor their supply chain and ensure that products will pass testing undertaken by supermarkets and random testing undertaken by the Pesticide Safety Directorate.

The volume of FNAO (mainly fresh produce) sold through wholesale markets has decreased significantly as volumes sold by supermarket retailers have increased. FNAO traded through wholesale markets does not have to meet any particular requirement over and above minimum legal requirements. This does not mean that products supplied to wholesale

markets are 'unsafe', but they may have been produced with fewer and less comprehensive checks and controls along the supply chain. Occasionally, for example during peak harvest season, FNAO produced to supermarket retailer's specification will be diverted to wholesale markets.

Food service operators source products from wholesale markets and directly from FNAO importers. Research undertaken for this study found that the requirements of food service operators are less stringent with respect to product specification. Large food service operators sometimes have product specification requirements similar to supermarket retailers, such as only accepting products produced to GlobalG.A.P. standards. Smaller food service operators do not have such requirements and will accept product as long as it meets EU and UK import requirements.

A5.3 Traceability often extended back to producers or groups of producers

Traceability is a process that enables trading businesses to track products as they move from the field through to the final customer (for example, supermarket retailers). Traceability typically functions on the 'one-up one-down' principle, that is, each business in the supply chain should be able to identify their supplier and customer for a product. The principal incentive for traceability across the FNAO supply chain stems from the requirements of the UK Food Safety Act 1990 for FBOs to exercise due diligence to ensure that food is safe for consumption.

FBOs in the fresh produce supply chain typically trace by carton / box of packed produce. Traceability typically extends from supermarket retailers / food service operators to specific producers, or if producers are small scale, small groups of producers.

Traceability is relatively straightforward. Producers include a code on boxes of fresh produce signifying the production lot and batch from which the box contents originate. The number on the box enables the producer to identify when produce was harvested, the pesticides applied to the product and the field it was grown in.

Importers supplying supermarkets require that, where necessary, it is possible to determine which pesticides have been applied, when they were applied, and in what quantities. This relies on producers maintaining accurate records and linking these records to the batch / lot numbers associated with consignments of exported fresh produce. The importer will conduct periodic 'trace back' exercises to determine whether the traceability system is functioning effectively and all relevant paperwork (such as spray records) is accurate and up to date.

All of the large importers interviewed as part of this study maintain an electronic record of lot / batch numbers for imported fresh produce. Some smaller importers record this information using a paper-based system, and some smaller importers do not maintain any traceability information at all.

A5.4 FNAO testing for contaminants is commonplace in the supply chain

There is a significant amount of product testing undertaken in the supply chain for FNAO imported from non-European third countries. The scale and frequency of testing varies significantly between FBOs, countries of origin and products, and is influenced by different issues on an *ad hoc* basis (for example, weather conditions in source countries). The testing protocols differ between the three product groups (i.e. fresh produce, spices and nuts), but some similarities do exist.

Product testing is not an effective method of hazard management on its own. FNAO will usually have passed along the supply chain and have been consumed by the time most analytical results are available. Product testing is one part of a broader system of hazard control and is generally used to monitor the effectiveness of a hazard management system. In summary, product testing is a monitoring point rather than a control point in a hazard management programme.

A5.4.1 Fresh produce testing is most frequently conducted for pesticide residues

Fresh produce is subject to testing for heavy metals, pesticides and microbiological contaminants. Testing is most commonly undertaken by larger importers, especially those supplying supermarket retailers, and is usually conducted to monitor the effectiveness of production practices which have been established and agreed in advance with producers. That is, testing is undertaken to check that controls further down the supply chain are producing the intended outcome.

Testing for heavy metals is conducted infrequently, typically only at the start of a business relationship between producers and importers. Heavy metal contamination of fresh produce is usually associated with heavy metal contamination of soil. If an area is contaminated with heavy metals, for example due to emissions from an industrial facility, it is likely that it will remain contaminated for many years. Heavy metals do not breakdown naturally and persist for years. A test conducted at the start of a trading relationship is usually enough to satisfy an exporter / importer that heavy metal contamination will not be a problem.

Pesticides should only be applied following specific protocols, such as the amount applied per square meter, with a set period of time left between application and harvest. These rules are specified on the instructions accompanying pesticides. This ensures that pesticides have sufficient time to degrade and MRLs are not exceeded. Certain weather conditions, such as low temperatures, or poor agricultural practices, such as over application of pesticides, can result in products breaching pesticide MRLs.

Testing for pesticide residues is conducted across the supply chain, including by producers, exporters / importers and the final customer. Pesticide testing is usually conducted to monitor whether agreed agricultural practices are being implemented correctly and to monitor farm-level controls. For example, fresh produce destined for supermarket retailers must be prepared with a pre-approved list of pesticides only. Testing results are used by importers and supermarket retailers to ensure that only agreed products are being applied to products, and are being applied correctly.

The frequency and extent of pesticide testing conducted by importers is usually informed by a risk assessment which takes multiple factors into account:

- Relationships with producers

  Products from producers with a long-term relationship with large exporters are typically subject to less frequent testing. Exporters are familiar with the production practices and are confident that products will meet relevant requirements.

  Products from producers with less well-established track records are subject to more frequent testing. Depending on the product, and the relevant production factors,[55] testing may be undertaken once per harvest or may be taken on an on-going basis. Test results are used to detect residues above permitted levels and the presence of any forbidden plant protection products (to confirm that producers are following agreed production practices).

- Environmental influences on residues

  Weather conditions strongly influence the type of pests to which plants are susceptible and the extent of the threat. Pesticides are more likely to be applied when the weather is likely to promote the growth and distribution of plant pests. Drought, stress or unusual temperatures during the growing season may affect the rate of pesticide decomposition, potentially leading to accumulation in the soil and residue levels being higher than normal.

- Siting of crops

  Certain pesticides should only be applied to particular crops. Agricultural production sometimes requires that different products are located adjacent to one another, which

[55] For example, products with a single harvest, such as grapes, may only be tested once prior to harvest. Alternatively, products with several harvests, such as okra, may be subject to more frequent testing.

can result in cross-contamination of pesticides between crops. If importers know that certain crops, such as herbs, are produced adjacent to other crops, such as oranges, increased testing may be applied.

- Local intelligence

  Large importers often have employees working locally in source countries. These employees are aware of local issues and keep abreast of rumours related to production processes. Information provided by local employees to large importers is used to inform product testing frequencies.

- Supplier audit results

  Suppliers are often audited and categorised according to risk, and pesticide residue analysis is targeted towards higher risk suppliers. New suppliers, without a track record, will automatically be allocated to a higher risk category.

- Commercial effects on the risk status of residues

  Commercial pressure may increase the risk of elevated residue levels. During the start of the season, when there is a gap in supply since the previous crop, or when prices are high, there is a risk that products will be harvested before pesticide harvest-intervals have expired.

Producers may also undertake testing and share the results with customers (exporters / importers) to demonstrate that products are likely to meet EU and UK import requirements. The frequency of such testing varies and may depend on the type of crop and the extent of historical test results available to share with customers.[56] The results of this testing may also be used by exporters / importers to inform their own pesticide residue testing programme.

A5.4.2 Spices are most frequently tested for microbiological food safety hazards and to a lesser extent, for contaminants

Spices are imported into the UK either processed (typically ground) or whole. The majority of testing undertaken on spices relate to mycotoxins (aflatoxins and Ochratoxin A) and to a lesser extent, bacteria associated with food borne disease (such as *E. coli* and *Salmonella*), adulterants (such as Sudan dyes and bulking agents) and pesticide residues. The type of testing undertaken depends on whether the products are whole or processed.

Processed (or ground) products are typically tested in source countries for microbiological contaminants, including mycotoxins and bacteria (for example, *E. coli* and coliforms). Testing is often conducted for each consignment due to the risk of food borne disease associated with ground spices. Testing for mycotoxins is also typically undertaken per consignment.

Pesticide and heavy metal testing is undertaken less frequently and depends on the relationship between the processor and the producer (farmer). Testing is less frequent when processors have some degree of control over the agricultural practices of producers. For example, when there is a direct relationship between processors and producers, processors may specify the type of pesticide applied to spice crops. Spice production is typically very fragmented, however, reducing the influence of processors over producers. Processors usually undertake more frequent testing when their relationship with processors is less direct.

Some spice importers choose to import whole products rather than processed products. This reduces the risks associated with adulterants (such as bulking agents) and provides full control over bacteriological contamination. Routine testing may still be undertaken to check the efficacy of procedures to remove bacteriological contamination but this is likely to be relatively infrequent.

Whole spices are still at risk of contamination with pesticide residues and mycotoxins. Each consignment of whole spices is typically tested for mycotoxins prior to export and the results

[56] More frequent testing may be undertaken by producers with less historical information available to share with customers.

are usually shared with importers in the UK. Products may be tested again upon import to verify the results provided by the exporter. Pesticide testing occurs less frequently and is usually a general screen using gas chromatography-mass spectrometry (GC-MS). The frequency of pesticide testing conducted by importers in the UK depends on the length of the relationship with the exporter in the source country, and also whether tests have been conducted in the source country (and the results shared with the UK importer).

A5.4.3 Nuts are subject to mandatory tests for mycotoxins but may occasionally be tested for other food safety hazards

Nuts are subject to testing for pesticide residues, heavy metals and mycotoxins. The majority of testing conducted on ground and tree nuts relates to mycotoxins (aflatoxins and Ochratoxin A).

Mycotoxin testing is conducted per consignment by the producer before products are shipped to the UK. Importers may also conduct their own testing once consignments are received in the UK, and wait for test results before the product is passed on to customers ('positive release'). Regulation (EC) No 401/2006 specifies the testing protocol which must be observed when testing nuts for mycotoxins. Importers interviewed for this study stated that they follow the testing protocol established in Regulation (EC) No 401/2006 to increase the likelihood that consignments will pass EU official controls.

Pesticide and heavy metal testing is usually conducted on an annual basis and may be completed per supplier and per product, or for a particular product from a selected country on a random basis. The purpose of pesticide and heavy metal testing is to monitor whether producers controls are effective and to demonstrate to customers that supply chain risks are being managed correctly. Pesticide testing is typically conducted via multi-reside testing, covering hundreds of chemicals (one importer reported that over 400 chemicals are tested under standard procedures).

A5.5 Payment arrangements act as an incentive to ensure products meet EU and UK import requirements

Two payment arrangements were identified during the research for this project, upfront payment and 'cash on delivery'. Both are important as they influence the incentive importers have to ensure FNAO products pass through official controls at UK DPEs. Interviews with importers suggest that FNAO products imported under upfront payment arrangements are more likely to pass controls.

Under 'upfront payment' arrangements importers purchase the product in the source country from producers, producer groups, or open markets. Under such arrangements the shipping costs are borne by the importer, as is the responsibility for passing official controls. If a product does not meet EU requirements with respect to pesticide residues, for example, the importer must bear the cost of either disposing of the product or arranging for its shipment to another jurisdiction. There is a very clear incentive for importers sourcing FNAO product under these arrangements to ensure that products are likely to meet UK and EU import requirements.

Under 'cash on delivery' arrangements importers pay an advance to exporters / producers in source countries and pay the balance once the products have cleared border controls. The scale of the advance provided depends on the relationship between an importer and the exporter / producer in the source country. More established relationships mean that the importer pays a more substantial advance. If products do not meet with UK or EU import requirements then it is the responsibility of the exporter / producer to arrange for their disposal or shipment to other (non-EU) jurisdictions. Under the 'cash on delivery' payment arrangement there is a clear incentive for the exporter / producer to ensure that products are likely to meet EU and UK import requirements.

A5.6 Information on controls performed by importers reported during the stakeholder consultation

A5.6.1 Assurance schemes are just one of a range of controls in place in the FNAO supply chain

Most importers interviewed for this study (18 of 34) referred to audits carried out by certification bodies as one of the steps taken by their organisation in order to ensure compliance with EU regulatory requirements related to pesticides, additives and other undesirable substances. However, most of the interviewed importers (28 of 34) and all retailers carry out their own controls on top of those performed by certification bodies. Importers explained that certification such as GlobalG.A.P. helps ensure regulatory compliance, but it is considered to be a minimum requirement and additional controls are usually deemed necessary.

Control activities described by interviewees include the following:

- Pre-export testing for different types of substances carried out in source countries;
- Testing of imported products carried out in the UK; and
- Grower audits and site visits in third countries aimed at verifying that the correct practices are in place in order to avoid contamination.

At least one of the listed control activities additional to those performed by certification bodies are carried out by 28 of 30 interviewed importers. Twelve importers conduct all three types of control. Two small importers do not carry out any additional testing or audit as they rely on other mechanisms to reduce the risks of non-compliance, including only dealing directly with major and well-established growers or paying a lower advance to riskier suppliers, such as newer suppliers, or suppliers with a previous history of failing controls.

More specifically, 24 interviewees carry out farms audits, 26 require pre-export testing and 17 test imported products. Amongst interviewees, the number of large importers who carry out own controls is slightly more than the number of small companies. Supplier audits and risk-based testing is also carried out by interviewed retailers.

Table A5.1 Private testing by company size

	Total interviewees	Farm audits	Pre-export testing	Testing imports
Importer (Large)	16	13	14	10
Importer (SME)	18	11	12	7
Total	**34**	**24**	**26**	**17**

Source: ICF GHK

Table A5.2 Private testing by sector of compliance, including the number of large importers who carry out own controls

	Total interviewees	Farm audits	Pre-export testing	Testing imports
Fresh produce	29	22	23	14
Nuts	3	0	1	1
Spices	2	2	2	2
Total	**34**	**24**	**26**	**17**

Source: ICF GHK

A5.6.2 The risk factors considered when carrying out own controls

Importer own-controls are generally risk-based. Two importers explained that they carry out random testing, but this is accompanied by risk-based testing. The main factors informing the control frequency for importers and retailers include:

- The type of substance considered: according to several interviewees, the highest risk of non-compliance is related to the use of pesticides, while risks are lower for other substances such as microbiological contaminants or additives. This is due to the fact that several MRLs are set often set at the lowest detection level.
- The type of product imported: products that are harvested multiple times during the year (such as blueberries) present a higher risk of pesticide residues compared to products that are harvested only once a year (for example, strawberries).
- The country of origin: regulatory requirements and controls over the use of pesticides in many countries outside the EU are often less strict than EU/UK requirements. Grapes from India are the most often cited example (4 interviewees mentioned that). This is due to a high risk of contamination from other farms: India grows a lot of grapes but only exports 4-5 per cent of what it grows, and Indian growers use pesticides that are not allowed in the EU. Fragmented land ownership and low education levels are additional factors increasing the likeliness of mistakes made during pesticide application.
- The type of grower and the commercial relationship between grower and importer: several importers own a proportion or all the farms where imported food is produced. In this case, they observe that owned farms are associated with a lower risk due to the ease of traceability. Similarly, when commercial relationships between growers and importers are well established, controls are likely to be less frequent in comparison to third-party suppliers.
- Weather patterns and seasonal changes impact on the use and disintegration of plant protection products (PPPs) in the soil or in the air. For example, during a wet growing season more PPPs might be used to protect crops from rots. One importer explained that studies on pesticide disintegration are carried out for the purpose of informing PPP use.

A5.6.3 The frequency and types of testing

Control frequencies vary across sectors and depend on the different risk management systems established by importers.

All spices and nuts importers interviewed for this study carry out both pre-export testing and testing in the destination country. The majority of interviewed importers of fresh produce arrange for pre-export testing (23 out of 27 interviewees) and about a half (14 out of 27) carry out testing in the destination country.

During the stakeholder consultation the following points about pre-export texting were made by importers:

- Fresh produce importers: testing frequencies vary widely. Private testing focuses mainly on pesticides and is generally required before a commercial relationship commences with a new grower. In some cases testing may be required from each grower at the beginning at the harvesting season. Growers that are considered more risky are tested with higher frequencies: one importer tests high risk growers on a monthly basis, while low risk growers are tested on a quarterly basis.
- Spices importers focus on testing for pesticides, aflatoxins and Sudan dyes: one importer specified that this type of testing is carried out on each supplier at least annually, and another importer explained that testing is lot-specific. Testing for heavy metals is less frequent.
- A nut importer consulted carries out pre-export testing for aflatoxins for all consignments, and good testing results are a pre-requisite for EU imports. Testing for other types of food safety hazards (mycotoxins, pesticides and heavy metals) is less frequent and is carried out on a yearly basis on at least one product from each grower.

During the stakeholder consultation the following points about testing in destination countries were made by importers:

- Fresh produce importers rely mainly on pre-export testing; however, in some cases testing may only be carried out in the UK due to the highly perishable nature of the product. Importers focus on different food safety hazards: for example, one importer reported that two thirds of tests carried out in the UK concern pesticide residues, while another company conducts testing for microbiological contamination with a higher frequency (per consignment / product type) while pesticides residue testing is less frequent (once or twice a year for each product type and depending on the supplier). Testing frequency is generally based on risk assessment and varies depending on the control systems in place. For example, one importer explained that if a product/supplier is considered to be high risk, about 20 samples per year will be taken in the UK. If the risk is considered to be low, only 2-3 samples will be taken. Another importer supplying a major retailer carries out testing on each consignment as required by the client.
- Spice importers conduct minimal testing in the UK: products are subject to specific treatments aimed at avoiding contamination, and testing is mainly conducted to test the effectiveness of such treatments.
- The nut importer carries out random testing on imported products for a wide range of contaminants.

A5.6.4 Control of compliance and traceability along the food chain

Traceability systems used by different importers vary widely. Supply chains that are BRC certified are characterised by 'full traceability': grower codes are reported on each box of imported goods, and importers are able to trace back to the field where a specific product was produced. BRC certification requires periodic trace-back exercises aimed at verifying the integrity of the traceability system. All of the 15 large importers of fresh produce interviewed for this study have traceability systems that allow them to identify primary producers: 10 out of 15 small importers interviewed have such systems in place. All retailers declared that full traceability is required for the import of fresh produce. Those who do not implement full traceability include small importers of spices, nuts and fresh produce.

Importers were also asked if traceability is easier via certain transportation methods or routes. Most interviewees replied that there are no significant differences between transportation methods, as the most relevant factors influencing traceability include grower characteristics (e.g. large and well established growers compared to fragmented and less organised production). Importers commented that traceability requirements are generally stricter when dealing with big supermarkets, which carry out their own traceability controls.

Importers were also asked how their organisation ensures the integrity of assured product consignments. The results indicate that:

- Most importers (19 of 34) only source directly from a limited number of growers and/or only import certified products, thus avoiding the risk of mixed consignments of both assured and non-assured products;
- When products produced under different assurance schemes travel together, importers rely on certified traceability systems in order to ensure integrity: products under a specific assurance scheme are packed separately and identified by different packaging, such as differently coloured boxes; and
- Those who deal with both certified and non-certified producers have put in place distinct supply chains where assured and non-assured products travel separately.

Annex 6 Implications for this study arising from horsemeat contamination in the EU beef supply chain

During the course of this study the Food Safety Authority of Ireland published the findings of a targeted study examining the authenticity, or labelling accuracy, of a number of burger products, which reveals that some products contained horse and pig DNA. The FSA launched its own investigation into how a number of beef products on sale in the UK and the Republic of Ireland came to contain some traces of horse and pig DNA. The FSA found that here are two distinct types of case:

- Products that contain a significant percentage of horsemeat, suggesting adulteration by negligence or fraud.
- Traces of horse and pig DNA at very low levels potentially due to contamination in facilities which also process horsemeat.

This information has renewed focus on the integrity of food supply chains and the reliability of operator-led controls. The FSA requested the study team to consider the implications for this study of the discovery of unlabelled horsemeat in beef products.

This section considers whether there are features of the FNAO supply chain which could lead to some of the issues experienced in the EU beef supply chain in relation to horsemeat contamination.

The EU beef supply chain is briefly described, followed by descriptions of supply chains for five FNAO products (from four non-EU third countries) in terms of the number and type of operators involved, the number and type of processing stages, and the factors contributing to the food safety food safety hazards commonly associated with the supply chain[57]. The sourcing strategies undertaken to address the factors contributing to food safety hazards are also described. Finally, the FNAO supply chains are compared in terms of the number of intermediaries involved, the number of processing steps, and the potential susceptibility to adulteration.

A6.1 Horsemeat contamination in the EU beef supply chain

During early 2013 testing conducted by the FSA of food products labelled as containing beef has found:

- Products that contain a significant percentage of horsemeat, suggesting adulteration by negligence or fraud.
- Traces of equine and porcine DNA at very low levels potentially due to contamination in facilities which also process horsemeat.

This information renewed focus on the integrity of food supply chains and the reliability of operator-led controls.

While it is too early to draw definitive conclusions on the causes of beef product mislabelling and horsemeat contamination, early analysis highlighted the length and complexity of the supply chain for processed meat products as a contributing factor (HM Government, 2013). Ingredients and products are sourced from and shipped between multiple countries before they reach consumers. The number of actors involved and the various processed products which may be generated from raw ingredients pose challenges for maintaining traceability from ‘farm to fork’. Opportunities arise for adulteration, mislabelling and fraud. The structure of the supply chain also means that the actions of a limited number of actors can rapidly affect a large number of retailers and products. The supply chain for ‘whole cuts’ of meat is less prone to these problems as supply chains are typically shorter and it is more difficult to substitute one whole cut for another.

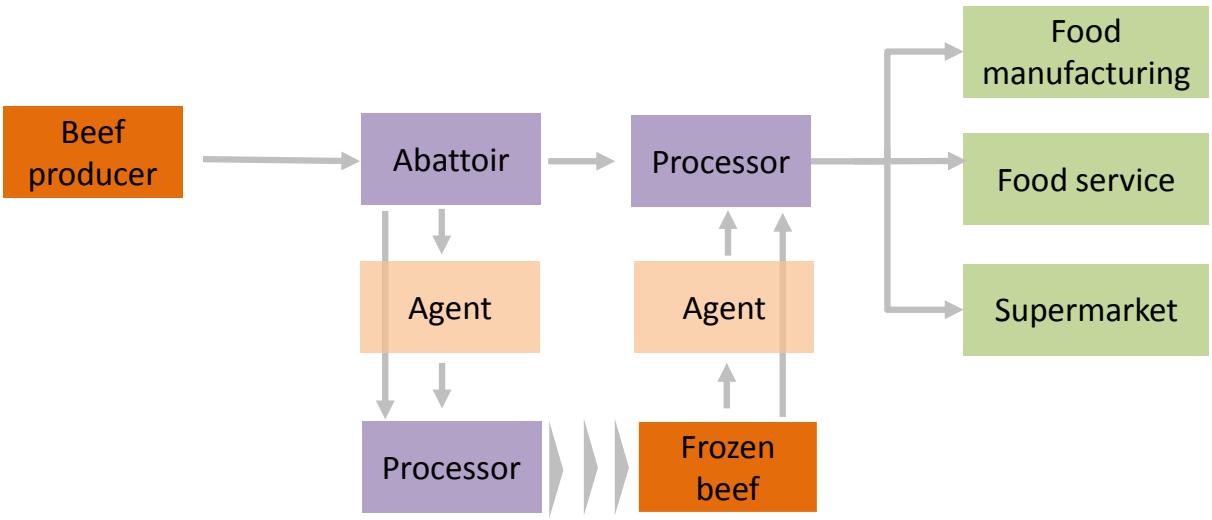
[57] It was intended that the supply chain for six products would be described but it was difficult to identify a sixth product to describe which would provide additional information. That is, the research did not find a sixth product supply chain, with information available, that was significantly different to the five described.

Initial evidence suggests that horsemeat frequently entered the beef supply chain between the abattoir and processor, often disguised as frozen beef. The horse meat was processed (chopped into small pieces) and mixed with processed beef before being frozen. The frozen mix of horsemeat and beef was subsequently incorporated into processed food products before being passed to customers.

The stability of supply chain relationships also matters: where there are long-term supply relationships that reach back to the farm, there is decreased potential for problems than in circumstances where supply contracts are governed by standards but are less stable. For example, products can be purchased as a commodity from a market or pool of products. Products are expected to meet certain specifications, but the primary factor under consideration is price. Attributes such as provenance are less important. Due to their instability such arrangements do not typically foster long-term relationships between suppliers and producers.

Figure A6.1 provides an indication of the potential supply routes for the EU beef supply chain. Horsemeat contamination is suspected to have originated with frozen beef products sourced from intermediaries along the supply chain (The Grocer, 2013). Retailers and other customers with more direct supply chains for their beef products were not found to have any beef products adulterated with horsemeat.

Figure A6.1 EU beef supply chain



Source: ICF GHK

The contamination of the EU beef supply chain highlights the complexity of some food supply chains and the difficulty of preventing fraud. Food supply chains are unlikely to become less complex in the future and greater cooperation between industry and the FSA will be increasingly important to identify and address emerging threats. This includes, for example, industry sharing intelligence with regulators and / or the FSA disseminating information to industry when a potential issue has been identified. Industry may be unwilling to share information with the FSA if they consider that it could increase the burden of controls they are subject to.

Both of the options proposed in Section 8 rely to some extent on the honesty and integrity of importers. There is the risk that importers, or other businesses along the supply chain, could provide fraudulent information to DPE officials. For example, fake pesticide residue test results could be submitted by importers to DPE officials. Such risks are difficult to eliminate but could be addressed through appropriate incentives. For example, importers found to have provided fraudulent information to DPE officials could be fined and / or subject to more frequent controls.

A6.2 FNAO supply chains

Information obtained during the course of this study suggests that FNAO supply chains are typically shorter than those for processed meat products[58], although there is variation. In many cases importers source products directly from producers, with only a single intermediary involved. There are some products within the scope of this study where evidence suggests there are longer supply chains and where there is intermediate processing. For example, powdered spices from India are likely to be sourced by intermediaries from a large number of producers and may be handled by multiple agents before import to the UK. This poses difficulties related to traceability and provides more opportunities for adulteration / contamination. The structure of the farm sector in the exporting country may shape the supply chain, rather than the product. Some countries (for example, Egypt) have larger farms than others (for example, India).

The evidence collected for this study also suggests that supermarket supply chains tend to be more stable and better integrated than those of other sectors. The supply conditions imposed by supermarkets necessitate long-term relationships and a degree of integration to ensure that risks are appropriately managed. In contrast, supply chains for the wholesale and food service market appear to be less integrated and include fewer (private) controls. Sourcing from open markets appears to be more common in non-supermarket supply chains and traceability may be more difficult along such supply chains.

Since it came into force in January 2010, versions of Annex 1 of Regulation (EC) No 669/2009 have included approximately 40 products from approximately 20 source countries. Six products from four source countries have been selected for detailed analysis with respect to the structure of each supply chain. Products were selected on the basis of the frequency with which they were included in Annex 1 of the Regulation and the extent to which they failed tests conducted at UK DPEs. Products were also selected to provide a sufficiently varied cross-section of the type of FNAO supply chains for products imported from non-European third countries.

The products selected for a detailed analysis of the structure of their supply chain are included in Table A6.1. Sub-sections below describe the structure of each product's supply chain, the factors influencing food safety food safety hazards, and sourcing strategies used to reduce food safety risks.

Table A6.1 FNAO products included in Annex I of the Regulation selected for detailed supply chain analysis

Product	Country	Hazard	Justification
Okra	India[59]	Pesticide residues	High failure rate
Chilli (ground)	India	Mycotoxins	High failure rate
Peas and beans	Kenya	Pesticide residues	High volume / value of imports
Strawberries	Egypt	Pesticide residues	High volume / value of imports
Nuts	Argentina	Mycotoxins	High volume / value of imports

A6.2.2 India

Food production in India is characterised by large numbers of small farms. Products are aggregated by middlemen before being sold by an exporter to a UK importer. The technical competence of small farms is often relatively low.

[58] Products of animal origin supply chains are typically much lengthier and more complex than FNAO supply chains. They generally include multiple ingredients obtained from multiple sources.

[59] Regulation (EC) No 91/2013 includes specific import requirements for okra from India. Okra from India is no longer included in Regulation (EC) No 669/2009.

A6.2.2.1 Okra

Okra is widely cultivated in India and is one of the most popular vegetables on the domestic market. Pesticide residues are the most common food safety health hazard associated with UK okra imports.

The high rate of import control non-compliances for okra from India is due to several contributing factors:

- Production typically occurs on small-scale farms where agronomic expertise is relatively limited. Producers may not be aware of the appropriate procedures for pesticide application, such as the correct concentration or harvest interval.
- The widespread use of pesticides not approved for use in the EU, or for which MRLs have been set at detection levels, means that products may not pass EU import controls even if the correct pesticide use procedures have been followed.
- Product is collected from many small farms by middlemen before being passed to exporters. This reduces the direct incentive for producers to ensure products meet EU legislative requirements.

Producers growing products for export to the EU often take steps to address the factors listed above. Separate supply chains may be established for products intended for the EU market, using only approved pesticides and paying close attention to how and when they are applied.

Sourcing strategies

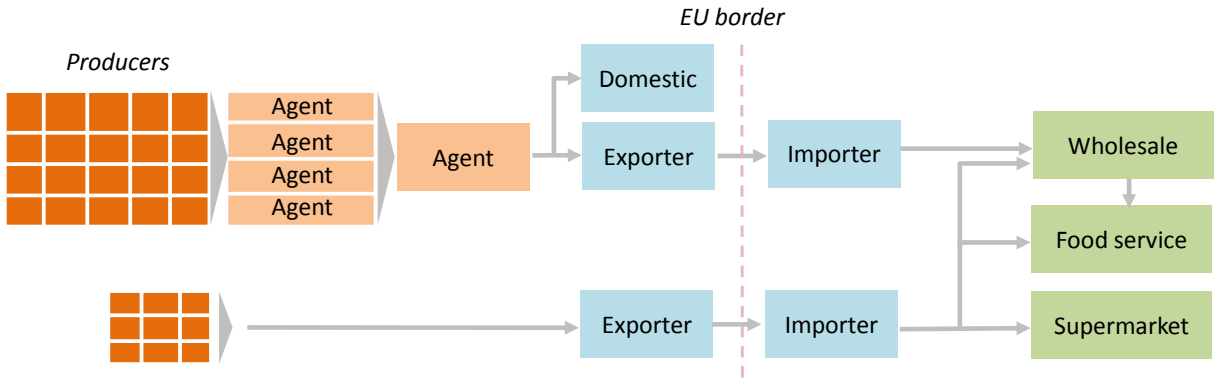
One okra importer from India was interviewed for this study. The importer was involved in the production of okra in India (backward integration) and had established several farms to produce okra to the specification required by EU import legislation and UK supermarket retailers. Additional product was occasionally purchased from farms not owned by the importer, but only if the product was grown on contract for the importer and in accordance with agreed rules and procedures for pesticide use.

The importer maintains a team of trained agronomists responsible for pesticide application to ensure that pesticides are correctly applied. Only the trained agronomists are permitted to apply pesticides on products intended for the EU market. Products are tested periodically to determine whether pesticide application procedures are functioning as intended (that is, whether MRLs are within set limits). Test results are shared with UK customers (i.e. supermarket retailers).

The importer believes that backward integration helps to ensure full control over production processes and is the only method to ensure that products will meet EU import requirements and supermarket product specifications. In his opinion, the relatively low volume of okra produced for export (compared to the amount produced for the domestic market) means that there is limited understanding of the production processes and controls necessary amongst Indian growers.

The structure of the okra supply chain in India is provided in Figure A6.2.

Figure A6.2 Supply chain for okra from India



Source: ICF GHK

The orange boxes represent the different types of producers in the supply chain. India is characterised by large numbers of small producers. Supermarket supply chains are often supplied by dedicated producers contracted to produce product to specific standards.

A6.2.2.2 Chilli (ground)

Chilli is one of the most important commercial crops in India and is a staple ingredient purchased on the domestic market. Food safety hazards commonly associated with chilli include contamination by mycotoxins and pesticides. Ground chilli has also been associated with adulteration with Sudan dyes[60].

Factors which contribute to the relatively high rate of non-compliance for chilli (whole and ground) from India include:

- Chillies are grown on small scale farms where agronomic expertise may be relatively low. This can result in the application of pesticides in excessive amounts, and / or insufficient time left between application and harvest (that is, the harvest interval is too short).
- Chillies are dried in the sun soon after harvest to reduce the moisture content. Harvested pods are spread in a thin layer, often on an area of concrete, to dry under the sun. If drying areas are not isolated from animals they may be contaminated by animal droppings, increasing the risks of contamination by pathogenic bacteria.
- Chilies are sorted and graded. The colour of whole chillies is used as an indicator of quality, paler chillies are considered to be lower quality and thus command a lower price.
- The pods are stirred frequently to prevent the growth of mould (and the production of mycotoxins). A failure to dry harvested pods sufficiently quickly or properly, for example due to inclement weather conditions, increases the likelihood that products will be contaminated with mycotoxins.
- Dried pods are typically stored in burlap sacks in a sheltered place, such as a shed. Failure to store the sacks properly can encourage mould growth, increasing the risk of mycotoxin contamination.
- Dried pods may be milled or crushed to produce chilli powder. This is an important stage where risk of adulteration is high. Sudan dye may be added to cheaper milled chillies (which are pale) to deepen the colour of the chilli powder and increase the price at which the chilli powder can be sold. Bulking agents may be added to increase the weight (and thus value) of milled spice.

[60] Sudan dyes are no longer subject to Regulation (EC) No 669/2009 but are included here as it is a potential contaminant of ground chilli imported India and demonstrates the different factors contributing to the contamination of FNAO imported from India.

- Product is typically sold from small-scale farms to middlemen before it is passed to exporters. This reduces the incentive for producers to meet EU import requirements with respect to pesticide residues or mycotoxins.

Sourcing strategies

Two sourcing strategies were identified to address the factors described above.

- Import of whole chilli

  Some importers source whole chillies only. The whole chillies are then crushed in the UK removing any risk of contamination with adulterants. Exporters commonly test whole chillies for mycotoxin and pesticide contamination before export, sharing the test results with their clients (importers). This testing is undertaken on a consignment basis reassure importers that products are likely to meet EU import requirements.

  Importers also undertake testing for pesticides and mycotoxins, the frequency of this testing is informed by the (perceived) risk posed by an exporter. For example, the frequency of testing may be lower if the importer has a long-term relationship with the exporter.

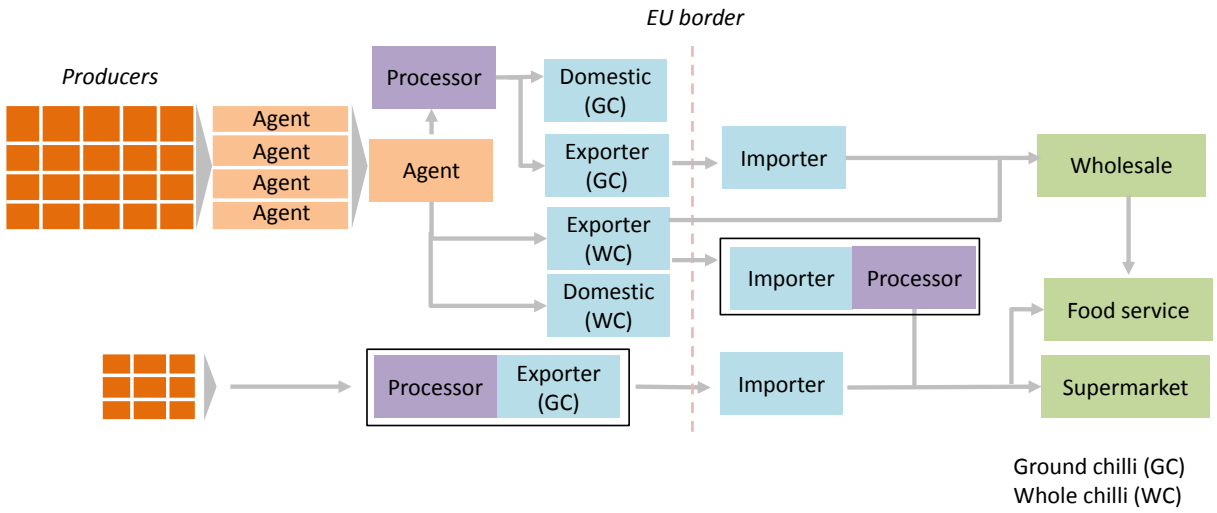
  Once crushed, the chilli is subject to heat treatment to remove pathogenic bacteria. Ground product is tested periodically to ensure that the heat treatment is effective.

- Importers of crushed / ground chilli

  One importer of ground chilli from India was interviewed as part of this study. The importer sources ground chilli from one exporter only. This exporter is backward integrated and has producers contracted to grow chilli on its behalf. This gives the exporter total control over the production process and reduces the risk that pesticides will be applied inappropriately. The exporter is a wholly owned subsidiary of a multinational spice producer and as such has facilities employing best available technology for the production of ground spices. All ground spices are fully heat treated to remove pathogenic bacteria and tested, on a consignment basis, for pesticides, mycotoxins and pathogenic bacteria. The results of these tests are shared with the exporter for each consignment.

The structure of the chilli supply chain (including ground and whole chilies) in India is provided in Figure A6.3.

Figure A6.3 Supply chain for chilli (ground and whole) from India



Source: ICF GHK

The orange boxes represent the different types of producers in the supply chain. India is characterised by large numbers of small producers. Supermarket supply chains are often supplied by dedicated producers contracted to produce product to specific standards.

A6.2.3 Kenya

Agriculture is the dominant sector of the Kenyan economy. The majority of total agricultural production serves the domestic market.

A6.2.3.1 Green beans

Green beans, unlike most other agricultural products, are mostly produced for export markets, principally in the UK, Germany, France, Holland, Belgium and South Africa. Green beans produced for export markets typically achieve a significantly higher price than beans produced for the domestic market.

Green beans are grown mainly by smallholder farms of less than two acres, but there has been a trend in recent years toward farm consolidation and increased vertical integration with exporters. Smallholder farms are usually organised in groups bound by regulations preventing the sale of green beans to the local market. Other smallholder farms have contracts with companies which may not allow the sale of produce outside of the contract, that is, produce must only be sold to the contracted party. Larger farms typically have contracts with large importers in countries like the UK and grow beans only for importers.

The majority of green bean exports to the UK are sourced directly from growers or grower groups. Some green beans may also be purchased from wholesale markets.

Kenyan green beans were included in Annex I of Regulation (EC) No 669/2009 for the first time in January 2013 due to pesticide residue contamination. Factors that influence the extent of pesticide residues on green beans produced in Kenya include:

- Many small holders produce green beans as a cash crop and may not have the technical expertise necessary to produce green beans that meet EU import requirements. For example, pesticides not approved for use in the EU may be applied to crops, excessively high concentrations may be applied, or harvest intervals may be too short.
- Small holders often produce multiple products on one farm, and neighbouring farms can be located very close together. Pesticides intended for other crops or from neighbouring farms can unintentionally drift onto green beans and result in residue levels in excess of EU import requirements.
- There are risks associated with product from non-controlled farms being bought by controlled farms and passed off as controlled product produced in accordance with standards and procedures intended to ensure compliance with EU import requirements. This practice is termed ‘grey trade’.

Sourcing strategies

Stakeholders consulted during this study described two sourcing strategies to address the factors described above.

- A common feature of the supply chain for green beans exported to the UK is backward integration of importers with producers, especially for product destined for UK supermarket retailers. Backward integration provides importers with increased control over the production process and inputs used, reduced likelihood that products will fail to comply with EU import regulations, and ensures that products meet customer specifications. It addresses potential risks associated with inappropriate use of pesticide chemicals and drift from adjacent crops / farms. The presence of local experts also helps to keep importers informed about local conditions and potential risks (with respect to product specifications). Close cooperation with local growers also reduces risks associated with grey trade as any unexpected increase in expected yield is noticed by local experts. Two types of backward integration have been identified:
  - Partnership agreements with large farms that produce green beans on contract for an importer: Large farms typically have their own agronomic experts, a high degree of technical competence, and are well aware of the steps and procedures necessary

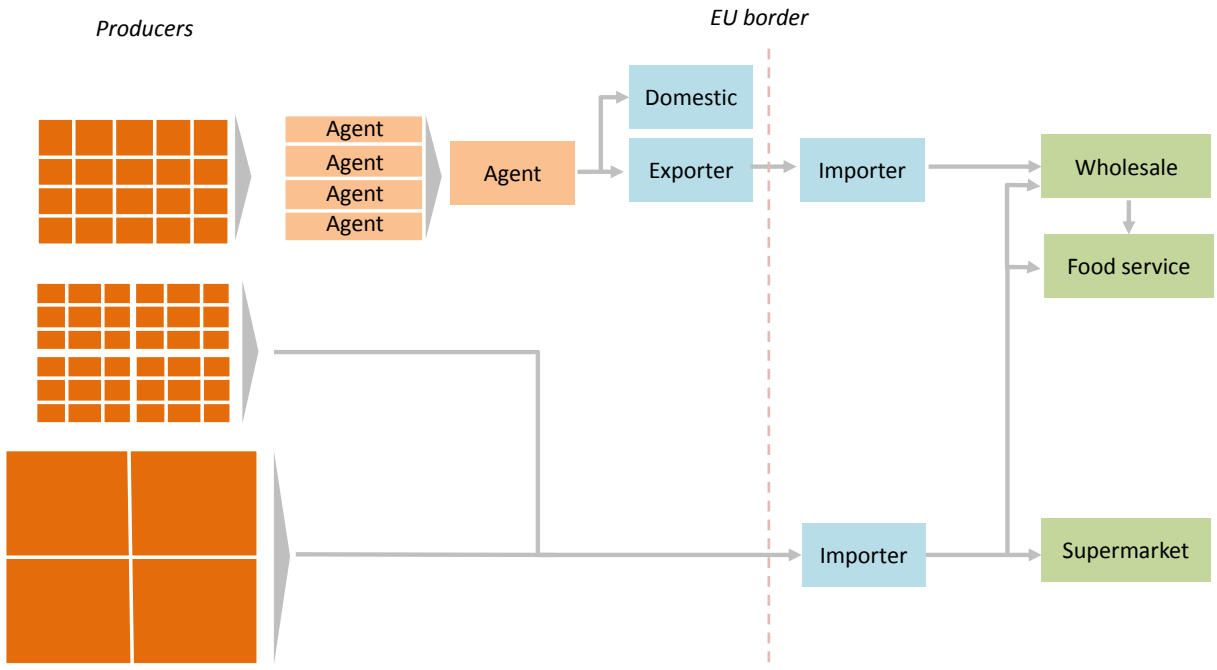
to ensure that products comply with EU import requirements and the product specifications of UK supermarket retailers.

- Contracts with groups of smallholders to produce green beans: Contracts typically include the provision of technical support to smallholders and the supply of inputs such as seeds and pesticides. Working with small growers in this way provides the importer with control over how products are produced and how pesticides (and other agricultural chemicals) are used. In some cases the importer may employ a team of experts to apply pesticides to ensure that the correct procedures are followed (e.g. dosage and harvest intervals). Frequent farm visits ensure that potential problems, such as pest infestations, are addressed early.

- Large importers undertake routine pesticide residue testing to ensure that on-farm procedures result in green beans which meet necessary requirements. Testing is undertaken for monitoring rather than control purposes. That is, testing is used as active surveillance but products are not held until results have been obtained ('positive release'). Testing frequency and the use of positive release are increased if a particular issue is suspected.

The structure of the green bean supply chain in Kenya is provided in Figure A6.4.

Figure A6.4 Supply chain for green beans from Kenya



Source: ICF GHK

The orange boxes represent the different types of producers in the supply chain, smallholder farms and larger more technically advanced farms. Smallholder farms sell direct into the market via agents (top), or group together to produce green beans on contract for large importers in the UK. The large farms also produce for importers, and are sometimes part-owned by the UK importers.

A6.2.4 Egypt

Egypt is an important source of fresh produce for UK importers. Strawberries have been included in Annex I of Regulation (EC) No 669/2009 since 2010. The Regulation requires increased controls with respect to pesticide residues.

A6.2.4.1 Strawberries

Strawberries imported from Egypt are typically produced on large farms. The strawberries are typically sold directly to importers; they do not usually pass through wholesale markets. Importers may, in certain circumstances, deal with an agent who sources product directly from producers. Such arrangements are relatively uncommon, however, and are typically

only used by smaller importers. Larger importers typically work closely with producers to ensure that products comply with supermarket product specification and meet EU import requirements.

Several factors that influence the likelihood that strawberries produced in Egypt will not comply with EU import requirements include:

- Strawberries are a 'constant pick' product,[61] which complicates appropriate pesticide application procedures. It is more difficult to determine appropriate harvest intervals for constant pick produce. Lack of appropriate controls or agronomic expertise can result in strawberries being harvested with pesticide residue levels above EU import requirements.
- In recent years there has been an increase in the amount of counterfeit pesticides available in Egypt. Counterfeit pesticides may contain higher concentrations of active substances, or may contain active substances which are not listed on the ingredient list. The (unintentional) use of counterfeit pesticides can result in pesticide residue levels which do not meet EU import requirements.
- Several importers interviewed during the course of this study argued that since the 2011 revolution the effectiveness of public controls related to pesticide residues has decreased. In their opinion, the turmoil since the revolution has increased the risk that too much, or banned, pesticides will be applied to products.

Sourcing strategies

Stakeholders consulted during this study stated that backward integration by importers with producers is the main sourcing strategy to improve the quality and consistency of fresh produce originating in Egypt, and address the factors described above.

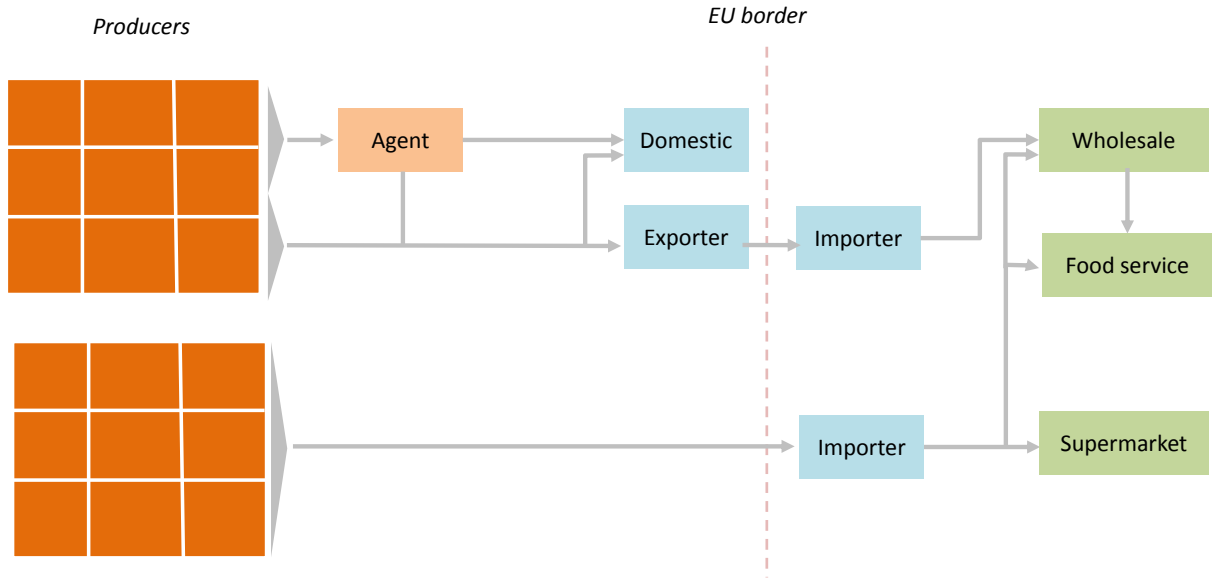
Backward integration is restricted to large importers and entails either a formal relationship (for example part- or full-ownership) or a commitment to a partnership arrangement spanning several seasons. This longer term commitment provides the scope for importers and producers to work together to ensure that product meets customer (i.e. supermarket retailer) product specifications. Importers may advise on which pesticide products should be applied and work with producers to ensure that appropriate application procedures are followed. There is typically extensive information sharing under these arrangements, for example producers typically share pesticide residue test data on an on-going basis.

Comprehensive self-control systems for pesticide residues are maintained by large producers, pack-houses and exporters. Controls include record keeping of pesticide use, sampling for pesticide residue analysis and third party certification to private standards.

The structure of the strawberry supply chain in Egypt is provided in Figure A6.5.

[61] 'Constant pick' refers to a production method utilising multiple harvests, rather than a single harvest: fruits may be harvested several times from the same plants during a season.

Figure A6.5 Supply chain for strawberries from Kenya



Source: ICF GHK

The orange boxes represent the different types of producers in the supply chain. Farms in Egypt are usually relatively large. Smallholders are uncommon. Importers often work directly with farms to ensure products meet supermarket retailer's product specifications.

A6.2.5 Argentina

Argentina is a major global producer of groundnuts and approximately 65 per cent of the crop produced is exported to the EU. Aflatoxin contamination is the principal food safety hazard associated with groundnuts exported from Argentina.

A6.2.5.1 Groundnuts

Groundnut production in Argentina is characterised by high levels of technical competence amongst growers and processors. Growers are typically medium to large in size due to the relatively large scale of the investment necessary to produce groundnuts.

Groundnuts are often produced in cooperatives which include the processor responsible for sorting and drying. The close relationship between producers and processors is important as it provides a clear incentive for high quality products to be supplied. UK importers either source directly from the processor or from an exporter representing a group of processors. The separation between exporter and processor is not always clear, as processors often have their own exporting arm.

Processors are legally obliged to meet food hygiene requirements and implement procedures based on HACCP principles. All groundnut processors exporting to the EU must be approved and licenced by the competent authority in Argentina. As part of licencing requirements, processors are required to meet minimum standards with respect to sorting, drying and storage facilities, and are also subject to sampling to ensure products meet minimum quality standards. Groundnuts must be tested for aflatoxins before they are shipped to the EU and the test results should accompany consignments.

Aflatoxins are naturally occurring contaminants which result from the growth of specific moulds. Mould growth is encouraged by high moisture levels, which can occur for several reasons during groundnut production and processing:

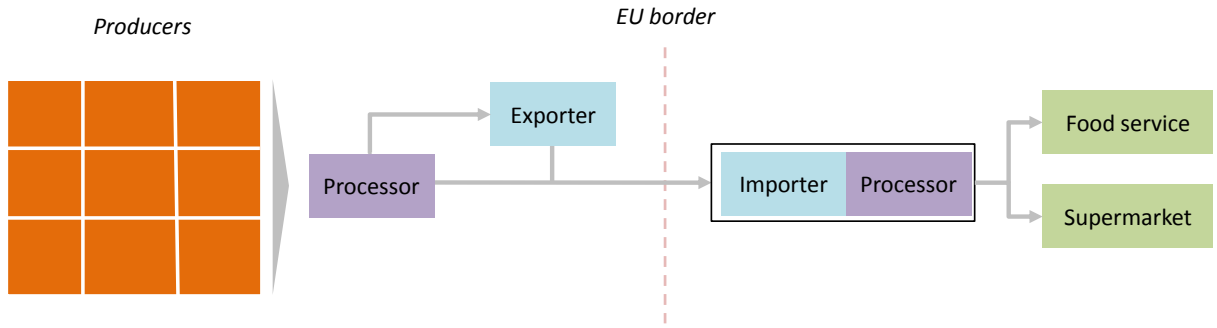
- Inclement weather around harvest time can increase the moisture content of groundnuts.
- Improper storage conditions, such as excessively high atmospheric humidity.
- Elevated atmospheric humidity during shipping to the EU.

Sourcing strategies

Importers interviewed as part of this study stated that there was not a particular sourcing strategy to avoid aflatoxin, but that paying for better quality products generally helped to ensure that products were free of aflatoxin contamination.

The structure of the groundnut supply chain in Argentina is provided in Figure A6.6.

Figure A6.6 Supply chain for groundnuts from Argentina



Source: ICF GHK

The orange boxes represent the different types of producers in the Argentinian groundnut supply chain. Farms are usually relatively large and technically advanced. Smallholder farms are uncommon.

A6.3 Comparison of selected FNAO supply chains

The analysis presented in section A6.2 demonstrates that FNAO supply chains differ from the beef supply chain and in relation to one another in terms of several factors. Table A6.2 summarises the supply chain for each product discussed above in terms of the number of intermediaries and processing steps. The table also categorises each product in terms of its potential susceptibility to adulteration.

Products most at risk of adulteration originate from supply chains with a high number of intermediaries and with at least one processing stage. Of the six products considered above, ground chilli from India and tea from China are the two products most susceptible to adulteration. A large number of intermediaries along the supply chain provide more opportunities for adulteration to occur. In addition, processing mixes products from various sources and provides the opportunity to disguise and dilute adulterants.

Table A6.2 Summary of selected FNAO supply chains in terms of the number of intermediaries and processing steps

Country of origin	Product	Number of intermediaries	Processing	Potential susceptibility to adulteration
India	Okra	High	No	Low
	Chilli (ground)	High	Yes	High
Kenya	Green beans	Low	No	Low
Egypt	Strawberries	Low	No	Low
Argentina	Groundnuts	Low	Yes	Low

A6.3.2 Implications of the horsemeat issue for the FNAO supply chain

The potential for FNAO products to be adulterated is limited to processed products; it limited to the potential substitution of good quality products with products of inferior quality. However, there are lessons from the horsemeat issue relevant to the FNAO supply chain. The majority of operators in FNAO supply chains have systems and controls in place to reduce food safety risks associated with products imported from non-EU third countries. However, as with the beef supply chain, the systems address known risks only. Tests and

controls in the EU beef supply chain are extensive but before the horsemeat issue they related to food safety (that is, pathogenic microbes) only. Speciation tests were not included as adulteration with different species was not a known risk.

The potential profits from food fraud are high and it is difficult to detect once underway. It is often linked to organised crime and wide networks of criminality and as such there is a need for a more formal approach to intelligence gathering. The challenge is to identify the next big opportunity for fraud and stop it before it is exploited. As the horsemeat issue has demonstrated, there is a need for constant vigilance by all operators and regulators along a supply chain and for information sharing between regulators and industry.

The potential risks to the beef supply chain should have been identified through horizon scanning by public authorities or private companies supplying beef products. It is not obvious what emerging risks and threats the FNAO supply chain might encounter in the future but systems and processes should be in place to try and identify them.

Annex 7 Regulation (EC) No 669/2009

This annex describes the requirements of Regulation (EC) No 669/2009.

A7.1 The requirements of Annex 1 of Regulation (EC) No 669/2009

Regulation (EC) No 669/2009 (hereafter, 'the Regulation') sets out the rules concerning the increased level of official controls on imports of feed and food of non-animal origin (FNAO) listed in Annex I of the Regulation. The purpose of the Regulation is to enable known risks to be addressed more effectively and to collect monitoring data on the occurrence and prevalence of unfavourable results from laboratory analysis to inform risk identification.

Annex I of the Regulation establishes the frequency of controls to be carried out on certain categories of food and feed imported into the EU from specific third countries in relation to a defined hazard. As explained in Article 1 of the Regulation, the list is defined based on different information sources, including the notifications received by the Commissions' Rapid Alert System for Food and Feed (RASFF) and reports from the Food and Veterinary Office (FVO).

The products included in Annex I are food and feed of non-animal origin and may include fresh fruit and vegetables, spices etc. Products containing or derived from a commodity listed in Annex I, such as juices and fruit mixes, are out of the scope of the Regulation.[62] Due to the highly perishable nature of some of these products, derogations to the general rules for increased controls are foreseen when their implementation would cause 'serious risk to food safety or [in] the product being damaged to an unacceptable extent'.

The Annex I list is regularly updated by the Commission: a review is conducted at least on a quarterly basis, as required by the Regulation. The study team collated the historical versions of Annex I to facilitate hazard categorisation and analysis.[63] The collated versions of Annex I present the precise version of the Regulation, the food products, country of origin identified as 'high risk', the related hazard, and the frequency of physical and identity checks required to date.

A7.1.1 Imports of FNAO from third countries must meet specific EU requirements in relation to food safety hazards included in Annex 1 of the Regulation

Annex I of the Regulation defines the control frequency for specific food safety hazards. Controls are performed according to the analytical methods and the interpretation of analytical results defined in the relevant legislation (e.g. the contaminants legislation).

The food safety hazards included in the historical versions of Annex I can be categorised as follows:

- Additives,
- Contaminants, and
- Pesticide residues.

The regulatory requirements for the presence of the listed substances and products in food and feed are set out under legislation related to each hazard. Requirements are established for the protection of human health and might result, for example, in lists of authorised substances and specified limits for the presence of such substances in certain types of food. More details on these requirements are provided in Table A7.1.

[62] http://ec.europa.eu/food/food/controls/increased_checks/docs/QandA_paper_en.pdf

[63] The collated versions of Annex I is available in a separate excel file.

Table A7.1 EU regulatory requirements in relation to imports of FNAO from third countries

Hazard	Legislative background	Requirements	Official controls
Additives	Regulation (EC) No 1333/2008 on food additives Regulation (EU) No 1129/2011 amending Annex II of Regulation (EC) No 1333/2008 by establishing a Union list of food additives Regulation (EU) No 1130/2011 amending Annex III of Regulation (EC) No 1333/2008 by establishing a Union list of food additives approved for use in food additives, food enzymes, food flavourings and nutrients Regulation (EU) No 1131/2011 amending Annex II of Regulation (EC) No 1333/2008 with regard to steviol glycosides	Only authorised food additives may be used. The level of use shall be set at the lowest level necessary to achieve the desired effect. Quantitative limits are established for most food additives food additives and their use is limited for certain foodstuff.	Official controls are carried out by Member States in accordance with Regulation (EC) No 882/2004 on Official Controls.
Contaminants	Regulation No 315/93 laying down Community procedures for contaminants in food Regulation No 1881/2006 setting maximum levels for certain contaminants in foodstuffs Sampling and analysis: Regulations (EC) No 1882/2006 (38), No 401/2006 (39), No 1883/2006 (40) and Commission Directives 2001/22/EC (41), 2004/16/EC (42) and 2005/10/EC (43).	Food containing a contaminant in an amount which is unacceptable from a public health viewpoint and in particular at a toxicological level shall not be placed on the market. A non-exhaustive list of maximum tolerance levels is established and includes limits for the same contaminant in different foods and analytical detection limits.	Specific sampling and analysis methods are established for official controls.
Pesticide residues	Regulation (EC) No 1107/2009 concerning the placing of plant protection products on the market Regulation No 396/2005 on Maximum Residue Levels (MRL)	The products listed in Annex I of the Reg. shall not contain any pesticide residue exceeding the maximum levels established in Annexes II and III of the Reg. or 0.01 mg/kg for those products for which no specific MRL is set out.	Official controls must consist of sampling and subsequent analysis

A7.1.2 Summary data from historical versions of Annex 1

The quarterly revisions of Annex 1 have significantly altered the list of 'high risk' products since the Regulation entered into force in January 2010. Most countries of origin are associated with one specific type of product and hazard, although some countries have often been listed for multiple products and food safety hazards. Some products have been included in the list for a short time, and then have been de-listed as a consequence of improved levels of compliance. For example, bananas from the Dominican Republic and basmati rice from India have been listed for only two quarters respectively for the presence of pesticides residues and aflatoxins. Other products have been listed as 'high risk' FNAO for longer periods, and some of them for the whole period of application of the Regulation: this is the case, for example, of peanuts from India (aflatoxins), tomatoes and peppers from Turkey (pesticide residues) and fruit and vegetables from the Dominican Republic such as aubergines, yardlong beans and bitter melons (pesticide residues).

Annex 8 The 2011 pilot study

A8.1 Importers and DPEs experience of the 2011 pilot scheme

This section summarises importers and DPEs experience of the pilot initiated by the FSA in 2011 in order to collect information on assurance schemes for imported FNAO. Interviews with importers and DPE officials investigated the issues that influenced the low participation rate, and potential mechanisms and incentives to encourage participation in a future pilot.

A8.1.1 The majority of importers were not aware of the 2011 pilot scheme

Only 1 out of the 34 interviewed importers took part in the 2011 pilot and provided the FSA with the GlobalG.A.P. certificate and the GGNs for imported products. The importer reported that he was not aware exactly of what information was required.

The majority of importers who did not take part (28 out of 33) explained that they were not aware of the pilot scheme. Some importers were informed about the pilot by the FPC, but did not take part as they were not trading 'high risk' products at the time when the pilot was conducted.

Most interviewed officials (7 out of 9) were informed about the pilot by the FSA and received an email invitation to take part. DPEs tried to involve importers in the pilot but very limited documentation on assurance schemes was submitted.

Results were submitted to the FSA only by Heathrow. The interviewed official explained that a lot of effort was put into involving clearing agents and importers, who were informed about the information required and the potential for reduced controls in the future on basis of a successful pilot.

None of the consultees was aware of any initiatives in other countries that use private assurance schemes to prioritise controls of FNAO.

Consulted importers were also asked why during the pilot scheme very low numbers of consignments were accompanied by assurance scheme documentation. Possible motivations given were:

- Consignments aren't always accompanied by documentation on assurance schemes: importers generally require a copy of GlobalG.A.P. certificates from their suppliers before the harvesting season or before starting to deal with new growers. The certificate has a yearly validity, and therefore is not requested with each consignment. GlobalG.A.P certified products may be identified with the GGN reproduced on each box. However, the presence of the GGN is not a mandatory requirement for GlobalG.A.P. certification, and therefore it's not used by all importers.
- The type of assurance scheme information that travels with food products is not standardised and depends on the importers' requirements and traceability systems. Some suppliers observed that, when food is supplied to supermarket retailers, information on assurance schemes must be available as supermarket retailers require that products are sourced from certified producers. The situation is different for organic certification: in this case, documentation related to certification must travel with the consignment.
- Importers might not have the resources and time required to take part in the pilot due to the very limited margins characterising the sector of food imports.[64] Importers have a good knowledge of which elements of assurance schemes relate to specific hazards. Some importers suggested that the FSA was either not clear enough on the type of information requested or did not request the correct information.

[64] Incentives, such as reduced fees for controls, or communication about the potential benefits if the pilot is successful, could help to address this.

- Confidentiality issues: companies might not be willing to share food safety information as this represents highly sensitive information, particularly for the fresh produce sector. For example, information related to the lists of growers/suppliers in third countries may be difficult to share with the FSA: retailers are generally not willing to divulgate this information as it may reach competitors.

A8.1.2 Factors which would increase participation in a future pilot study

According to interviewees for this study, possible steps to increase the likelihood of success of a future pilot study are:

- The involvement of trade associations: trade associations could provide the FSA with the contacts of importers that would be interested to take part in a pilot, help the dissemination of information about the study in order to support participation (for example through the FPC journal) and offer reassurance about aspects such as the confidentiality of the information collected in the course of the study.
- To focus on specific countries/products/substances where the risk of non-compliance is higher. This should be done by taking into account the results from previous testing conducted by official authorities, including those collected by the PSD. One trade association underlined that it would be more likely to obtain the involvement of importers supplying retailers with perishable products and when trading volumes are significant, such as in the case of beans from Kenya and strawberries from Egypt. Some DPEs however stated that it would be difficult to implement a pilot focusing on a specific country, and that it would be better to focus on hazards with the higher health impacts, such as mycotoxins.
- To take into account the results of testing and controls undertaken by importers or other operators;
- To involve retailers: suppliers would be more likely to participate if 'nudged' by retailers.
- To require the right type of information and to state clearly which information is requested: importers and DPEs stressed the fact that who will undertake the pilot study will need to have a good technical knowledge of the background of assurance schemes, including protocols and traceability systems in place. It has been suggested that the FSA should work in close cooperation with importers in order to define which information could be realistically be provided. Shipping agents play a key role in submitting documentation on imported products and their involvement is considered as very important by interviewed DPEs.

A8.1.3 Possible incentives to encourage importers' participation

Importers were also asked which would be the most effective measures to encourage their participation in a future pilot. Possible incentives are ranked as follows:

4. Possibility to have quicker/cheaper testing (mentioned by 17 consultees): the majority of interviewees replied that the best incentive would be to ensure quicker and cheaper product testing at points of entry for importers taking part in the study.
5. Clear rationale (10) Consulted importers would also be more willing to participate if the rationale, purpose and possible benefits of the pilot were clearly explained, including, for example, the perspective that the pilot will result in more targeted controls taking into account the history of compliance of importers
6. Involvement of trade associations (2);
7. Involvement of retailers (2); and
8. There should be a formal request of participation from the FSA (1).

Annex 9 Option assessment criteria

Table A9.1 includes the set of criteria used to assess each of the proposed options. The table includes three criteria, each with a series of sub-criteria. The table also includes a scoring system for each sub-criterion.

Table A9.1 Option assessment criteria

Criteria	Sub-criteria	Description
Effectiveness	Reliability	The information used to prioritise controls should be trustworthy and of consistent quality. That is, the information can be assumed to provide a reliable account of the actual situation.
	Timeliness	The information will be available in within the timeframe required for the option to function properly, and the information will expedite the process of conducting official controls.
	Independence	The information under consideration (and / or processes generating the information) should be verified by a trusted third party.
	Completeness	The information is sufficient to inform the prioritisation of FNAO controls, and also ensure a reliable and independent process.
Efficiency	Administrative burden - FBOs	The administrative burden on importers / producers / other supply chain actors should be kept to the minimum possible.
	Administrative burden - government	The administrative burden on government should be kept to the minimum possible.
Coherence	FSA objectives	The proposed option should meet with the objectives of the FSA with respect to the prioritisation of import controls, including the application of a risk-based approach to regulatory activity.
	UK objectives	The proposed option should meet with UK Government objectives with respect to reducing the burden of regulations on business.
	EU objectives	The proposed option should meet with related and wider objectives, including EU objectives.

Annex 10 Pesticides residues testing conducted by the PRiF

A10.1 Pesticides testing

Defra's Expert Committee on Pesticide Residues in Food (PRiF) regularly reports on the results of official pesticides testing carried out in the UK. Such testing includes controls in the scope of Regulation (EC) No 669/2009 but also covers pesticides controls conducted under other food safety legislation.

During 2011 and the first three quarters of 2012 a total of 6,000 samples were tested for the presence of pesticides residues. Overall 117 samples, or 2 per cent of all samples tested, were found to have residues above the amount permitted by legislation.

A10.1.1 Sampling point

Samples were collected at different sampling points, including retailers' and wholesalers' premises, import points, packhouses, depots and producers' premises.

Almost 4,800 samples were collected from supermarkets, out of which 4,771 came from the premises of 10 major UK supermarket retailers. Of these, 55 samples from supermarkets were non-compliant. Approximately 1,200 samples were collected at other sampling points, and 62 resulted in non-compliances.

Comparing samples taken at supermarket retailers with samples from other sampling points reveals that there is a significant difference in compliance rates; 1 per cent of samples collected at supermarkets were non-compliant, whereas the proportion of non-compliances for other sampling points was 5 per cent. The sampling results are summarised in Table A10.1.

Table A10.1 Sampling results - point of sampling

Sampling point type	No of samples tested	No of non-compliances	% of non-compliances
Supermarket	4794	55	1%
Other	1206	62	5%
Total	**6000**	**117**	**2%**

A10.1.2 Country of origin

Controls were conducted on both locally produced and imported food. More than 2,900 samples related to food produced in the UK, with the other samples collected from food imported from EU and extra-EU countries. As regards EU countries, most of the products sampled originated in Spain (511 samples), Italy (133), the Netherlands (132) and France (117). Tested products from non-EU countries mainly came from India (129 samples), Egypt (115) and Kenya (106).

In absolute terms, the county of origin with the largest number of exceedances was the UK, with 35 non-compliant products, followed by India and Kenya (18 exceedances each) and Spain, France and Egypt (5 exceedances each).

Among the countries of origin mentioned above, the highest frequencies of non-compliance were found in Kenya (17 per cent of samples from Kenya were above the MRLs) and India (14 per cent), while 4 per cent or less of products originating in the other mentioned countries were above the MRLs.

Table A10.2 summarises testing results in relation to the countries of origin.

Table A10.2 Sampling results - country of origin

Country of origin	No of samples tested	No of non-compliances	% of non-compliances
UK	2,943	35	1%
India	129	18	14%
Kenya	106	18	17%
Spain	511	5	1%
France	117	5	4%
Egypt	115	5	4%
Italy	133	4	3%
Jordan	42	3	7%
Ghana	34	3	9%
Canada	24	3	13%
Colombia	34	2	6%
Dominican Republic	25	2	8%
Cyprus	10	2	20%
St Vincent & the Grenadines	2	2	100%
South Africa	181	1	1%
EU	143	1	1%
Costa Rica	112	1	1%
Turkey	53	1	2%
Morocco	36	1	3%
Thailand	35	1	3%
Pakistan	23	1	4%
Vietnam	20	1	5%
Tunisia	2	1	50%
Bangladesh	1	1	100%
Other	1,169	0	0%
Total	**6,000**	**117**	**2%**

A10.1.3 Type of food product

A wide range of food products have been tested, including fresh and dried fruit and vegetables, spices, meat, fish, dairy products, cereals, processed food and infant food. Most MRL exceedances related to fresh fruit and vegetables, spices and rice. In particular, most of non-compliant products were beans with pods (35 non-compliant samples), lentils (16), spices (16), okra (14) and speciality vegetables (14).

Among the products mentioned above, those that presented the highest frequencies of non-compliance were spices: 29 per cent of tested samples were above the MRLs. Non-compliant spices consisted mainly of cumin imported from France or originated in the UK, except from one sample of cumin imported from Turkey.

High frequencies of non-compliance have also been found in lentils (19 per cent) and beans with pods (16 per cent). Most of the non-compliant lentils were either grown in the UK or imported from Canada. All non-compliant beans with pods were imported from non-EU countries, mainly from Kenya (16 out of 35 non-compliant samples) and India (12 samples).

Table A10.3 Sampling results – type of product

Type of product	No of samples tested	No of non-compliances	% of non-compliances
Beans with pods	218	35	16%
Lentils	84	16	19%
Spices	55	16	29%
Okra	109	14	13%
Speciality vegetables	177	14	8%
Rice	72	8	11%
Other	5,285	14	0,3%
Total	**6,000**	**117**	**2%**

Annex 11 Additional points to consider in a future pilot scheme

The points below may help to implement either an Option 1 or Option 2 pilot scheme.

A11.1.1 Information

The information required from operators should be carefully considered. It is important to ensure that information can be provided relatively easily, that is, that the information can travel along the supply chain and can be provided to DPE inspectors upon request. In instances where information does not currently travel along the supply chain it may be necessary to work with importers, producers and other stakeholders to identify whether it is practical to provide the information, and if not, what alternative information could be provided.

A future pilot scheme should also consider *how* information should be exchanged and utilise existing systems and processes whenever possible to reduce the burden on participants. The EU Trade Control and Expert System (TRACES) was identified by several stakeholders as a potentially suitable platform to provide additional information to DPEs alongside documentation (CEDs) required under Regulation (EC) No 669/2009.[65]

A11.1.2 Stakeholders

Producers

Including producers in the design of a future pilot scheme could increase the likelihood of success. Information about how a product has been produced, for example the list of applied pesticides, can only be provided by importers if it has been provided to them by producers. Including producers in the design of a future pilot would help to ensure that it will be possible and practicable for importers to provide the information necessary for the pilot to succeed.

Importers

The FNAO supply chain is not homogenous. It includes a wide variety of importer-types, from small operators supplying low volumes of speciality products to large operators importing high volumes of FNAO products to multiple supermarket retailers.

As described in this report, the extent of systems and processes in place to record information related to their supply chain varies considerably by importer-type, and even with importer-type. As such, a future pilot may be more successful if it is targeted at specific importer-types. For example, a future pilot involving the sharing of pesticide test results with DPE inspectors would have a higher chance of success if it focused on large importers likely to have the necessary systems and processes in place to record and provide this information.

Shipping agents

Shipping agents are responsible for moving a consignment from the ship / plane and through border controls. Shipping agents act as the interface between importers and DPE officials; the agents collate and provide the relevant documentation, such as airway bills and phytosanitary certificates, to the relevant competent authority officials.

As shipping agents are typically responsible for ensuring the appropriate paperwork is submitted, it is important that they are included in any future pilot scheme. Failure to include shipping agents in a future pilot could mean that information required as part of the pilot scheme is not transmitted from the importer to the DPE.

DPE officials

DPE officials are likely to be central to any future pilot, acting as a focal point for the collection and dissemination of information. For this reason it is important that they are

[65] An assessment in 2011 found that the EU TRACES system is used by 16 Member States to record information related to 25 – 30 per cent of imports relevant to Regulation (EC) No 669/2009 (European Commission 2012).

included during the earliest stages of the design of a future pilot scheme. Doing so will help develop an understanding of how the current system of controls operates, and how the burden of a future pilot can be minimised insofar as is possible. Including DPE officials in the design of a future pilot would ensure that assumptions about how information can be collected or disseminated are likely to be correct. Failure to adequately include DPEs during the design of a future pilot is likely to reduce the likelihood that the pilot would be a success.

The type of products imported varies between DPEs, and some only receive a limited amount of 'high risk' products included in Annex 1 of the Regulation. This variation between DPEs means that it may not be necessary to include all of them in the design of a future pilot. The choice of FNAO product and importer-type may help the FSA to select the most appropriate DPEs to include. For example, green beans are a highly perishable product and are imported to the UK via air freight. As such, focusing on large-operators supplying green beans from Kenya to supermarket retailers would suggest that only airport DPEs should be included in a future pilot.

Reducing the number of DPEs included in a future pilot would help to streamline the consultation activities and provide for a simplified set of requirements / instructions.

Supermarket retailers

Supermarket retailers have significant influence on the FNAO supply chain and could help to incentivise importers to participate in a future pilot. Including supermarket retailers may help the FSA select products / importer-types for inclusion in a future pilot. For example, focusing on large importers supplying soft fruits to supermarket retailers may provide a useful delineation of scope for the pilot. In addition, including participants across an entire supply chain will help to ensure that the pilot will address important issues related to how / what information moves along a supply chain and the incentive mechanisms commonly in place.

There are disadvantages to including supermarket retailers, however. FNAO importers may be concerned that sensitive information, such as pesticide tests results, would be shared with supermarket retailers. Additional effort may be necessary to ensure that there is a clear agreement about the roles and responsibilities of participants in a future pilot.

Trade associations

Trade associations can be a useful mechanism to engage with an industry or sector and should be included in the design of a future pilot scheme. They would provide a means to engage FNAO importers to publicise a future pilot scheme, and also to provide input to improve the design and operation of a pilot scheme. Trade associations are important as they can provide anonymous feedback from an industry or sector on a proposed pilot scheme. This would help to ensure that potential confidentiality issues do not prevent industry from engaging in the design and operation of a future pilot scheme.

FNAO importers, especially smaller operators, can be difficult to identify and may not have sufficient time to engage in the design or operation of a future pilot. Engaging with a trade association can help to ensure that the concerns of smaller operators are included in the design of a future pilot, even if individual companies do not engage directly.

A11.1.3 Communication

Communicating with participants in the FNAO supply chain is complicated by the large numbers of operators involved and the varying business models employed. Communication effort and activities may need to be tailored according to the type of FNAO importer. For example, large importers are often backward-integrated with producers, are straightforward to identify, and generally straightforward to engage with. Their large size means that there is often a single individual or team dedicated to specific issues, such as product specification, and these individuals often have a good understanding of the regulatory and wider supply chain issues facing their organisation. In contrast, smaller operators are typically less backward-integrated (if at all), are difficult to identify, and may not have the time or inclination to engage with a pilot scheme. The 'stage' in the supply chain may also influence a stakeholder's communication needs. For example, importers supplying direct to supermarket retailers may operate under a completely different set of circumstances

compared to an importer supplying wholesale markets. This variance is likely to require communication materials and approaches appropriately tailored for different importer types.

Trade associations are generally an excellent place to start when engaging with an industry or sector, and it is likely that any future pilot scheme would benefit from their inclusion at the earliest stages of the pilot design. Trade associations can provide a useful summary of the issues affecting their members, for example the problems associated with controls conducted under Regulation (EC) No 669/2009, and can also provide useful ideas about the most effective communication strategies for their particular sector. This is important as communication materials which acknowledge an industry's concerns are more likely to be well received compared to communication materials which seek only to promote an initiative.

Trade associations often maintain mailing lists or publish regular newsletters, both of which would be useful for promoting a future pilot, and also to seek input from industry about the design of a future pilot. Having the support of a trade association would demonstrate to industry that a future pilot has been developed in conjunction with an organisation that understands their concerns and how their industry operates. This would help to increase the credibility of a future pilot scheme and increase the likelihood of success.

A11.1.4 Incentives

In the short-term it is likely that a pilot scheme would be an additional cost without any immediate benefit. Over the long-term, if the pilot scheme is successful, it is likely that the benefits would be distributed across a sector / supply chain. Including a clear incentive for organisations to engage with a future pilot scheme would help to increase the likelihood of a successful outcome. Incentives could include the opportunity for quicker or cheaper controls for participating importers, for example[66]. If it is not possible to offer quicker or cheaper controls to participating importers, alternatives could potentially include highlighting the potential benefits to the sector should the pilot prove to be successful.

Including appropriate incentives is likely to be more important for industry (that is, FNAO importers) compared to government as the FSA is likely to have some degree of influence with DPE officials and may secure their cooperation by requesting it. FSA is likely to have more influence if it can fund the additional costs incurred by DPEs due to the pilot. Communication is important to ensure DPE officials have a clear understanding of their role in a future pilot. Participating DPE inspectors should be clear about what information is required, from whom and for what purpose.

The research conducted for this study suggests that appropriate incentives may differ slightly by product group. That is, different incentives may be required for importers of fresh produce, spices and nuts. For example, fresh produce, especially highly perishable fresh produce, is significantly impacted by delays along the supply chain. The opportunity for quicker controls and less lengthy delays is likely to be a good incentive for fresh produce importers. In contrast, quick controls are less important to importers of nuts and spices. Reduced inspection and test fees may be more appropriate incentives for these importers.

A11.1.5 Engagement

There are two different types of engagement, active and passive. Passive engagement involves publishing information and relying on organisations to seek it out themselves. Active engagement involves preparing information and ensuring that specific individuals and organisations receive it and are encouraged to participate and engage. Active engagement with relevant stakeholders is likely to increase the likelihood that a future pilot scheme would be successful.

The most carefully crafted communication materials will be completely ineffective if they are not read by the appropriate person. Often it is necessary to speak to the relevant individual to explain what the communication materials are about and why it is important that they take

[66] Participating importers could be offered a reduction in the fees charged by DPEs, or could be put to the top of the queue for physical and document checks.

the time to read them. However finding the appropriate person, and speaking with them directly, is often very difficult. In large organisations it is may be difficult to determine who has responsibility for the issue under consideration, while in smaller organisations the individual concerned may not have sufficient time to engage.

Active engagement generally requires persistence. Individuals are generally busy and it can be difficult to find a suitable time to speak with them, and several reminders may be necessary if any specific inputs are required. Active engagement does help to build a relationship with stakeholders and often increases the usefulness of the information provided.

The 2011 pilot scheme included some degree of consultation with industry, primarily through the Fresh Produce Consortium. FSA also wrote to DPEs to inform them about the study, and requested that they inform importers and shipping agents about it too. The research conducted as part of this study indicated that awareness of the pilot scheme was relatively low among industry and DPEs, suggesting that a more active approach may be necessary in the future. This could include, for example, establishing a panel of importers, DPEs, shipping agents and trade associations to provide critical input into the design of the next pilot scheme. This could help to build a relationship among stakeholders and increase awareness of future pilot schemes.

A11.1.6 Scope

A future pilot scheme could be broad or narrow in scope. That is, it could focus on a particular product type / importer type (narrow) or could cover all imported FNAO classified as 'high risk' by Annex I of the Regulation. There are potential advantages and disadvantages to both.

A narrow approach could potentially simplify the design of a future pilot. It would require less complicated communication materials, as the message could be tailored for a more homogenous audience, and a more straightforward communication approach, as participants could be contacted through a reduced number of channels. It is also likely that there would be fewer participants, reducing the number and type of issues which should be reflected in the pilot design. However, a narrow pilot design could exclude important issues experienced by certain stakeholder groups. In addition, it could be difficult to generalise from lessons learned through a narrow pilot to the wider FNAO supply chain. This would potentially reduce the usefulness of the pilot scheme. However any potential disadvantage to sectors which are excluded from pilot could be addressed in follow-up pilots (assuming the first is successful).

A broad pilot scheme would ensure that a wide variety of stakeholder types, and related issues, are incorporated in the scheme design. This would ensure that the results obtained are relevant to the wider FNAO supply chain, potentially increasing the usefulness of the pilot. However, it is likely that a broad pilot scheme could be complicated to design and implement. Relatively more resources would be required to engage with the increased number of stakeholders, and tailoring communication materials and activities to multiple stakeholder groups would also require additional resources (compared to the narrow approach). There is also the risk that attempting to develop a pilot scheme that is general enough to be relevant to all importers ends up being too general to be relevant to any; that is, a broad approach may result in a pilot scheme that can only accommodate general information, unlikely to facilitate a meaningful analysis, and thereby dis-incentivising importers to participate.

Another important feature of the scope of a future pilot is its timing. Annex I of Regulation (EC) No 669/2009 is revised regularly, usually on a quarterly basis. While there are certain product / source country combinations which have been a constant feature of Annex I since the Regulation was introduced, other products have been included for relatively short periods. Many FNAO importers import a specific range of products from certain countries. The product / country combination is usually fairly constant as it is the result of several years' work to develop relationships with producers and establish niches with customers. As such, the design of any future pilot will have to consider when it will be launched. Assuming that

the future pilot builds on controls conducted by DPE officials, the contents of Annex I of the Regulation will dictate which importers are likely to be involved. This may be a more important consideration if a narrow approach is taken in the design of the future pilot.

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