REVIEW OF CASE STUDIES AND EVALUATIONS OF SANITARY AND PHYTOSANITARY CAPACITY: KENYA, TANZANIA AND UGANDA

Research work for the Standards Development Trade Facility

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Executive summary

1. This review provides an assessment of compliance with SPS standards in key export markets and prevailing levels of SPS management capacity in Kenya, Tanzania and Uganda. The analysis is based on a review of existing reports and case studies rather than original research and, therefore, reflects the current state of publicly-available information. The results presented herein should be interpreted in this context.

2. The analysis presented in the report reflects the pre-existing literature on compliance with SPS standards in export markets and assessments of food safety, animal health and plant health management capacity. There are evidently gaps in the set of information that is available and these gaps differ across the three countries, making comparisons problematic. However, there is a welcome move towards the application of standard evaluation frameworks and tools, for example the IPPC's Phytosanitary Capacity Evaluation (PCE) tool and the Performance, Vision and Strategy (PVS) framework of the OIE. The literature on compliance with export market SPS standards also tends to focus inordinately on 'problems'; predominantly products and/or standards where established exports have been impacted. Thus, we lack a more general assessment of the degree to which Kenya, Tanzania and Uganda comply with international market standards and the 'gaps' that need to be filled in order to achieve compliance. Indeed, many instances of 'non-compliance' tend to go unnoticed, especially where these are latent barriers to accessing higher-value markets for agricultural and food products.

3. This report is compiled on the basis of a review of existing publications, as well as limited assembly of data from various sources. The information available on each country, including whether this is in the public domain and thus reviewed by this study, is provided in Table 1. Thus, the scope and depth of the analysis is necessarily limited and excludes information that is confidential, which is perhaps of greatest consequence in the ability to integrate prior SPS-related capacity evaluations, for example on plant health. It is also possible that some of the information is outdated, given that original research to update information in published studies is beyond the scope of the project. The main information sources used are detailed in the respective sections.

Table 1. Existing reviews of SPS compliance and capacity for Kenya, Tanzania and Uganda

Source	*Kenya*	*Tanzania*	*Uganda*
Diagnostic Trade Integration Study	*No*	*Yes*	*Yes*
Trade Policy Review	*Yes*	*Yes*	*Yes*
Performance, Vision and Strategy (PVS) Tool	*(Yes)*	*No*	*No*
Pilot of FAO Guidelines to Assess Capacity-Building Needs to Strengthen National Food Control	*Yes*	*Yes*	*Yes*
Phytosanitary Capacity Evaluation (PCE) Tool	*(Yes)*	*(Yes)*	*(Yes)*
PACE evaluation of animal health controls	*(Yes)*	*Yes*	*Yes*
Diagnostic Trade Integration Study - World Bank background studies	*No*	*Yes*	*Yes*
Ad hoc case studies	*Yes*	*No*	*No*
Other studies	*No*	*Yes*	*Yes*

Key: Yes = Conducted and in public domain;
(Yes) = Conducted but not in public domain; No= not aware of any.

4. In Kenya, Tanzania and Uganda, the ability to comply with food safety, animal health and plant health standards in key export markets has a critical influence on trade performance, alongside other competitiveness factors. Thus, attempts to exploit potentially lucrative markets for agricultural and food products, and in particular 'non-traditional' products, as part of rural poverty alleviation and export diversification strategies are closely tied to efforts towards SPS capacity-building.

Historically, much of the focus of concerns about compliance with SPS standards has been on technical regulations, the official requirements of public authorities in export

*markets. However, more recently attention has widened to include the parallel role of private standards, for example EUREPGAP, as dominant buyers have progressively implemented and enforced their own standards. In some cases the primary concern for Kenyan, Tanzanian and Ugandan exporters remains public regulations, for example hygiene standards for fish and fishery products in the European Union (EU), while in others private standards have become the predominant driver, for example in high-value UK markets horticultural products. However, disentangling the distinct compliance tasks associated with particular public and/or private SPS standards is difficult; for example, private standards typically reflect prevail*ing *technical regulations in export markets as well the requirements of buyers per se.*

5. All three of the study countries have faced considerable challenges meeting food safety standards in their key export markets, most notably for fish and fishery products in the EU. Indeed, they were subject to periods of restrictions on exports of Nile perch to the EU through the late 1990s. However, in due course Tanzania, Uganda and Kenya managed to achieve compliance and have secured longer-term market access. The differing experiences of these three countries illustrate the critical role of the strategic responses of the public and private sectors to the process of compliance, with consequences for the associated short and medium-term costs and benefits.

6. Compliance with export market SPS standards can also be the means of establishing and maintaining competitive advantage over lower-cost competitors. The most notable example is the efforts of major Kenyan horticultural exporters to comply with exacting private standards, most notably of the UK supermarkets. Indeed, the Kenyan horticultural sector has proved to be a 'global leader' in exports of certain 'non-traditional' horticultural products. There have also been spill-overs to neighbouring countries, most notably Tanzania, through investments by Kenyan exporters.

7. The costs of compliance with export market SPS standards can be considerable, for both the public and private sectors. These investments include non-recurring costs of achieving the necessary controls and conformity assessment capacity, as well as the on-going expenditures that are reflected in higher supply costs. While this may necessitate the use of scarce financial, technical and human resources, as is illustrated by the case of fish and fishery product exports to the EU noted above, the longer-term pay-off in terms of continued market access and/or growth in export revenues can be considerable. Thus, in a number of the cases described in this report are clearly benefits from compliance with export market SPS standards. It is evident, however, that there is not always an immediate and/or clear pay-off from such investments, as is illustrated by the case of Ugandan honey exports to the EU.

8. The process of compliance with export market SPS standards differs significantly across the three study countries, and between products and sectors therein. In some cases, compliance has essentially been driven by the threat of loss of market access, essentially in 'crisis' mode, most notably fish and fishery exports to the EU on the part of Kenya, Tanzania and Uganda. In others, in particular Kenyan horticultural product exports, there has been a more 'proactive' approach to compliance, with attempts to 'keep up' or even pre-empt export market standards.

9. The collective experience of the three study countries with fish and fishery products exports to the EU is sometime construed as a 'positive' example of low-income countries meeting strict food safety requirements. However, it also illustrates the fact that, in broad terms, SPS management capacity has not always been enhanced in line with the evolution of export market standards, nor the establishment and expansion of export supply chains. The Nile perch 'experience' highlights the critical importance of, at the minimum, keeping up with export market SPS standards. It also illustrates the potentially dire consequences of non-compliance and the considerable costs that can be incurred over a short space of time in order to regain market access. In contrast, the experiences of

Kenya, in particular, with horticultural product exports, presents a more 'optimistic' picture. Here, the efforts and abilities of exporters to respond in a 'proactive' manner to evolving food safety standards in key markets has been critical to their international market competitiveness and that is difficult and costly to emulate, including by Tanzania and Uganda.

10. The case studies in the report illustrate the key role of both the public and private sectors in achieving compliance with export market SPS standards. Predominantly, minimum levels of capacity are needed in both sectors in order to achieve compliance and to undertake the necessary certification or other conformity assessment procedures. The sequencing of the establishment of this capacity is critical to the process of establishing and maintaining market access. Further, once such capacity has been established there is a need for it to be maintained and to be further enhanced as export market standards continue to evolve. Thus, compliance must be seen as an ongoing and even 'never ending' process of upgrading SPS management capacity rather than a discrete or 'one off' response to export market requirements.

11. The fact that Kenya, Tanzania and Uganda have achieved compliance with strict SPS standards for strategic commodities in key export markets demonstrates that a certain level of SPS management capacity is present. There remain, however, considerable weaknesses in SPS management capacity that impinge on access to potential markets and/or erode international competitiveness. Thus, in all three countries, we tend to observe 'islands' of enhanced capacity within a more general environment of weak food safety, animal health and/or plant health controls. Where we observe more enhanced capacity this tends to be focused on key export commodities, with little or no spill-over to supply chain directed at domestic markets. Thus, there is an on-going and critical need for capacity to be enhanced, with a focus on both export and domestic markets.

12. In all three study countries, it is evident that efforts are being made to enhance food safety, animal health and/or plant health capacity, across both the public and private sectors. Such initiatives include the updating of legislative frameworks, enhancement of laboratory facilities, etc. At the same time, some exporters have enhanced their food safety controls, including the implementation of internationally-recognized systems such as Hazard Analysis and Critical Control Point (HACCP) and Good Agricultural Practice (GAP). It is not evident, however, that such efforts have followed a coherent and sequenced process, both within and across the public and private sectors, while processes of reform have often been protracted. There is also very great variation in the extent of these capacity-building efforts both within and across the three study countries.

13. In Kenya, Tanzania and Uganda recognition of the roles and importance of SPS management capacity is limited, raising concerns about the sustainability of the capacity development efforts that are observed. Although historic compliance problems in key export markets and on-going concerns have served to raise awareness, it is not evident that this has been translated into a broader strategic focus on building and sustaining capacity, backed up with the necessary on-going resources. Further, institutional structures for SPS management tend to be fragmented and with inadequate coordination of functions and responsibilities. As a consequence, scarce resources are often not used to the greatest effect.

14. Broadly, technical assistance has played a critical role in the development of SPS management capacity in Kenya, Tanzania and Uganda, most notably in the public sector. The resource constraints faced by government combined with prioritization of other areas of public investment have meant that controls have tended to languish and become outdated over time. Thus, we tend to observe 'spurts' of capacity building when donor support is available, and in areas that particular donors are prepared to allocate funds. This often confounds efforts towards the more strategic management of capacity-building efforts in the three study countries.

15. The progressively greater engagement of Kenya, Tanzania and Uganda in global markets serves to enhance the importance of 'SPS diplomacy'; the ability to engage and negotiate with trading

partners through bilateral and multilateral institutions. While there is evidently significant variation in the capacity of Kenya, Tanzania and Uganda to engage in institutions such as Codex Alimentarius and the World Trade Organization (WTO), all three countries have rather weak ability to represent and defend their national interests.

16. Across the three study countries there is wide variation in the level of private sector capacity, most notably with respect to food safety. Private sector capacity is most developed in Kenya and weakest in Tanzania, with Uganda falling somewhere in-between. While SPS management has traditionally been regarded as the preserve of the public sector, the private sector is coming to play a more prominent role, especially with respect to food safety,. On the one hand, much of the process of compliance is dependent on the actions of private actors through the supply chain for export commodities. On the other, private sector capacity can substitute for weaknesses in prevailing public sector controls, such as we observe in the horticultural sector in Kenya. Indeed, arguably the success of Kenyan horticultural products exports has occurred despite evident weaknesses in public sector SPS capacity.

17. The overall message of this report is that, while 'much remains to be done' in order to establish and maintain the food safety, animal health and plant health management functions required to meet evolving export market SPS standards and to respond to the associated challenges in a more 'proactive' manner, the three countries on which we focus here appear to have 'made a good start'. There are certainly gains to be had from the adoption of a more strategic approach to capacity development and more attention needs to be given to the sustainability of established SPS management capacity. This perhaps implies less reliance on technical assistance as the driver of capacity development, although technical and financial support from bilateral and multilateral donors will undoubtedly remain critical. At the same time, there is scope for the better coordination of technical assistance and of processes of capacity-building within the recipient countries in order to ensure that scarce resources are used in the most effective manner.

18. While recognizing the need for the further enhancement of capacity to undertake food safety, animal health and plant health controls in Kenya, Tanzania and Uganda, existing capacity does provide a 'springboard' for on-going processes of capacity development. There is a need, however, for capacity enhancement to focus on establishing and maintaining broad-based and 'lower level' functions, such as broad awareness and recognition of the role of food safety, animal health and plant health controls, and the application of basic 'good' practices along export supply chains. Conversely, much donor intervention has tended to focus on 'higher level' functions, for example enhancing laboratory testing capacity, and/or on compliance with arguably the strictest export market standards, for example EUREPGAP. While such efforts are clearly necessary in order to maintain access to the most exacting markets, for example in the context of a pre-established export sector, they may be less appropriate where the industry is 'nascent'. Arguably, much of the scope for expanding exports of agricultural and food products in Kenya, Tanzania and Uganda falls into this latter category.

1. Introduction

1. In recent years, sanitary and phytosanitary (SPS) measures have become an increasingly prominent issue for global trade in agricultural and food products (Jaffee and Henson, 2004; Josling *et al*., 2004). Of particular concern is the potential impact that food safety and/or animal and plant health measures can have on the ability of developing countries to gain and/or maintain access to markets for higher-value agricultural and food products, especially in industrialized countries. In part this reflects the growing preponderance of SPS measures, but also the more widespread recognition of the degree and manner in which trade flows can be affected. These concerns are typically greatest for low-income countries that tend to have weak SPS management capacities that can thwart efforts towards export-led agricultural diversification and rural development.

2. Recognition of the SPS management capacity constraints faced by developing countries has served to highlight the role of technical assistance and other capacity-building support, both from bilateral donors and multilateral development agencies. While the vast majority of technical assistance is directed at overcoming acute compliance problems (World Bank, 2005a), often in the context of actual or potential trade problems and disputes, increasing attention is being given to the need for a more strategic focus that enhances fundamental food safety and animal and plant health management capacity and enables developing countries to be more 'proactive' in their responses to evolving SPS standards in global trade (Jaffe and Henson, 2004; Henson and Jaffee, 2007). At the same time, it is apparent that there is a need for better coordination of the 'substantial amounts of technical assistance that is being provided in this area and for the sharing of experiences in order to identify 'good practices'. The Standards and Trade Development Facility (STDF) aims to play a role in this regard.

3. This background paper aims to provide input into a process of sharing and comparing experiences relating to capacity-building directed at food safety, animal health and/or plant health management in the context of trade. This process is being pursued through a series of regional consultations that focus on the provision and receipt of SPS-related technical cooperation that will enable on-going priorities to be defined and examples of 'good practice' to be identified. More specifically, this paper provides:

- An overview and assessment of case studies and other evidence on compliance with SPS measures in the context of trade.
- An overview and assessment of existing SPS-related capacity evaluations.
- The identification of cross-cutting issues related to SPS compliance and capacity.
- The identification of gaps in current knowledge related to SPS compliance and capacity.

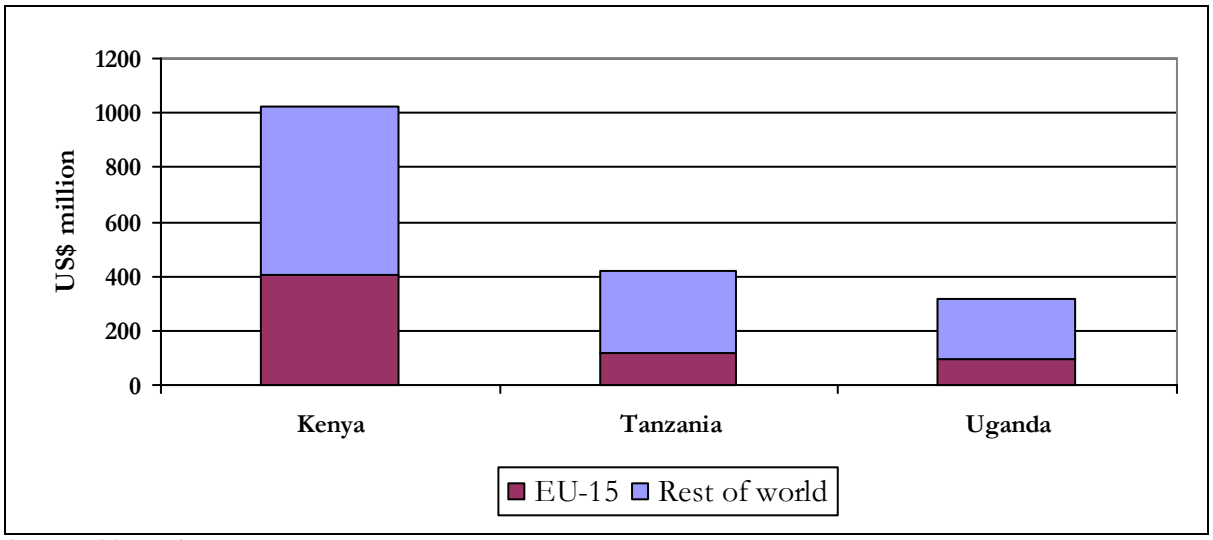
4. The particular focus of this paper is on Kenya, Tanzania and Uganda. For these countries, maintaining and expanding agricultural and food exports, and shifts to 'non-traditional' and 'higher-value' products and markets, are critical to strategies for trade diversification and agribusiness development. Major agricultural and food exports include coffee, tea, vegetables, fruit, fish and fishery products, spices and nuts (Table 2). For a number of these products, compliance with SPS standards, and especially in the European Union (EU) that accounts for around 40 percent of food and beverage exports from Kenya and 29 percent from Tanzania and Uganda (and a far higher proportion of high-value exports) (Figure 1), is critical to export performance. Food safety challenges include controls on microbial contaminants, pesticide residues and naturally-occurring toxicants, in particular mycotoxins. At the same time animal and plant diseases can act as absolute barriers to accessing a broader range of markets, for example the Middle East and the United States (US).

Table 2. Selected agricultural and food exports from Kenya, Tanzania and Uganda, 1990 to 2005 (US$ '000)

Country	1990	1995	2000	2005
Vegetables				
Kenya	39,149	42,051	93,426	119,794
Tanzania	2,365	2,293	397	5,309
Uganda	352	1,314	2,415	4,883
Fruit				
Kenya	13,141	22,711	22,234	37,952
Tanzania	358	308	372	767
Uganda	607	795	311	1,334
Spices				
Kenya	412	405	1,472	3,668
Tanzania	17,799	4,979	10,546	12,489
Uganda	233	519	2,016	6,597
Coffee				
Kenya	123,543	319,475	178,288	135,229
Tanzania	87,604	138,414	87,604	80,871
Uganda	173,170	298,209	125,099	151,227
Tea				
Kenya	290,112	417,928	481,734	536,529
Tanzania	25,139	15,245	19,395	29,972
Uganda	1,967	2,052	1,520	12,889
Nuts				
Kenya	3,519	6,724	8,483	20,194
Tanzania	30,593	117,428	72,424	43,545
Uganda	82	299	103	84
Fish				
Kenya	26,918	36,301	38,874	n/a
Tanzania	1,386	26,462	30,819	n/a
Uganda	6,383	20,381	96,078	n/a

Source: FAOSTAT

Figure 1. Value of food and beverage exports from Kenya, Tanzania and Uganda to the EU-15 and rest of the world, 2004



Source: COMTRADE

2. Overview of SPS evaluations

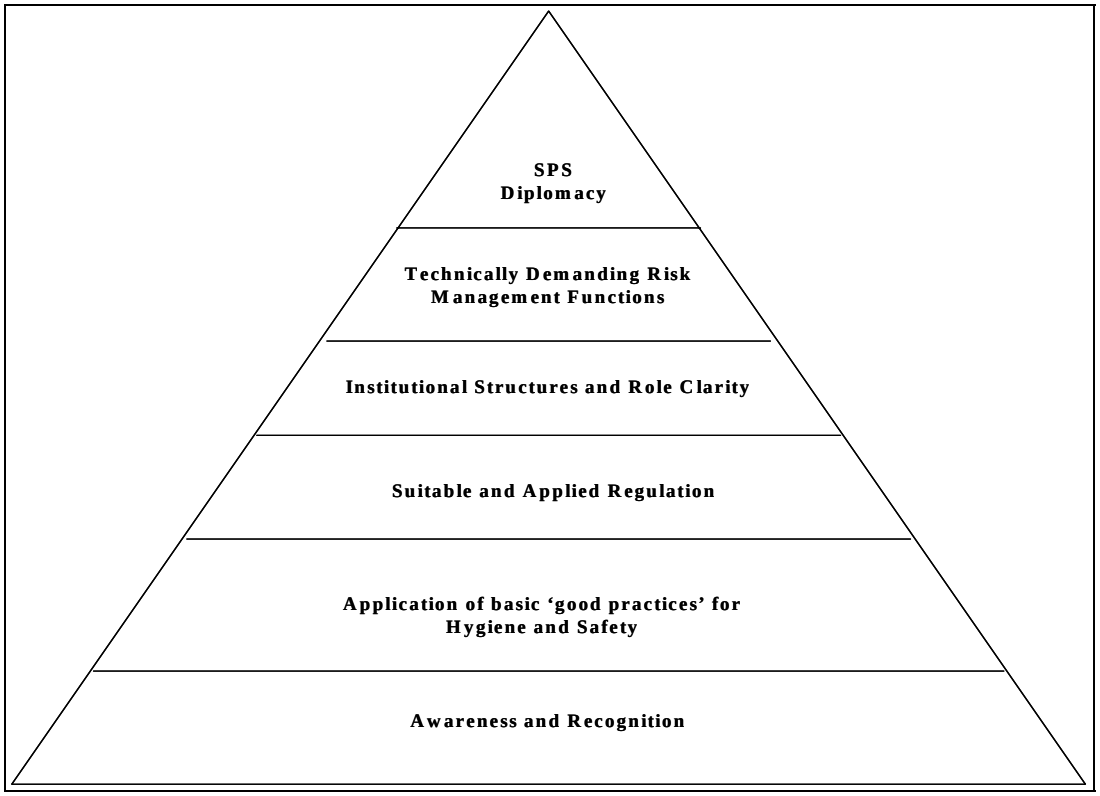
5. Having explored the degree to which the three study countries are compliant with export market SPS standards, we now turn to the broad state of food safety, animal health and plant health management capacity. In the case of animal and plant health, a minimum level of capacity is critical to ensure market access; the existence of certain pests and/or diseases can prohibit entirely exports to certain markets. In many developing countries, this capacity, predominantly in the public sector, tends to be rather weak.

6. Attempts have been made to develop structured frameworks for evaluating SPS capacity that permit comparisons across countries and/or over time. With respect to plant health, the IPPC's Phytosanitary Capacity Evaluation (PCE) Tool (FAO, 2005) enables quantitative assessments of capacity and the identification of priorities for capacity-building. The Performance, Vision and Strategy (PVS) Tool of the OIE and the performance evaluation form of the Pan-African Programme for the Control of Epizootics (PACE) provide similar frameworks for assessments of animal health capacity. The FAO has developed guidelines to assess capacity-building needs to strengthen national food control systems (FAO, 2006) and has plans to produce a condensed version (a so-called 'Quick Guide') for use in situations where a more rapid assessment is needed. However, these guidelines do not represent a formal quantitative assessment framework in the say way as the PCE and PVS tools.

7. Collectively, these formal capacity evaluation frameworks aim to enable countries to undertake self-evaluations of capacity and, given the level of detail and potential sensitivity of the results, the consequent reports are generally confidential. Thus, for the purposes of preparing this report it was not possible to include the results of evaluations using the IPPC and OIE instruments. Here we largely rely on less structured appraisals, such as those undertaken as part of the Diagnostic Trade Integration Study (DTIS) for Tanzania (Integrated Framework, 2005) and Uganda (Integrated Framework, 2006). However, summary data from evaluation of animal health capacity under PACE, and detailed results for Tanzania, were available. Assessments of food safety management capacity in the three countries undertaken as pilots of the FAO framework were consulted.

8. In the realm of food safety, animal health and plant health management a multitude of inter-related functions have to be performed, making it difficult to make sense of the capacity that is observed. Thus, which elements of capacity are critical, such that a system will not function (or will function inefficiently or ineffectively) if they are missing? Further, with respect to capacity-building, what elements of capacity should ideally be established first and/or are critical for sustainability? The notion of priorities in the strengthening of capacity is integral to all of the evaluation frameworks discussed above. However, here we examine SPS capacity from a broader perspective, while also identifying specific and critical weaknesses in this capacity, that requires a more generic notion of priorities. Thus, we (in a loose sense) employ the hierarchy of SPS management functions presented in World Bank (2005) (Figure 2). This hierarchy gives greater credence to 'softer' elements of capacity, for example awareness, than the more formal evaluation frameworks.

Figure 2. Hierarchy of trade-related SPS management functions



9. In this hierarchy, the foundation of any SPS management system is awareness and recognition, in both the public and private sectors and from the level of decision-makers to implementers and operatives, of the importance of effective SPS controls to export competitiveness and recognition by each party of their own role in this system (World Bank, 2005). It is unlikely that any system of SPS management can be effective or sustainable without broad-based appreciation of its functions and roles. The next stage is the application of established risk and quality management practices through the supply chain from production to distribution, most notably HACCP, good manufacturing practice (GMP) and GAP. Regulatory action may be required to compel implementation of these practices if there is insufficient market-based incentive to do so in the short to medium term. With broad awareness and common application of good practices, many potential SPS risks can be managed effectively at the farm or firm level. However, there are other risks that are more systemic in nature, and that are not confined to particular production or processing operations, such that they cannot be fully controlled on a decentralized basis and require broader oversight or collective action. This can entail research and analytical functions, surveillance and quarantine systems and emergency management arrangements. Many plant and animal diseases fall into this category. These more technically-demanding functions often require sophisticated skills, specialized equipment and well-defined organizational structures, supported by recurrent funding. Some of these functions need to be legally mandated to ensure that they are implemented appropriately. Finally, at the top of the pyramid is 'SPS diplomacy', which relates to engagement with the WTO, Codex Alimentarius, OIE and IPPC, as well bi-lateral relations with trading partners.

2.1 Kenya

10. Broad reviews of SPS management capacity have been undertaken in Kenya as part of the WTO's Trade Policy Review process (WTO, 2006a) and, for food safety, as a pilot of FAO's Guidelines to Assess Capacity-Building Needs to Strengthen National Food Control Systems (Mollins and Gitonga, 2006). Unlike the other study countries, however, there is no DTIS. Kenya's

submission on technical assistance requirements to the SPS Committee in 2002 provides hints of areas where capacity needs strengthening (see Table A1), although this is now a little outdated. More recently, Kenya's submission to the FAO/WHO Regional Conference on Food Safety for Africa in 2005 identifies areas of strength and weakness, specifically with respect to food safety controls (FAO/WHO, 2005a; 2005b).

2.1.1 Awareness and Recognition

11. In general, the level of awareness of the role that SPS management capacity plays is limited in Kenya and there is an evident need for concerted information campaigns and training at all levels of government and within the general population. In contrast, within key export sectors, most notably horticultural products, flowers and fish and fishery products, awareness is well-established at most levels of the supply chain. In part this reflects the problems that the Nile perch sector has faced in complying with EU hygiene standards, and also the perceived threat to horticultural exports from the demand among major buyers for the implementation of EUREPGAP. Both of these issues has received considerable attention in the media, acting to enhance awareness of the role that food safety standards play in international trade. However, outside of these export sectors, such awareness tends to be 'issue' based rather than representing a more general recognition of the critical roles played by SPS management capacity. There is also an apparent lack of 'learning' from the experiences of Nile perch and horticultural products, in particular, on the part of other sectors.

12. In the major export sectors, private industry organizations play a key role in the monitoring of SPS standards in export markets, assessment of impacts, liaison with government and communication within the sector. The Kenya Flower Council and FPEAK are most proactive in this regard, and arguably are well ahead of the government in foreseeing how standards are likely to change and the implications for SPS management capacity in Kenya. At the same time, there is generally good coordination and cooperation with government. For example, FPEAK is an active participant in the National Task Force for Horticulture that encompasses both the public and private sectors. While AFIPEK is less proactive in this regard, it has evolved over time into a more effective industry organization that liaises and collaborates with government on the enhancement of food safety controls along the Nile perch supply chain.

2.1.2 Food Safety Controls

13. Turning now to the higher levels of capacity in Figure 2, and to food safety control capacity in particular, the pilot application of FAO's capacity assessment guidelines presents in-depth analysis of prevailing strengths and weaknesses (see Table A2) (Mollins and Gitonga, 2006). At the current time, Kenya lacks a defined and published policy on food safety as part of a wider National Food and Nutrition Policy (NFNP). The overall goal of the NFNP is:

> *"To have all Kenyans enjoy at all times food that is free from adverse substances in sufficient quantity and quality to satisfy the nutritional needs of individuals taking into account dynamics in feeding habits."*

14. Although a new Food and Feed Regulation has been promulgated and passed into law in January 2006 (Mollins and Gitonga, 2006), the attendant regulations have yet to be implemented, such that legislative provisions for food safety remain outdated and non-compliant with international standards.

15. More generally, there are weaknesses with the management of SPS management capacity in Kenya, and in particular food safety controls. As Kenya's submission to the FAO/WHO Regional Conference on Food Safety for Africa attests (FAO/WHO, 2005b):

Most food safety challenges facing the country could be attributed to the management system's inability to detect potential risks and gaps, share information, plan together and identify appropriate strategies for collaborative management of food safety in the supply chain and protect the consumer.

16. As a result, scarce resources are often not used in the most effective manner, with duplication of tasks in some cases (for example multiple inspection of processing facilities) and entire gaps in controls in others. The lack of managerial efficacy also tempers the scope for Kenya to be proactive in addressing emerging issues, whether in export markets or domestically, such that it perhaps does not perform to the maximum of its potential. There is, however, a proposed National Food Safety Focal Point that would be charged with coordinating the responsibilities and functions of the various agencies of government charged with food safety controls (Mollins and Gitonga, 2006). Time will tell whether this institution is an effective remedy to this problem.

17. Within the food processing sector, food safety controls closely mirror a 'three-tier' model[1]. Thus, hygiene standards in key export sectors (and most notably high-care semi-processed horticultural products (Jaffee, 2003)) are 'on par' with the best in the world. Large and medium-sized food processors more generally, some of which export (for example canned fruit) and/or supply domestic markets (for example milk and dairy products) also have generally good hygiene controls, although application of HACCP is not universal. Finally, there is an enormous informal sector consisting of SMEs, that in some sectors can account for 80 percent or more of the supply to domestic markets (for example milk and meat) where hygiene controls are rudimentary (at best) and there is little or no oversight, whether public or private. Thus, we should see key export sectors as 'islands' of high-level food safety management capacity within a 'sea' of broad incapacity.

2.1.3 Plant Health Controls

18. Ironically, the success of the Kenyan fresh vegetable and flower sectors has occurred not because of a strong national base of SPS management capacity, but in spite of the generally weak capacity. To the extent possible, these firms take active measures to by-pass limitations in public oversight and SPS management, either on an individual or a collective basis. Thus, much of the oversight of food safety controls in the horticultural supply chain comes through private systems of certification, for example the BRC Global Standard and EUREPGAP. Further, FPEAK coordinates surveillance of export shipments of fresh vegetables for pesticide residues, that are tested by KEPHIS or at a private laboratory. FPEAK was also actively involved in the development of the Kenya Bureau of Standards (KEBS) standard for production of fresh fruit and vegetables for export and is now engaged in translating this into KenyaGAP, that will be benchmarked to EUREPGAP.

19. Although food safety capacity is limited, Kenya does have laboratories facilities that are capable of undertaking the full range of tests on food samples for the purpose of meeting export market requirements. Thus, KEBS has accredited laboratories for microbiological and chemical analyses. There are other facilities equipped for microbiological and chemical analysis, although in many cases these are in need of upgrading and have not been internationally accredited. KEPHIS has the one laboratory with international accreditation to undertake tests for the full range of pesticide residues. This laboratory is currently used to undertake analyses on horticultural products and fish.

[1] With respect to food safety, in contrast, we tend to observe a two-tiered system that can span the public and private sectors; a relatively advanced, market-driven food safety control system directed at compliance with international market standards for exports and a weak or neglected food safety control system for local markets (FAO, 2006). In some countries the situation is somewhere between these two extremes, with a 'third tier' of relatively rigorous food safety controls for large- and medium-sized processors in the formal sector supplying domestic markets, while controls may be non-existent for micro and small enterprises (SMEs), predominantly in the informal sector.

20. Kenya has relatively well-developed plant health controls under KEPHIS, especially in the context of most low-income countries. Much of the focus, however, has been on establishing credible systems for the inspection of horticultural and flower production and packaging facilities and export consignments. The control systems of the major export firms have also been harnessed to achieve effective pest controls in order to gain access, for example, to US markets for an increasing array of products.

21. More broadly, capacity to undertake pest risk assessment (PRA) remains weak and surveillance systems are rudimentary. Diagnostic capacity, including laboratory facilities and pest databases, also needs to be enhanced. As a result, it is difficult to establish and maintain pest-free areas and there are regions of the country where pests of trade significance occur and limit market access. For example, coastal areas of Kenya have had problems with exotic species of fruit fly that impinge on exports of certain tree fruit, for example to the Middle East. Finally, KEHPIS has no legal powers to prevent the exportation of violative products and/or to apply penalties to those who supply non-compliant products. This limits its ability to establish and maintain effective controls for key plant pests and diseases in export commodities.

22. Weaknesses in controls on plant pests and diseases are the cause of 'underlying' concerns that access to key markets for horticultural products and flowers could be curtailed, or that the imposition of export market border controls will act to diminish the competitiveness of Kenyan exports. Thus, in 2002 Kenya supported the concerns raised by Ecuador and Israel about plant health controls for cut flower imports to the EU (WTO, 2007a) that implied risk-based and tighter border inspections. More generally, there are concerns in Kenya that a more comprehensive approach to the management of plant pests in the EU will present challenges into the future.

2.1.4 Animal health controls

23. The Department of Veterinary Services under the Ministry of Livestock and Fisheries is responsible for animal health controls in Kenya. Recently, an evaluation of capacity in this area has been undertaken using the OIE's PVS Tool, although this is currently subject to peer review and is not publicly available. However, recent evaluations of animal health controls in 29 African countries under the PACE programme (Squarzoni *et al*., 2006) enable us to assess the status of capacity in Kenya and the other two study countries relative to the sub-continent as a whole and to a minimum level of functionality that is deemed 'satisfactory'.

24. Data are available from the PACE programme for semi-quantitative evaluations undertaken in 2004, 2005 and 2006 that enable not only the current status of capacity to be assessed, but also the sustainability of this capacity to be judged. The aggregate scores are derived from an analysis grid composed of 67 criteria categorised under 11 thematic items. The total score and score per item are calculated as averages on a scale from 'not yet implemented' (1) to 'satisfactory' or 'complete' (4). Scores are also estimated for the effective operation of animal health controls ('dynamic score') based on levels of re-training of staff, implementation of OIE procedures, access to equipment, etc. Judgements of the sustainability of the system ('sustainability score') are based on the level of government funding relative to that deemed necessary for the sustainability of normal animal disease surveillance activities.

25. In the case of Kenya, the total and dynamic scores are higher than for the East Africa region as a whole and for the entire 29 countries in the study, and are higher than for Tanzania and Uganda (Table 3). However, other qualitative evaluations (see for example Abegaz, 2007) suggest that the regulatory framework is in need of updating to conform with OIE norms and the broader requirements of the SPS Agreement. Further, the capacity to undertake disease surveillance and to implement quarantine procedures are limited, precluding the establishment and maintenance of disease-free areas. Thus, while Kenya has made good progress in controlling Rindepest, with support from the PACE programme, a number of OIE 'List A' disease are endemic and restrict exports of livestock and

livestock products to both regional and international markets. The ability to take emergency actions in order to curtail outbreaks of disease is also limited. For example, in 2007 Oman instigated emergency restrictions on imports of live animals from Kenya (as well as Tanzania, Uganda and a number of other East and Southern African countries) to prevent the spread of Rift Valley Fever (WTO, 2007).

Table 3. PACE evaluation scores for animal health control systems in study countries

Country	Total Score	Dynamic Score	Sustainability Score
Kenya	2.86	2.93	0.5
Tanzania	2.72	2.82	0.5
Uganda	2.68	2.79	3.0
Average score for 10 countries of East Africa	**2.37**	**2.58**	**1.28**
Average score for 29 African countries	**2.40**	**2.69**	**1.10**

Source: Squarzoni et al. (2006).

26. The PACE evaluation raises questions about the sustainability of established animal health control capacity in Kenya. In 2006, government funding of animal health controls was at only 11 per cent of the level deemed necessary to maintain established animal disease surveillance activities. Indeed, the sustainability score for Kenya was significantly below the average for the East Africa region as a whole and was lower than for Tanzania and Uganda.

27. With respect to 'SPS diplomacy', Kenya has a functioning National Notification Authority and Enquiry Point. The Ministry of Trade and Industry (MITI) has overall responsibility for WTO matters, but delegates SPS issues to respective departments in the Ministry of Agriculture and Rural Development and Department of Health (WTO, 2006b). While there is a National Committee on the World Trade Organization (NCWTO) that aims to coordinate SPS and other matters, it is evident that the fragmentation of the Enquiry Point and administrative responsibly for SPS matters more generally across three government ministries/departments creates coordination and communication problems (Nyangito *et al*., 2003).

28. To provide an indication of Kenya's engagement in the establishment of international SPS standards, Table 4 presents data on the proportion of meetings of General Purpose Committees of the Codex Alimentarius Commission attended over the period 1995 to 2006. The proportion of meetings attended has increased appreciably over time, although some of the lowest rates of attendance are in areas which might be considered of greatest interest for Kenya, for example pesticide residues. Indeed, this issue was raised as part of Kenya's submission on technical assistance requirements to the SPS Committee in 2002 (Table A1).

Table 4. Proportion of Codex Alimentarius General Purpose Committee Meetings Attended by Study Countries, 1995 to 1999 and 2000 to 2006

Committee	Kenya		Tanzania		Uganda	
	1995-1999	2000-2006	1995-1999	2000-2006	1995-1999	2000-2006
Food Hygiene	60%	80%	40%	40%	20%	20%
Pesticide Residues	40%	57%	60%	43%	0%	29%
Food Import and Export Inspection and Certification Systems	40%	75%	0%	0%	20%	0%
Veterinary Drugs in Food	33%	50%	0%	0%	0%	0%
Nutrition and Food for Specific Dietary Uses	33%	100%	0%	86%	0%	14%
Food Labelling	0%	100%	0%	33%	0%	17%
Methods of Analysis and Sampling	0%	80%	0%	60%	0%	0%
General Principles	33%	33%	0%	22%	0%	56%
Food Additives and Contaminants	40%	43%	0%	29%	20%	43%

2.2 Tanzania

29. A number of broad evaluations of SPS management capacity have been undertaken on Tanzania, for example under the WTO's program of Trade Policy Reviews (WTO, 2006c) and the Integrated Framework's series of DTIS (Integrated Framework, 2005), including background research by the World Bank (2005b) (See Table A3). Specifically on food safety, Molins and Masaga (2005) have completed a Tanzanian pilot of FAO's Guidelines to Assess Capacity-Building Needs to Strengthen National Food Control. More detailed results from the PACE evaluation of animal health management capacity are available than for Kenya and Uganda (MWLD, 2006). Tanzania has not made a submission on technical assistance requirements to the SPS Committee.

2.2.1 Awareness and recognition

30. Tanzania does not have a defined and published policy on food safety, animal health and/or plant health management (World Bank, 2005; Molins and Masaga, 2006). Although it is evident that the government is supportive of related institutions, the level of resource allocation is inadequate to support the necessary functions and capacity-building. This reflects the fact that awareness and recognition of SPS matters and their importance to domestic safety and productivity and export market performance is limited. This includes among politicians and senior policy-makers, but also many elements of the agricultural and food sector and consumers. The notable exception is fish and fishery products for export, where the need for food safety controls is well recognized and appreciated, and the efforts made to achieve compliance with EU hygiene standards are even a source of 'national pride'.

31. In Tanzania, SPS matters are not a 'union' matter and so there are distinct approaches in the Tanzanian mainland and Zanzibar, with each having its own legislative frameworks, institutional structures, etc. Broadly, prevailing capacity in both jurisdictions is relatively weak, especially as one moves up the pyramid of functions depicted in Figure 3; Molini and Masaga (2006) provide an itemized listing of areas of deficiencies that is prioritized for capacity building (Table A4). Reflecting space limitations, our focus here is on the mainland of Tanzania.

2.2.2 Food safety controls

32. Historically, food safety controls in Tanzania were based on a multitude of legal instruments and involved numerous public institutions. However, in 2003 a Tanzania Food, Drugs and Cosmetics

Act was promulgated, updating existing legislation and creating a Tanzania Food and Drugs Authority (TFDA) within the Ministry of Health and Social Welfare. The TFDA was ostensibly established as the single entity with responsibility for protecting domestic consumers. However, there is considerable overlap with the on-going activities of the Tanzania Bureau of Standards (TBS), for example establishing minimum standards and inspecting food imports, and there appears to be limited coordination between the two agencies (World Bank, 2005). Further, resource constraints have meant that the TFDA has been unable to translate its numerous responsibilities into its day-to-day operations (Molini and Masaga, 2006). Thus, the TFDA has weak physical infrastructure (for example laboratories) and limited staff, for example to undertake border inspections. The duplication of tasks between the TFDA and TBS means that these limited resources are perhaps not used as effectively as they might.

33. In general, the updated legislative framework for food safety controls in Tanzania provides an adequate legal basis for official oversight. However, there is a need to revise attendant regulations in order to ensure compliance with international norms and/or requirements in export markets. Where substantive reforms has occurred, this has generally been in the context of specific trade problems, most notably for exports of fish and fishery products to the EU. What such cases do illustrate, however, is the willingness and ability of the Tanzanian authorities to act when they need to!

34. Currently, the existing legislative framework governing SPS capacity and food quality is under review by the Better Regulation Unit (BRU) of the Ministry of Planning, Economy and Empowerment under the Business Environment Strengthening for Tanzania (BEST) programme (Molini and Masaga, 2006) This aims to establish a more enabling and sustainable regulatory environment for business, to enhance enterprise competitiveness and to improve service delivery to the private sector by the government in order to support the growth of the private sector.

35. The food safety control system is broadly characterized by a ‘two-tier’ model. There is little awareness of proper hygiene practices among food handlers in Tanzania and limited understanding and application of HACCP principles in the food manufacturing sector that supplies domestic markets (World Bank, 2005). Indeed, no food processing establishments that manufacture products for the local market operate under the HACCP system and only two TBS inspectors are trained in HACCP (Molini and Masaga, 2006). Further, the supply of foods to domestic markets is dominated by the informal sector that is subject to little or no controls. This contrasts with the export sector, in particular fish and fishery products, where hygiene standards are broadly compliant with international norms and requirements in key export markets, most notably the EU.

36. Neither the TFDA nor TBS has any direct involvement in the monitoring of agricultural and food products for export. Responsibility for the monitoring of fish and fishery products lies with the Fisheries Department of the Ministry of Natural Resources and Tourism. Here, oversight is essentially through the public sector. In contrast to the TFDA, the Fisheries Department is adequately resourced to perform its functions as regulator through a mix of governmental support and user fees (Molini and Masaga, 2006). Regulation of the horticultural sector is essentially through the controls of private exporters and certification by third party bodies to the BRC Global Standard, EUREPGAP, etc. Currently, around 20 suppliers are certified to EUREPGAP in Tanzania (Table 9). Many exporters use foreign laboratories to undertake test for pesticide residues, especially when this is required by a foreign market regulator or buyer.

37. Despite the capacity constraints highlighted above, the TFDA has a Risk Assessment Unit (Molini and Masaga, 2006). This unit has categorized registered food processing establishments according to their inherent food safety risk. Inspections of food processing establishments are said to be scheduled on the basis of this defined risk and on the compliance history of each establishment. Further, in 2003 the TFDA issued guidelines for the registration of pre-packaged food products that require facilities processing dairy products, meat, fish and other relatively high-risk products to implement HACCP and to have certification of compliance for their HACCP plan (World Bank,

2005). To date, however these guidelines have not been implemented, and indeed have been the subject of a legal challenge (World Bank, 2005).

38. Laboratory capacity for the purpose of food safety control is generally weak. Although there are numerous laboratories with some ability to undertake microbiological and/or chemical analyses, these are generally outdated and lack the equipment necessary to perform the tests required for compliance with export market standards. To date none of these laboratories has been internationally accredited, although a number are in the process of implementing the required procedures and are expected to achieve accreditation in the not too distant future. For example, the food microbiology laboratory of the TBS was waiting for its final inspection as of the end of 2006. Unlike Uganda and Kenya, there are no private food laboratories in Tanzania that enable weaknesses in public sector capacity to be by-passed, such that exporters are required to use the services of foreign laboratories, for example in South Africa.

39. As a result of structural changes in administrative responsibilities within the public sector, persistent under-funding and lack of clearly defined responsibilities, the system of animal health controls in Tanzania was near to collapse at the end of the 1990s (World Bank, 2005). However, in recent years considerable efforts have been made to implement reforms, including administrative changes and updating of the legal framework, such that capacity has improved considerably.

2.2.3 Plant health controls

40. A revised legal framework for plant health controls was implemented in 1997 and the attendant regulations were subsequently implemented in 1999 (World Bank, 2005). However, while the Plant Protection Act established a National Plant Protection Advisory Committee it did not clearly specify which agency would act as the National Plant Protection Organization. The legislation also does not include provisions for pest surveillance, pest risk analysis, pest free areas or the protection of threatened species. Hence, while Tanzania has recently become a member of the International Plant Protection Convention (IPPC), in many key respects its legislation and administrative system do not comply with international norms.

41. Two separate entities are involved in the inspection and/or certification of imports and exports of plant materials, the Plant Health Service (PHS) of the Ministry of Agriculture, Food Security and Co-operatives (MAFC) and the Tropical Pesticides Research Institute (TPRI). The PHS has 165 inspectors based at 28 entry points, including the international airports and major sea and lake ports and selected border posts. However, many of these staff do not have specific training in phytosanitary matters (World Bank, 2005). At most of the field stations staff do not have reference materials for pest identification and have little or no direct means of communication with PHS headquarters. Only one inspection post has a laboratory for the rapid identification of pests or diseases.

42. The lack of established reporting procedures and poor communication with producers and exporters means that there is no established pest surveillance in Tanzania (World Bank, 2005). There is no central repository for documents and data management of pest records or surveillance data. While phytosanitary certificates are issued for exports, there is no computerized system to retrieve the attendant documentation or to trace consignments, nor a formal system for investigating cases of non-conformity in consignments.

43. As a result of these weaknesses, Tanzania has been prone to outbreaks of plant pests and disease, some of which are of trade significance. These have included Cassava Green Mite, Large Grain Borer (in maize), Woolly White Fly (in citrus fruits) and Banana Wilt Disease (World Bank, 2005). Currently, a major concern is the infestation of citrus and mango-growing areas by an exotic variety of fruit fly that could threaten Tanzania's exports of oranges and mangoes, for example to the Middle East.

44. Historically, budgetary resources for phytosanitary services have been limited, such that controls have tended to be driven by pest outbreaks. Although these actions have often been quite successful, they have generally been dependent on, and often driven by, donor interventions. In recent years, however, the allocation of domestic resources has increased, while the PHS has been able to raise some revenues via cost recovery fees.

2.2.4 Animal health controls

45. In 2003, the Animal Disease Act and Veterinary Act provided for animal health controls that are broadly in compliance with international norms. Under this legislative framework the Directorate of Veterinary Services (DVS) of the Ministry of Water and Livestock Development is responsible for animal health matters, with a mandate to control animal diseases, protect consumers against livestock-borne diseases and support the provision of animal health services.

46. The DVS has inspectors at 22 ports of entry into Tanzania, although communications between these points and central headquarters is weak. The DVS manages seven veterinary investigation centres in different zones of the country and 19 holding grounds which serve as quarantine stations. The DVS itself has only a limited number of staff veterinarians, although around 130 veterinarians work in local government or regional administrations. However, the DVS estimates that the number of government veterinarians at central or local levels is about half of that needed to coordinate animal health services properly and to undertake effective disease surveillance (World Bank, 2005).

47. Animal disease surveillance in Tanzania remains intermittent and suffers from problems in attaining effective coordination between local and centrally-based staff (World Bank, 2005). Further, there is no established animal health information system and capacity to perform risk assessment. Thus, Tanzania struggles to control and eradicate a number of OIE 'List A' epidemic diseases, which restrict its access to international markets (WTO, 2006). In order to increase its livestock exports, Tanzania envisions creating specific disease-free zones, which would be recognized by its trading partners in accordance with the OIE Terrestrial Animal Health Code. The DVS has prioritized Rinderpest, contagious Bovine Pleuropneumonia (CBPP) and Foot and Mouth Disease (FMD) in its programme of surveillance and international collaboration. However, many of the attendant actions are dependent on donor support, for example the PACE programme in the case of Rindepest that has shown very encouraging results.

48. A broad evaluation of animal health capacity in Tanzania is provided by the PACE programme. The total score is lower than in Kenya, but higher than for the 10 countries of East Africa and the 29 African countries in the study (Table 3). Particular strengths and weaknesses are outlined in Table A5. In contrast to Kenya and Uganda, the sustainability of established capacity is judged to be relatively secure, with 78 percent of the required resources being made available by the government in 2006. The sustainability score is significantly above that for the countries of East Africa and African countries in the study as a whole.

49. Tanzania's capacity to engage in 'SPS diplomacy' remains limited. While both an Enquiry Point (TBS) and National Notification Authority (Ministry of Industry and Trade) have been established, there are evident problems with coordinating responses to emerging issues and effective communication among the various agencies engaged in SPS matters. While there are signs that participation in international standards-setting has increase in recent years, as illustrated by the example of Codex Alimentarius (Table 4)and in part due to support from the Codex Trust Fund, Tanzania is not able to sustain its participation in key areas of interest. Further, key infrastructural weaknesses and resource constraints limit the ability of officials to respond to emerging issues in a timely manner, including internet access to consult documents prior to meetings and travel funds for national experts to attend meetings. Even where issues are identified in a timely manner, weaknesses in research and surveillance capacity limit the scope of Tanzania to pursue its national interest.

2.3 Uganda

50. The information presented in this section comes from general assessments of SPS capacity undertaken as part of the WTOs Trade Policy Review (WTO, 2006d), the Integrated Framework's DTIS (Integrated Framework, 2006), and related background research by the World Bank (2006) (see Table A6), and a recent study by CEAS (2006) for the STDF. It also draws on the Ugandan pilot of FAO's Guidelines to Assess Capacity-Building Needs to Strengthen National Food Control Systems (Molins and Bulega, 2006) for food safety and the evaluation of the PACE program for animal health. Uganda's submission on technical assistance requirements to the SPS Committee in 2002 provides some indication of identified areas of capacity that are in need of strengthening (see Table A7), although this is now rather outdated.

2.3.1 Awareness and recognition

51. Overall awareness of the nature and importance of SPS management capacity among policy-makers and through the food supply chain is limited, although there is wider recognition of the importance of food safety controls (WTO, 2006; Molins and Bulega, 2006). The problems experienced with Nile perch exports to the EU served to highlight the implications for Uganda of non-compliance with export market standards, although this situation has tended to be seen as a 'fish problem' and one that can be corrected through market forces rather than being of more general relevance and needing government action (Molins and Bulega, 2006). Thus, this awareness has not always translated into policy action, especially in terms of the needed resources and/or legislative and institutional reforms.

52. There are, however, signs that the situation is changing in the food safety arena. Thus, the Ugandan government has issued a National Food Safety Strategic Plan 2005-2008 (Molins and Bulega, 2006) that has as its purpose:

> *"To guide the implementation of the new food safety law, food safety programmes, activities and other food safety control systems in the country, ... give the new law a sense of direction and translate it into a tool for an effective food safety control system, including accountability by the lead agency, ... and clearly spell out the roles and responsibilities of the key stakeholders, address issues of institutional linkages, collaboration and harmonization of activities aimed at promoting and improving the status of food hygiene and safety in Uganda."*

53. Reflecting the relatively low priority given to SPS matters historically, 'higher level' capacities (as depicted in Figure 3) tend to be weak, with the one notable exception of the fish and fishery products sector. Indeed, the attention given to this specific case in evaluations of SPS capacity in Uganda is notable; it is clearly held up as an example of what can be achieved, although it is not one that has been widely emulated in other sectors to date.

2.3.2 Food safety controls

54. Broadly, public food safety controls in Uganda can be characterized as outdated, although a lengthy process of reform is on-going (World Bank, 2006). For an itemization of specific deficiencies see Table A8. Currently, official food safety controls are implemented under the Food and Drugs Act of 1964 (Molins and Bulega, 2006). However, broadly this legislation does not conform with international norms and there is no reference to some important contemporary food safety issues, for example food additives and contaminants. Under the National Food Safety Strategic Plan, a new bill has been drafted that aims to update this legislative framework. However, Molins and Bulega (2006) posit that the delay in enacting this bill suggests a lack of understanding and agreement on the scope and significance of food safety matters among legislators and decision-makers in the public sector and, further, may be indicative of divergent views between the various parts of government currently

charged with regulating food safety. The process of legislative reform in other areas, for example plant health controls, has also been protracted.

55. A number of institutions are involved in implementing public food safety controls. Although the Ministry of Health is given overall responsibility for regulating domestic food safety, fish and fishery products and livestock and livestock products come under the jurisdiction of the Ministry of Agriculture, Animal Industry and Fisheries, while the Uganda National Bureau of Standards (UNBS) enforces a range of food product standards. The National Food Safety Strategic Plan 2005-2008 envisages the formation of a Food Safety Council housed in the Ministry of Health to coordinate food safety controls across government and to undertake monitoring and auditing food inspections in areas that come under the responsibilities of the Ministry of Health (Molins and Bulega, 2006).

56. Food safety controls through the food supply chain are characterized by the 'two-tier' model discussed above. Thus, across most sectors and in both the formal and informal sectors, food safety controls are typically rudimentary. While processing plants in the formal sector are subject to inspection by the Ministry of Health through local authorities and the UNBS has launched a programmes to promote GMP, HACCP and ISO 22000, in practice there is scarce implementation of systematic approaches to food safety management. The UNBS does operate a voluntary Product Certification Scheme, in which around fifty local companies participate (World Bank, 2006), although the associated standards are not that exacting. Likewise, in agricultural production, implementation of GAP is the exception rather than the rule; as of 2006, only one supplier was EUREGAP certified in Uganda (Table 9). This is in stark contrast to the fish and fishery products sector that has been required to comply with EU food hygiene standards and is the glaring 'outlier' in the Ugandan agri-food sector.

57. At the current time there is little or no capacity to undertake food safety-related risk assessment. In part this reflects limited research in the area, despite the existence of considerable research capacity, but also the lack of rigorous monitoring programmes for microbiological and chemical contaminants. The one exception is *Vibrio* spp, that was implicated in the original ban on exports of fish and fishery products to the EU in the later 1990s (Molins and Bulega, 2006).

58. In contrast to the general landscape of weak food safety capacity in Uganda, laboratory testing can be considered adequate given current needs in order to service export market requirements (World Bank, 2006). In the public sector, the UNBS laboratories for microbiological and chemical analyses are in the process of achieving accreditation and/or participate in regional proficiency testing programmes (Molina and Bulega, 2006). The UNBS laboratory is currently used for testing of fishery product samples, although the Department of Fisheries is in the process of constructing its own laboratory. There are also private sector laboratory facilities including Chemiphar (U) Ltd, an internationally-accredited laboratory established predominantly for the purpose of undertaking analysis of fisheries product samples, and SGS. Indeed, there is evidently competition between the laboratories operated by UNBS, Chemiphar and SGS (World Bank, 2006). At the same time, however, lack of coordination across the various public and private sector entities that have laboratories at times leads to duplication of tasks and capacity. For example, the laboratories of the Government Chemists, UNBS, Department of Livestock and Entomology and ChemiPhar have all acquired the equipment necessary to undertake tests for pesticide residues (World Bank, 2006).

59. Reflecting the general non-application of GAP and weaknesses in regulatory frameworks, chemical contaminants in agricultural and food products are an prominent concern in Uganda. In particular, contamination of coffee, chillies, paprika and other spices with mycotoxins is a persistent problem. Indeed, there have been related border detentions of exports to the EU (Table 5). There is also a need for more efficacious controls for pesticide residues, extending beyond agronomic practices to include effective product registration, regulated maximum residue levels (MRLs), etc.

60. The duplication of tasks is most evident with the inspection of processing facilities and at border points. Thus, both the Ministry of Health, through local authorities, and the UNBS inspect food manufacturing plants. Further, while only a limited number of border posts have adequate inspection capacity, both the UNBS and MAAIF (including the separate departments responsible for plant pest and disease and animal health controls) are making efforts to enhance their inspection capacity (World Bank, 2006). There may be scope for collaboration across these agencies to make better use of scarce resources.

2.3.3 Plant health controls

61. Responsibility for plant pest and disease controls in Uganda lies with the Crop Protection Department of MAAFI, that also formulates and enforces regulations related to agro-chemicals. The Crop Protection Department operates within a regulatory framework that is in need of reform. A draft Plant Protection and Health Bill seeks to update this legislation to reflect the International Plant Protection Convention (WTO, 2006e). This Bill designates the Crop Protection Department as the National Plant Protection Office (NPPO). To date, however, this has legislation has not achieved parliamentary approval. A draft Control of Agricultural Chemicals Bill provides for the separation of the regulation of chemicals and fertilizers and implements measures that aim to ensure pesticide-related safety throughout the food chain. This regulatory framework is also in the process of ratification.

62. Uganda has implemented the IPPC's PCE, but the results are not publicly available and are not considered here. It is apparent, however, that capacity for plant pest and disease control remains rudimentary (Songa, 2003; World Bank, 2006). The lack of an official pest list and basic phytosanitary information, and of research and diagnostic facilities, hamper effective controls (CEAS, 2006). There is also no institutionalized pest surveillance program. Although the Crop Protection Department has recently increased the number of zone and border inspectors to strengthen monitoring and surveillance of plant health, these are in need of further enhancement (WTO, 2006). Upgrading necessitates both physical investments, for example in laboratory facilities, and training of officials in pest risk assessment, quarantine procedures, etc.

63. There are significant problems with plant pests in Uganda, that diminish agricultural productivity and hamper exports (CAES, 2006). Fruit fly is one of the most important phytosanitary pests and a major barrier to accessing potentially lucrative markets, for example the Middle East and US. In the case of staple crops, such as grains and bananas, key pests and diseases include the Grain Borer, nematodes, weevils, Black Sigatoga and Fusarium (causing Panama Wilt).

64. The only offices providing phytosanitary certificates for export are located at or near Entebbe airport (CEAS, 2006). This significantly limits officially-certified exports to those that are shipped via the airport (for example flowers, fish and horticulture products) or to products that are aggregated in the Kampala/Entebbe area prior to export to other countries. Local border stations are not empowered to issue phytosanitary certificates such that exports from these areas are sent without phytosanitary certificates and/or are traded on the informal market.

2.3.4 Animal health controls

65. Controls on animal diseases fall under the responsibilities of the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). Historically, Uganda had a good system for animal health management, but this collapsed in the political upheavals of the 1970s and 1980s (World Bank, 2006). More recently, controls have improved with support from regional livestock development programmes and efforts towards strategy formulation and action plan development.

66. The legislative framework for controls on animal health is evidently in need of reform in order to bring it into compliance with international norms. At the same time, the shift to decentralized

animal health controls has been the cause of confusion and lack of coordination, such that the limited resources that are available have not been used effectively (World Bank, 2006). Indeed, the established disease reporting system between districts and the centre appears to be dysfunctional, such that efforts are currently underway to recentralize controls.

67. The Ugandan government recognizes the problems it faces with prevailing animal health management capacity and has issued an Animal Health Strategy 2005-2008 that presents ambitious plans for the reform and enhancement of controls. Thus, the vision of this strategy clearly identifies prevailing areas of weakness:

> *"The Animal Health Strategy envisions a vibrant livestock sub-sector, free of the major disease constraints.…The key strategic areas for intervention are:*
> - *Improving Disease Reporting, Diagnosis, Treatment and vaccination.*
> - *Improving the control of the main vector and vector borne-Diseases*
> - *Establishment of a livestock identification and trace back system and enforcement of movement control of livestock and livestock products.*
> - *Setting up emergence preparedness plans for notifiable diseases*
> - *Creating disease free or export zones*
> - *Optimizing veterinary input supply for animal health*
> - *Improving veterinary training and delivery of services*
> - *Improving veterinary public services and inspection*
> - *Strengthening the application and enforcement of veterinary legislation*
> - *Improving Veterinary Infrastructure establishment*
> - *Improving disease monitoring, surveillance, information gathering and dissemination*
> - *Refocusing Research and Development in Animal Health"*

68. Critical weaknesses include lack of quarantine stations and regulated routes for animal movement, limited diagnostic laboratory capacity and weak disease monitoring and surveillance systems. Staffing of the pertinent sections of the MAAIF is also inadequate.

69. As a result of these weaknesses, Uganda struggles to control numerous endemic animal diseases, a number of which are on OIE's 'List A' (World Bank, 2006; CAES, 2006) and of trade significance. These include Trypanosomosis, Foot and Mouth Disease (FMD), Contagious Bovine Pleuropneumonia (CBPP), Africa Swine Fever (ASF), various tick-borne diseases (including East Cost Fever, Anaplasmosis, Heart Water and Barbesiosis), Brucellosis, Lumpy Skin Disease (LSD), Tuberculosis and Newcastle Disease (NCD). Collectively, these diseases both diminish agricultural productivity and restrict the markets to which Uganda can export livestock products.

70. For each of the important animal diseases, the Ugandan government does have an agreed policy and has defined associated control measure (World Bank, 2006). However, resource constraints frequently inhibit the implementation of effective actions. Thus, with the notable exception of Rinderpest, Uganda's current disease controls tend to be 'outbreak-driven' as opposed to involving the on-going promotion of good practice and prevention, ensuring emergency preparedness and the implementation of effective and continuous disease surveillance. While Uganda has benefited from a number of national and regional livestock development programmes, the government has found it difficult to sustain and replicate the achievements these have achieved. For example, Uganda's capacity to undertake effective surveillance, emergency preparedness and diagnosis of FMD received a boost from an Emergency Assistance Project under FAO's Technical Cooperation Programme (TCP) in 2002 and 2003. However, when new FMD outbreaks occurred at the end of 2003 after this project had been concluded, not all reported outbreaks could be investigated. Likewise, Uganda has struggled to replicate the Rinderpest surveillance system developed under the PACE programme.

71. While Uganda does indeed have the weakest animal health control among the three study countries, they are stronger than in East Africa as a whole and compare well to those of the 29 African countries in the PACE study described above (Table 3). The evaluation does, however, highlight critical problems with the sustainability of this capacity, with current government funding considered only sufficient to meet 21 percent of the estimated resources required to maintain these controls.

72. Although Uganda has established a national Enquiry Point (Ministry of Agriculture, Animal Industry, and Fisheries) and National Notification Authority (Ministry of Tourism, Trade and Industry), its ability to engage with the WTO is constrained by the resources allocated to these agencies that are insufficient to participate effectively in meetings and/or to raise emerging SPS issues with the private sector. Thus, attendance at meetings of the SPS Committee is irregular and, where this does occur, Uganda is normally represented by its Geneva-based trade representatives who lack attendant technical expertise (WTO, 2006). More generally, Uganda lacks a coherent policy on trade-related SPS issues, although according to a draft of the National Trade Policy, Uganda is:

> *"….currently undertaking reforms of all its commercial laws to bring all its trade-related laws, regulations and procedures into conformity with WTO requirements. A WTO Implementation Bill has also been drafted to provide the legal basis to fulfill Uganda's commitments in the WTO".*

73. The UNBS is also the National Contact Point for Codex Alimentarius and serves as the secretariat for a multi-sectoral National Codex Committee. While support has been provided by the Codex Trust Fund to enhance participation in the promulgation of Codex standards, attendance at meetings of the General Purpose Committees, for example, remains limited (Table 4). Further, even when Ugandan officials are able to participate in Codex meetings, lack of underlying institutional capacity, resource limitations and lack of systematic data collection inhibit substantive contributions to the international standards-making process (World Bank, 2006b). Such incapacity impedes efforts towards 'SPS diplomacy' more generally.

74. Across Uganda's participation in international SPS fora, however, a more positive picture is seen with the OIE. Uganda is represented at annual meeting, while reporting of animal disease outbreaks has steadily improved. A Ugandan has also held a seat on the Aquatic Animals Commission of the OIE. At the same time, weaknesses in underlying capacity impede its ability to have an effective influence on standards development.

2.4 Synthesis

75. Looking across the evaluations and studies of SPS capacity in Kenya, Tanzania and Uganda, we can draw the following broad conclusions:

- Basic SPS management capacity in the three study countries is generally weak, as is typical of low-income countries in sub-Saharan Africa as a whole. While there is clearly a need for wide-scale capacity enhancement, certain elements of SPS management are better developed than in Africa as a whole; one example is animal health controls. Further, there is considerable variation in capacity across the study countries and between the areas of food safety, animal health and plant health. Overall, SPS management capacity is best developed in Kenya and weakest in Tanzania and Uganda.

- Within the broad context of rather weak SPS capacity there are elements of enhanced capacity in all three countries, which is 'world class'. Predominantly, such 'islands' of strong SPS controls are directed at, and in most cases have been induced by, public and/or private export market SPS standards.

- There is a general trend towards more structured and rigorous assessments of SPS capacity that identifies and/or prioritizes areas of weakness and foci of capacity-building efforts. This is a positive development that has the potential to enhance awareness and recognition of the critical areas of weakness in food safety, animal health and/or plant health management capacity in Kenya, Tanzania and Uganda.

- In all three countries it is evident that efforts are being made to enhance capacity related to food safety, animal health and/or plant health. Such initiatives include the updating of legislative frameworks, enhancement of laboratory facilities, training of pertinent officials, etc. It is not evident, however, that such efforts have followed a coherent and sequenced process, while processes of reform have often been protracted. In many cases they have been driven by, and remain dependent on, donor support.

- In Kenya, Tanzania and Uganda, recognition of the roles and importance of SPS management capacity is limited, raising concerns about the sustainability of capacity development efforts. Although historic compliance problems in key export markets (most notably for fish and fishery products) and on-going concerns (for example the potential impacts of private standards on exports of horticultural products) have served to raise awareness, it is not evident that this has been translated into a broader strategic focus on building and sustaining SPS management capacity, backed up with the necessary on-going resources.

- Much public sector capacity in the three study countries has evolved as a result of, or at least with significant support from, bilateral and/or multilateral donors and development organizations. This raises further concerns about the sustainability of prevailing and/or future capacity, especially where it is not evident that the necessary on-going resources have been committed once donor funding has come to an end.

- Across Kenya, Tanzania and Uganda there is wide variation in the level of private sector capacity, most notably with respect to food safety. Private capacity is most developed in Kenya and weakest in Tanzania, with Uganda falling somewhere in-between these two countries. Even within Kenya there is a stark contrast between the capacity of the large leading exporters, that are broadly ‘world class’ and the larger base of small and medium-size exporters that operate with more rudimentary controls, reflecting the less exacting markets that they target.

3. Overview of compliance studies

76. A major concern in the on-going debate about SPS measures and their trade-related impacts on the countries of East Africa is the degree to which prevailing food safety, animal health and/or plant health controls are in compliance with the public and/or private standards of export markets (see for example World Bank, 2005a; Jaffee and Henson, 2004). There is, however, a paucity of analytical work in this area, such that it is not possible to draw broad conclusions on the *degree* to which Kenya, Tanzania and Uganda are compliant with international and/or export standards and to *identify specific areas of non-compliance.* Rather, we are forced to focus on the rather narrow sub-set of products and/or capacities where prior research exists and the discussion presented below must be interpreted in this context.

77. Evidence on compliance with export market food safety, animal health and/or plant health standards can be derived from two broad sets of information:

- **In-depth analyses of compliance** drawn from case studies and/or surveys. These generally aim to identify areas of 'compliance' and 'non-compliance', often in some depth, although they are necessarily product and/or export market specific. Often a key element of such studies is estimation of the associated costs of compliance. Many of these case studies focus on 'problems' faced by countries in gaining market access or loss of existing market access due to non-compliance. As such, they provide a rather 'blunt' view of the issue of compliance, couched in terms of 'compliance' versus 'non-compliance', rather than seeing compliance in terms of a continuum that influences not only market access but also competitiveness, and thus the volume and value of trade flows. Alternatively, there are some assessments of compliance that focus on a 'notional' set of capacities that are needed in order to meet SPS standards in international markets. However, interpretation of such studies is problematic in that compliance is defined in a very general manner, while the requirements of particular markets may differ somewhat from a more general set of capacities.

- **Outcome measures** drawn from data on the volume and/or value of trade, border detentions, etc. Thus, we might examine the evolution of trade flows over time for products and/or markets, based on the premise that compliance is a necessary (although not sufficient) condition for trade to occur. Here it is most useful to focus on products and markets where there is known to be a history of non-compliance. Alternatively, border detention data can highlight changes over time in rates of non-compliance. Such indirect measures are an imperfect proxy for more direct and comprehensive assessments of compliance, especially given that a multitude of factors can influence the volume and/or value of trade, although they can be a useful indicator in the absence of such assessments and/or can compliment in-depth case studies.

78. Here we examine both of these sub-sets of information in an attempt to build up a (necessarily incomplete) picture of the level of compliance with export market SPS standards. The focus is on products that are of greatest economic importance to Kenya, Tanzania and Uganda and where there is sufficient information to say something that is 'meaningful'.

3.1 Outcome measures

79. A direct measure of non-compliance with export market SPS standards is provided by data on border detentions. In the case of the EU, the major industrialized country market for agricultural and food products from Kenya, Tanzania and Uganda, alerts[2] and information notifications[3] are issued for

[2] Issued when a violative product is on the market and when immediate action is required to attend to the risk.

consignments of food or feed that violate European Community food safety standards under the Rapid Alert System for Food and Feed (RASFF). Below we present data on alerts and information notifications for the period 2000 to 2006.

80. Overall, the number of detentions for all three countries was low over the period 2000 to 2006, with an average of 1.7 notifications per year for Kenya and Uganda and 2.3 for Tanzania (Table 5). This suggests that, for the agricultural and food products that these countries export to the EU, and thus where food safety controls broadly conform with EU standards, rates of non-conformity are low.[4] However, in this context they do provide some broad indicators of areas of weakness in food safety controls. Most notable are microbiological contamination of fish and fishery products (Kenya, Tanzania and Uganda), heavy metals in canned fruit (Kenya) and mycotoxins in coffee, tea and cocoa and nuts and nut products (Uganda) (Table 6).

Table 5. Detentions under EU's Rapid Alert System for Food and Feed by product, 2000-2006

Product	Kenya		Tanzania		Uganda	
	Alerts	Information	Alerts	Information	Alerts	Information
Fish & fishery products	1	4	1	13	0	3
Fruit & vegetables	5	2	0	0	0	0
Coffee, tea & cocoa	0	0	0	1	0	5
Nuts & nut products	0	0	0	0	0	4
Other/mixed food	0	0	1	0	0	0
TOTAL	**6**	**6**	**2**	**14**	**0**	**12**

Source: European Commission

81. Trade data provide a rather imperfect measure of compliance with export market SPS standards. Where trade is established and growing we can perhaps imply the absence of significant compliance problems. Conversely, where an established trade flow suffers a sudden and pronounced decline this may indicate an incident of non-compliance, although this would need to be substantiated with other information, for example from case studies (see below). Without more rigorous analysis, however, trade data are less good as indicators of more subtle and complex compliance issues, for example impacts on export competitiveness.

Table 6. Detentions under EU's Rapid Alert system by reason, 2000-2006

Reason	Kenya	Tanzania	Uganda
Microbiological contamination	5	12	3
Antibiotic residues	0	2	0
Additives	0	1	1
Mycotoxins	0	1	8
Pesticide residues	2	0	0
Heavy metals	5	0	0
Other	0	1	0
TOTAL	**12**	**16**	**12**

Source: European Commission

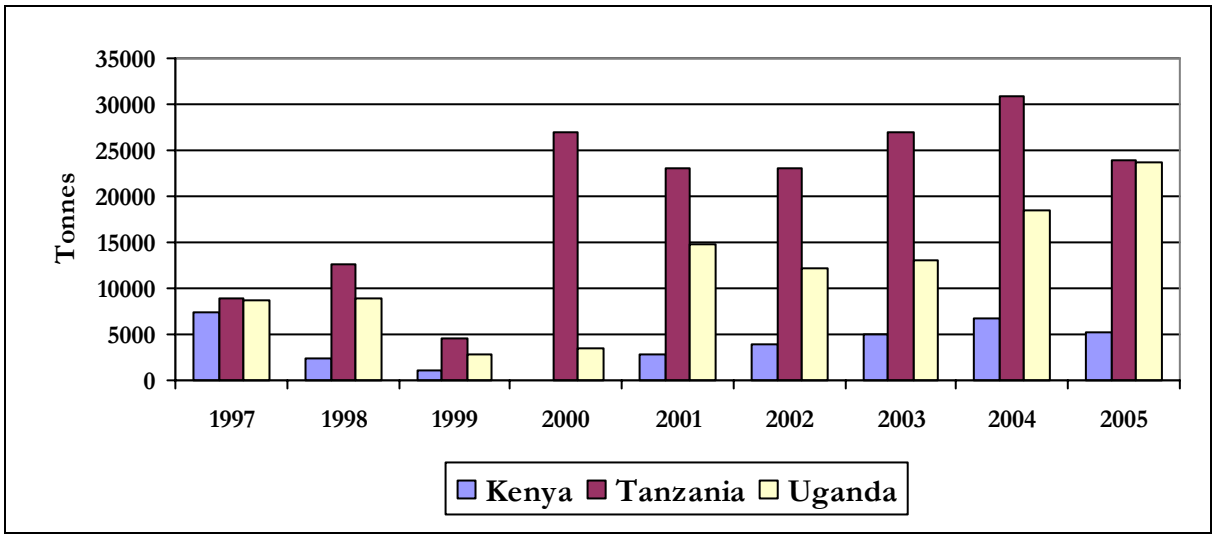
82. As an illustration, Figure 3 presents the volume of Nile perch exports form Kenya, Tanzania and Uganda to the EU over the period 1997 to 2005. All three countries experienced serious problems complying with EU hygiene standards for fish and fishery products in the late 1990s (as discussed in more detail below), but have since achieved and sustained food safety controls that are equivalent to EU requirements. The impact of restrictions on exports of Nile perch imposed by the European Commission because of concerns about contamination, especially in 1999, are clearly

[3] Issued when the product does not require immediate action by another Member State, because the product has not reached their market.

[4] Alternatively, that the RASFF detects non-conformities on a relatively infrequent basis.

apparent. However, since achieving compliance, the volume of exports in all three countries recovered and, at the minimum, has been maintained.

Figure 3. Volume of Nile perch exports to the European Union, 1997-2005



Source: Josupeit (2006)

3.2 In-depth analyses of compliance

83. In this section we present a more in-depth discussion of compliance with export market SPS standards, based on prior case studies and/or evaluations. While these enable us to explore the processes through which compliance has been established and/or is maintained, identifying prevailing areas of weak or non-compliance, it should be recognized that they do present a rather 'distorted' picture. Thus, case studies have tended to focus on products and/or markets where there have been recognized problems with compliance(for example fish and fishery product exports from Kenya, Tanzania and Uganda to the EU) or prominent 'success stories' (for example horticultural product exports from Kenya). Less attention has been given to products where trade has not occurred and/or where non-compliance with export market SPS standards is an absolute barrier to trade being established, perhaps alongside other trade and competitiveness issues. This is the case of the livestock sector for which no studies exist.

3.3 Kenya

84. For Kenya, we examine the specific cases of fish and fishery products and horticultural products on which substantial prior analyses have been undertaken. While excluding some important agricultural and food commodities (for example coffee and tea), these cases present an interesting contrast in the role of public and private standards, and in the parallel compliance efforts by the public and private sectors.

3.3.1 Fish and fishery products

85. One of the most notable commodities for which SPS compliance has created problems in Kenya is fish and fishery products, and in particular Nile perch exports to the EU (Henson and Mitullah, 2004; Mussa *et al*., 2005). The EU lays down harmonized requirements governing hygiene throughout the supply chain for fish and fishery products. Processing plants are required to implement hygiene controls based on Hazard Analysis and Critical Control Point (HACCP) and are inspected and approved on an individual basis by a specified 'Competent Authority' in the country of origin, with the European Commission undertaking inspections to ensure that systems of approval meet EU requirements. Imports from Third Countries are required to have controls that are at least equivalent to those of the EU. Countries for which local requirements have been recognized as equivalent are subject to reduced rates of physical inspection at the EU border.

86. Weaknesses in hygiene controls through the supply chain for Nile perch from Lake Victoria were first highlighted in 1997 following a series of inspections by the European Commission that identified non-conformity with the respective EU Directive. Following these inspections, lengthy periods of restrictions related to weaknesses in general hygiene standards through the supply chain, alongside immediate concerns relating to the potential for contamination with microbial pathogens and pesticide residues, were applied that limited access to EU markets. These restrictions motivated a process of upgrading in the Nile perch export sector and in mechanisms of public oversight.

Table7 Costs of compliance with EU hygiene requirements in Kenya's Nile perch processing sector

Plant	Number of permanent/ temporary employees	Value of exports, 2002 (US$)	Current operating level (percent)	Non-Recurring Costs (US$)	Increase in unit production costs (percent)
A	75/100	10.73 million	30	26,800	5
B	100/80	1.86 million	40	19,600	10
C	20/40	0.54 million	25	15,200	25
D	150/250	2.59 million	50	13,600	15
E	100/150	0.32 million	50	8,500	15
F	100/200	0.38 million	50	21,800	20
G	270/250	12.83 million	60	128,000	25
H	75/100	4.27 million	50	6,500	15
I	—	0	0	80,000	30
J	—	0	0	200,000	40
K	—	0	0	2,100	40
L	—	0	0	7,100	50
M	—	0	0	19,500	25
N	—	0	0	8,300	40
TOTAL		**33.52 million**	**—**	**557,000**	**—**
Mean per plant			**44**	**39,785**	**25**

Note: Companies I through N were not operational in 2003.
Source: Henson and Mitullah (2004).

87. Over the period 1998 to 2002, significant efforts were made to enhance hygiene standards within the industrial fish processing sector. These included improvements in the general structure of processing facilities, implementation of HACCP, upgrading of water and ice supplies, worker training, etc. The scale of these changes, and also the great variability in prevailing hygiene standards within the processing sector, is indicated by the profile of compliance costs across the sector (Table 7). The total non-recurring costs of compliance for the fish-processing sector is estimated by

Henson and Mitullah (2004) at US$557,000. However, costs per facility ranged from minimal amounts to US$128,000, about an average of almost US$40,000. Among plants still operational, these costs accounted for between 0.25 percent and 2.81 percent of the value of exports in 2003, suggesting a favourable rate of return on the investment in terms of continued market access. However, the cost of constructing a new plant capable of handling 10 tonnes of fish per day and that complies with the EU's hygiene standards is estimated at US$962,000 (Nyangito *et al.*, 2003), suggesting that these standards have erected significant barriers to new entrants to the sector. According to Henson and Mitullah (2004), recurring costs of maintaining these enhanced hygiene controls in plants still operational in 2003, in terms of increases in costs of production, ranged from five to 25 percent, with a mean of 16.2 percent. This variation again, at least in part, reflects the wide variation in prevailing hygiene standards within the sector.

88. Until recently, a persistent 'weak link' in hygiene controls along the Nile perch supply chain related to landing beaches. Typically, hygiene standards at the approximately 300 beaches along the Kenyan shores of Lake Victoria were rudimentary. To address this problem, the Government of Kenya identified a relatively small number of beaches that collectively accounted for a large share of the total supply of landed fish into the export processing sector, and instituted a formal process of inspection and approval (Henson and Mitullah, 2006). The fish landed at these beaches is health certified and sealed to permit traceability. Exporters are not permitted to purchase from non-approved landing beaches.

89. Alongside the upgrading of food safety controls in the processing sector, fundamental reforms were undertaken in systems of public oversight of the supply chain. Administrative responsibilities were realigned and centralized, establishing the Department of Fisheries as the designated Competent Authority. Legislation was revised and associated inspection and certification systems for processing facilities and product consignments upgraded to enhance the efficacy of enforcement. More recently, a Memorandum of Understanding between the Department of Fisheries and the Association of Fish Processors and Exporters of Kenya (AFIPEK) has given formal recognition to the processing sector's own code of practice, which is referenced in the annual approval of facilities for export (Henson and Mitullah, 2006). This has served to further enhance oversight of the processing sector.

90. The European Commission has undertaken inspections of hygiene controls in the fish and fishery products export sector in Kenya on six occasions over the period 1997 to 2007. The inspections in 2000, 2002 and 2006 all confirmed that Kenya has controls that are broadly equivalent to those required by EU legislation with only minor non-conformities, although with one significant exception (see below).

91. A major constraint in the implementation of effective hygiene controls for fish and fishery products in Kenya is laboratory testing capacity. Although, efforts have been made to upgrade laboratory facilities, implement systems of good laboratory practice and achieve accreditation, when the European Commission undertook inspections in 2006 remaining non-compliances with EU legislation were identified. It is reported that Kenyan officials were warned that restrictions would again be applied to exports of fish and fishery products to the EU if laboratory facilities were not upgraded in a 'reasonable' period of time (Josupeit, 2006).

3.3.2 Horticultural products

92. Kenya's experience in complying with food safety and plant health requirements for export, of horticultural products, again predominantly to the EU, present a rather different context for processes of compliance. On the one hand, while upgrading in the Nile perch sector has been driven by the need to comply with technical regulations governing hygiene in export markets, horticultural product exports have had to comply with a wide array of public and private standards related to pesticide residues, use of good agricultural practice (GAP), controls on plant pests and diseases, etc. On the other hand, the process of compliance in the horticultural sector has occurred gradually over

time as export market requirements have evolved, while in the Nile perch sector it occurred dramatically and over a short period of time in order to overcome restrictions on access to EU markets.

93. Kenya's export horticulture sector was first established in the 1950s when small quantities of temperate vegetables and tropical fruits were supplied during the 'off-season' to UK markets (Jaffee, 2003). The sector evolved over time, beginning to export high-quality green beans and a broad array of vegetables to immigrant populations in the UK year-round. Until the mid-1980s, supply chains were relatively unsophisticated, necessitating only limited investment in infrastructure, product development and food safety controls. In most cases fresh produce was sourced from numerous small and medium-sized producers, with little or no traceability and/or temperature control along the supply chain. Oversight of the sector, by regulatory authorities in Kenya and public authorities and buyers in Europe, was limited.

94. Through the late-1980s and 1990s, the export horticulture sector in Kenya was transformed and today is widely recognised to be an African (if not a global) leader. With the growth of the supermarket sector in Europe (and especially the UK) and the implementation of an increasing array of business-to-business and collective private standards governing food safety (Henson, 2006), including the BRC Global Standard and EUREPGAP, upgrading controls became an imperative if Kenya was not to lose its established market position to lower-cost competitors (Jaffee, 2003). At the same time, food safety regulations in the EU, as well as some individual Member States, were being enhanced, most notably related to pesticide residues, while monitoring systems were being strengthened (Henson and Jaffee, 2007). Indeed, Jaffee (2003) has argued that compliance with seemingly ever stricter public and private food safety standards, alongside investments in quality control and product innovation, have become the predominant basis of Kenya's competitive position in global markets.

95. A number of the leading horticultural exporting firms in Kenya foresaw the evolution of food safety controls in their major export markets and made large-scale investments in their supply chains. These investments included upgrading of packing facilities and implementation of GAP, both on their own farms and on those of their out-growers. Most of these exporters translated the requirements of their major customers into their own 'code of practice', that was implemented and enforced through systems of management and oversight through the supply chain, thus ensuring compliance and traceability. At the industry level, the Fresh Produce Exporters Association of Kenya (FPEAK) implemented its own code of practice, attempting to enhance the overall level of food safety controls in the export horticulture sector. Further, the National Taskforce on Horticulture is currently coordinating the development of KenyaGAP, that will be benchmarked to the EUREPGAP standard.

96. The design and implementation of the food safety and quality assurance systems employed by leading Kenyan horticultural product exporters requires large-scale investments. For example, Nyangito *et al*. (2003) estimate the cost of establishing and maintaining a fresh vegetable supply chain from production through to the airport and that complies with export market food safety standards to be US$1.3 million. The cost of establishing a packing facility with HACCP alone is estimated at US$375,000. Jaffee (2003) reports the estimated labour and consultant costs of implementing these food safety controls in a relatively large and established export firm at US$50,000 to US$70,000. The costs of operating these systems of supply chain control are also substantial. Again, Jaffee (2003) reports the estimated annual food safety management costs of a large exporter for 'premium' products at about US$300,000; equivalent to around three percent of annual turnover.

Table 8. Compliance needs for Kenyan horticultural exports by exporter type

Type	Main Characteristics	Major Facilities	Main Skills	Incremental Investment
'Brief Case' Trader	Very small scale; intermittent and opportunistic sales	Pick-up truck Fax machine	Some trading skills	Minimal as 'facilities' used for multiple purposes
Small and Medium-Sized Generic Exporter	Regular sales to regular clientele of one or two shipments per week; most sales are of loose packed produce; Virtually all sales to wholesaler-based distribution channels.	Small packing shed with some cold store capacity and basic equipment (i.e. sorting tables) Three to four pick-up trucks	Trading and management skills. At least one quality control person. One/few persons who rove around and interact with farmers. Several produce graders.	US$50,000 to US$75,000
Large Generic Exporter	Regular sales to regular clientele virtually every day. Sell mix of loose and pre-packed produce. Most sales to wholesaler-based distribution channels although also to smaller supermarkets.	Larger packing house facilities with some automation and significant cold store facilities. Larger fleet of trucks including several insulated trucks	Supply chain management skills. More quality control staff. Several agronomists and larger number of field staff	US$500,000 to US$650,000
'Premium' Supplier	Regular supplier to supermarkets and other up-market distributors. Most sales are of pre-packed produce with improved packaging and product combinations.	Seemingly requires development and operation of one or more farms (ensure supply control and traceability) with investments in irrigation and other farm equipment Upgraded central pack-house facilities (stainless steel tables; improved lighting; blast cooling system; good sanitation and worker hygiene systems) plus pre-cooling centres in major product sourcing areas	Supply chain and food hygiene/HACCP management skills. Multiple layers of quality assurance personnel Advanced production planning skills, including professional farm management skills. Need to be an 'accredited' supplier (i.e. BRC)	Small version handling 500 – 1500 tonnes/year: US$1.5 million. Larger version handling >2500 tonnes/year: US$4 million to US$5 million.
Value-Added Prepared Food Operator	Same as 'premium' supplier with the addition of a 'high-care' line of prepared ready foods	The above plus separation of high and low risk areas and distinct 'high-care' rooms with the necessary temperature control and air venting systems, metal detectors, heat sealing equipment.	The above plus additional food science personnel	Varies by unit size and by need for new building. Minimal extra investment is US$100,000 but more likely US$0.5 million to US$1 million.

Source: Jaffee (2003).

97. Focusing on the relatively few leading horticultural exporters in Kenya, while they account for a significant proportion of total exports, does present a rather distorted picture of compliance with export market food safety standards. On the one hand, the requirements that Kenyan exporters have to meet vary widely across export markets; for example, between UK supermarkets at one extreme and continental European wholesale markets at the other (Jaffee, 2003; Henson, 2006). On the other, there remain a wide variety of exporters in Kenya, that can be distinguished according to the predominant markets served, degree of permanency in the market, etc. The food safety controls employed by these exporters and the associated costs of compliance, likewise, vary significantly (Table 8).

98. At the current time the major preoccupation in the Kenyan export horticulture sector is implementation and certification to EUREPGAP, and indeed a number of related cost of compliance studies have been undertaken (see for example FAO, 2006; Graffham *et al*., 2006). Although the situation is evolving rapidly, it is possible to get a 'snap shot' of the level of compliance with EUREPGAP in Kenyan export horticulture. In September 2006, there were 41,121 EUREPGAP certified suppliers of fruits and vegetables globally, including both Option 1 and Option 2 (Table 9)

(Graffham *et al*., 2006). Although Kenya had only 386 certified suppliers (accounting for 0.9 percent of certified suppliers globally) in September 2006, it accounted for 19.5 percent of certified suppliers in sub-Saharan Africa and was second only to South Africa in the penetration of EUREPGAP certification. Further, by April 2007, the number of certified suppliers in Kenya had increased to 606, accounting for 26.9 percent of certified suppliers in sub-Saharan Africa (EUREPGAP, 2007).

Table 9. Number of EUREPGAP-certified suppliers of fresh fruit and vegetables by region, September 2006

Region	Number of Certified Suppliers
Europe	33,130
Latin America	2,979
Asia	2,369
Sub-Saharan Africa	1,980
Of which:	
South Africa	*1,448*
Kenya	*386*
Ghana	*85*
Tanzania	*20*
Cote d'Ivoire	*19*
Zimbabwe	*14*
Zambia	*4*
Senegal	*3*
Uganda	*1*
North Africa	374
North America	289
Total	**41,121**

Source: Moeller (2006)

99. A range of estimates exist on the costs of implementing EUREPGAP, encompassing both Option 1 (mainly in the context of large-scale outgrowers or integrated exporter-producers) and Option 2 (mainly in the context of small and medium-scale outgrowers). For example, Graffham *et al.* (2006) estimate the cost of preparing 1,948 small-scale outgrowers for certification, that supply ten leading horticultural exporters collectively accounting for over 50 percent of Kenyan exports, at £2.25 million, with an average cost per small-holder of £1,156. Of this, 36 percent is estimated to have been borne by the producer, 44 percent by the exporter and 20 percent by an external agency. However, these costs vary widely, for example by farm size, export firm size, product grown, etc., such that averaging such estimates is of questionable validity.

100. While much of the investment made to achieve the compliance of Kenyan horticultural product exports with SPS requirements has been in the private sector, the public sector has also made efforts to upgrade capacity. Notably, the Kenya Plant Health Inspection Service (KEPHIS) has implemented more rigorous and risk-based phytosanitary and quality checks, at both the pack-house of major exporters and freight depots around the airport, and upgraded its laboratory to undertake pesticide residue tests. The KEPHIS laboratory achieved international accreditation in May 2006. Parallel efforts have been made by the Pest Control Product Board (PCCB) to improve the overall integrity of the pesticide approval and distribution system through a program of training, licensing and accreditation of stockists, and to remove illicit and non-registered pesticides from the local market (Jaffee, 2003).

101. KEPHIS is also taking a more active role in undertaking pest risk assessments (PRAs), especially in relation to trade with South Africa, United States (US) and Japan. Indeed, the US Animal and Plant Health Inspection Service (APHIS) undertook an inspection visit in January/February 2007 aimed at extending the products that Kenya is approved to export to the US (shelled garden peas, baby corn and baby carrots), most notably to include French beans (FINTRAC, 2007).

3.4 Tanzania

102. In the case of Tanzania we also examine fish and fishery products and horticultural products, enabling comparison with the situation and experiences in Kenya. However, in making such comparisons, attention needs to be given to the fact that the Kenyan case studies reported above were undertaken in much greater depth, such that we have differing amounts of information on specific areas of compliance and non-compliance and the underlying processes of capacity development.

3.4.1 Fish and fishery products

103. As in Kenya, exports of Nile perch to the EU faced periods of restrictions through the late-1990s related to non-conformity with hygiene standards and acute concerns about potential microbiological and pesticide residue contamination (World Bank, 2005b; Integrated Framework, 2006). In the case of Tanzania, however, there was already a single designated 'Competent Authority' with responsibility for oversight of the fisheries sector such that no realignment of administrative responsibilities was required. Arguably, this permitted the Tanzanian government to respond in a more timely manner when the European Commission identified significant areas of non-compliance and applied restrictions on exports.

104. In order to achieve compliance with EU hygiene standards for fish and fishery products, Tanzania fundamentally reformed its existing legislation and implemented a more rigorous system of inspection and certification of processing facilities and product consignments and constructed a laboratory dedicated to the analysis of fish samples. The cost of establishing an accredited laboratory alone is estimated at around US$800,000. On-going costs of fisheries inspection, predominantly due to the employment of a larger cadre of inspectors, are estimated at around US$33,000.

105. Within the industrial processing sector, major improvements have been made in both the structure of facilities and operating procedures (World Bank, 2005b). Although some facilities had been 'proactive' in starting to upgrade their hygiene controls, for example through the implementation of HACCP, most had to make very considerable improvements in order to comply with the EU's hygiene standards. These included the upgrading of the general fabric of processing facilities, rearrangement and segregation of processing operations, installation of ice and water facilities and effluent treatment plants, etc. Staff had to be trained and quality control personnel employed or enhanced in order to implement HACCP. The non-recurring costs of these improvements ranged from US$1.0 million to US$7.0 million, with an estimated cost for the 10 plants in the Nile perch processing sector in 2004 of US$24.9 million (Table 10). Although these non-recurring costs only accounted for between 2.0 percent and 9.5 percent of aggregate turnover for the period 2000 to 2003, they imposed a significant burden on some firms, especially those that had entered the sector relatively recently and were still indebted. For those firms that survived, however, these investments yielded a significant return in terms of continued market access and growth in export revenues.

Table 10. Non-recurring and recurring costs of compliance with EU hygiene standards in Tanzanian Nile perch processing sector

Facility	Non-Recurring Cost (US$)	Mean Turnover 2000-2003 (US$)	Non-recurring Cost (%2000-2003 Turnover)	Recurring Cost (% Production Cost)
1	1,000,000	5,000,000	5.0%	15%
2	1,500,000	15,000,000	2.5%	12%
3	7,000,000	30,900,000	5.7%	10%
4	4,100,000	21,800,000	4.7%	10%
5	2,000,000	25,000,000	2.0%	15%
6	1,500,000	4,000,000	9.5%	10%
7	1,500,000	9,300,000	4.0%	12%
8	1,300,000	10,000,000	3.2%	15%

Source: World Bank (2005b).

106. Fish processors have incurred recurring costs of compliance associated with stricter hygiene controls that have increased their production costs. These costs include the employment of additional supervisory staff, record-keeping, laboratory analysis, on-going staff training, etc. It is estimated that these costs have enhanced production costs by between 10 and 15 percent (Table 10).

107. Historically, processors purchased Nile perch from a multitude of beaches with little or no traceability to individual boats or even landing sites. Standards of hygiene at landing sites were, at best, rudimentary. Most processors have made efforts to consolidate their supply base or at least maintain a higher level of control. For example, there is greater use of collector boats that take fish from fisher craft and land it directly at a jetty in close proximity to processing facilities. While hygiene controls have undoubtedly been enhanced drastically, there is still room for improvement and it is evident that landing sites remain the 'weak link' in the supply chain. The total cost of basic upgrades to all 52 designated landing beaches is estimated at US$4 million, with more comprehensive improvements costing an estimated US$27.7 million (World Bank, 2005b).

108. The significant investments made by the public and private sectors in Tanzania have enhanced standards of hygiene significantly such that the European Commission deemed controls to be equivalent to EU requirements on the basis of inspections in August 1999 and October 2000, with only relatively minor non-conformities. Indeed, of the three countries in the region subject to restrictions on exports of Nile perch, Tanzania was the first to regain market access in January 2000. Since that time, exports have expanded significantly (Figure 3) and there have been relatively few border detentions in the EU (Table 5), suggesting that compliance with EU hygiene standards has been maintained.

3.4.2 Horticultural Products and Floriculture

109. Although nowhere approaching the scale of Kenya, Tanzanian exports of fresh vegetables and flowers have expanded significantly in recent years. In the case of speciality vegetables, exports are primarily directed at supermarkets in the UK and other European countries, exposing exporters to exacting food safety standards, as described for Kenya above (World Bank, 2005b). Traditionally, exports of cut flowers were oriented to the Dutch flower auctions, although several exporters are now selling direct to supermarkets or specialty florists. An assessment of SPS capacity in both the fresh vegetable and cut flower sectors was undertaken as part of the Tanzania Diagnostic Trade Integration Study (DTIS) in 2006 (Integrated Framework, 2006).

110. Broadly speaking, Tanzania has not faced significant problems complying with SPS standards in its major fresh vegetable markets, including the UK supermarkets (Sargeant, 2004). In a large part this reflects the investments made by Kenyan exporters that have imported their considerable standards-related capacity facilitating compliance with export market SPS standards, most notably for

food safety (World Bank, 2005b). Where domestic capacity is weak, use is made of services in other countries, most notably to test for pesticide residues, to overcome the related constraints.

111. As of 2006, there were two major exporters of fresh vegetables. Both exporters have had their pack houses certified to the BRC Global Standard. This implies that these operations employ good hygienic practices and have implemented HACCP. Expatriate managers have been used to manage these pack houses (World Bank, 2005b). These exporters use a relatively small pool of outgrowers, most of which are medium or large-scale farms, such that implementing effective controls through the supply chain is relatively easy. As of September 2006, there were 20 fruit and vegetable suppliers with EUREPGAP certification (Table 9), including many of these outgrowers. Such farms have typically needed to improve their worker facilities, especially the provision of toilets, water sources, changing rooms, etc. Investment costs of US$2,000 to US$4,000 have been typical on these farms, while EUREPGAP certification has cost US$2,000 to US$3,000 per farm (World Bank, 2005b).

112. There are seven major cut flower exporters. The traditional focus on the Dutch auctions meant that buyer demand for certification was limited (World Bank, 2005b). However, with the shift to higher-value and more exacting markets private standards are becoming of greater importance. Thus, a number of exporters have pursued certification to EUREPGAP and the BRC Global Standard, among others.

113. Neither the vegetable nor the cut flower exporters are heavily reliant on the Tanzanian government to ensure compliance with food safety or plant health standards (World Bank, 2005b). For example, planting materials are often sourced from Europe or Kenya and certified by the appropriate authorities in those countries. This material may be checked by the Tropical Pesticides Research Institute (TPRI) but, if temporary quarantine of planting materials is needed, this is normally undertaken by the importing companies themselves. The TPRI is, however, responsible for issuing phytosanitary certificates and undertakes inspection of packing facilities and product consignments. Any laboratory tests for pesticide residues are undertaken in accredited laboratories in Europe.

114. A more general assessment of compliance with food safety and plant health standards, specifically for tropical fruit, has been undertaken by UNCTAD (2005). In this study, compliance by public institutions was assessed relative to international standards, while compliance in the private sector was based on the EUREPGAP protocol. The key elements of the food safety and plant health control system needing upgrading were identified and estimates made of the associated costs of compliance.

Table 11. Estimated costs of compliance for public food safety and plant health controls to meet international standards related to exports of tropical fruit

Organization	Objective	Cost (US$)
Tanzania Bureau of Standards	Review and update legal framework	120,000
	Develop standardization capacity	80,000
	Enhance Certification Capacity	130,000
	Promote implementation of quality standards	400,000
	Improve participation in international standards-setting	130,000
	Recruitment	10,000
	Sub-total	***870,000***
Ministry of Agriculture, Plant Health Division	Review and update legal framework	160,000
	Develop capacity to deal with SPS issues	30,000
	Develop inspection and quarantine capacity	220,000
	Develop Export certification capacity	140,000
	Strengthen information, surveillance systems	130,000
	Modernize procedures for registering and control of pesticides	30,000
	Promote implementation of quality standards	210,000
	Improve Participation in International Standards Setting	90,000
	Upgrade infrastructure to allow efficient implementation of phytosanitary systems	30,000
	Recruitment	50,000
	Sub-total	***1,090,000***
Ministry of Health, Department of Environmental Health	Review and update legal framework	80,000
	Develop inspection capacity	100,000
	Improve information systems	80,000
	Promote Implementation of safety standards	40,000
	Improve participation in international standards setting	80,000
	Infrastructure development	160,000
	Recruitment	20,000
	Sub-total	***560,000***
TOTAL		**2,520,500**

Source: UNCTAD (2005)

115. In the case of public sector capacity, the UNCTAD assessment encompasses the entirety of food safety and plant health controls including legislation, inspection and laboratory analysis. Areas of non-compliance include the lack of legislative provisions and analytical capacity to undertake control on pesticide residues, non-implementation of GAP, HACCP and/or traceability at appropriate places along the supply chain, and weaknesses in controls on plant pests (including legal pest limits, surveillance and quarantine, export certification and analytical capacity). The cost of upgrading existing controls is estimated at US$2.5 million (Table 11).

116. Compliance with food safety and plant health standards for tropical fruit in the private sector was assessed, and the associated costs of compliance estimated on the basis of the changes made by two producer-exporters in the fresh vegetable sector that had achieved EUREPGAP certification (UNCTAD, 2005). These changes include adjustments to production systems, infrastructure construction and upgrading, training, consultancy services and certification costs in order to achieve compliance with EUREPGAP. The estimated non-recurring costs for a 'representative firm' are estimated at US$98,690, with recurring costs of US$20,500 per annum (Table 12).

Table 12. Firm-level costs of compliance with EUREPGAP

EUREPGAP Requirement	Costs (US$)	
	Non-Recurring	Recurring
Traceability	4,300	100
Record keeping and self-inspection	6,000	3,600
Site management	900	0
Risk assessments	1,500	300
Technical services	0	2,000
Laboratory analysis	0	3,000
Soil and substrate management	1,000	100
Fertiliser use	2,500	750
Crop protection	10,400	1,250
Irrigation/fertilization	600	0
Harvesting	9,800	200
Produce handling	11,300	100
Waste and pollution management	800	50
Worker health, safety and welfare	47,490	4,250
Environmental issues	1,100	200
Certification costs	1,000	2,000
EUREPGAP procedures	0	2,600
TOTAL	**98,690**	**20,500**

Source: UNCTAD (2005)

3.5 Uganda

117. As with Kenya and Tanzania, exports of Nile perch have raised challenges for Uganda and have been the subject of at least two prior studies, that we review here. We also examine the horticulture and floriculture and honey sectors, both of which show evidence of capacity-building towards compliance with export market food safety standards. In addition one previous assessment in Uganda undertakes a more general assessment of the compliance of food safety controls with standards in export markets, rather than focusing on a particular product and/or market, to which we first turn.

3.5.1 General food safety controls

118. In 2006, a broad-based assessment of the conformity of Ugandan food safety controls with standards in export markets was undertaken for the STDF in order to estimate the associated costs of compliance (CEAS, 2006a). This assessment covered both the public and private sectors. In the case of the public sector, it encompassed legislative change, training and awareness-raising, infrastructure development and equipment upgrading, inspection, testing and other monitoring and control mechanisms. These estimates provide an indication of the degree of non-conformity, on a broad basis, of public controls with food safety standards in export markets, as well as the resources required in order to make the necessary upgrades

119. The estimated cost of the necessary reforms to food safety controls in Uganda is around US$2.5 million (CEAS, 2006a). This estimate is based on (and indeed is almost identical to) the work of UNCTAD (2005) on Tanzania reported above, such that the specific weaknesses highlighted in Table 7 are taken to be applicable to Uganda. More detailed analysis is presented of the investments needed to achieve accreditation of the Government Analytical Laboratory to undertake pesticide residue analysis, predominantly for fish (Table 13), that are based on a previous assessment of the laboratory (Cox, 2005). These include renovation of the facility, purchase of equipment and staff training, that collectively are estimated to cost US$465,874.

Table 13. Costs of achieving accreditation for pesticide residue laboratory

Activity	Elements	Cost (US$)
Renovation of accommodation	Extension to the buildings including appropriate internal renovation	42,000
Equipment procurement, running and maintenance	Basic equipment	220,000
	Consumable materials required for the equipment	15,280
	External contracts for servicing and instrument calibration	25,700
	Glassware	27,800
Laboratory accessories	General laboratory accessories	6,250
	Laboratory consumables	20,840
Textbooks and reference materials	Textbooks and other reference materials	2,780
Staff Training and Consultant inputs	Professional consultancy	45,140
	Training in ISO 17025	15,625
	Training in the measurement of uncertainty	10,416
	Attendance at international workshops and conferences	5,560
	Participation in a proficiency testing scheme	2,083
	The accreditation process (pre-assessment, assessment and any follow-up)	26,400
Total		**465,874**

Source: CEAS (2006)

3.5.2 Fish and fishery products

120. In a similar manner to Kenya and Tanzania, Uganda was subject to periods of restrictions on exports to the EU through the late 1990s. On the one hand, the sector had developed and expanded with undue regard for the need to establish and upgrade effective hygiene controls through the supply chain and, more particularly, to benchmark the domestic standard to EU requirements. On the other, as a result of poor controls, acute problems with microbiological contamination were experience with exports to the EU in the mid-1990s. The apparent lack of effective controls was further highlighted when it became apparent that (probably isolated) incidents of pesticides misuse were recorded around Lake Victoria, such that there was a risk of residues in fish exported to the EU.

121. Restrictions on exports of Nile perch to the EU promoted investments by the Uganda government and fish processing sector in upgrades to public and private hygiene controls. National legislation was updated and brought into compliance with the respective EU standard. Official inspection systems were revised and augmented, including the training of personnel and upgrading of laboratory testing facilities, and systems of export certification implemented. Two laboratories were upgraded, one each in the public and private sectors. The private sector laboratory is internationally accredited and services not only the fish and fishery products sector but also other export commodities, for example honey (see below).

122. In the processing sector, facilities were renovated, including reorganization of operations, upgrading of ice and/or water facilities and effluent plants, installation of laboratories, enhancement of temperature control and/or chilling/freezing capacity, etc. The cost per plant varied from US$200,000 to US$1.7 million (Table 14) (Ponte, 2005), with an average cost per plant of US$1.1 million. Assuming that plants constructed after 2000 were already in compliance with EU standards, this implies a total cost of US$16.9 million.

123. Processing facilities also implemented HACCP, entailing the establishment of new control and record-keeping systems, staff training, etc. Much of the cost associated with HACCP is recurring and estimated to range from US$39,600 to US$80,000 per plant per year. This variation is explained, in part, by the volume of fish handled and the size of the dedicated quality management team that is employed (Table 14). Thus, the total cost for the Ugandan fish processing sector of maintaining

HACCP is around US$ 540,000 per year. This represents less than one per cent of the value of export at US$ 87 million in 2003 (Ponte, 2005); similar to Kenya and Tanzania the return on this investment in terms of regaining and expanding export revenue is considerable.

Table 14. Costs of compliance with EU hygiene standards for fish and fishery products in Uganda

Company	Year Started to Implement HACCP	Number of Plants Upgraded	Compliance Period (Months)	Non-recurring Costs (US$'000)	Recurring Costs (US$)
A	1998	2	12		39,600
B	2001	1	12		
C	1997	1	48	1,927	65,800
D	1997	1	12	1,000	
E	2000	1	24		45,000
F	1995	1	36		72,000
G	1998	2	36	1,000	70,000
H	1997	1	12	1,500	80,000
I	2000	1	12	200	43,000
Average		**11**	**23**	**1,125**	**59,343**

Source: Ponte (2005).

124. Estimating the changes needed to achieve compliance with food safety standards (or SPS standards more broadly) in export markets is problematic. On the one hand it can be difficult to identify what changes were actually necessary to achieve compliance. On the other, putting a monetary amount to such investments (especially in the case of costs that are internal to the firm) is problematic. Thus, an alternative estimate of the costs incurred in complying with EU standards for fish and fishery product hygiene is presented in Table 15. This puts the total non-recurring costs at US$39 million, of which over US$38 million represents the upgrading of processing facilities. Recurring costs, perhaps more significantly, are estimated to be around US$28 million, averaging to US$1.75 million per plant per annum.

125. Following the upgrading of hygiene controls in Uganda's Nile perch sector and the lifting of restrictions on exports to the EU, exports have grown considerably (Figure 3). However, while it is evident that public oversight and firm-level hygiene controls in Uganda's Nile perch sector are sufficiently compliant with EU requirements not to have caused trade disruptions in recent years, there do appear to be 'weak links' in the supply chain which could pose potentially significant risks if not further managed (World Bank, 2006). In particular, and as in Kenya and Tanzania, more attention needs to be given to standards of hygiene at landing sites. Indeed, there are reports of 40 percent of fish being rejected by processing facilities due to poor quality (CAES, 2006), predominantly because of the lack of a cold chain prior to procurement by processor, that could be reduced dramatically if, for example, ice was available on landing vessels. This requires not only the provision of ice, but proper incentives for fishers and traders to follow good hygiene practices; evidently these incentives do not exist at present (World Bank, 2006). Further, the fabric of landing sites needs to be upgraded, inevitably requiring that a (maybe small) number of designated beaches are overhauled.

Table 15. Costs of compliance with EU hygiene standards for fish and fishery products in Ugandan processing sector

Activity	Cost (US$)	
	Non-Recurring	Recurring
Quality compliance upstream		
Insulating, cleaning and maintaining fish vessels/boats on the lake; icing fish at collection points to prevent contamination and spoilage and for preservation	26,720	2,300,000
Conforming to required hygiene conditions at fish landing points	88,960	36,000
Insulating, refrigerating, cleaning and maintaining transportation equipment	444,480	5,100,000
Quality compliance at processing plant		
Approval and licensing of plants	0	4,480
Fish handling and processing area	3,200,000	384,000
Chill rooms, ice rooms and cold stores	16,000,000	960,000
Protection against vermin and undesirable animals	160,000	192,000
Provision of appropriate working equipment	400,000	960,000
Ensuring supply of appropriate water	1,600,000	960,000
Water waste and waste management	640,000	960,000
Sanitary facilities	480,000	384,000
Cleaning and disinfecting of transport vehicles	0	20,000
Freezing and cold storage facilities	16,000,000	534,400
Compliance with HAACP requirements	320,000	534,400
Labelling and traceability	0	778,680
Establishing and enforcement of monitoring procedures	320,000	534,400
Chemical and biochemical tests	0	2,075,680
Labelling of fish samples	0	106,670
Corrective measures for non-conformance	0	1,067,200
Train staff for managing food safety systems and traceability	20,000	320,000
Quality inspections at airport, certification and other levies	0	40,200
Grading and packaging including labelling	0	10,600,000
Certification and audit for quality compliance	16,000	400,000
TOTAL	**39,108,160**	**27,938,230**

Source: CEAS (2006).

3.5.3 Horticultural products and floriculture

126. In recent years, the Government of Uganda has shown interest in promoting exports of horticultural products and flowers, spurred on by the success of Kenya. However, experience to date has been rather mixed, with only modest exports of fresh fruit and vegetables alongside a larger floriculture sector (World Bank, 2006). In stark contrast to Kenya, exports of fresh fruit and vegetables are undertaken by a relatively limited number of small firms, while the supply chain remains rather fragmented. The exports of flowers, on the other hand, is dominated by larger and highly-integrated firms, many of which have foreign investment.

127. Reflecting the fact that most of Uganda's fruit and vegetable and flower exports are destined for wholesale/auction markets in the UK and continental Europe, they do not face the same raft of private food safety standards as Kenya. Thus, most exporters do not have systems of traceability, while little attention is has been given to controls on pesticide residues (World Bank, 2006). Currently, only one supplier is certified to EUREPGAP (Table 9). However, some more exacting buyers have begun to ask for additional record-keeping on the sourcing and oversight of the produce supplied, although this still remains the exception rather than the rule. The fruit and vegetable sector in Uganda can, thus, be characterized as being in a 'low standards trap'. While it is compliant with the SPS requirements of its markets, the lack of more rigorous food safety controls, in particular, hampers (and may even preclude) accessing higher-value but more exacting standard markets.

128. In Uganda, there has been great confusion about the implications of EUREPGAP for exports of fresh fruit and vegetables. Initially, there was widespread concern that compliance was essential

for all exports to the EU, fuelled by an apparent misunderstanding about the regulatory status of the standard (World Bank, 2006). Indeed, the Crop Protection Department of the Ministry of Agriculture, Animal Industries and Fisheries has been promoting EUREPGAP compliance, even though there is no apparent demand for this in Uganda's current major export markets.

129. One exporter that achieved EUREPGAP compliance in 2004 reports making investments of around US$2,000, of which US$4,000 was the cost of certification (Kleih *et al*., 2007). Internal labour costs were an additional US$8,000. However, this exporter subsequently ceased exporting fresh fruit and vegetables and did not renew its certificate in 2006.

130. The floriculture sector experiences some problems with plant pests, including mildew and white flies (World Bank, 2006). Most of the associated control measures are taken by exporters themselves; exports are dominated by roses and chrysanthemums that are grown in greenhouse that are owned and operated by the exporters. Thus, significant investment has not been needed on the part of the public sector, although there has been an expansion of personnel in the Crop Protection Department for the purposes of phytosanitary certification of consignments. Much of the sector has also adopted the German Milieu Programma Sierteelt (MPS) guidelines that are benchmarked to EUREPGAP.

3.5.4 Honey

131. Concerted efforts have been made in Uganda to achieve compliance with EU standards on honey in order to facilitate exports (Integrated Framework; 2006; CEAS, 2006a). Predominantly this has involved the revision of national legislation and implementation of controls on residues The EU requires that imports of all animals and animal products are subject to an approved residue monitoring plan (World Bank, 2006). Thus, any country wishing to export honey to the EU must monitoring chemical residues, including pesticides and antibiotics, to ensure product safety. The residue monitoring plan is presented to the European Commission annually. Samples are collected and analyzed and the results evaluated in parallel with those from the previous year to monitor changes in levels of contaminants. The implication is that export approval is renewable on an annual basis.

132. As the first step, Uganda revised its national honey standard to achieve conformity with the EU's standard. The Animal Resources Directorate was designated as the official 'Competent Authority' for all matters concerning honey and other bee products. In 2005, a survey was undertaken of all honey-producing regions of the country. The samples were analyzed in a German laboratory Subsequently, the European Commission included Uganda on its list of approved honey exporters, one of only five sub-Saharan countries to gain such approval (World Bank, 2006). The cost of this initial exercise was around US$40,000, most of which was donor-funded.

133. Having achieved access to EU markets, the challenge for Uganda is to maintain the residue monitoring programme such that annual renewals are achieved. As of 2006, no computerized surveillance system was in place (World Bank, 2006). Likewise, a system for issuing sanitary certificates and bee movement permits and maintaining quarantine measures has not been established. However, there is a private laboratory that is internationally accreditation to test for pesticide residues, that has been upgraded predominantly to undertake analyses of fish and fishery products for export. Recurring costs are estimated at US$24,000 for the monitoring programme alone (CEAS, 2006). If standards in bee production are to be further enhanced to meet the EUREPGAP standard, the non-recurring and recurring costs are estimated at US$666,290 and US$173,950 per year, respectively (Table 16).

Table 16. Costs of implementing and maintaining systems to comply with EU honey standards in Uganda

Activity	Cost (US$)	
	Non-Recurring	Recurring
Apiculture legislation	160,000	0
Training farmers in good production management	150,000	15,000
Acquisition of modern equipment	50,000	4,200
Traceability	10,000	2,000
Record Keeping	6,000	3,600
Residue monitoring programme country wide	180,000	15,000
Establishment and support of one stop advisory centre	60,000	2,000
Laboratory analysis	0	15,400
Training on quality and safety issues	0	40,000
Waste and pollution management	1,800	500
Worker Health and Safety	47,490	4,250
Updating honey standards	0	20,000
Certification Costs	1,000	2,000
Deployment of inspectors at critical quality points	0	50,000
TOTAL	**666,290**	**173,950**

Source: CEAS (2006).

134. While Uganda has achieved compliance with EU standards and is approved to export honey, to date only one private firm has been actively pursuing honey exports. Further, only one or two relatively small consignments have actually reached the EU, such that this sector has a long way to develop in order to justify the on-going costs of compliance with EU standards applicable to honey.

3.6 Summary

135. The broad 'message' from compliance studies on Kenya, Tanzania and Uganda can be summarized as follows:

- There is a relatively limited literature on compliance in the three study countries. The literature that does exist tends to focus on compliance 'problems' that have jeopardized existing market access and/or what are seen as 'notable' examples of compliance 'successes'. This provides a rather distorted picture; there is less focus on more general compliance issues and problems, for example where exports are entirely precluded due to non-compliance, predominantly with animal and/or plant health controls.

- Most studies on compliance with export market SPS standards in Kenya, Tanzania and Uganda have taken a case study approach. While providing in-depth information on compliance 'experiences' these are necessarily largely qualitative in nature. A key weakness in comparing these case studies is that they do not employ a common and structured analytical framework. To supplement these case studies, direct or 'proxy' measures can be used as indicators of on-going compliance or non-compliance. These include trends in the volume and/or value of trade, data on border detentions, etc. Collectively, however, the general picture is far from clear.

- The export market SPS standards faced by exporters in Kenya, Tanzania and Uganda differ by products and markets, among other factors. In some cases the primary driver of the upgrading of SPS controls (predominantly for food safety) are public standards (as with fish and fishery products in all three countries), while in others it is the private standards of major buyers (as with horticultural products in Kenya and, to a much lesser extent, Tanzania). However, disentangling the distinct compliance tasks associated with

particular public and private standards is problematic, such that we need to see compliance as a more holistic process of upgrading rather than focusing on, for Example legislative requirements or EUREPGAP *per se.*

- It is evident that the three case study countries have faced considerable challenges in complying with evolving SPS standards for 'non-traditional' export commodities. However, in all three cases compliance has been achieved, although often after considerable levels of investment have been made. At the same time, once compliance has been achieved this seems to have been maintained, such that border detentions are low and the volume of exports has expanded over time, suggesting a significant return on the investments made. This is not to imply, however, that there are remaining challenges with sustaining capacity once this has been achieved, most notably in the public sector.

- Compliance with export market SPS standards, as well as being seen as one of the critical challenges of gaining and/or maintaining access to export markets, can also be the basis of international competitiveness. Among the study countries, Kenyan exports of horticultural products is the most notable example. Indeed, it has been argued that the ability of major Kenyan exporters to comply with exacting food safety standards has been a key way in which they have overcome competition from lower-cost suppliers.

- The nature of the compliance process has differed across the three study countries, and between products and sectors therein. In some cases, compliance has essentially been driven by real or perceived threats to market access, often in 'crisis' mode. Exports of Nile perch to the EU is the most notable example. Conversely, in other cases there has been a more 'proactive' approach to compliance, with attempts to 'keep up' or even pre-empt export market standards. Here, Kenyan horticultural product exports are most noteworthy.

- Both public and private SPS capacity plays a critical role in compliance with export market SPS standards, although with significant differences in the level and nature of importance across markets and products. In some cases essential functions must be performed by the public and/or private sectors in order to achieve compliance. In others, the lack of capacity in one sector (for example public sector controls) can be compensated by investments in another sector (for example the establishment of private sector capacity). The overarching message, however, is that both the public and private sectors have a role to play in achieving and maintaining compliance with export market SPS standards and that processes of upgrading in both sectors should be coordinated in order to avoid undue duplication of tasks and appropriate sequencing of investments.

4. Findings and analysis

136. The review of compliance with export market SPS standards and SPS management capacity in Kenya, Tanzania and Uganda highlights the critical role that food safety, animal health and plant health measures play in the export performance. Attempts to exploit potential markets for agricultural and food products, and in particular for 'non-traditional' products, as a means to rural poverty alleviation and export diversification are closely tied to SPS capacity-building broadly, and compliance with export market standards in particular. The three study countries present a general picture of weak SPS capacity that is indicative of the challenges faced by low-income countries more widely, but also of successes in achieving compliance with food safety standards even in very exacting high-income country markets.

137. Before proceeding to explore the cross-cutting issues raised by the three countries, we summarize the situation and experiences of each of the three study countries. In so doing, we bring together their prevailing levels of SPS management capacity and their success at meeting export market SPS standards in the context of this capacity.

4.1 Kenya

138. While SPS management capacity in Kenya can be considered more developed than in most low-income countries and than in Tanzania and Uganda, the broad picture is of relatively weak systems of food safety, animal health and plant health controls. At the same time, however, we observe 'islands' of enhanced food safety capacity within major export sectors, most notably horticultural products and fish and fishery products, that have achieved compliance with some of the strictest SPS standards internationally, often at great cost. Arguably, however, the success of horticultural products exports, in particular, has occurred *despite* evident weaknesses in public sector SPS capacity. The private sector has invested heavily in 'world class' food safety controls, while the consolidation of supply chains has enabled the public sector, operating with weak infrastructure and severe resource constraints, to provide the level of food safety and plant health oversight that is necessary. Where critical capacities are missing domestically, these have tended to be imported, for example through the use of international laboratory testing services. Likewise, the predominant mechanism of conformity assessment has been certification to the BRC Global Standard and EUREPGAP, among others, most often through international third party agencies.

139. The Kenyan government recognizes the need for SPS management capacity to be enhanced in order to support existing agricultural and food exports, continue the process of export diversification and to prevent the 'hard' experience with exports of fish and fishery products to the EU from being repeated. It is evident that there are areas where capacity remains fundamentally weak, especially related to animal and plant health, and that this precludes access to potentially lucrative export markets for a broader range of agricultural and food products. At the same time, it is not clear that the full lessons have been learned from the problems experienced with Nile perch, such that market access has continued to be threatened. Further, the necessary and widespread awareness and recognition of the role played by SPS standards in Kenya's export performance, and the associated need for broad-based capacity enhancement does not appear to be in place. While concerted efforts are being made to enhance capacity in some spheres, for example plant health controls, there does not appear to be an overall strategic imperative for the strengthening of SPS management. Further, such efforts have tended to be motivated by, and reliant on, donor funding raising questions of long-term sustainability.

4.2 Tanzania

140. The overall picture in Tanzania is of weaker SPS management capacity than in Kenya, cutting across the public and private sectors, that limits the ability to respond to emerging standards in export markets. Although there have been efforts to implement 'higher level' functions, for example risk

assessment and risk-based controls, these remain rudimentary, while 'lower level' functions are inadequate . At the same time, and as in Kenya, we do observe 'islands' of more enhanced capacity in key export sectors (most notably fish and fishery products and horticultural products) that have evolved due to acute problems and/or where capacity has been imported through the investments of foreign exporters. Here, significant investments have been made in order to establish the necessary infrastructure and operating systems. In these sectors, prevailing weaknesses in domestic capacity are generally overcome through the use of foreign services, most notably testing for pesticide residues. Indeed, Tanzania's exports of horticultural products, in particular, have clearly benefited from the experiences and expertise of Kenyan exporters that have established 'world class' production facilities and supply chains. In other areas where substantive progress has been made (for example the eradication of particular animal diseases or plant pests and diseases), donor support has played a key role. Looking at this broad landscape, the lack of a coherent strategy on the enhancement of SPS management capacity is evident such that we might expect capacity to remain uneven and to be driven through the forces of public and/or private standards in key export markets and/or donor support.

4.3 Uganda

141. As in Kenya and Tanzania, prevailing food safety, plant health and animal health controls in Uganda are generally weak, although in key export sectors these do provide at least the minimum level of controls required. Thus, Uganda has demonstrated the ability to comply with food safety standards in export markets, most notably fish and fishery products, although this has tended to be in 'problem solving' mode rather than reflecting a strategic imperative. Where more 'proactive' efforts have been made to upgrade capacity in order to access high-income markets (for example honey), while there has been evident success this does not appear to have been translated into concrete export market performance. In the case of horticultural products, although much of the critical capacity is in place, including accredited private sector facilities to undertake laboratory tests for pesticide residues, and a small number of exporters have achieved EUREPGAP certification, a significant presence in target export markets has not been achieved. Indeed, the case of Uganda illustrates the fact that SPS management capacity is a necessary but not sufficient condition for export competitiveness. Further, the longer-term sustainability of this capacity is reliant on their being sufficient resources, whether through public funding and/or market demand, in order to cover the recurrent costs. Thus, we see challenges in maintaining controls on animal health, for example, when donor-funded project interventions come to an end.

4.4 Findings common to Kenya, Tanzania and Uganda

Looking across the three study countries we can observe key similarities and differences in the evolution of SPS management capacity, with two processes of enhancement being discernible. On the one hand, public sector capacity has tended to evolve relatively slowly over time, often with significant levels of bilateral and/or multilateral support. While we can observe efforts to adopt a more strategic approach to capacity development, often under the headings of food safety, animal health and/or plant health, most capacity has been developed in a piece-meal fashion as resources become available and/or acute or threatened 'crises' emerge, usually related to loss of export market access. On the other hand, private sector capacity has evolved in a more spontaneous and 'proactive' fashion. While donors have provided support to processes of private sector capacity enhancement, these have not been reliant on external funding and indeed there has probably been a significant degree of substitution of private investment for donor funding. Most private capacity is subsumed within supply chains and related private support services with little or no spill-overs to the public sector.

142. Technical assistance has played a critical role in the development of public sector SPS management capacity in Kenya, Tanzania and Uganda. Indeed, data from the DDA Trade Capacity-Building Database (Table 17) suggests that considerable amounts have been allocated to trade-related SPS capacity-building. The resource constraints faced by government in these three

countries, combined with prioritization of other areas of public investment, have meant that controls have tended to languish and become outdated over time. Thus, we observe 'spurts' of capacity building as and when donor support is available, and in areas to which particular donors are prepared to allocate funds. While the SPS Committee and STDF have attempted to link better the priorities of developing countries with donor commitments, reliance on donor support challenges efforts towards strategic development of capacity. Further, if donor support is not accompanied by a commitment to allocate the necessary resources to maintain this capacity in the medium and long term, sustainability is a challenge. Thus, in the realm of animal health, for example, there are concerns that the capacity developed under the PACE programme will not be sustained in Kenya and Uganda.

Table 17. Value of technical assistance in area of SPS measures, 2001-2006 (US$ million)

Area	Kenya	Tanzania	Uganda	Total
General	209.9	1,024.4	43.6	1,275.8
Plant Health	2,831.5	10.0	10.0	2,851.5
Animal health	0.0	223.0	0.0	223.0
Food safety	112.0	92.0	0.1	204.2
Total	**3,151.5**	**1,349.4**	**53.6**	**4,554.5**

143. Kenya stands out among the three study countries as having the most well-developed private sector food safety capacity, as is evident from the performance of horticultural and flower exports and the level of conformity with private standards such as the BRC Global Standard and EUREPGAP. Thus, for example, Kenya now accounts for 27 percent of all EUREPGAP-certified suppliers of fresh fruit and vegetables in sub-Saharan Africa. While there have been spill-over effects on Tanzania through inward investments by Kenyan exporters, overall capacity within the private sector remains weak. Indeed, exporters tend to overcome weaknesses in capacity through the use of international support service providers. The situation in Uganda is somewhat similar to Tanzania, although compliance with private standards such as EUREPGAP is almost non-existent. The state of private sector capacity across the three countries illustrates the vicious cycle between market competitiveness and sustainable capacity development; while a certain minimum level of capacity is needed in order to access and compete in key export markets for higher-value agricultural and food products, a minimum level of exports is needed to ensure that this capacity can be sustained.

144. The predominant pattern of 'islands' of enhanced SPS management capacity, cutting across the public and private sectors, amid a 'sea' of generally weak capacity highlights the predominance of exports as the driver of processes of capacity-building in all three countries. Thus, the stereotypical 'two' and 'three-tier' models of SPS management described above generally hold, with generally limited interactions and spill-overs between export and domestic market supply chains and associated processes of public and private oversight. We might argue, therefore, that the motivator of most capacity-building efforts has been the drive to maintain and enhance the economic returns from higher-value exports, rather than broader objectives of related to public health and/or agricultural productivity. This is reflected, for example, in the lack of a coherent strategic approach to capacity development for food safety, animal health and plant health management in all three countries.

145. Bringing together public and private modes of capacity development, and examining prevailing capacity in the three study countries through the lens of the hierarchy of functions presented in Figure 2, it appears that food safety, animal health and/or plant health controls have not generally evolved through a planned and strategically coherent process. Thus, in Kenya, Tanzania and Uganda, while there is capacity to undertake some more 'advanced' functions, for example laboratory testing and risk assessment, these have not been established on a foundation of broad awareness and recognition of the importance of establishing and sustaining effective SPS management systems and the widespread application of basic 'good practices'. On the one hand this raises concerns about the degree to which this capacity can be sustained, except in highly developed

export sectors. On the other, it means that on-going efforts to achieve compliance with export market SPS standards often involve significant 'leaps' in capacity, necessitating considerable levels of investment over short time frames that can challenge export competitiveness and necessitate significant reallocations of public funds.

146. Looking across the broad areas of food safety, animal health and plant health management capacity, there are evident differences in the role of the public and private sectors. Broadly, animal and plant health management capacity in all three countries is essentially within the public sector, reflecting the fact that pests and diseases tend not to respect geographical boundaries, whether administrative and/or between production facilities. While the structure of production and private systems of supply chain management help to 'make the most' of weak public sector oversight, as in the Kenyan horticultural sector, a certain minimum level of public sector capacity is needed in order to establish effective controls and then to demonstrate to trading partners that these are legitimate. Thus, all three countries face critical problems with animal and plant health issues that are of significance to international trade, presenting absolute barriers to market access and/or necessitating controls that undermine competitiveness. In contrast, food safety management cuts across the public and private sectors, requiring coordinated efforts in order to provide official certification of processing facilities or product consignments, and there is considerable scope for the substitution of public and private sector capacity. This is most evident with the horticultural products sector in Kenya and Tanzania and with fish and fishery products in Uganda. In all three of these cases the private sector has undertaken food safety control functions. Offsetting capacity weaknesses in the public sector.

147. Examining the experiences of Kenya, Tanzania and Uganda in complying with export market SPS standards it is evident that all three countries have been able to gain and maintain market access for strategic export commodities. While the collective experience with fish and fishery products exports to the EU is sometime construed as a 'positive' example of low-income countries meeting strict food safety requirements, it also illustrates the fact that, in broad terms, SPS management capacity has not been enhanced in line with the evolution of export market standards, nor the establishment and expansion of export supply chains. The Nile perch 'experience' highlights the critical importance of, at the minimum, keeping up with export market SPS standards as they evolve over time. It also illustrates the potential dire consequences of non-compliance and the considerable costs that can be incurred over a short space of time in order to regain market access. The experiences of Kenya with horticultural product exports, in contrast, presents a more 'optimistic' picture. Here, the efforts and abilities of exporters to be 'proactive' in responding to evolving food safety standards in key markets has formed the key basis of their international market competitiveness that is difficult and costly to emulate, including by Tanzania and Kenya.

148. Ironically, some of the less costly but also most critical elements of food safety, animal health and/or plant health capacity-building are the most difficult to implement. Notably, all three countries have struggled to revise their legislative frameworks and reform institutional structures, despite the fact that they have received considerable support from agencies such as FAO. In part this reflects the lack of broad-based recognition of the critical role that SPS management capacity plays in processes of economic development, especially when export-led, but also the inertia of established legislative and institutional structures, especially where considerable realignment of responsibilities (and thus power) and resources is involved.

149. Reflecting inertia in processes of reform, institutional structures for SPS management in all three countries can be broadly characterized as fragmented and with inadequate coordination of functions and responsibilities. As a consequence, scarce resources are often not used to the greatest effect. Thus, for example, multiple agencies can be involved in undertaking some critical SPS management functions, while other functions are disregarded. This duplication of functions is also observed with capacity-building efforts. For example, in Kenya, Tanzania and Uganda there have been multiple efforts to establish critical laboratory testing capacity, often at great cost. It is not

evident that the collective capacity created, should all of these efforts be successful, is sustainable given foreseeable demand for testing services from exporters and public oversight officials. Again, therefore, we see inefficient use of scarce resources.

150. As the 'highest' level of functionality in Figure 2, 'SPS diplomacy' is not surprisingly the weakest element of food safety, animal health and plant health management capacity in Kenya, Tanzania and Uganda. While there are differences in the level of engagement with institutions such as Codex Alimentarius across the three countries, the ability to influence processes of international standards development and pursue SPS-related trade concerns through bilateral and multilateral fora is severely constrained. Key here is the incapacity to undertake on-going surveillance activities and research in order to accrue the scientific data needed to support negotiating positions, rather than the inability to attend meetings *per se*. The inevitable consequence is that these countries are resigned to being 'standards takers', with little scope to bring about changes in SPS measures that are deemed to be against their national interest.

151. The analysis presented above is reflective of the pre-existing literature on compliance with SPS standards in export markets and assessments of food safety, animal health and plant health management capacity. There are evidently gaps in the set of information that is available, while these gaps differ across countries, making valid comparisons problematic. Further, in the literature on compliance in particular, there tends to be a focus on 'problems'; predominantly products and/or standards where established exports have been impacted. Thus, we lack a more general assessment of the degree to which Kenya, Tanzania and Uganda comply with international market standards and the 'gaps' that need to be filled in order to achieve compliance. The predominant focus also tends to be on problems achieving compliance with standards in high-income country markets, with very little attention being given to the potential impact of SPS controls in low and/or middle-income country markets, where presumably the compliance 'gap' is smaller.

152. It is evident that the current literature on Kenya, Tanzania and Uganda fails to recognize many of the less prominent instances of 'non-compliance', especially where these are latent barriers to accessing higher-value markets for agricultural and food products. In many such cases, non-compliance is only one of a number of competitiveness challenges faced by exporters alongside weak communications and transportation infrastructure, high freight rates and utility costs, etc. In such cases it can be difficult to isolate the challenges of non-compliance and the associated cost of establishing critical capacities. A further weakness is the tendency to see compliance as a discrete event, in that a country and/or exporter therein is seen as being either 'compliant' or 'non-compliant'. This is a misleading interpretation of the nature of conformity and how standards tend to be enforced, especially in private spheres. It also disregards the often gradual processes through which capacity is enhanced, major elements of which may not reflect concerted efforts towards compliance, but rather general moves towards improvement.

153. The reviews that form the predominant input to this paper present 'snapshots' of the current status of compliance with export market standards and levels of SPS management capacity. It is evident, however, that these are subject to change over time, while the 'benchmark' that the study countries aspire to is also changing. While we may be able to discern a broad notion of the direction and magnitude of capacity-building processes, it is difficult to discern where Kenya, Tanzania and Uganda will be at defined points in the future. The information that has been collected and synthesized above suggests that all three are 'moving in the right direction', although at differing speeds and through distinct processes. Further, the positioning of capacity, especially between the public and private sectors, diverges and is also likely to change over time.

5. Conclusions

154. The review of Kenya, Tanzania and Uganda presented above sends mixed messages about prevailing levels of SPS management capacity and the scope to comply with export market SPS standards. On the one hand, while food safety, animal health and plant health capacity compares well with other low-income countries, and indeed is superior in some areas, there are considerable weaknesses that impinge on access to potential markets. On the other hand, all three countries have demonstrated capabilities to comply with exacting export market standards and to respond when challenges due to non-compliance emerge. Hence, we have the broad picture of 'islands' of enhanced capacity within a overall 'sea' of weak controls.

155. The experiences of the three study countries suggest that export market requirements can be a significant motivator of processes of upgrading of food safety, animal health and/or plant health capacity. The implication, however, is that SPS management capacity tends to evolve according to a two-tier 'model', with little spill-over of the more rigorous controls applied in export supply chains to products destined for domestic markets. Thus, while considerable economic benefits may flow from such capacity, for example in terms of import revenue, foreign exchange and returns to producers and paid labour, the direct impacts on local public health are likely to be limited. The fact that upgrading is motivated by export market standards also implies that capacity-building tends to occur in 'spurts' as the need is perceived rather than as an on-going process.

156. The need for further enhancement of capacity to undertake food safety, animal health and plant health controls in Kenya, Tanzania and Uganda is evident. While using those elements of capacity that are more highly developed as a 'springboard', processes of capacity enhancement need to focus on establishing and maintaining broad-based and 'lower level' functions in accordance with Figure 2. Thus, awareness and recognition of the role of SPS management needs to be fostered, while efforts are made to engender basic good practices through supply chains. Conversely, much donor intervention tends to focus on higher level functions, for example enhancing laboratory testing capacity, and/or on compliance with some of the strictest export market standards, for example EUREPGAP. While such efforts are necessary in order to maintain access to the most exacting markets, predominantly in the context of a pre-established export sector (for example horticultural product exports from Kenya), they may be less appropriate where the industry is nascent (for example horticultural product exports from Uganda) and/or where export market SPS standards are less exacting.

157. To date, the technical assistance 'model' applied to the enhancement of SPS management capacity in Kenya, Tanzania and Uganda has tended to focus on the development of technical competences without considering the strategic nature of processes of compliance. Thus, much capacity is developed as problems arise and is narrowly focused in terms of specific food safety, animal health or plant health control functions. A strategic perspective examines not only the scope for compliance in a technical sense, but also the ability to be 'proactive' and to exhibit 'voice' in relations with export market governments and buyers (Henson and Jaffee, 2007). Everything else being equal, proactivity enables developing countries to choose the path of compliance that is most beneficial and/or that minimizes the associated costs of compliance. Such a perspective could be of benefit to the three countries studied here.

158. It is evident that some elements of the technical assistance provided to Kenya, Tanzania and Uganda has focused on enhancing capacity for 'SPS diplomacy'. This includes training on the workings of the SPS Agreement, design of National Notification Authorities and Enquiry Points, support to attend meetings of the Codex Alimentarius Commission, etc. While such efforts are essential, they do fail to address the fundamental weaknesses in the ability of these countries to defend their national interests in international fora. Most notable is the lack of coherent surveillance and research capacity, fragmented institutional structures, etc. While some of these more basic elements of capacity could be construed as falling outside of trade-related SPS capacity-building *per se*, this

emphasize the need for capacity building to be aligned and coordinated with development assistance more broadly.

159. The experiences of Kenya, Tanzania and Uganda in complying with export market SPS standards and developing food safety, animal health and plant health capacity present a valuable collection of knowledge that can inform the development of human capital, establishing strategic priorities, design of technical assistance programmes, etc. Certainly, there seems little point in each country 'reinventing the wheel' every time they face a new challenge, which may already have been addressed (successfully or unsuccessfully) by one of their neighbouring countries. Thus, there is a need for an on-going platform to facilitate the sharing of experiences and collective 'soul searching', especially where there are mutual (or at least non-competing) interests. The STDF could play a role in this regard.

160. Both the OIE and IPPC have developed structured instruments for assessing animal and plant health management capacity that facilitate self-assessment, comparison across countries and monitoring of the impacts of capacity-building efforts over time. While the FAO's framework for assessing food control capacity is less structured, it also provides a consistent framework in which to undertake capacity evaluations. Although the results of such evaluations were not all available for the purposes of preparing this report, from the information that was considered it is evident that frameworks of this type have a valuable role to play in guiding national and international capacity-building efforts and as the basis for strategy-based priority-setting.

161. From the review of existing assessments of compliance with export market SPS standards it is evident that we know very little about the experiences of Kenya, Tanzania and Uganda in meeting the requirements of low and middle-income country markets. The focus on high-income countries serves to highlight the challenges of complying with the most exacting food safety, animal health and/or plant health standards. However, we can not take it as given that this is the most beneficial route for these countries to follow. Further, while Kenya has evidently been very successful at exploiting 'high-value' markets for horticultural products in Europe, this does not necessarily imply that this is the best strategic direction for other sectors, or even for horticultural producers that have not yet gained access to established export supply chains. This suggests that we need to review compliance experiences and challenges more broadly, comparing the costs and benefits of meeting requirements in a wider range of potential export markets.

162. An important message from the review of Kenya, Tanzania and Uganda is that both the public and private sectors have a role to play in building SPS management capacity and in complying with export market standards. Further, the 'compliance challenge' is driven by not only the official regulatory requirements of exports markets but also the business-to-business and private collective standards enforced by buyers. The interconnections between the public and private sectors, not only in our countries of interest but also in export markets, needs to be recognized and incorporated into capacity-building strategies, including the provision of technical assistance. Thus, there is a need to abandon 'traditional' notions of where capacity appropriately lies and focus instead on capacity that is pre-existing and where it can be most effectively and efficiently established or enhanced. Due consideration also needs to be given to interactions between the public and private sectors where critical capacity cuts across these sectors.

163. Where capacity is weak domestically, a strategy used by leading exporters is to employ an international service provider. Where such capacity is costly to put in place and/or domestic demand is relatively weak, perhaps in the context of a nascent export sector, this would appear to be an appropriate strategy. Regional capacity might play a role here. This emphasizes the need to develop SPS management capacity in close coordination with the evolution of export sectors and the export market SPS standards they face. If capacity is developed for which there is little demand, unless this is supported by government and/or donor funds, sustainability is unlikely. Likewise, the options for capacity development, in both the public and private sectors, is very different according to the level of

development of an export sector. In a mature industry, for example Kenyan horticulture, there may be domestic private service providers that can undertake critical functions on the basis of commercial demand from exporters. Conversely, in an infant industry, for example Ugandan horticulture, such support services will struggle to survive, perhaps necessitating that such functions are performed by government or provided with donor support into the medium term.

164. One of the most fundamental problems faced by Kenya, Tanzania and Uganda is the appropriate management and coordination of food safety, animal health and plant health controls. It is evident that there can be duplication of functions at one extreme and entire gaps in capacity at the other. Further, poor coordination among the various entities charged with SPS management functions, both within the public sector and across the public and private sectors, means that resource use can be suboptimal. Better coordination and management alone could mean that more capacity is sustained, even within the confines of existing resources.

165. The overarching conclusion of this review is that Kenya, Tanzania and Uganda need to build on their successes in constructing capacity and complying with export market SPS standards, both individually and collectively, and work towards a more broad-based system of SPS controls. Towards this end, a coherent strategy needs to be implemented that is aligned with technical assistance from bilateral and multilateral donors and is in accordance with the need to prioritize the development of specific SPS functions, coordinated with the requirements of key (existing and potential) export sectors and managed in a manner that avoids duplication of functions and assures sustainability. In pursuit of this strategic focus, technical assistance has a critical role to play. While we need to recognize that such assistance can distort local markets and is often not attuned with local priorities, it is evident that the resource constraints faced by Kenya, Tanzania and Uganda necessitates reliance on donor support. Both bilateral and multilateral donors need to work more closely with recipient nations, supporting longer-term strategies for capacity development. The STDF can play a key role in encouraging and/or facilitating a shift to this ‘model’ of technical assistance in the future.

ANNEX I
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ANNEX II
Tables

Table A1. Technical assistance requirements identified by Government of Kenya, 2002

Area	Information	Training	Infrastructure (Hard and/or Soft)	Specific Concern	Other
Rights, obligations and practical operation of the SPS Agreement:	- Introduction to the WTO and international trading system - Importance of the SPS Agreement in international trade - Introduction to the work of Codex and IPPC - Importance of the appropriate level of sanitary protection, non-discriminatory trade measures, analysis of trade disputes cases relating to SPS measures, work of standard-setting bodies	- Application of provisions on transparency - Recognition of equivalence and regionalization - Harmonization of requirements - Risk analysis - Dispute settlement procedures - Analysis of disputes	- Advice in the establishment/ revision of national harmonization with international norms and guidelines - Public awareness with regard to SPS measures - Establishment of a database for the notification system	- Need for cooperation with public and private agencies on SPS concerns	
Food safety	- Monitoring of pesticide residues in agriculture for MRLs compliance	- Good agricultural practices for the producer - Codex Committees on pesticide residue standards and data base generation - Residue analysis	- Survey and monitoring tools, computers and transport - Equipment - Capacity building	- Establishing national MRLs and PHI database - Ensuring food safety and compliance to international MRLs stringent measures	- Systems of accreditation and certification of safe products to ensure national trade credibility
Animal health					
Plant health	- Review and updating of national regulatory framework	- Sensitisation of inspectors, policy makers, stakeholders in Plant Health Industry on linkages between technical and legal flow plus the consequences thereof	- Facilitation - Consultancy expenses (legal & technical - Computer and relevant accessories	- Compliance with the international regulatory framework - Creation of appropriate administrative structures	- Enhance the transparency process and action - Coordinated/ - harmonized systems

Area	Information	Training	Infrastructure (Hard and/or Soft)	Specific Concern	Other
	- Pest Risk Analysis (PRA)	- Training of inspectors on methodologies of PRA, information access/retrieval Generation of pest risk analysis information	- Capacity building: - Personnel - Equipment	- Establishing of a pest list - Establishing pest free areas - Categorization of pests based on risks	- The information is essential for guaranteed exports of plant products e.g. fresh produce
	- Improve and increase inspectors technical capability	- General training on WTO – SPS compliance requirements - Training in technical fields	- Installation of diagnostic laboratory facilities at exit/entry points including fumigation equipment - Upgrading of existing phytosanitary inspection facilities - Development of harmonized phytosanitary measures and risk management procedures	- Improving the degree of phytosanitary compliance including accreditation	
Plant health	- Creation of National Database for other countries import requirements	- Information technology	- Computers and relevant accessories		
	- - Seed health	- Standard laboratory techniques	- Laboratory seed testing equipment and facilities	- Identification of seed borne quarantine pests	

Source: WTO (2002)

Table A2. Identification and prioritization of capacity-building needs of the Kenyan national food control system

Current Status	Desired Future Capacity	Gap or Obstacle	Capacity Building Need	Priority
- There is no national statement of policy regarding food safety and quality	- Food safety and quality policy stated - Food safety and quality are recognized as a national priority	- Lack of awareness about food safety and quality at decision-making levels of government	- Increase awareness about the impact of food safety and quality on the economic and social fabric of the nation among top decision-making levels	1
			- Review the draft National Food and Nutrition Policy to guide implementation mechanisms for the food safety and quality component, adopt it and incorporate it into national development plans	1
- Basic right of consumers to safe, wholesome food not recognized in legislation	- The Right to Food, including the right to safe and nutritious food, recognized by the food legislation	- No mention in current food legislation	- Full revision of the Food, Drugs and Chemical Substances Act, Chapter 254 (and the food safety provisions in the Public Health Act if necessary) to recognize the Right to Food	1
- Responsibility of producers and processors to provide safe and wholesome food not mentioned in legislation	- Responsibility of producers and processors to provide safe and wholesome food clearly stated in food legislation	- No mention in current food legislation	- Revision of the Food, Drugs and Chemical Substances Act, Chapter 254 (and the food safety provisions in the Public Health Act if necessary) to clearly define the rights and responsibilities of all stakeholders in the food chain, and to modernize it	1
- Lack of public awareness about food safety and quality	- Consumers increasingly aware of food safety and quality issues and actively participating in food safety and quality advocacy	- Lack of consumer education and information material and activities - Absence of or ineffective consumer organizations	- Preparation and dissemination of information on basic food safety issues to the public	1
			- Creation of a public consumer protection office	2
- Lack of awareness about food safety and quality among food producers and processors	- Food producers and processors increasingly aware of food safety and quality issues	- Lack of appropriate education and information programmes for producers and industry by Ministry of Health and other Ministries responsible for agriculture, livestock and fisheries	- Preparation of materials on food safety and quality for producers (GAPs and GAHPs) and processors (GMPs)	1
			- Offering of short, periodic GAPs	2

Current Status	Desired Future Capacity	Gap or Obstacle	Capacity Building Need	Priority
			and GAHPs (Ministry of Agriculture, Ministry of Livestock and Fisheries Development) for farmers and prerequisite programmes and GMPs	
- Overlapping responsibilities regarding inspection of meat for local consumption - Inspection of meat entrusted to the meat industry promoting institution	- The National Food Safety Focal Point coordinates all food safety and quality control (delegation to local councils permitted) - Food inspection for local consumption assigned to health authorities	- Current food legislation	- Revision of the Food, Drugs and Chemical Substances Act, Chapter 254 (and the food safety provisions in the Public Health Act if necessary) to legally institutionalize the National Food Safety Focal Point - Revision of the Meat Control Act, Chapter 356 and KMC Act, Chapter 363 to assign abattoir and meat inspection to	1 1
- Ministry of Health delegates inspection and enforcement responsibilities to district and city councils	- District and municipal councils have adequate budgetary, staff and technical resources to conduct food inspection and enforce the law - Inspection schedules based on risk	- District and municipal councils lack economic and technical resources; inspectors lack roper training and tools	- Provide budgetary and technical support to district and municipal councils upon which the Ministry of Health delegates inspection/enforcement responsibilities - Training of district and municipal council inspectors by the Ministries of Health and of Livestock and Fisheries Development - Sharing the experiences of the Fisheries Dept. with the Ministries of Health and of Livestock and Fisheries Development and district and municipal councils	1 1 2
- Large, unregulated informal food processing and preparation sector	- Informal food processing and preparation sector registered and informed	- District and municipal councils lack economic and technical resources	- Budgetary and technical support given to district and municipal councils - Enforcement of registration and establishment of training requirements on basic food sanitation for street vendors	1 2

Current Status	Desired Future Capacity	Gap or Obstacle	Capacity Building Need	Priority
- Lack of efficient coordination/ collaboration among institutions involved in food safety and quality control	- Institutions involved in food safety and quality control coordinate activities and actively collaborate with each other, guided by the National Food Safety Focal Point	- Current irrelevancy of academic training and educational programmes to the needs of the food sector - Lack of coordination and integration of public research institution programmes with the needs of the Ministries of Agriculture, of Health, and of Livestock and Fisheries Development and the food sector	- Revision of the Food, Drugs and Chemical Substances Act, Chapter 254 (and the food safety provisions in the Public Health Act if necessary) to legally institutionalize the National Food Safety Focal Point	1
			- Revision of the Food, Drugs and Chemical Substances Act, Chapter 254 (and the food safety provisions in the Public Health Act if necessary) to mandate support (fund, train, equip, monitor and audit the food safety- and quality-related activities of local councils) to local authorities	2
			- Creation of the National Food Safety Focal Point as effective food safety and quality coordinating board with participation of all involved agencies and with a secretariat in the Ministry of Health	2
			- Integration of public research institutions into the national food safety and quality effort via relevant /coordinated research	2
			- Incorporation of the public academic sector into the food safety and quality system via: o Training inspectors o Development of practical and relevant curriculum for food science professionals o Establishment of continuing education programmes (i.e., refresher course work)	1 2 3
			- Incorporation of the public academic sector into the food safety and quality system via:	

Current Status	Desired Future Capacity	Gap or Obstacle	Capacity Building Need	Priority
			o Relevant applied research o Provision of extension services to producers and processors	2 3
- Current emphasis on final product inspection and not on process	- The food safety and quality system focuses on process rather than on final product	- Lack of knowledge about GAPs, GAHPs, GMPs, and HACCP	- Progressive education and training on GAPs and HACCP	
			- Education/training of Ministry of Agriculture, Ministry of Livestock and Fisheries Development, and academic extensionists, "trainers," on GAPs and GAHPs	1
			- Education/training of farmers on GAPs/GAHPs	2
			- Education/training of Ministry of Health, Ministry of Livestock and Fisheries Development, academia and city council "trainers" on HACCP prerequisite Programmes (GMPs, SOPs, SSOPs)	3
			- Education/training of large and medium processors on HACCP prerequisite programmes (GMPs, SOPs, SSOPs)	3
			- Training of small processors on pre-requisite programmes (GMPs, SOPs, SSOPs)	4
			- Training of Ministry of Health and city council "trainers" on HACCP	4
			- Introduction of large food processors to HACCP	4
- Absence of monitoring of	- Pesticide residues, veterinary drug	- Lack of resources and institutional coordination - Lack of analytical capability	- Installation of national analytical capacity for pesticide residues,	1

Current Status	Desired Future Capacity	Gap or Obstacle	Capacity Building Need	Priority
contaminants in the food supply	residues, heavy metals, microbial contaminants and mycotoxins in local foods routinely monitored - Food control laboratory support available in districts - Food control management decisions based on - risk assessment		veterinary drug residues and mycotoxins in foods: o instrumental and reference materials o staff training - Establishment of regular pesticide residue, veterinary drug residues, microbial contaminants and heavy metals monitoring (as applicable) of fresh vegetables, fruits, meat, and fish in local markets by Ministry of Health in collaboration with the Ministry of Agriculture - Institutionalization of mycotoxin monitoring in local and imported cereals, grains and by-products (KEPHIS) - Installation and commissioning of food microbiology and chemistry laboratories in strategic locations countrywide - Creation and maintenance of databases on food contaminants - Utilization of databases in risk assessment	2 2 3 3 3
- Absence of monitoring of processed food composition and other labelling fraud	- Food composition and weight monitored against label	- Lack of control and laboratory support	- Strengthening of existing food control laboratories - Control of food composition and weight fraud - Control of food labelling	3 3 3

Note: 1 = Immediate attention required; 2 = secondary priority; 3 = medium term (3–5 years); 4 = long term (5–10 years).
Source: Molins and Gitonga (2006)

Table A3. Action matrix for enhancing trade-related SPS management capacity in Tanzania

Technical or Policy Issue	Actions Recommended	Requirements					Agencies/Actors Involved	Time Frame	Priority
		Define Strategy	Change Policy /Law	Promote Awareness	Reform Institutions	Seek Technical Assistance for Capacity Building			
Strategy and priority setting	Seminars/workshops to raise awareness of SPS management capacity issues and to conduct dialogue with the private sector	X		X			TBS, TFDA, MOH, MOAFS, MNRT	Short-term	Highest
	Establishment of formal mechanism for improved strategic planning and institutional coordination on matters of trade-related quality and SPS management	X				X	TBS, TFDA, MOH, MOAFS, MNRT, private sector, research + professional orgs.	Short-term	High
Institutional efficiency and effectiveness	Review of existing institutional arrangements to minimize overlaps and ensure most effective use of limited technical and staff capacities	X			X		TBS, TFDA, MOH, MOAFS	Short-term	High
Regional cooperation	Dialogue and planning with regional partners to achieve capacity synergies and mutual recognition of systems	X	X		X		Official agencies + private sector orgs.	Medium-term	Medium

Technical or Policy Issue	Actions Recommended	Requirements					Agencies/Actors Involved	Time Frame	Priority
		Define Strategy	Change Policy /Law	Promote Awareness	Reform Institutions	Seek Technical Assistance for Capacity Building			
Promotion of good practices	Implement scheme for support of implementation of HACCP, GAP, GMP etc. through loans, partial subsidies etc.					X	TBS, TFDA, MOAFS + private orgs.	Medium-term	High
	Implement comprehensive program of food safety controls in hotels/restaurants servicing tourists via awareness-raising, certification, surveillance, auditing, etc.	X	X	X		X	MNRT, MOH, TBS, private associations + local governments	Short to Medium-term	High
	Continue to enhance investment in upgraded hygiene facilities at fish landing sites on Lake Victoria					X	MNRT	Short to Medium-term	High
Enhancing food quality standards in smallholder production	Implement initiatives that build on existing efforts to organize smallholder producers to supply high-value markets for agricultural and food products			X		X	MOAFS, NGOs, + private orgs. TFDA	Medium-term	Medium

Technical or Policy Issue	Actions Recommended	Requirements					Agencies/Actors Involved	Time Frame	Priority
		Define Strategy	Change Policy /Law	Promote Awareness	Reform Institutions	Seek Technical Assistance for Capacity Building			
Phytosanitary control measures	Update legislation on plant health controls to become compliant with the IPPC		X			X	Ministry of Agriculture and Food Security	Medium-term	Medium
	Raise awareness and training in practices for plant health control including GAP, integrated pest management, etc.			X		X	Ministry of Agriculture and Food Security	Medium-term	High
	Address immediate problems which threaten to undermine trade or productivity (including fruit fly)					X	Ministry of Agriculture and Food Security; Neighboring countries	Short-term	High
	Enhance scale and effectiveness of surveillance for plant pests and diseases	X			X	X	Ministry of Agriculture and Food Security	Med. to Long-term	Lower
Animal health controls	Continue updating of animal health legislation		X				MWLD	Medium-term	Medium
	Enhance scale and effectiveness of surveillance for animal diseases	X			X	X	MWLD	Med to Long-term	Medium
Registration of pesticides	Review arrangements for pesticide registration and explore equivalency of approval processes in other countries		X		X		TPRI	Short-term	High

Technical or Policy Issue	Actions Recommended	Requirements					Agencies/Actors Involved	Time Frame	Priority
		Define Strategy	Change Policy /Law	Promote Awareness	Reform Institutions	Seek Technical Assistance for Capacity Building			
Certification of organic products	Continue to establish national capacity to certify organic products for export markets					X	TBS, MOAFS, Tancert	Medium-term	Medium
Laboratory capacity	Upgrade laboratory capacity for food safety, plant and animal health in a graduated manner building upon existing initiatives (for example the DANIDA project and Nyegezi laboratory)					X	TBS, TFDA, MOH, MOFS, TPRI, MNRT, and private orgs.	Medium to Long-term	Medium
Advisory and certification services	Develop competitive market for advisory and certification services involving both public and private suppliers	X	X			X	TBS, MOAFS, private organizations	Medium to Long-term	High
Quality enhancement	Raise awareness among herders and in slaughterhouses and implement a grading system which provides incentives to improve the quality of hides and skins available to industry			X	X	X	MWLD, MTI, Chamber of Butchers	Short-to Medium Term	High
International relations related to SPS matters	Enhance capacity to attend and play a more active role in meetings of the SPS Committee, Codex Alimentarius, OIE and IPPC			X		X	TBS, MOAFS, MTI	Long-term	Lower

Key: Time Frame: Short-term: 18 months; Medium-term:18 months to 3 years; Long-term:3 to 5 years.

*Source: World Bank (2005***)**

Table A4. Identification and prioritization of capacity-building needs of the Tanzanian national food control system

Current Status	Desired Future Capacity	Gap or Obstacle	Capacity Building Need	Priority
There is no national statement of policy regarding food safety and quality	Food safety and quality are recognized as a national priority	Food safety and quality are recognized as a national priority decision-making levels of government	Increase awareness about the impact of food safety and quality on the economic and social fabric of the nation among top decision-making levels	1
			Develop and adopt a national statement of policy regarding food safety and quality	1
Basic right of consumers to safe, wholesome food not recognized in legislation	The Right to Food, including the right to safe and nutritious food, recognized by the food legislation	No mention in current food legislation	Revision of the TFDCA to recognize the intrinsic Right to Food of consumers	1
Responsibility of producers and processors to provide safe and wholesome food not mentioned in legislation	Responsibility of producers and processors to provide safe and wholesome food clearly stated in food legislation	No mention in current food legislation	Revision of the TFDCA to assign clear responsibility for food safety and quality to producers and processors	1
Lack of public awareness about food safety and quality	Consumers increasingly aware of food safety and quality issues and actively participating in food safety and quality advocacy	Lack of consumer education and information material and activities	Preparation and dissemination of information on basic food safety issues to the public	1
		Absence of or ineffective consumer organizations	Creation and/or promotion of consumer organizations	2
Lack of awareness about food safety and quality among food producers and processors	Food producers and processors increasingly aware of food safety and quality issues	Lack of appropriate education and information programmes for producers and industry by TFDA, TBS, and Ministries responsible for agriculture, livestock and fisheries	Preparation of materials on food safety and quality for producers (GAPs and GAHPs	1
			Ministry of Agriculture, Fisheries Dept.) and processors (GMPs – TFDA, TBS, Fisheries Dept.) - Offering of short, periodic GAPs and GMPs courses for farmers and processors, respectively	2
Overlapping responsibilities regarding inspection of food for local consumption	- TFDA sole responsible for overall national inspection of food for local consumption (delegation to local councils permitted)	- Current food legislation	- Revision of the TFDCA to abrogate: ▪ (a) food inspection responsibilities of other institutions (including Ministry	1

Current Status	Desired Future Capacity	Gap or Obstacle	Capacity Building Need	Priority
	- TBS sole responsible for standard setting		of Water and Livestock and Dairy Board but excluding export fisheries); (b)standard-setting functions of TFDA	
			- Revision of the TFDCA to create an effective food safety/ quality coordinating board involving all relevant agencies and with a secretariat in the TFDA	
- TFDA delegates inspection and enforcement responsibilities to district and city councils	- District and city councils have adequate budgetary, staff and technical resources to conduct food inspection and enforce TFDCA	- District and municipal councils lack economic and technical resources; inspectors lack proper training	- Provide budgetary and technical support to district and municipal councils upon which TFDA delegates inspection/enforcement responsibilities	1
	- Inspection schedules based on risk		- Training of district and municipal council inspectors by TFDA	1
			- TFDA and district and municipal councils to benefit from the experience of the Fisheries Department	2
- Large, unregulated informal food processing and preparation sector	- Informal food processing and preparation sector registered and informed	- District and municipal councils lack economic and technical resources	- Budgetary and technical support given to district and municipal councils	1
		- Lack of street vendor registration and training	- Establishment of registration and training requirements for street vendors	2
- Lack of efficient coordination/ collaboration among institutions involved in food safety and quality control	- Institutions involved in food safety and quality control coordinate activities and actively collaborate with each other	- Current legislation mandating enforcement activities and not allowing delegation of responsibilities	- Revision of the TFDCA assign sole food inspection responsibilities to the TFDA (excluding only export fisheries) with allowance for delegation local councils	1
		- Current irrelevancy of academic training and educational programmes to the needs of the food sector	- Revision of the TFDCA require TFDA to support (fund, train, equip) monitor and audit the food safety and quality-related activities of local councils	2
		- Lack of coordination and integration of public research institution programmes with	- Creation of an effective food	

Current Status	Desired Future Capacity	Gap or Obstacle	Capacity Building Need	Priority
		the needs of the TFDA and the food sector	safety/ quality coordinating board with participation of all involved agencies and with a secretariat in the TFDA	2
			- Integration of public research institutions into the national food safety and quality effort via relevant /coordinated research	2
			- Incorporation of the public academic sector into the food safety and quality system via: (a) training inspectors; (b) development of practical curriculum for food science professionals;	1 2
			(c) establishment of continuing education programmes (i.e., refresher course work)	3
			- Incorporation of the public academic sector into the food safety and quality system via: (a) relevant applied research, (b) provision of extension services to producers and processors	2 3
- Current emphasis on final product inspection and not on process	- The food safety and quality system focuses on process rather than on final product	- Lack of knowledge about GAPs, GAHPs, GMPs, and HACCP	Progressive education and training on GAPs and HACCP: - Education/training of Ministry of Agriculture extensionists on GAPs and GAHPs	1
			- Education/training of farmers on GAPs/GAHPs	2
			- Education/training of TFDA and	2

Current Status	Desired Future Capacity	Gap or Obstacle	Capacity Building Need	Priority
			city council inspectors and large and medium processors on HACCP pre-requisite programmes (GMPs, SOPs, SSOPs)	
			- Training of TFDA and city council inspectors and large and medium processors on HACCP	3
			- Training of small processors on pre-requisite programmes (GMPs, SOPs, SSOPs)	4
- Absence of monitoring of contaminants in the food supply	- Pesticide residues, veterinary drug residues, microbial contaminants and mycotoxins in local foods routinely monitored - Central laboratories accredited - Food control laboratory support available in districts - Food control management decisions based on risk assessment	- Lack of resources and institutional coordination - Lack of laboratory accreditation - Lack of analytical capability	- Installation of national analytical capacity for pesticide residues, veterinary drug residues and mycotoxins in foods: (a) instrumental and reference materials, (b) staff training	1
			- Accreditation of central laboratories	2
			- Establishment of regular pesticide residue, veterinary drug residues, microbial contaminants and heavy metals monitoring (as applicable) of fresh vegetables, fruits, meat, and fish in local markets by TFDA in collaboration with the Directorate of Crop Development (Min. of Agriculture), Fisheries Dept. (Min. of Natural Resources and Tourism) and TAFIRI	2
			- Institutionalization of mycotoxin monitoring in local and imported cereals, grains and byproducts (Directorate of Food Security, Min. of Agriculture)	2

Current Status	Desired Future Capacity	Gap or Obstacle	Capacity Building Need	Priority
			- Installation and commissioning of food microbiology and chemistry laboratories in strategic locations countrywide (consider possible public/private partnerships)	3
			- Creation and maintenance of databases on food contaminants	3
			- Utilization of databases in risk assessment	3
- Absence of monitoring of processed food composition and other labeling fraud	- Food composition and weight monitored against label	- Lack of control and and laboratory - support	- Strengthening of food control laboratories	3
			- Control of food composition and weight fraud	3
			- Control of food labeling	3

Note: 1 = Immediate attention required; 2 = secondary priority; 3 = medium term (3–5 years);4 = long term (5–10 years).
Source: Molins and Masaga (2006)

Table A5. PACE evaluation of animal health controls in Tanzania

Criteria	Status at Time of Evaluation Qualitative	Quantitative	Score (1-4)
1. Existence of Disease Control Policy and Strategies			
1. National policy and strategies against priority diseases, established (definition of priority diseases, law, sanitary policy in force...)	Weak	2	2
2. Control and eradication plans against priority diseases, established and functional	Weak	2	2
3. Assumption of financial responsibility by the state (even partial) of the surveillance of animal diseases (except wages	Good	3	3
4. Existence of an "emergency fund" and a compensation fund in case of an epizooty (RP, RVF)	Rudimentary (Under PMO)	1	1
5. Plans for control of the main zoonoses	Weak	2	2
6. Integration of private veterinarians in the national disease control plans	Good	3	3
2. Legal Basis, Architecture and Structure of ESS/N			
7. Steering committee, functional (respecting meetings and schedules)	Very Good	4	4
8. Technical committee, functional (respecting meetings and schedules)	Very Good	4	4
9. Central Epidemiology Unit established and functional	Good	3	3
10. Organogram and flow chart of the network established (formalization, chain of command)	Weak	3	3
11. Chart of operation (existing, validated and used)	Good	3	3
12. Integration of partner structures of animal health in the network	Good	3	3
3. Implementation and Operation			
13. Surveillance Posts and Agents set up (number, provision, consistent with the country context)	Good	3	3
14. Basic training of the agents (epidemiology, surveillance, sampling, diagnosis and treatment…) realized and regular refresher courses held	Good	3	3
15. Handbook of procedures for the agents of the network available	Rudimentary	1	1
16. Working papers validated (guide for field agents, enquiry forms...)	Weak	2	2
17. Tools for data acquisition available in the field (cards, questionnaires...)	Good	3	3
18. Sampling material available in the field (logistic, conservation and forwarding...)	Weak	2	2
19. Efficient means of transport (vehicles and fuels...)	Good	3	3
20. Means of communication provided to the field agents (radio, telephone, mobile phones,...)	Good	3	3
21. Mobile Team (multidisciplinary) set up and functional	Weak	2	2
4. Animation (Coaching)			
22. Qualified human resources available to the level of the Central Epidemiology Unit	Weak	3	3
23. Regular missions of the Central Epidemiology Unit (or Regional) in the field	Weak	2	2
24. Means of operation efficient at all levels and means (cards, cold chain, fuel...)	Weak	2	2
25. Continuous animation inside the network (workshops, meetings between partners)	Good	3	3
26. Animation and communication outside the network	Weak	3	3
27. Systematic feedback of information towards the field (agents, stockbreeders, veterinarians...)	Good	4	4
28. Regular update of the chiefs of station and linking agents	Weak	2	2
5 Management of Data and Sanitary Information			
29. Existence of a functional Data Base (responsible identified, competences, and logistics...)	Good	3	3
30. Procedures of data management, respected: validation, entry and analysis	Good	3	3

Criteria	Status at Time of Evaluation Qualitative	Quantitative	Score (1-4)
31. Validation of data (reliability, exhaustiveness, specificity...)	Good	3	3
32. Effective use of the PID/ARIS or other data base software	Good	3	3
33. Processing of statistical and epidemiological data and issuing f quality epidemiological reports	Good	3	3
34. Use of a GIS (issuing of updated zoosanitary maps	Very Good	4	4
6. Veterinary Diagnostic Laboratories			
35. Role and implication of the veterinary laboratory within the network formalized (protocol...)	Good	3	3
36. Skilled human resources for diagnosis	Good	3	3
37. Capacity of analyses for the priority diseases (Number of samples analyzed per month	Weak	2	2
38. Materials provided by network	Good	3	3
39. Existence of functional decentralized laboratories (human and material)	Good	3	3
40. Participation of the laboratory in the investigations of the network and animation	Good	3	3
7. Communication and Flow of Medical Information			
41. Didactic and awareness documents elaborate and diffused	Good	3	3
42. Communication tools are efficient, diversified and updated (radio, TV, posters...)	Good	3	3
43. Edition of a periodic sanitary bulletin (regularity, quality...)	Good	3	3
44. Diffusion of the bulletin at all levels and in sufficient quantity	Weak	3	3
45. Frequency and quality of the technical reports issued (OIE, IBAR...)	Good	3	3
8. Monitoring of the Activities			
46. Performance Indicators for monitoring identified and validated	Good	3	3
47. Application of the PI at all levels and component of network	Weak	2	2
48. Continuously assessment of PI and correction measures applied	Weak	2	2
49. Motivation of the agents on the qualitative and quantitative level (principle of the meritocracy)	Weak	2	2
9. Integration of the Partners			
50. Integration of private vets in diseases surveillance (formalized, effective)	Weak	2	2
51. Integration of professional organizations and other structures formalized and effective (NGO, projects...)	Good	3	3
52. Training & awareness of the partners on diseases surveillance	Good	3	3
53. Integration of the stockbreeders and producers associations in the surveillance network	Weak	3	3
54. Training and integration of “warning” stockbreeders in the surveillance network	Good	3	3
10. Surveillance of Priority Diseases			
55. Surveillance paths priority diseases, detailed (procedures, relevance...)	Weak	2	2
56. Sampling plan for rinderpest established and used according to the OIE procedure (choices of the epidemiological unit, TAS...)	Excelent	4	4
57. Clinical surveillance of rinderpest following the OIE procedure (supported suspicions, quality of questionnaires…)	Excellent	4	4
Criteria	**Status at Time of Evaluation Qualitative**	**Quantitative**	**Score (1-4)**
58. Serologic surveillance of rinderpest following the OIE procedure (sampling, analyses...)	Excellent	4	4
59. Effective surveillance of zoonoses by the surveillance network	Good	3	3
11. Wildlife Surveillance			
60 National officers trained and operational (livestock and forestry)	Weak	2	2
61.Field agents for wildlife on post (number, positioning, context...) trained and updated.	Good	3	3

Criteria	Status at Time of Evaluation Qualitative	Quantitative	Score (1-4)
62. Existing working tools and equipment (questionnaires, transport, communication, equipment, sampling...)	Weak	2	2
63. Collection of sanitary data on wildlife carried out	Good	3	3
64. Sanitary data integrated into the database (relevance, reliability, volume...)	Weak	2	2
65. Effective clinical surveillance (reports, declarations, suspicions...)	Good	3	3
66. Serologic surveillance (RP) carried out through hunters	Not Started	1	1
67. Serologic surveillance (RP) carried out through darting	Good	3	3
Total Score (x=1-67)		**184**	**184**
Average Score (y=x/67)		**2.75**	**2.75**

Note: Scores-1=not started or rudimentary 2=started & operational but at weak; 3=working and good; 4=working & very good

Source: MWLD (2006)

Table A6. Technical assistance requirements identified by Government of Uganda, 2002

Area	Information	Training	Infrastructure (Hard and/or Soft)	Specific Concern	Other
166. Rights, obligations and practical operation of the SPS Agreement	Conferences, seminars and workshops: - Introduction to the WTO and the inter-national trading systems - Presentation of the SPS Agreement and related issues	Specific understanding of the SPS agreement by the technical people: - Implementation of transparency - Provisions, applications of risk analysis - Determination of appropriate level of protection - Recognition of equivalence - Regionalization - WTO dispute settlement procedure and analysis of SPS related trade disputes		- Limited awareness of SPS agreement nationally at technical, policy public and private sector levels - Limited ability to organize awareness seminars - Limited capacity to attend international conferences - Limited technical persons - - Facilitation of a trained person to train others	
Food safety					
Animal health					
Plant health	- Up dating of national regulatory framework - Absence of regulations despite the presence of laws - Pest lists and distribution maps - Creation of national data for other countries import's requirement	167. Training of inspectors on risk assessment, inspection, quarantine diagnostics and certification procedures	- Capacity building including building of a central and regional referral plant quarantine diagnostic laboratories - - Equipment, computers, CD-ROMs and databases	- Limited pest identifiers - Training in risk analysis and diagnosis techniques - Upgrading of the Central Post Entry Phytosanitary Laboratory - Establishing satellite labora main entry points	- Designing cost recovery mechanisms for sustainability - Processing and storage facilities for laboratory specimens

Table A7. Action Matrix for Enhancing Trade-Related SPS and Quality Management Capacity in Uganda

Technical or Policy Issue or Specific Supply Chain	Actions Recommended	Requirements					Agencies/Actors Involved	Time Frame	Priority
		Define Strategy	Change Policy /Law	Promote Awareness	Reform Institutions	Seek Technical Assistance for Capacity Building			
Consumer Awareness	Develop sustained public campaigns to educate consumers on food safety and hygiene issues through various media	✓		✓		✓	UNBS, MOH, Consumer Orgs	Medium-Term	Medium
Promotion of Good Practices	Conduct feasibility study for a finance revolving fund for SME 'graduates' of the Cleaner Production Center's Eco-Benefits Program to implement their facility and systems upgrades	✓					MTTI, CPC, Uganda Manufacturers Association	Short-Term	Lower
	Promote awareness and application of HAACP through broad based programs in the food and manufacturing sector generally or in designated pilot sectors..					✓	UNBS, TQM, CPC, Industry associations	Medium-Term	Medium
	Implement special program of food hygiene/safety awareness and appropriate technologies for street vendors					✓	UNBS, Consumer Orgs., NGOS	Medium-Term	Lower
Standard setting and legislation	Complete the needed consultations and actions to enact the pending new/revised legislation related to food safety, agricultural health, and biosafety. It is advisable not to wait until some type of 'crisis' forces such actions and crowds out proper technical deliberations.		✓				Ugandan Parliament, Agricultural Sessional Committee, relevant Ministries and Departments	Short-Term	High
	Harmonize selected regional SPS and quality regulations + procedures that will facilitate trade and private investment		✓				UNBS, MAAIF, and regional counterparts	Medium-Term	High
Risk Assessment and Management	Critically evaluate the recent 'Animal Health Strategy' to more clearly define achievable strategies, develop an implementation plan and determine capacity upgrade needs	✓			✓	✓	MAAIF, Industry representatives, Local Council representatives	Medium-Term	Medium
	Complete pest risk assessments on three products and use this process for training of crop protection staff					✓	MAAIF	Short-Term	Lower
Risk Assessment and Management	Identify specific areas of no/minimal incidence of diseases/pests of SPS concern where focused eradication/monitoring programs could lead to int'l recognition	✓				✓	MAAIF, NARO, private sector organizations	Medium-Term	Medium

Technical or Policy Issue or Specific Supply Chain	Actions Recommended	Requirements					Agencies/Actors Involved	Time Frame	Priority
		Define Strategy	Change Policy /Law	Promote Awareness	Reform Institutions	Seek Technical Assistance for Capacity Building			
	Prepare and implement university courses on risk assessment and management			✓		✓	Makerere University	Medium-Term	Medium
Inspectorate Services	Equip field inspectors with transport and communications to better enable them to perform on-farm inspections. This can be paid for via cost-recovered inspection fees.	✓	✓			✓	MAAIF	Short-Term	Medium
	Prepare and implement university course(s) on food inspection methods and responsibilities			✓	✓		Makerere University, UNBS, MOH	Medium Term	Lower
Inspectorate Services	Organize a consultative and diagnostic process in which public officials and private sector representatives from selected commodity sectors will discuss how the lessons learnt from the evolution of Uganda's fish inspection system could be used to reform /rationalize inspectorate capacities elsewhere & what the most cost-effective strategy (ies) would be	✓		✓	✓	✓	Task Force comprising MTTI, UNBS, MAAIF Departments Authority, Min. of Finance, Private Sector Foundation, Selected Industry Business Associations & Key Agencies	Short-term	High
Testing and Diagnostics	Develop a laboratory plan that rationalizes existing capacities and creates one central laboratory for specialized plant + animal health testing	✓			✓	✓	Task force with UNBS, MAAIF Departments, and Chemiphar, SGS, MOF	Short Term	High
	Strengthen human resources for diagnostic work through developing a university laboratory technician course, and internship program, and a lecture series program on specialized topics				✓	✓	Makerere University, UNBS, Chemiphar, SGS	Medium Term	Lower
Testing and Diagnostics	More clearly define the role of UNBS relative to that of private sector testing. Recognize that UNBS' primary roles are to provide accreditation, set standards, and confirm testing accuracy.	✓		✓	✓		MTTI, UNBS, Chemiphar, SGS	Short-Term	High
	Develop a laboratory technical group that allows information exchange, provides training, enables inter-laboratory testing, and develops a maintenance support program	✓			✓		UNBS, Chemiphar, SGS	Medium-Term	Medium

Technical or Policy Issue or Specific Supply Chain	Actions Recommended	Requirements					Agencies/Actors Involved	Time Frame	Priority
		Define Strategy	Change Policy /Law	Promote Awareness	Reform Institutions	Seek Technical Assistance for Capacity Building			
SPS Diplomacy	Develop an improved strategy for collaborative arrangements within COMESA and EAC for joint representation in international standard-setting, product-specific, and SPS meetings with a view to pooling resources/expertise on common issues.	✓			✓	✓	UNBS, Codex Committee, MAAIF, EAC Secretariat, Counterparts in other EAC countries	Medium-Term	Lower
Fisheries Supply chain	Develop awareness raising and training program among fishers to promote hygiene, proper handling practices, and storage to preserve fish quality	✓		✓		✓	UFEA, DFR, UFFCA, Local Councils	Short-term	High
	Examine the feasibility and potential approaches to implementing a system of traceability in the fish supply chain.	✓				✓	Same as above	Medium Term	Medium
	Reconsider current approach to landing sites as a public sector responsibility. Explore private management and development of landing facilities as an alternative approach.	✓	✓		✓		DFR, UFPEA, BMUs, Local Councils	Short-Term	Highest
	Enable Beach Management Units to become commercial enterprises with legally enforceable rights and with the ability to compete for business and charge users for landing services	✓	✓			✓		Medium-Term	High
Fisheries Supply chain	Develop an appropriate regulatory framework for aquaculture, train staff of the competent authority to monitor and enforce regulations, conduct necessary risk assessments and promote the adoption of good aquacultural practices.		✓	✓	✓	✓	DFR, UFPEA, Private consultants	Medium-Term	Medium
	For pesticide residues in fish, shift from consignment testing to a surveillance approach involving random samples of water, raw material, and finished products.	✓	✓				DFR, UFPEA, Chemiphar	Short term	Medium
Horticulture	Reconsider proposed policy to formally link the issuance of phytosanitary certificates with the *mandatory* adoption of EUREPGAP and other management systems		✓				MAAIF	Short-Term	High

Technical or Policy Issue or Specific Supply Chain	Actions Recommended	Requirements					Agencies/Actors Involved	Time Frame	Priority
		Define Strategy	Change Policy /Law	Promote Awareness	Reform Institutions	Seek Technical Assistance for Capacity Building			
Horticulture	Promote quality and facilitate the broad adoption of GAP, better post-harvest and packing practices and associated systems for supply chain management in the form of a voluntary UgandaGap. appropriate to the industry's level of development and in accordance with evolving buyer requirements	✓		✓		✓	Private companies, Crop Protection Department, NGOs	Medium-Term	Lower
	Move away from funding the certification of organic productions to more promotion of GAP/quality management, and market development for current organic products	✓				✓	Private industry; NOGAMU	Short-Term	Medium
Proposed Reintroduction of DDT	Gauge perceptions of foreign buyers in relation to reintroduction of DDT to obtain a sense of the actual risks and potential buyer requirements	✓	✓				Private sector associations, MOH,	Short term	High
Proposed Reintroduction of DDT	Organize an event in which pubic officials and private sector representatives from other countries will elaborate on how they managed the reintroduction of DDT for malarial control and minimized the trade, environmental and other risks.	✓	✓	✓		✓	Private sector associations, MOH,	Short-Term	High
Coffee	Develop a plan for industry wide assistance in raising producer awareness by providing training on quality and ochratoxin control	✓		✓			UCDA, National Union of Coffee Farmers, Private Companies	Medium-Term	Medium
	Coordinate efforts to combat CWD and replant Robusta trees in order to recover production volumes and increase yields.	✓				✓	UCDA, Research Organizations; Coffee plant nursery companies	Medium-term	Highest
	Support a stronger industry association and differentiated pricing structure that will focus on rewarding better quality and improving the overall image of Ugandan coffee	✓		✓			UCDA, Ug. Coffee Exporters Association, Private Industry	Medium-Term	Medium
Tea	Raise the quality of smallholder tea through training in GAP, introducing a more refined pricing structure, and providing TA to factory operators.			✓		✓	Tea processors, NAADS	Medium-Term	Lower

Technical or Policy Issue or Specific Supply Chain	Actions Recommended	Requirements					Agencies/Actors Involved	Time Frame	Priority
		Define Strategy	Change Policy /Law	Promote Awareness	Reform Institutions	Seek Technical Assistance for Capacity Building			
	Improve official capacity to inspect tea exports and issue internationally-recognized phytosanitary certificates to enable direct market exports			✓	✓	✓	Ugandan Tea Association, MAAIF	Medium-Term	Lower
Hides and Skins	Develop a road map to increase volume and quality of H&S with a focus on basic issues such as good animal husbandry, disease management, and incentives to reward quality and uphold standards.	✓		✓		✓	MAAIF, UEPB, ULAIA	Medium-Term	Medium
Tourism and Food Safety	Conduct comprehensive baseline survey and needs assessment on food safety in hotels and restaurants	✓		✓			MTTI, Industry Association	Short Term	Medium
	Promote basic food safety and hygienic practices in hotels and restaurants through training, sensitization, and dissemination of good practice manuals			✓		✓	MTTI, Industry Association, Consumer Orgs.	Medium Term	Lower
Tourism and Food Safety	Enhance capacity of district authorities and regulators to monitor and inspect operators through training and development of monitoring and evaluation tools					✓	MTTI	Medium Term	Lower
Honey	Promote the adoption of modern bee-keeping practices, improved post harvest practices, and the formation of bee-keeping groups, and conduct necessary research to inform growers and processors	✓		✓		✓	TUNADO, MAIIF	Medium	Medium
	Develop the necessary capacities and systems of the competent authority to implement the outlined residue monitoring program				✓	✓	MAAIF	Short-Term	Medium
Maize	Evaluate and apply quick and inexpensive screening tests for aflatoxin that can be used at collection centers and storage warehouses	✓				✓	NARO, WFP, Maize Traders	Short-Term	High
Maize	Intensify efforts to improve post-harvest drying/management of maize through training + investments in suitable facilities	✓				✓	NARO, NAADS, WFP, Maize Traders	Medium-Term	High

Key: Time Frame for Implementation: Short-term: 18 months; Medium-term:18 months to 3 years

Source: World Bank (2006)

Table A8. Identification and Prioritization of Capacity Building Needs of the Ugandan National Food Control System

Current Status	Desired Future Capacity	Gap or Obstacle	Capacity Building Need	Priority
- There is a national strategic plan for food safety, but implementation is lagging	- National strategic plan for food safety implemented; Food Safety Council in operation	- Formation and empowerment of the Food Safety Council	- Increase awareness about the impact of food safety and quality on the economic and social fabric of the nation among top decision-making levels	1
- Basic right of consumers to safe, wholesome food not recognized in legislation	- The Right to Food, including the right to safe and nutritious food, recognized by the food legislation	- Current food legislation	- Revision of the food legislation to recognize the intrinsic Right to Food of consumers	1
- Responsibility of producers and processors to provide safe and wholesome food not mentioned in legislation	- Responsibility of producers and processors to provide safe and wholesome food clearly stated in food legislation	- Current food legislation	- Revision of the food legislation to assign clear responsibility for food safety and quality to producers and processors	1
- Lack of public awareness about food safety and quality	- Consumers increasingly aware of food safety and quality issues and actively participating in food safety and quality advocacy	- Lack of consumer education and information material and activities - Absence of or ineffective consumer organizations	- Preparation and dissemination of information on basic food safety issues to the public - Promotion/strengthening of consumer organizations	1 2
- Lack of awareness about food safety and quality among food producers and processors	- Food producers and processors increasingly aware of food safety and quality issues	- Appropriate Ministry of Health and MAAIF education and information programmes for producers and industry	- Preparation of materials on food safety and quality for producers (GAPs and GAHPs – MAAIF) and processors (GMPs – Ministry of Health, UNBS) - Offering of short, periodic GAPs, GAHPs and GMPs courses for farmers and processors, respectively	1 2

Current Status	Desired Future Capacity	Gap or Obstacle	Capacity Building Need	Priority
- Ministry of Health and Department of Livestock and Entomology (MAAIF) delegate inspection and enforcement responsibilities to district and municipal councils	- District and municipal councils have adequate budgetary, staff and technical resources to conduct food inspection and enforce food safety and quality regulations - Inspection schedules based on risk	- District and municipal councils lack economic and technical resources; inspectors lack proper training	- Provide budgetary and technical support to district and municipal councils upon which inspection and Enforcement responsibilities are delegated - Training of district and municipal council inspectors by Ministry of health and MAAIF - District and municipal councils benefit from the experience of the Dept. of Fisheries Resources	1 1 2
- Large, unregulated informal food processing and preparation sector	- Informal food processing and preparation sector registered and informed	- District and municipal councils lack economic and technical resources - Lack of street vendor registration and training	- Budgetary and technical support given to district and municipal councils - Establishment of registration and training requirements for street vendors	1 2
- Lack of efficient coordination/ collaboration among institutions involved in food safety and quality control	- Institutions involved in food safety and quality control coordinate activities and actively collaborate with each other	- Coordinating Food Safety Council not implemented - Current irrelevancy of academic training and educational programmes to the needs of the food sector - Lack of coordination and integration of public research Institution programmes with the needs of the food sector	- Formation and empowerment of the Food Safety Council - Fund, train, equip, and monitor/audit the food safety- and quality-related activities of local councils - Integration of public research institutions into the national food safety and quality effort via relevant /coordinated research - Incorporation of the public academic sector into the food safety and quality system via (a) training of inspectors; (b) development of practical curriculum for food science professionals; and (c) establishment of continuing	1 2 2 2

Current Status	Desired Future Capacity	Gap or Obstacle	Capacity Building Need	Priority
			education programmes (i.e., refresher course work)	
			- Incorporation of the public academic sector into the food safety and quality system via (a) relevant applied research and (b) provision of extension services to producers and processors	3
- Current emphasis on final product inspection and not on process	- The food safety and quality system focuses on process rather than on final product	- Lack of knowledge about GAPs, GAHPs, GMPs, and HACCP	- Progressive education and training on GAPs, GAHPs and HACCP:	
			- Education/training of MAAIF extensionists on GAPs and GAHPs	1
			- Education/training of farmers on GAPs and GAHPs	2
			- Education/training of district and municipal council inspectors and large and medium processors on HACCP pre-requisite programmes (GMPs, SOPs, SSOPs)	2
			- Training of district and municipal council inspectors and large and medium processors on HACCP	3
			- Training of small processors on pre-requisite programmes (GMPs, SOPs, SSOPs)	4
- Absence of monitoring of contaminants in the food supply	- Pesticide and veterinary drug residues, microbial contaminants, heavy metals and mycotoxins in local foods routinely	- Lack of resources and institutional coordination - Lack of analytical capability	- Installation of national analytical capacity for pesticide and veterinary residues, microbial contaminants, heavy metals and mycotoxins in foods: (a) instrumental and reference materials, (b) staff training	1

Current Status	Desired Future Capacity	Gap or Obstacle	Capacity Building Need	Priority
	monitored - Food control laboratory support available in districts - Food control management decisions based on risk assessment		- Establishment of regular monitoring of microbial contaminants and pesticide residues (fresh vegetables, fruits, and fish) and of veterinary drug residues and microbial contaminants (dairy products and meat) in local markets in collaboration with MAAIF	2
			- Institutionalization of mycotoxin monitoring in local and imported cereals, grains and byproducts	2
			- Installation and commissioning of food microbiology and chemistry laboratories in strategic locations countrywide (consider possible public/private partnerships)	3
			- Creation and maintenance of databases on food contaminants	
			- Utilization of databases in risk assessment	3
				3
- Absence of monitoring of processed food composition and other labeling fraud	- Food composition and weight monitored against label	- Lack of control and laboratory support	- Strengthening of existing food control laboratories	3
			- Control of food composition and weight fraud	3

Note 1 = Immediate attention required; 2 = secondary priority; 3 = medium term (3–5 years); 4 = long term (5–10 years).
Source: Molins and Bulega (2006)