

# Uganda, Standards and Trade: Experience, Capacities, and Priorities



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***DRAFT: FOR COMMENT ONLY***

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Strategic planning in the management of trade-related standards should be an on-going iterative process of assessment, consensus-building, and making adjustments in the face of implementation experiences and evolving opportunities and challenges. It is hoped that the analysis and recommendations provided in this report will contribute to an emerging 'vision' within Uganda regarding near- and longer-term priorities in this area plus catalyze or intensify further stakeholder dialogue on outstanding policy issues.

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## 1. INTRODUCTION:

As Uganda seeks to expand and further diversify its food and agricultural exports, the country will increasingly encounter more stringent regulations and private standards in relation to food safety and plant and animal health. And, to the extent that these exports are directed at high-income countries, suppliers will increasingly need to demonstrate compliance with environmental and social regulations or protocols. Compliance with this range of standards will form an increasingly important part of Uganda's international competitiveness.

Most of these emerging requirements were of little importance for Uganda's trade in the past, given the prevailing structure of its agricultural commodity exports, at least through the 1980s. For Uganda's trade in coffee, tea, cotton, tobacco, and other traditional commodities, the primary requirements long centered on achieving acceptable quality at competitive cost. Yet, the structure of Uganda's agro-food trade has changed rather considerably over the past decade, with the emergence of non-traditional exports in fish products, floriculture/horticulture, spices, hides/skins, honey and other products. International trade in many such products is strongly governed by food safety and/or agricultural health requirements.<sup>1</sup> Even for some of Uganda's traditional agro-food export commodities, there are growing challenges—and opportunities—associated with food safety, agricultural health, and environmental/social standards.

For the most part, such issues were “off the radar screens” of most public institutions, private companies, and farmers/fishers in Uganda until quite recently. The restrictions placed on Uganda's exports of fish and fishery products to the European Union during the late 1990s served as a wake-up call for many Ugandan stakeholders, alerting them to the potential challenges and opportunities posed by the evolving system of food safety standards in international markets generally, and more specifically in certain focal markets for Uganda non-traditional exports.

Uganda—with the assistance of the development community-- successfully responded to the challenges posed by the EU ban and it has been able to considerably expand its fish and fishery product exports in recent years. In selected other areas, Ugandan producers and exporters are also beginning to adopt and benefit from higher international food safety and quality standards. Yet, these developments still represent outlier examples and Uganda's overall capacity to manage food safety and agricultural health risks remains quite limited both in the context of international trade and domestic markets. This situation applies both to the public and private sectors.

In certain sub-sectors, this limited capacity has constrained Uganda's agricultural and food exports, either by inhibiting market access or by yielding lower incomes due to discounted market prices. Some non-traditional exports have been restricted to supplies to non-market outlets (i.e. UN procurement) or informal cross-border trade, in part due to difficulties in conforming to prevailing commercial market standards. As commercial objectives evolve from supplying commodities to supplying differentiated and value-added products, the demands for product and process standards—and related conformity assessment capacity—will surely

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<sup>1</sup> See World Bank (2005).

increase. Yet, other fundamental constraints on growth and competitiveness will also have to be overcome.

This paper provides an overview of the emerging challenges and opportunities which Uganda is facing in relation to food safety, agricultural health, and other standards impacting agro-food market development and trade. Primary attention is given to ‘non-traditional’ agricultural and food exports. The paper does not aim to provide a comprehensive review of Ugandan SPS management capacity in terms of in-depth strengths and deficiencies. Rather, it draws upon expert and stakeholder perspectives and builds upon existing analyses to provide a strategic framework for Ugandan policy-makers, donors and other stakeholders to assist in better planning and prioritizing actions and capacity-building measures in this field. This is done by providing a conceptual framework on SPS management challenges and capacity needs and by providing a ‘birds-eye’ perspective on existing Ugandan capacities and experiences in managing food safety, agricultural health and related challenges and opportunities.

The paper is structured as follows. The first section provides a short conceptual framework, covering the economics of standardization, and the basic elements of a national system for quality and SPS management. This is followed by an overview of the changing structure of Uganda’s agro-food exports and how this has raised the relative importance of SPS management for Ugandan international competitiveness. The subsequent section provides an overview of Uganda’s standards-related architecture and reviews the strengths and shortcomings of pertinent capacities. This is followed by a series of industry/product case studies, illustrating a range of specific issues, approaches taken and impacts of standards, and apparent needs for strategic re-orientation and/or further capacity-building. The paper concludes with a set of recommendations for near-term priority action and medium-term attention.

## **2. STANDARDS, SPS MANAGEMENT AND TRADE: A FRAMEWORK**

Standards have come to be crucial elements facilitating transactions and trade both within and between countries. Standards and technical regulations stipulate what can or cannot be exchanged and define the procedures that must be followed for exchange to take place. Thus, the ability to comply with standards in regional and overseas markets is a major factor determining access to those markets and more broadly the capacity to export.<sup>2</sup>

This important role that standards play in trade and, in turn, development arises for a number of reasons, including:

- Standards are instrumental in facilitating the flow of information between consumers and producers, particularly providing information on unobservable characteristics such as food safety. Thus, standards can reduce uncertainty for consumers and indicate to producers the expectations and requirements of consumers in terms of quality and safety. Standards can therefore contribute to higher levels of economic activity. Standards enable governments to pursue/achieve their objectives related to public health and safety.

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<sup>2</sup> This is true both for mandatory regulations, set by governments to meet their objectives regarding health, safety and the environment, and for market-driven voluntary standards, set within the private sector, to reflect the demands and tastes of consumers or the technological or management requirements of supply chain leaders.

Standards that improve food safety will tend to complement policies that aim to raise productivity and/or increase economic growth.

- Standards provide an important mechanism for technology transfer to developing countries. Technology is expressed through standards and thus the latter helps to diffuse technical information concerning products or processes.
- Standards are crucial in allowing firms in developing countries to integrate into global production chains, by ensuring the compatibility of components and traceability of products and/or raw materials made in geographically dispersed places. Harmonized standards between countries and/or industries can reduce transaction costs by reducing duplicative conformity assessment functions, including testing and certification.

Historically, the applicable standards for international trade in food and agricultural products were quality standards, covering physical and visual characteristics, tolerances for foreign matter, etc... In recent decades, relatively increased emphasis has been put on sanitary and phytosanitary standards aimed at the protection of human, animal and plant health. In order to manage risks associated with the potential spread of pests and diseases or the risks to human health from contaminants or disease-causing organisms, a wide range of measures have been employed, including outright bans, standards laying down the conditions under which products must be produced and/or the characteristics of the end product, or labeling and other information requirements (World Bank 2005).

SPS standards and other measures have been traditionally promulgated and applied by public authorities and provide a minimum set of food safety and/or plant and animal health standards with which suppliers must comply. Increasingly, however, private standards have become a dominant element of the standards landscape, applied by private sector buyers as a means to comply themselves with public standards, to ensure the quality and safety of their products, and, sometimes, to differentiate their products from those of their competitors. In practice, such private standards, whether promulgated on an individual firm or collective industry basis, have become an equally mandatory requirement to access high-value markets for agricultural and food products.

One concern is the impact of SPS standards and other measures on the ability of developing countries, such as Uganda, to access export markets (Jaffee and Henson 2004; Ponte 2005). While the globalization of food markets and reduction in tariff barriers provide opportunities for developing countries to benefit more from trade, there are concerns that SPS standards may continue to hinder market access. Uganda and other developing countries may face problems complying with SPS standards because of their lower level of economic development and, more specifically, their limited SPS management capacity. Thus, it is now recognized that SPS management capacity—what is also commonly referred to as food safety and agricultural health capacity—is of vital importance to agricultural and food exports from developing countries.

Whereas much of the focus of SPS controls at the national level is on domestic safety issues, including protection of consumers against food-borne hazards and the agricultural sector against animal and plant pests and diseases, such capacity is also necessary in order to comply with SPS requirements in export markets, particularly in industrialized countries. For example, importing countries frequently require guarantees, in the form of Phytosanitary or Animal Export

Certificates, that exports are derived from areas that are free from certain pests or diseases, that minimum standards of hygiene have been applied in the manufacture of a food product, or that products are free of contaminants such as pesticides residues, heavy metals and mycotoxins. *The exporting country must have the capacity both in the public and private sectors to comply with these requirements and to undertake the necessary conformity checks in order to ensure that compliance has been achieved.*

SPS management involves an agglomeration of basic and more sophisticated technical and administrative functions, in turn requiring a broad range of skills, physical infrastructure, institutional structures and procedures, and financial resources (World Bank, 2005). Some of these basic functions are set out in Box 1.

### **Box 1: Some basic SPS management functions**

- Apply GAP, GMP, HACCP, and QM at farm and enterprise levels
- Develop appropriate legislation and standards
- Register/control feed, agro-chemicals, veterinary drugs, etc.
- Conduct basic research, diagnosis, and analysis
- Accredite laboratories/veterinarians/other third party entities for official duties
- Develop/apply quarantine procedures, including for emergency situations
- Carry out epidemiological surveillance and information management
- Inspect/license food establishments
- Develop/maintain pest or disease-free areas
- Test products for residues, contaminants and microbiological content
- Verify/certify biological materials (seeds; embryos, semen)
- Verify/certify imported/exported products related to established risks
- Establish/maintain identity of products (for example traceability)
- Report possible hazards to treaty/trading partners
- Notify WTO/trading partners on new SPS measures
- Participate in international standard-setting processes

Administrative and technical capacities for SPS management are embodied in institutional structures and procedures, physical infrastructure and human capital. It is often assumed that the management of food safety and agricultural health is predominantly the responsibility of the public sector. Indeed, there are many crucial regulatory, research and management functions that are normally carried out by governments, and a variety of circumstances where importing countries require that certain functions be performed by a designated public sector ‘competent authority’.

However, the private sector also has a fundamentally important role to play. First, the private sector should contribute to standard-setting at the national level; it is typically well informed about technical options and the associated costs and benefits for business. Second, it is through the specific actions of individual producers and processors that compliance with food safety and agricultural health requirements is achieved. Third, capacity building in the private sector can complement (or even substitute for) public sector capacity, as with the investment in accredited

laboratory testing facilities. Fourth, the private sector normally plays an important role through the pressures it places on public agencies to effectively implement their SPS management responsibilities.

There is wide variation in the extent to which regulatory, technical and administrative capacities represent a significant constraint on developing country exports of agricultural and food products. In general, weaknesses in the management of plant and animal health issues are more likely to act as an absolute barrier to trade than lack of food safety controls. Many developing countries lack the capability to undertake effective epidemiological surveillance and to conduct rigorous risk assessments which are acceptable to overseas trading partners. Thus, regardless of capacity within the private sector, for example to meet the food safety and quality requirements of overseas customers, the country as a whole will be unable to gain market access.

*This array of SPS management functions and the associated institutional, technical and capacities is rather daunting for many developing countries. However, it is necessary to be pragmatic. Generally, prevailing levels of capacity are rather low, while available resources are limited and the opportunity cost associated with investments in the enhancement of SPS management capacity is high-- there are countless other potential uses that compete for scarce resources.<sup>3</sup> This necessitates the need to prioritize capacity-building efforts in terms of the integral functions of SPS management. At the same time, priority-setting is a complex task necessitating trade-offs between competing and multiple deficiencies. This underlines the need for a strategic approach to capacity-building that focuses on areas with the largest potential pay-off and the related need to avoid capacity- development in a mode of 'fire-fighting'—i.e. reacting to adverse events, including trade bans.*

A useful framework in the development of priorities is the concept of a hierarchy of SPS management functions (Figure 2) (World Bank, 2005). Functions towards the base of the pyramid represent the foundation stones, while those towards the top add value and sophistication to the entire system of SPS management and gain in importance as export sectors mature and encounter increasingly complex technical, administrative and even political challenges.

The foundation of any SPS management system is broad awareness among participating stakeholders about the relevance and importance of food safety and agricultural health to the competitiveness of their country/sector/firm and recognition of their own role in this system. Where this awareness is especially weak, any system of regulatory enforcement will almost certainly be overwhelmed. Awareness of major SPS challenges and opportunities is needed at several levels, including:

- among senior agricultural and trade officials, in order to assign appropriate priorities for public programs and expenditures;
- among owners and managers of producing/exporting firms and their industry organizations as these people make pertinent investment, personnel and other decisions; and

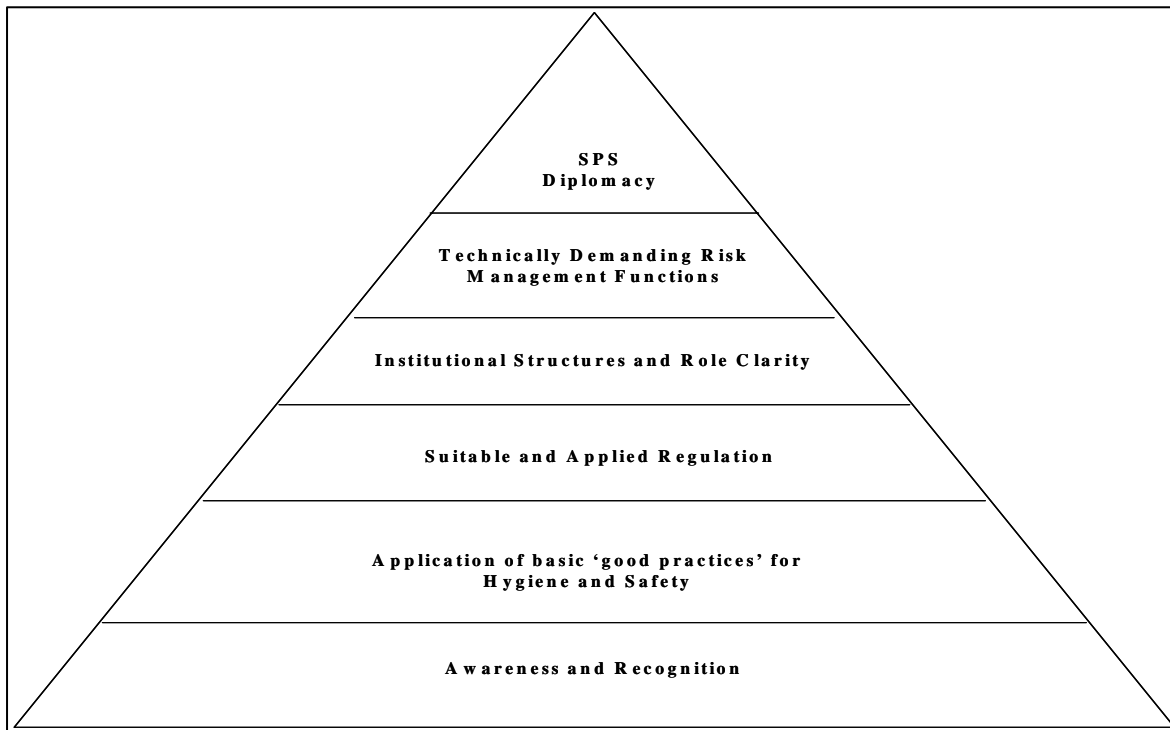
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<sup>3</sup> This is especially evident in Uganda where administrative attention to food safety must 'compete' with resource allocations for malarial control and control of communicable diseases.

- among the large numbers of producers, and farm and industry workers, who produce and handle agricultural raw materials on a day-to-day basis.

Another core set of building blocks that proceed from broad awareness is the application of basic and recognized risk and quality management practices at the farm and processing levels of supply chains, including HACCP, ‘good manufacturing practice’ (GMP) and ‘good agricultural practice’ (GAP). This mostly involves training staff and family members in basic hygiene, the proper use and storage of potentially hazardous substances, improved record-keeping related to production practices, and the ability to conduct risk assessments, etc.

**Figure 1: Hierarchy of trade-related SPS management functions:**



With broad awareness and common application of good practices, many potential SPS risks can be effectively managed at the enterprise (or farm) level. Yet other risks cannot be fully controlled on such a decentralized basis. These are more systemic in nature and require broader oversight or collective action, requiring basic research, risk analysis surveillance systems and quarantine and emergency management systems. In such contexts, even if individual farms and firms apply good practices, they may not be able to control all hazards, thus the need for scientific testing and verification systems. Many of these higher-order functions require particular technical skills, often specialized equipment and well-defined procedures, supported by recurrent funding. Some of these functions need to be mandated by law in order to ensure that they are implemented appropriately. An effective regulatory framework and transparent institutional structures is therefore placed in the middle of the pyramid.

At the top of the pyramid is so-called ‘SPS diplomacy’, which includes the international obligations of individual WTO members but also relates to engagement in the technical and

political realm of official and private international standard setting, negotiations with bilateral trade partners and with regional integration partners on matters dealing with harmonization, equivalence, joint programs, special considerations, etc. This relates to the concept of ‘voice’ in responding to the emerging regulatory and commercial requirements. The ability to have an effective ‘voice’ in such international fora is something that few lesser-developed and small countries have yet perfected.

### **Box 2: Strategic Options: Compliance, Voice and Re-direction**

There is a common assumption that developing countries (and individual suppliers therein) have no room for maneuver in the face of emerging standards. That is, they face situations of ‘comply or perish’. In reality, countries and suppliers face a wide range of choices even when they are seeking to comply with a particular standard, although the increased emphasis in recent years on proscriptive process/procedural requirements (rather than product or outcome standards) does somewhat curtail this room for maneuver.

Developing countries (suppliers) can pursue one or a combination of the following types of strategies in the context of evolving standards:

*Compliance*: adopting measures to meet international standards or the requirements of one’s trade partners. This might involve some combination of legal/regulatory change, the application of certain technical or other risk management approaches, implementation of testing, certification, and/or other conformity assessment measures, etc...

*Voice*: seeking to influence the ‘rules of the game’ and/or how they are implemented via participation in international standard-setting fora, communications with the WTO, negotiations with bilateral or regional trading partners, and/or business planning with downstream clients.

*Redirection*: altering commercial strategies to encompass sales to different countries or market segments, changes in the mix or form of products, and other maneuvers taking into account the costs and benefits of complying with different standards.

The timing and mode of strategic response may also vary. Actions may be taken on a proactive or reactive basis. In the former, future requirements are anticipated and measures are taken ahead of time in a manner that minimizes costs or maximizes benefits. In the latter, the player waits until the requirements are put in place and only then adopts responsive actions, perhaps hoping to limit action or at least learn from the mistakes of the ‘first movers’. The strategy can be either defensive or offensive; the former involve measures designed to minimize the changes required; the latter involve trying to exploit an opportunity created by standards (i.e. a price premium prevailing for organic products).

The locus of strategic response may also vary. Some responses may be taken by individual firms, farms, or government agencies. Other responses involve collective action, perhaps through producer or industry organizations, or inter-ministerial task forces. There is scope also for strategic response which involves public-private collaboration, or collaboration between developing country stakeholders in multiple countries.

More often than not, the strategic response by developing countries to emerging trade-related standards takes the form of reactive-defensive responses, frequently made in the context of a crisis (i.e. a trade ban or outbreak of a disease). Needed public systems and private investments are frequently not made until there is a threat of trade interruption to an important market. This is most unfortunate since in this mode of response both government and the private sector will typically have fewer technical or administrative options to order to achieve compliance with the required standard and one’s credibility in the exercise of ‘voice’ may be undermined by weaknesses in the basic regulatory and private management systems for compliance.

Source: Based on World Bank 2005

Having established some level of SPS management capacity in accordance with the above pyramid, this needs to be sustained in terms of effectiveness, scientific and technical relevance and access to financial, physical and human resources. In turn, this requires that sufficient political and economic priority be given to the maintenance of this capacity, perhaps both from the perspective of trade promotion, and also the welfare of domestic producers and consumers. Further, there may be a need for systems of cost recovery, for example user fees, where appropriate.<sup>4</sup> Further, this emphasizes the need for SPS management capacity to be viewed from a dynamic perspective; the efficacy of the integral functions must be reassessed and updated in the light of developments in science and technology, changes in standards applied by major trading partners, and changes in the reference points provided by the Codex Alimentarius (for food safety), OIE (for animal health) and IPPC (for plant health).

The overall conclusion from the above is the need to be pragmatic when examining the state of SPS management capacity in Uganda and realistic about the immediate scope for the enhancement of the integral SPS management functions. This emphasizes the need to prioritize SPS management functions, emphasizing first the core elements at the base of the pyramid presented in Figure 2. Further, SPS management capacity should be developed with a strategic perspective, aiming to maximize the prospective benefits from competitive repositioning or, at the very least, minimize the costs associated with compliance processes.

The pragmatic, strategic approach involves:

5. Prioritization: identifying the most immediate and/or most significant risks that the country faces from an SPS and trade perspective as well as the most immediate and/or significant opportunities for competitive or welfare gain in this area. Attention should be focused on areas involving either high risk/high potential gain or low risk/high potential gain. There can be high returns to investment in SPS management upgrading provided that these investments are properly focused. There are no universal blue prints here. What constitute high risk/high gain or low risk/high gain situations will vary by country, depending upon its patterns of trade, its current capacities, and the evolving standards in current or prospective markets.
6. Phasing: distinguishing between short-term and medium/long-term priorities and scope for action. Some measures are simply not amenable to immediate or short-term solutions due to their technical or institutional complexity or the need to pursue certain activities in stages. Strategic planning for trade and SPS management should not be a one-off event. It needs to be re-visited on a periodic basis, taking into account new challenges and opportunities as well as lessons from on-going implementation.
7. Multi-stakeholder Participation: a strategic outlook on trade and SPS management should be developed at the national level as well as that of individual industries/sub-sectors, enterprises and farms. While each agency, enterprise, and farm must develop its own position or strategy for using or promoting standards (as part of broader commercial or administrative strategies), there is much value in developing joint strategies and utilizing collective action to implement such strategies. This should be within the public sector, within the private sector, and between the two.

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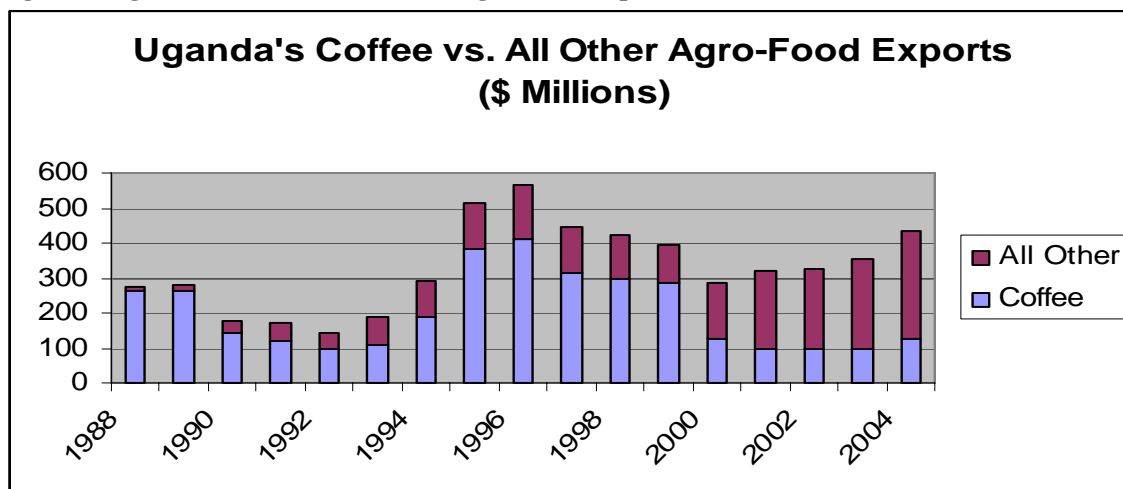
<sup>4</sup> This is a particularly salient issue for developing countries; there are numerous cases of SPS management systems being implemented through externally-funded technical assistance, which have become redundant in the medium to long-term because of lack of access to domestic resources.

### 3. UGANDA'S AGRO-FOOD TRADE AND PERTINENT STANDARDS

One of Uganda's colonial inheritances was its dependence upon a limited set of agricultural commodities for the bulk of its foreign exchange earnings. At independence in 1962, only four commodities—coffee, cotton, tobacco, sugar, and tea-- accounted for 72% of Uganda's total merchandise exports and 94% of its food and agricultural exports. Over the 1971-1985 period, Uganda's agricultural sector was badly disrupted by the country's political turmoil and associated insecurity of market activities and breakdown of infrastructure and support services. While subsistence food production was maintained, this period witnessed the virtual collapse of the country's cotton, tea, sugar, and tobacco industries. Coffee was the only major agro-industry which survived this period of turmoil without a large decline in output. As a result, by the late 1980s, coffee accounted for more than 95% of Uganda's agro-food exports. The subsequent collapse of coffee prices in the early 1990s was a major factor in the deterioration of Uganda's balance of payments, debt-servicing ratio, and increased dependence on international financial assistance.

Over the past decade, Uganda's coffee exports have fluctuated wildly, driven up and down by huge movements in international prices, yet also affected by problems of crop diseases, declining productivity and declining quality. In recent years, Uganda's coffee exports have fallen below \$100 million and in 2004 accounted for only 29% of the country's agro-food exports (Figure 3). A series of market and macroeconomic reforms, together with the rehabilitation of infrastructure and favorable conditions for investment, have contributed to the initial recovery and more recent expansion in Uganda's traditional exports of tea, cotton, and tobacco. In recent years, the combined exports of these three commodities have approached that of the once dominant coffee exports.

Figure 2: Uganda's Coffee vs. All Other Agro-Food Exports

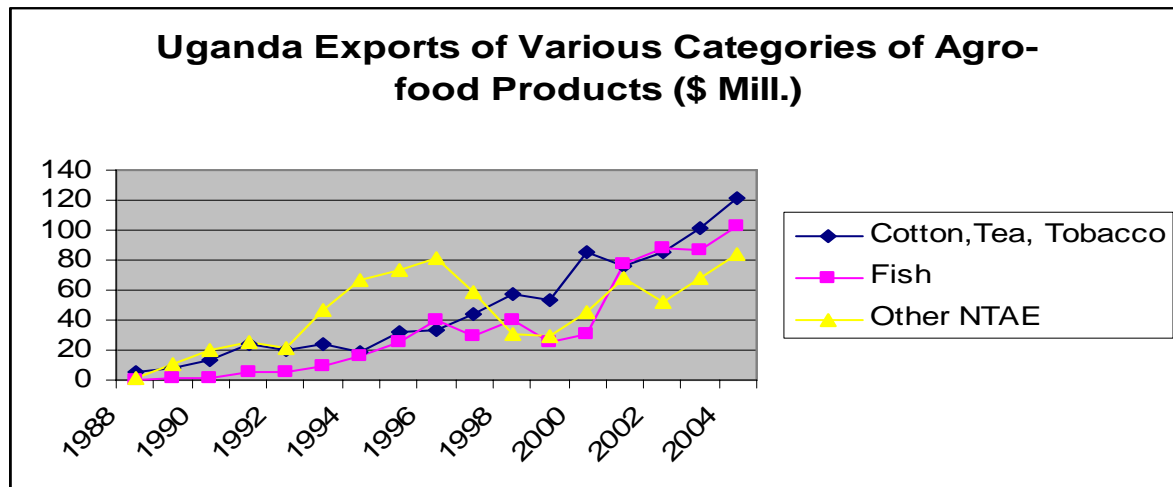


Over the past decade, another major trend has been the development of a broad range of non-traditional agro-food exports. Befitting Uganda's varied natural resource base, NTAEs have taken several forms, including:

- *Fish*: fresh and frozen Nile perch and Tilapia fillets sold in Europe, the Middle East, and selected other markets;
- *Animal products*: hides/skins sold in Europe and meat sold in the regional market;
- *Low-value staple foods*: primarily maize and beans, sold in the regional market;
- *Horticultural and floricultural products*: roses and chrysanthemum cuttings, and selected ‘ethnic’ fruits and vegetables sold in Europe and bananas sold regionally;
- *Spices and higher-value industrial crops*: vanilla, chilies, ginger, pyrethrum, and silk cocoons sold in Europe, the Middle East, and Japan, and
- *Oilseeds*: sesame seed sold in Europe and the Middle East, and groundnuts and soybeans sold regionally.

The ascent of Uganda’s fish exports has been the most impressive and dramatic. Export-oriented fish processing has evolved from a very modest beginning in the early 1990s to a rather substantial industry involving twelve companies, exports exceeding \$100 million per year, and making contributions to the income of several hundred thousand people. Few of Uganda’s other NTAE have developed a critical mass of strong institutions and regularized supply chains. One exception is the floricultural industry, which now features some eighteen production/export operations and an important presence in certain product/market segments. Ugandan producers and traders have carried out a fluctuating trade in maize, beans, and other staple food products, based on a combination of sales for humanitarian purposes (through the World Food Programme) and informal trans-border trade. With considerable external financial and technical support, other smaller agro-export supply chains have made advances over the years. Two examples are the vanilla and honey sectors. Yet, there have been numerous other efforts where short-term export market in-roads have not been sustained.<sup>5</sup>

**Figure 3: Uganda Exports of Various Categories of Agro-food Products**



*The product composition and market (segment) orientation of Uganda’s agro-food food exports are among the main factors determining the operative standards which the country’s producers, processors, and traders face. Over the years, several of Uganda’s traditional agro-export sub-*

<sup>5</sup> Examples include the early 1990s ‘gold rush’ in sesame seed and many false starts in the trade in air-freighted fruits and vegetables.

sectors have experienced problems related to quality, either due to climatic conditions or to institutional factors which weakened quality control systems or farmer incentives. Such problems have led to price discounts in the marketplace. However, Uganda has not generally faced market access constraints for its traditional agricultural commodities on the basis of either food safety, plant health or other technical requirements. Even while some international attention has been given to pesticide residues in tea and the incidence of ochratoxin in coffee, neither of these concerns have posed significant problems for Uganda. Additional, non-quality standards have been mostly applicable in the specialty segments of these commodity markets, including for organic or 'fair trade' cotton, coffee, and tea.

In contrast, for many of Uganda's emerging non-traditional agro-food exports, issues related to food safety, agricultural health and/or environmental standards are of comparatively greater importance in international trade.<sup>6</sup> For example:

- Major OECD importing countries have tightened their product and process standards related to fish and fishery products, with increased attention to hygienic conditions at fish landing sites and in fish processing facilities and to the overall regulatory framework for fish quality and safety controls (see Henson and Mitullah 2004).
- For fresh fruit and vegetables, some governments and private sector players have raised food safety product and process standards and also required their suppliers to adopt certain environmental and social protocols. Particular attention has been given to the use and storage of agro-chemicals and the presence of pesticide residues in fresh produce. Both in this trade and that for cut flowers, increasing attention has also been given to phytosanitary controls and the possible international transmission of plant pests (see Jaffee, 2003). Environmental and social standards feature prominently in the major private sector 'codes of practice' governing important elements of the international floricultural product trade.
- For live animals and livestock products, there have been long-standing concerns about the possible transmission of contagious and economically significant animal diseases through trade. With the emerging links between certain animal diseases and human food and health risks (in particular Bovine Spongiform Encephalopathy and Avian Flu), far more stringent sanitary measures have been adopted by many industrialized and developing countries. The presence of several endemic animal diseases in Uganda has been one factor restricting its trade in livestock products, especially beyond East Africa.
- For cereals and oilseeds there has been growing international attention to microbiological contamination, plant health risks and, for certain markets, the need to identify and label supplies based on genetically modified varieties. Uganda does not export these products (other than sesame seed) outside of the region and thus has not faced some of the more stringent standards now being applied.
- International trade in spices was historically governed by price competition and attention to physical and other product quality parameters. However, in parallel with broader trends in the food industry, in recent years greater attention has been given to selected product safety, production system hygiene and plant health concerns (Jaffee 2005).

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<sup>6</sup> See World Bank (2005) for a survey of the emerging trends in official and private standards, especially in relation to trade in higher value foods with OECD countries.

- For several other Ugandan non-traditional agricultural and food exports—including honey, hides and skins, silk, etc.-- there are also applicable food safety, agricultural health or other standards which may come into play when certain external markets are targeted.

Table 1 provides a summary of the types of standards which, depending upon the direction of trade, could most affect Uganda's major traditional and non-traditional exports. More detailed discussion on the actual applicability and impact of these standards on Uganda's trade is provided in Section 5 below.

The market orientation of supply chains and export operations is as important as the product composition for determining the applicable standards. Ugandan producers, processors, and traders deal in a broad spectrum of commercial settings, with different sets of operative regulatory and/or private standards. This spectrum includes the following:

- *Mainstream domestic market*: combining considerable informal trade and some formally registered/monitored activities. In this market there is limited application of basic grading systems and minimal market surveillance or enforcement of standards related to food safety and agricultural health. Upwards of 80-90% of the domestic food market falls into this category.
- *Regional/EAC market*, also combining considerable informal trade and some formally monitored movements of goods and transactions. Enforcement of SPS and quality standards is non-existent for the informal trade and variable in relation to the formal trade.
- *Instability/humanitarian market*, involving supplies under tender and other arrangements to the World Food Programme, other elements of the United Nations, and other humanitarian relief programs to feed refugees, other displaced people, or peace-keeping troops in neighboring countries. These tenders are ostensibly governed by specific quality and food safety standards, although enforcement is variable.
- *Extra-regional developing countries*, buying Uganda's traditional or non-traditional agro-food commodities. Enforcement of standards is variable, yet typically stronger for such matters as animal health, food spoilage, and labeling.
- *Ethnic food market segments in Europe*, where commercial attention focuses on product variety and quality at reasonable cost and where little if any (enforced) requirements exist for food safety management systems, product traceability, etc.
- *Upper end domestic market*, involving the supply of food to an emerging modern retail and fast food sector, higher end hotels and restaurants, and selected other catering services (i.e. for the airlines). Compared with the mainstream domestic market, stricter attention is given to quality parameters and good hygienic practices.
- *Mainstream, supermarket-led marketing channels in Europe and other high-income countries*, which are associated with a combination of private 'code of practice' and other protocols and a higher level of official monitoring of food safety and phytosanitary risks for raw materials and intermediate and finished products.

**Table 1: Uganda Trade in Food and Agricultural Products: Illustrative Standards and Technical Requirements:**

Product Group	Standards, Regulations or Private Protocols Related to:				
	Food Safety	Animal/Plant Health	Quality or Technical Attributes	Environment	Social
Fresh Fruits and Vegetables	Pesticide residue limits Microbiological standards Traceability req. Hygiene require.	Plant material quarantine Pest risk analysis Fumigation requirements Phytosan. certificates	Quality grades General labeling requirements Packaging standards	Pesticide use restrictions Water/soil contamination reg. Codes for organic practices/certif.	Monitoring of child labor Occupational health standards
Fish and Fish Products	Microbiological and foreign matter standards Pesticide residue limits HACCP checks	Restrictions on antibiotic use in aquaculture Animal health certificates	Quality grades Labeling require. Packaging stand. Quality Mgt. Certification	Fish catch restrictions Environmental management certification	-
Live Animals and Meat Products	Vet. drug residue limits Microbiological standards	Disease-free areas Disease surveillance Restrictions on vet. drugs Animal traceability	Quality grades Labeling requirements Packaging standards	Codes for organic practices and certification Regs. on animal waste effluent	Animal welfare monitoring
Hides and Skins	-	Animal health status for raw hides/skins	Quality attributes	Water effluent regulations Chemical use restrictions	-
Honey	Pesticide + antibiotic residue limits Microbiological standards Hygiene require.	Pesticide and antibiotic surveillance Antibiotic use restrictions Export certificates	Quality grades General labeling require. Packaging standards GMP conformity	Codes for organic practices and certification Antibiotic use restrictions	
Spices	Limits on Pesticide residue + mycotoxin Microbiological standards	Fumigation requirements and restrictions	Quality grades Consumer pack labeling requirements Packaging stand.	Codes for organic practices and certification	-
Cereals, Oilseeds, and Animal Feed	Microbiological standards Limits on Pesticide residue + Mycotoxin	Fumigation requirements or restrictions	Quality grades GMO labeling Restr. on animal feed ingredients Nutritional labels	Biosafety/GMO regulations Codes for organic practices and certification	-
Cut Flowers	-	Plant material quarantine Phytosanitary certif.. Pest risk analysis needs Fumigation req.	Quality attributes Packaging standards	Pesticide use restrictions Regulations on water/soil contamination	Monitoring of child labor, Occupational health stand. Fair Trade provisions
Coffee, Tea, Cocoa	Microbiological standards Pesticide residue limits	Fumigation requirements	Quality attributes Packaging standards	Codes for organic practices and certification Biodiversity code	Monitoring of child labor Fair Trade provisions
Cotton	Pesticide residue limits in cotton seed oil	GMO variety approval	Quality attributes	Codes for organic practices Restrictions on pesticide use	

Fully reliable statistics on the market destinations of Uganda's traditional and non-traditional exports are difficult to come by due to various factors, including (i) the under-reporting of cross-border trade in staple foods, live animals, etc., (ii) Uganda's land-locked status and use of Kenya as a transit point or point of commercial transactions (i.e. tea sold at the Mombassa auctions), and (iii) other exports which are channeled through transit points abroad (i.e. flowers sold

through Dutch auctions; commodities channeled through Dubai.) According to the data available to UNCOMTRADE, some 82% of the recorded 2004 Ugandan exports of food and agricultural products (including fish) went to high-income countries, only 6% to other African countries, and only 12% to other developing countries. The COMTRADE data is missing the bulk of Uganda's tea trade and under-accounts for its cotton and maize trade. Developing countries take a considerable share of Uganda's tea and cotton and the maize trade is regional. However, even taking this under-reporting into account, high-income countries would still be considered to be the destination for some three-fourths of the value of Uganda's agro-food trade, with about 10% going to other African countries and 15% to non-African developing countries. Table 2 below uses the COMTRADE data to provide the indicative directions of Uganda's trade.

**Table 2: Destinations of Uganda's Trade for Selected Agro-Food Products**

(% of Export Value to Country Categories)			
Commodity	High-Income Countries	African Countries	Other Developing Countries
Coffee	84	4	12
Cotton	21	10	69
Tobacco	66	18	16
Fish	98	0	2
Cut Flowers	100		
Hides + Skins	69	3	28
Vanilla	100		
Maize		100	
Total Food + Agr*	82	6	12

Source: Calculated from UNCOMTRADE data.

\*Underestimates shares of developing countries due to missing data on tea, under-reporting of cotton, and unrecorded maize exports.

## 4. INSTITUTIONS & CAPACITIES FOR MANAGING STANDARDS

Numerous public agencies and private organizations play a role in the management of quality and/or SPS standards in Uganda. These active players and their pertinent responsibilities vis-à-vis standards are briefly described here. In the subsequent section, more detailed analysis is provided on the apparent capacities of these institutions and the overall performance of Uganda's system of quality and SPS management.

### 4.1 *Institutions for Managing Standards*

#### 4.1.1 Public Sector

##### *Uganda National Bureau of Standards (UNBS)*

The UNBS was established in 1989 as a statutory body under of the Ministry of Tourism, Trade and Industry. It is the apex body for standardization in Uganda and its stated mission is to promote industrialization, fair trade and consumer protection through the provision on standards, testing, quality assurance and metrology services. The Bureau coordinates the process of standard-setting in Uganda, although for food items the standards adopted tend to be equivalent

to Codex or to regional standards. UNBS carries out periodic awareness-raising or training programs related to quality or food safety management. It operates four laboratories—for microbiology, chemistry, building materials, and electrical matters—while a fifth, for testing petroleum products, is being developed. Only the microbiological lab is internationally accredited.

UNBS serves as both the national enquiry point on WTO SPS and TBT issues and the Codex contact point in Uganda. It serves as the secretariat for a multi-sectoral national Codex committee and its officers periodically attend the meetings of the Codex General Principles Committee. UNBS is the local agency which is most actively involved in the process of harmonizing standards at the level of the East African Community and is a member of the African Regional Standards Organization.

UNBS operates a voluntary Product Certification Scheme, in which some fifty local companies have participated in. Some 108 products, of which half are processed food products, currently bear the Uganda Standards Certification Mark, signifying that their production operations and the products themselves meet certain specifications. UNBS also plays some role in the enforcement of food safety standards. For those food products carrying mandatory standards, the UNBS attempts to inspect imported consignments, having inspection staff at 14 of the 52 official entry points. The Bureau also has a tiny (2 person) market surveillance team that essentially responds to tips on fraudulent, mislabeled, or otherwise problematic food being sold in local markets. The UNBS is not involved in the inspection of exported products, with the sole exception of maize sold within the region. The UNBS has a total staff of 115, of which some 85 are professionals, including scientists, engineers and technicians.

#### *Ministry of Agriculture, Animal Industry and Fisheries*

The Ministry of Agriculture, Animal Industry and Fisheries has various departments with specifically defined roles and responsibilities in relation to food safety and agricultural health. These include the following:

- **The Department of Livestock and Entomology** is responsible for the development of policies and regulations on animal diseases, the development of veterinary inspection procedures, and the inspection and certification of imports and exports of animal products. The Department coordinates national programs to manage rabies, CBPP, Rinderpest, and Food and Mouth Disease, and is involved in the implementation of regional animal disease control programs. It provides technical support to the 700 to 800 veterinary officers working at local levels, in part to inspect and certify animal products. The Department is also the designated competent authority for honey.
- **The Department of Animal Production and Marketing** ensures compliance with the Animal Disease Act and Regulations. The department is responsible for formation of standards regarding the quality and safety of livestock and livestock products. In this area it provides training, supervision, and other technical back-up to local governments related to plans and programs for livestock and livestock product handling and marketing.

- **The Crop Protection Department** is responsible for formulating and enforcing regulations related to seeds, agro-chemicals and the management of phytosanitary risks. It seeks to undertake surveillance and diagnosis of crop pests and diseases and to work with other national and international agencies to control the outbreak of migratory plant pests and epidemic diseases. The Department carries out inspections of imports and exports of planting materials and plant based products, mostly checking for pests and diseases. Where interceptions are made, tests might be conducted at the Kawanda Agricultural Research Institute. The Department issues phytosanitary certificates when these are required for exports. Crop protection officers are located at MAIFF headquarters, at zonal stations, and at an increasing number of border/entry posts. The Department is the so-called competent authority responsible for the inspection and regulation of horticultural commodities for local and international markets. A new draft Bill would designate the Department as the National Plant Protection Office (NPPO).
- **The Department of Fisheries Resources** is responsible for the inspection, certification, and control of fish and fish products consumed locally and abroad. It is responsible for enforcing fisheries regulation, including carrying out inspection of factory premises, processing lines, landing sites, fish transport and export points for adherence to safety and quality requirements, as well as maintaining a national fish inspection and quality control system. The DFR issues a certificate for each consignment of fish prior to export. The Department is responsible for regulating and overseeing the emergent development of aquaculture in Uganda. The DFR, in collaboration with local government (District Councils), directs fisheries resource conservation and management initiatives. Budgetary and other constraints have inhibited the effectiveness of the DFR in pursuing its multiple responsibilities.<sup>7</sup>

#### *Ministry of Health, Environmental Health Division*

The Ministry of Health's Environmental Health Division is ostensibly the lead government agency on matters of food hygiene and safety. Its role primarily relates to policy formation in this area and the coordination of actions cutting across various government agencies as well as local government authorities. It has no implementation functions per se, as food establishment inspection and licensing is done by health officers working for local councils. The Division carries out no market surveillance work, yet periodically collaborates with the UNBS on limited programs to gauge the safety of certain product items. The Division does not directly work in areas related to Uganda's external food trade.

Given other pressing health matters, the Division receives less than 5% of the Ministry of Health's annual budget. Most of this allocation goes to pay the salaries of its small staff, with little funding available for operational field activities. Only one of its ten staff members has a suitable background to do risk assessment work, plus any such work would be constrained by the fragmented and incomplete nature of existing epidemiological and laboratory testing data related

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<sup>7</sup> A major institutional reform in fisheries sector management is underway. The National Fisheries Policy, approved by Cabinet in 2004, calls for the formation of a Uganda Fisheries Authority, an autonomous agency in government, with a governing board appointed by the Minister of MAAIF. The UFA would take over many of the sector management functions of the DFR, including those related to quality and food safety management.

to food borne illness. The Ministry's Health Education Department likewise has little or no funding to carry out campaigns on food safety and hygiene.

The Division's mandate is provided for under an antiquated Food and Drug Act of 1964 which doesn't cover current issues in the field (i.e. risk management, traceability, etc.). The Division, working in conjunction with other agencies and stakeholders, recently drafted a Food Safety Bill which has been presented to cabinet for comment. The Bill makes provision for the Division to serve as a central secretariat on food safety issues, to be supported by technical working groups dealing with specific topics.

#### *Uganda Cleaner Production Center (UCPC)*

Established in October 2001 with the support of UNIDO, the UCPC helps firms to become more competitive and to improve environmental management by making more efficient use of raw materials and resources. Its 'eco-benefits program' aims at building national cleaner production capacities by fostering dialogue between industry and government and facilitating investments in environmentally sound technologies. Firms are taught to use water and energy more efficiently and to implement better waste management to reduce operational costs. The UCPC also helps firms to implement cleaner production technologies by assisting companies to achieve ISO 9000 and 14000 certification. As of 2005, the UCPC has worked with more than 40 enterprises in areas such as fish processing, sugar, leather, tea and tourism.

#### *Commodity Development Boards and Other Public Institutions*

Although UNBS is the competent authority for various agricultural commodities and food products for which mandatory standards have been established, quality management for several traditional export commodities is government by particular agencies or Boards. Historically, these Boards directly participated in export marketing, although since this trade was liberalized, these agencies are now primarily involved with regulatory and industry promotion functions. One example of this is the Uganda Coffee Development Authority (UCDA). Among other functions, the UCDA monitors and enforces standards set out in the Coffee Regulations regarding the processing, grading, packing and export of conventional and organic coffee. It inspects and certifies each export consignment, carries out training of quality controllers, and provides some extension services to processors. UCDA's laboratory is not accredited and it relies upon private companies for ochratoxin testing and for checking the quality of coffee loaded into containers. The Cotton Development Organization (CDO) is the competent authority in the cotton sub-sector. It performs either visual or laboratory tests of ginned cotton and issues quality certificates.

Other public institutions also have pertinent regulatory and/or support functions related to the management of quality, SPS, or other standards. For example, the Water Resource Management Department administers the Water Statute (1995) which provides for the use, protection, and management of water resources. Food industries that use significant quantities of water (i.e. fish processing) face regulatory oversight from this Department. The National Agricultural Advisory Services (NAADS) provides farmer extension services, including advice on post-harvest and quality management, produce marketing, etc... Health officers employed by local government

councils are responsible for inspecting and licensing food establishments, including food processing plants and restaurants. Although minimally funded, the Ministry of Labor has an occupational health unit that periodically examines health and safety issues for agricultural workers.

#### **4.1.2 Private Sector**

Many private sector institutions also play key roles in the management of trade-related quality, food safety, agricultural health, and other standards in Uganda. Obviously, individual farmers/fishers, traders, and agro-food processing companies play the most central and active role in generating raw materials and finished products that meet commercial and/or regulatory requirements for quality and safety. Yet, there are also an array of private service institutions which either assist these supply chain players to improve their methods or products or which provide conformity checks on management systems and/or products via inspection, testing, or certification services. While the existing market for such services is relatively underdeveloped in Uganda—compared, for example, with the situation in Kenya or South Africa—the depth and breadth of such services will certainly expand over time in response to growing demand (and the ability to pay for services).

Several of the relatively larger private providers of standards-related services are subsidiaries of international companies. For example, *Chemiphar* is an affiliate of a Belgian company. It operates a laboratory that is internationally accredited to carry out microbiological and chemical testing for many of Uganda's principal agro-food exports. It is the only laboratory that is authorized by the European Commission to carry out tests of fish consignments being directed to the EU market. A local subsidiary of *SGS* has been active in Uganda since 1990. It performs quantity and quality testing and certification for certain products, provides fumigation services for grain and coffee, and provides advisory services to clients seeking to adopt quality, food safety, or environmental management systems. **Total Quality Management Leadership Ltd** has, since 1995, provided training industrial and other companies in ISO 9000 and ISO 14000 management systems. Various other subsidiaries of foreign companies have been periodically active in certifying Ugandan production systems for compliance with international organic standards.

Uganda also has numerous industry associations which vary in terms of size, capacity and effectiveness. They are important in helping industry to act collectively in lobbying government and also in facing external challenges posed by changing standards and regulations. Some organizations carry out basic training in quality management and offer business development and marketing services to members. Some of the most active associations in providing training and services to enhance quality include: *The Uganda Fish Producers and Exporters Association, the Uganda Flowers Exporters Association, The Uganda Apiary Development Organization, the Association of the Vanilla Exporters of Uganda, and the Uganda Manufacturers Association*. Another pertinent organization is the *National Organic Agricultural Movement of Uganda* (NOGAMU). Founded in 2002, NOGAMU now works in four areas: training and extension in organic farming, market promotion, organic certification, and advocacy. The organization has been instrumental in the development of Ugocert, a Ugandan organic certification body, which is being prepared for international accreditation.

One NGO which has been active in raising awareness on food safety matters is the *Consumer Education Trust (CONSENT)*. CONSENT was founded in 1988 in the context of an emerging consumer movement in Uganda. The organization is a consumer advocacy group which aims to promote consumer awareness as regards quality and standards. CONSENT has worked with government to develop a draft Consumer Protection Bill, which is currently in parliament and also participates in the national codex committee. Consent, in partnership with the UNBS and others, has designed programs and events to raise awareness about particular food safety issues and to campaign for the protection of consumer rights. It is now working with the Ministry of Tourism, Trade, and Industry on the design of a program to enhance food safety awareness and the adoption of good hygiene practices in the Ugandan hospitality industry.

There are thus a broad array of public and private institutions which play some role in the management of trade-related quality, food safety, agricultural health and other standards. Coordination at the national level is rather weak, and, as will be highlighted below, there are various areas in which existing management is very weak or is less effective (and sustainable) than it could be because it is fragmented among many institutions. However, at the level of individual commodities there is evidence of collaboration and clearer divisions of labor between and among organizations. For example, with respect to coffee, the UCDA works together with an array of private sector companies, in relation to quality inspection (Cotecna), chemical/contaminant testing (Chemiphar), and fumigation against plant health risks (SGS). Other private entities are involved in the certification of environmental or social standards in this traditional industry. The fish export supply chain features an even larger array of regulatory agencies and service providers to address quality, food safety, animal health, and environmental matters.

## **4.2 Capacities for Managing Standards**

The analysis here utilizes the framework provided by Figure 2 above to examine various strengths and weaknesses in standards-related management in Uganda. The analysis highlights evolving capacities with respect to:

- raising awareness about the importance of standards to competitiveness and about the roles of different stakeholders in standards management;
- promoting ‘good practices’ in agriculture and industry;
- setting standards and modernizing pertinent legislation to be in conformity with international norms;
- risk analysis and management (as illustrated through the case of animal disease surveillance and animal health management)
- implementation of inspection and audit functions;
- diagnostic (testing) capacity; and
- international representation and conduct of standards-related ‘diplomacy’

### **4.2.1 Awareness-Raising Among Key Stakeholders**

As mentioned earlier in this report, the foundation of any SPS management system is broad awareness among participating stakeholders about the relevance and importance of food safety and agricultural health to the competitiveness of their country/sector/firm and recognition of their own role in this system. Where this awareness is especially weak, any system of regulatory enforcement will almost certainly be overwhelmed. Awareness of major SPS challenges and

opportunities is needed at several levels. Firstly, among senior agricultural and trade officials, in order to assign appropriate priorities for public programs and expenditures. Secondly, awareness is needed among owners and managers of agricultural/food processing/exporting firms and the industry organizations that represent them. These people make investment, personnel and other decisions, and engage in self-policing activities, which determine the willingness and capacity of firms to meet emerging SPS standards. Finally, awareness is critical, and perhaps most difficult to build, among the large numbers of producers, and farm and industry workers, who produce and handle agricultural raw materials on a day-to-day basis.

In Uganda, awareness of food safety and agricultural health issues is low but has been marginally heightened as a result of the fish trade restrictions in the late 1990's. Because of the overwhelming impact the embargo had on trade, both public and private sector stakeholders are more aware of the potential impact of non-compliance with regulatory or commercial standards. Awareness in the various departments of MAAIF has certainly increased and MAAIF has sought increased budgetary resources to carry out its regulatory enforcement and other responsibilities. For example, the Crop Protection Department has recently increased the number of zone and border inspectors to strengthen monitoring and surveillance of plant health. The Department of Fisheries has put in place standard operating procedures for inspection and quality assurance in the fisheries supply chain. UNBS has also received additional budgetary support to carry out laboratory testing and other functions. However, within the Ministry of Health, attention to food safety remains marginalized by the dominate foci on infectious diseases and malarial control. Within the private sector, awareness about the importance of quality, food safety, and/or agricultural health has spread into certain industries, mostly at the level of food processors and export traders, yet this awareness generally remains very weak among fishers, farmers, and intermediary traders.

Awareness raising initiatives in Uganda can be grouped into three categories: (i) periodic campaigns; (ii) sustained, thematic programs; and (iii) sector or commodity-specific extension work. Examples from each are briefly discussed, in turn.

In recent years, there have been several campaigns to increase food safety awareness, either among consumers or particular food system participants. These campaigns have been organized either by government or civil society organizations as and when resources were made available (typically from external sources). For example, in December 2002 a National Food Safety Week was organized through joint efforts of the Ministry of Health, MAAIF, UNBS and the Uganda Consumer Protection Association with participation and support from UNIDO. The event focused largely on food safety practices for bakeries and hospitality enterprises. It also featured a market cleanliness competition, which involved field visits to markets to assess hygiene and sanitation in various markets in Kampala City Council.

In Uganda, two consumer associations are active in consumer training and advocacy: The Uganda Consumer Protection Association and The Consumer Education Trust (Consent). Consent is actively engaged in public awareness programs to promote consumer awareness and education. The organization runs a food and agriculture program which promotes food safety through capacity building, education and training on proper hygiene. Consent has carried out surveillance of sanitary conditions in markets and their efforts have led to improved garbage

collection in Kampala's markets. The use of broadcast radio, pamphlets and flyers on food safety and consumer rights are a small but nonetheless critical effort for promoting public awareness—and probably yield considerable benefits at limited cost. The organization has also developed a joint awareness program with the Ministry of Trade Tourism and Industry.

**Box 3: Improving food safety of informally vended street foods**

The domestic market for food products in Uganda is dominated by informal vendors, many of which have roadside stalls or are traders in open air markets where they sell fresh fruits and vegetables as well as prepared foods and drinks. Because this trade occurs in the informal sector, it is often outside the scope of official control systems and remains the least regulated. Poor water quality and unsanitary conditions in the industry are a significant contributor to food borne illnesses such as cholera and dysentery. One recent survey found the common use of tap water in bottled water and juices. Experiences from other countries demonstrate that low cost measures to improve sanitation and water quality, combined with training and awareness-raising can reduce the food safety hazards for consumers and improve livelihoods for vendors.

One such program is the Safe Water System (SWS) Program which was developed by the Centers for Disease Control and Prevention (CDC) in response to the cholera epidemic in South America. Under this program, bottles of dilute sodium hypochlorite are sold at very low cost for household water treatment. The SWS strategy also involves awareness-raising to improve hygiene and water and food handling practices. At a cost to households of 1 US cent per day or less, the SWS has resulted in reductions in the risk of diarrheal disease ranging from 22 to 84%, with an average of 50%. Because the chlorine solution can be manufactured inexpensively locally, and then distributed through local commercial networks it represents a replicable and low cost measure that could be easily adopted by street food vendors to reduce the risk of disease outbreaks from contaminated water.

In Zambia and Zimbabwe, the Natural Resources Institute funded a number of small scale projects to improve food safety of street foods. These programs focused largely on awareness raising and training for food vendors and inspectors to reduce the incidence of food borne illness. In Ghana, promotional materials on food safety were used to educate consumer and food vendors. These included four TV documentaries and billboards by the Food and Drug Board of Ghana, posters and training manuals for Environmental Health officers and street vendor NGOs. Although these efforts are small scale, they can be ramped up to a regional or national level to broaden outreach to a larger number of vendors.

Source: Centers for Disease Control and Prevention and Natural Resources Institute

Sustained, thematic programs, such as the UNIDO-supported Cleaner Production Center, have a greater impact at the firm level. These programs have solid budgetary support (usually from donors) and can be sustained over time to build capacity. The CPC runs a 10 month ECO Benefits program to promote sustainable production among local firms. With respect to export sectors, the CPC has worked with firms in fish processing, leather processing, tea and tourism. Companies involved in the ECO benefits program learn to use resources more efficiently in order to reduce operational costs and adopt operating procedures to improve the quality of products. In the fish and wine industries, firms have been taught the importance of controlling and reducing food contamination through simple good hygiene practices as well as completing the HACCP certification program. Similarly, Total Quality Management Leadership Ltd (TQML) is an enterprise which was established in 1995 at the request of the Ugandan President to promote exports and tourism. TQML has conducted ISO 9000 certification for almost 100 companies, 25 of which have operations in food and agriculture. The consultancy is also working with a much smaller number of firms to achieve ISO 140000 certification.

Creating awareness among policy makers is the focus of the APEP biotechnology and biosafety awareness program. In 2005, the program organized a 10 day study tour to India for top policy makers, legislators, technology managers, journalists and private sector representatives. APEP is also planning to travel to South Africa with other key stakeholders in 2006 to discuss biotechnology policy issues and examine technology transfer and application opportunities. Through basic communications, APEP is also reaching out to civil society, consumers and farmers on biotech issues.<sup>8</sup>

The final category of interventions in awareness-raising has involved government/donor extension programs, typically focused on a particular commodity or a specific geographical area. Many of these programs have sought to sensitize farmers about the benefits of quality, better hygiene, or improved production methods, although in some circumstances market incentives, in the form of higher prices, have not re-enforced these messages. NAADS, the government funded agricultural advisory service, works throughout the country to increase farmers' access to information, knowledge and technology. Similarly, many donor initiatives such as APEP, SCOPE, and EPOPA conduct similar interventions with farmers. Some of the more successful efforts have involved smallholder production of vanilla, sunflower, and upland rice. None of these involve very large numbers of farmers. The major challenge ahead is to reach much larger numbers of fishers and producers of coffee and maize in order to strengthen awareness about quality and proper hygiene and to ensure that these messages are re-enforced by improved incentives.

#### **4.2.2 Promotion of 'Good Practices'**

Application of good practices for agri-food safety and agricultural health is becoming central to the ability of farmers, agro-enterprises and countries to access high value international markets. Yet, the experience of the relatively more successful commodity sectors such as that for Nile Perch, illustrates the extremely challenging task for Uganda (see Section 5 below). One of the key factors was the fact that product characteristics of the fish itself provided its exporters with a unique competitive position within the high value EU market and thereby provided especially strong incentives for the Nile Perch exporters to apply the difficult practices and conditions imposed by the EU. Such commercial incentives to apply a range of so-called 'good practices' appear to be considerably weaker in most other sectors, resulting in a phenomenon in which it is external players—in the forms of donors, consultants, and NGOs—which are the primary driving force behind many initiatives.

Efforts to promote good practice ought to give due consideration to the efficacy of promoting non-generic practices and conditions especially if they are imposed by markets where a particular commodity is already naturally disadvantaged to compete. Hence the growing recognition that instead of seeking to unquestioningly apply the ever changing and complex requirements of some buyers, care must be taken to evaluate what the strategic advantage,

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<sup>8</sup> Project representatives have appeared on regular radio talk shows explaining the merits of biotech and demystifying some of the issues for the general public. The two consumer groups in Uganda are active participants in APEP sensitization sessions and they have made modest efforts at disseminating information on biotechnology and GM products to the public. To reach farmers, APEP works with journalists at Uganda National Farmers Federation to sensitize growers through biotech materials published in the Farmer's Voice newspaper. Although the project is not yet conducting trials with farmers, it is laying the foundation for possible future use of biotech by incrementally sensitizing producers and others stakeholders on key issues.

choices and direction would be for the particular commodity in question. This often requires one to step back and ask the following essential questions: What are the growth and competitive prospects of the commodity in question and in what markets? Where the potential exists, what is the nature of complementary interventions that are required to develop local capacity to apply and promote good practices for agro-food safety and agricultural health? Part of the problem is that this kind of strategic diagnosis is rarely undertaken.

With respect to agro-food safety and agricultural health, application of ‘good practice’ involves a wide range of common sense tasks as well as less intuitive ones. They include application of basic hygiene and sanitation requirements such as the use of clean containers, physical segregation of the dirtier processing tasks from the less dirty ones, and the maintenance of personal hygiene all through the process of handling food. Good practice could also mean putting in place an appropriate physical structure with adequate facilities for storage and grading or the application of recommended production and post-harvest practices. Instituting a proper record keeping and traceability system, application of HACCP, quality management systems and recommended practices for plant and animal health are all examples of good agricultural and manufacturing practice. Table 3 provides an overview of the status of good practice for agro-food safety and agricultural health in Uganda.

The picture is one of limited application of good practice in most of the commodity sectors. Even among the few sectors where there is been some progress such as the Nile Perch fisheries, application of good practice tends to be concentrated in the processing and exporting segment of the supply chain. Almost all the commodity sectors included in the review suffer from a lack of strategic diagnosis. The horticulture sector provides a classical example of the unquestioning promotion of certain buyers’ requirements (EUREPGAP) prior to the identification of what is Uganda’s strategic and competitive advantage (see Section 5 for elaboration). The table also indicates that in-country capacity to promote the application of HACCP and Internal Control Systems is very weak. Practices in the hides and skins sector are notoriously poor. So are the practices for animal husbandry, slaughter, meat transportation, handling and marketing. Practices and capacities for animal health management are not any better and unless they are boosted substantially, Uganda’s livestock sector will likely fail to bring about the desired contribution to poverty reduction and economic growth. Overall, Uganda has only limited private and public sector capacity to promote good practices for agri-food safety and agricultural health and efforts to learn from the Nile Perch fisheries experience have thus far not been very successful.<sup>9</sup>

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<sup>9</sup> While the late 1990s Nile Perch experience raised awareness about the importance of standards compliance, the multi-agency/donor response to that crisis probably also crowded out other activity which might have focused on promoting good agricultural and manufacturing practices more generally in Uganda. Such efforts are now emerging, however. UNIDO is planning to work with pilot enterprises in the honey, meat, dairy and fruit and vegetable sectors to promote both HACCP and quality management systems. The Export Promotion Board has launched a program to encourage corporate social responsibility initiatives.

**Table 3: Status of Application and Promotion of Good Practices in Selected Product Groups**

	<b>Fish &amp; Fish Products</b>	<b>Fruits &amp; Vegetables</b>	<b>Live animals &amp; Meat Products</b>	<b>Honey</b>	<b>Hides &amp; Skins</b>	<b>Dairy</b>
<b>Good Agricultural &amp; Manufacturing Practices for Food Safety</b>						
Basic hygiene & sanitation requirements; Appropriate physical structures for sanitation, storage & grading	Extensive awareness within export supply chain but application concentrated at processing stage. Limited application within domestic-oriented chain.	Limited application within export-oriented chain but no functional system of inspection & audit	Applied by most processing plants. but no functional system of inspection & audit	Difficult to ascertain. No functional inspection, audit & information system	-	Applied by formal milk-processing sector. Weakly applied within informal segment
Smallholder group development & internal control system (ICS); Application of recommended harvesting & post-harvest practices in conformity with microbiological & mycotoxin limits	Implementation of good fishing & handling practices still difficult	ICS establishment & certification difficult & costly. Very limited application of good post-harvest practices	Very inadequate practices & Infrastructure through chain. Good practices more commonly applied by industrial processing firms	ICS development & certification difficult & costly. Good harvesting & post-harvest practices still limited	-	Very limited application of good post-harvest practices
Proper record keeping & traceability requirements	Traceability still difficult & records irregular	No functional traceability system	No system for traceability	No traceability system	-	No traceability system
Segregation of plant layout & operations in conformity with standard operating procedures	Applied by all fish processing plants	Not widespread	Applied by some meat processing plants	Inspection & conformity checks not done	-	Moderately applied by formal dairy sector
<b>Application of HACCP for food safety</b>	Widespread HACCP certification among export processing firms	HACCP not applied	HACCP system rarely applied among processors	HACCP not applied	-	HACCP not applied except by one firm

	<b>Fish &amp; Fish Products</b>	<b>Fruits &amp; Vegetables</b>	<b>Live animals &amp; Meat Products</b>	<b>Honey</b>	<b>Hides &amp; Skins</b>	<b>Dairy</b>
<b>Application of quality management systems such as ISO 9000</b>	Systems Acquired & certified	No certification reported	No certification reported	No certification reported	Not applied	Very limited
<b>Plant/Animal health good practices</b>						
Use of disease-resistant seed; Pest & disease free zones	-	Low adoption. Free zoning not yet undertaken	OIE's List A diseases are still present. Recent strategy includes disease free zones	Status of bees as disease free not yet verified	Disease free export sourcing remains difficult	-
Adoption of recommended fumigation practices, animal branding/labeling	-	Limited application	Very limited application of good practices	-	Very limited	-
Proper management of livestock & livestock product movement	-	-	Difficult implementation	-	Difficult	Difficult
<b>Environmental practices</b>						
Proper use & storage of permitted pesticides, chemicals & veterinary drugs	-	Not widely applied	Difficult implementation	Organic practices used	Limited	-
Limits on resource exploitation (sustainable yield); Organic practices	Difficult implementation	Organic practices widely applied	Difficult implementation especially in the drier parts of the cattle corridor	No limits to observe	-	-
<b>Availability of guidelines for good practice through the full supply chain</b>	National, context specific, guidelines available including codes for self-policing	Not available. Only EUREPGAP guidelines introduced to a few farms/firms	Limited availability	Not developed. Scattered availability	Scattered availability	Difficult especially within informal segment

**Source: Team Field Interviews, 2005**

### 4.2.3 Standard Setting and Pertinent Legislation

#### *Standard-Setting*

Standard setting in Uganda is the responsibility of the UNBS and the policy-guiding National Standards Council. Many standards are demand-driven, with requests coming from industry groups, individuals, government, and public interest groups. UNBS has ten technical committees with representation from industry, universities, consumer groups, and regulatory agencies. Examples of committees include those for agricultural and food products, chemicals and the environment, textiles and apparels, building and construction, and metrology. The committees develop and deliberate on draft standards which are then subject to public comment before they are endorsed by the NSC.

Between 1993 and 2005, UNBS issued 720 standards, of which 239 are related to food and agricultural products, either technical specifications of products themselves or associated with their processes of manufacturing. Three-fourths of Uganda's standards are based on international or regional standards. Codex Alimentarius standards are commonly used as a basis for Ugandan food standards. All food and agricultural product standards are ostensibly compulsory, even though many such standards relate to quality parameters rather than food safety. A code of hygiene for the food and drink manufacturing industry is also compulsory, although its enforcement is intermittent. The UNBS implements a Product Certification Scheme whereby it permits qualified manufacturers to place a quality mark on its packaging to signal compliance with certain criteria and satisfactory inspections.

According to Orchard et al (2005), the historical focus of Ugandan standard-setting has been on the local manufacturing sector rather than in relation to the country's trade. However, in recent years, there has been more attention to enforcing standards on products imported into Uganda, especially cooking oils, drinks and processed foods. With relatively few exceptions (i.e. for fish products, coffee, maize, and honey) there has been little standard-setting (and enforcement) effort in relation to Ugandan exports. The impetus for change in the fish sector came from pressures from Uganda's main trading partner for these products—the European Union.

In recent years, a growing level of attention has been given to harmonizing standards and selected administrative procedures within the wider East African Community. In 2001, members of the EAC signed the Protocol on Standardization, Quality Assurance, Metrology and Testing (EA-SQMT) as part of a broader trade agreement signed by the three countries two years earlier. Under this protocol, the countries agreed to apply a common policy on standardization, metrology and conformity assessment of goods produced and traded with the Community. The protocol laid down the principles for cooperation among the three member states and defined their obligations in various spheres.

Following the signing of the SQMT protocol, the drive for harmonization of standards gathered some momentum and the EASC proceeded to develop a large number of

‘harmonized’ standards between the three member states. By the end of 2005, some 550 ‘harmonized’ standards had been agreed to, of which nearly 200 related to food products. It is not clear on what basis these were prioritized, as the private sector has had very little input into the process. Most relate to product specifications—that is, defining food product in technical or other terms. A very limited number of these food-related standards cover sampling and testing methods, labeling or other matters that might truly affect trade. Most are based on international standards set through CODEX, ISO or OIE. There has also been a lack of clarity or consensus on the status of certain standards: most food standards are compulsory in Uganda and Tanzania, yet are voluntary in Kenya. Many of the ‘harmonized’ standards have not been published or even shared with the private sector and major external trading partners. Even fewer have been formally adopted as national standards in any of the member states.

During the past year, the approach to regional harmonization of standards has been altered. The drive is not to maximize the number of agreed regional standards, but to concentrate attention on products and procedures for which differential standards/approaches may actually impede trade within the region or affect the reputation of regional products abroad. Hence, attention has been devoted to developing regional standards for some particular products (i.e. maize)<sup>10</sup>, service establishments (i.e. classifications of hotels and restaurants)<sup>11</sup>, and certain procedures (i.e. for forest certification).<sup>12</sup>

To some extent, one could argue that standards are *under-enforced* within the region, thereby permitting some types of trade which may even be resulting in cross-border transmission of plant pests and animal diseases. How this will evolve in the future is not clear. In a few product areas, the harmonization of standards will certainly prove relevant and beneficial to trade; the private sector is in the best position to identify these areas. It is thus critical that a stronger *demand-driven element* is introduced into the on-going process of standards harmonization. Either the standardization sub-committee should feature an increased representation of the private sector or there should be additional mechanisms by which the private sector can have input into the selection and prioritization of standards which are to be adopted at the EAC level.

A note of caution is needed, however, on regional standards harmonization. There is a perception that regional standards should provide an ‘upgrade’ from domestic ones and be at the level of certain international standards or those of major OECD country trading partners. In some cases, this could be appropriate. Yet, there are other circumstances where the adoption of international standards could have a negative impact on domestic

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<sup>10</sup> The EAC regional standard for maize was ratified in July 2005.

<sup>11</sup> This harmonization will assist in promoting the EAC as a single tourist destination. Previously, Uganda did not have a standard classification system for hotels and restaurants.

<sup>12</sup> The misalignment or over-zealous enforcement of quality, food safety and agricultural health standards has not been a significant factor inhibiting Uganda’s intra-regional trade in food or other products. Periodically, there have been problems with Ugandan maize being rejected—on quality grounds—when entering Kenya. The enforcement of these quality standards has been intermittent or even seasonal, depending upon the underlying supply and demand conditions for maize in Kenya.

markets, regional trade and poorer consumers within the region. A central challenge is to set standards and conformity assessment procedures that are appropriate for domestic and regional markets, given consumer preferences and ability to pay, the prominence of informal markets, and institutional capacities, without jeopardizing the international market access of certain suppliers. The determination of appropriate standards for regulating informal markets for meat, dairy and other products is a contentious issue within the region, where the direct imposition of OECD country standards will be difficult and probably socially undesirable to implement.

### *Pertinent Legislation*

Uganda's body of legislation which pertains to food safety, agricultural health, and compliance with international SPS and TBT matters is in a state of transition, with many areas covered by obsolete legislation, other areas facing a legal or regulatory vacuum, and a large queue of draft bills and policies positioned at various points in the national legislative process. As regards the SPS Agreement, the relevant legislation is the National Bureau of Standards Act plus regulations made in relation to the UNBS (i.e. on import inspection) and in relation to the Agricultural Seeds and Plant Statute (1994), the Control of Agricultural Chemicals Act (1964), the Crop Protection Act (1964), the Food and Drugs Act (1964), the Animal Disease Act (1964), the Food Quality Assurance Rules (1998), and the Fish (Quality Assurance) Rules 1998.

Only the fisheries-related legislation and association regulations are reasonably up to date—although even here significant changes are being proposed under a Draft Fisheries Bill. In other areas, current plant health legislation does not make provision for many of the functions now considered central to modern phytosanitary management—including pest risk analysis and developing pest free areas—nor does it designate a national plant protection organization. Current laws regulate agro-chemicals and fertilizers in the same way despite these being associated with very different risks. The existing Food and Drugs Act is obsolete in that the regulation of pharmaceutical products was devolved to a separate organization (outside of the Ministry of Health) more than a decade ago and because the act does not take into account a wide range of technological and administrative developments in the food industry over recent decades. In relation to biosafety and biotechnology, the industry has been operating in a virtual legal vacuum, although R&D activity in this area ostensibly falls under the Uganda National Council for Science and Technology Act (1991).

At present, there is a broad range of pending legislation—some in the form of draft bills and others are bills which have been approved by Parliament and are awaiting executive approval. Some draft legislation was introduced to Parliament more than three years ago and actions are still pending. For example:

- After nearly a decade of technical discussion and territorial turf wars, a draft Food Safety Bill (2003) was prepared to include clearer responsibilities in food safety oversight and provisions related to codes of good practice, control of pesticide residues in food, food additives, and measures to ensure the safety of food imports and exports. This Bill was based on a model FAO food law.

- A draft Plant Protection and Health Bill (2003) seeks to update legislation to reflect the International Plant Protection Convention. It has been sitting in the Parliamentary Sessional Committee on Agriculture for some time.
- Amendments to the Agricultural Seeds and Plants Statute have recently cleared Parliament. Changes include harmonization with the East African Community's seed regulations and with provisions of the OECD and ISTA rules and regulations.
- A draft Control of Agricultural Chemicals Bill will separate the regulation of chemicals and fertilizers, seek to ensure pesticide-related safety throughout the food chain, and make other adjustments in the current legislation.
- A draft Biosafety Bill and associated Biosafety Regulations have been under preparation and discussion for several years

This legal limbo is a source of concern, both for the private sector and for those units in government which are responsible for program implementation and regulatory enforcement related to SPS matters.

#### **4.2.4 Risk Assessment and Management (An Illustration from Animal Health)**

In the context of food safety and agricultural health, risk assessment is the process that provides estimates of the probability, severity, and likely impact that a particular hazard may present to human, plant or animal health. Risk management involves the identification and implementation of strategies to control hazards. It entails risk evaluation, assessment of alternative options, implementation of selected strategies, and on-going monitoring and review of implementation performance.

Underlying capacities for risk assessment and risk management on SPS matters are very limited in Uganda. Systematic data collection and analysis in the pertinent areas is unusual and normally not sustained over time.<sup>13</sup> Responsibilities are seemingly fragmented among various institutions, at the levels of central and local government. Crisis management rather than preventative surveillance and risk management has been the norm, although even much of the crisis management effort has been dependent upon external financing. The array of existing problems and future challenges for capacity building and coordination are illustrated here through the example of animal disease surveillance and animal health management.<sup>14</sup>

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<sup>13</sup> The current laws make no provision for food safety risk assessment. While considerable epidemiological data is gathered by the Ministry of Health, this is rarely analyzed and is not effectively maintained.

<sup>14</sup> Analysis has also been done of the capacity weaknesses in phytosanitary management. For example, Songa (2003) emphasizes the lack of an official pest list, of retrievable phytosanitary information, and of basic facilities. There are no institutionalized pest surveillance activities. Reference is made to the need for extensive staff training—related to inspections, pest diagnostics, and pest risk analysis. Uganda has apparently implemented the IPPC's Phytosanitary Capacity Evaluation, yet the conclusions and priorities from this evaluation remain unclear.

Uganda once had a vibrant system for animal health management. This, like all other systems collapsed in the 1970s and 1980s during the years of political and economic disarray. The situation has improved since owing to various regional livestock development programs and efforts towards strategy formulation and action plan development. Nevertheless, the level of livestock and animal health management has neither been restored to that of the 1960s nor reached internationally acceptable standards. The single most important constraint is the weak capacity for livestock disease control. Presently, the country is struggling to control several of OIE's 'List A' diseases. Many of the animal diseases are endemic, contagious and their presence has limited the scope for increasing farmers' incomes as well as access to regional and international markets. Obstacles to effective animal disease control have not been easy to overcome. They include confusion of central and local government roles, the persistent under funding and stagnation of public investments in the livestock sector, the high cost of animal drugs on animals of low productivity, a decayed livestock and animal health infrastructure, a weak animal health delivery service and several other deficiencies. Until these obstacles to animal disease control are resolved, the government emphasis on export of livestock, livestock products and by-products to raise rural incomes will likely fail to come to fruition.

The main difficulty is the weak capacity to control the notoriously wide and varied range of animal diseases coupled with a deficient food safety management infrastructure. The major diseases affecting livestock include: Trypanosomosis (Nagana), Foot and Mouth Disease(FMD), Contagious Bovine Pleuropneumonia (CBPP), Rabies, Africa Swine Fever(ASF) Tick-borne Diseases (East Cost Fever, Anaplasmosis, Heart Water, and Babesiosis), Brucellosis, Lumpy Skin Disease(LSD), Tuberculosis, and Newcastle disease (NCD) and Gumboro in poultry. Of these, FMD, CBPP, ASF and Lumpy Skin Disease are currently the most important notifiable diseases in terms of limiting production regional and international trade<sup>15</sup>. According to the International Organization of Epizootics (OIE), access to regional and international markets requires that a country is declared free from notifiable diseases. Yet, outbreaks for many such diseases continue to occur.<sup>16</sup>

For each of the important diseases, there seems to be an agreed policy and control measure. Notably, with effect from the 2004/2005 financial year, the GOU increased funding for disease control from 165 million in year 2003/2004 to 1.29 billion Uganda Shillings. The Livestock Disease Control Fund is managed under the Office of the Commissioner, Livestock Health and Entomology, and is guided by PACE. The funds are

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<sup>15</sup> Uganda is currently in the process of getting recognized as Rinderpest-free, due to effective surveillance and control measures adopted under the EU-supported Pan African Program for the Control of Epizootics (PACE).

<sup>16</sup> For example, in 2003, there were 33 new outbreaks of FMD in 19 districts, affecting 214,519 animals and killing 442. Only 13 of the 19 districts were quarantined and 11 received FMD vaccines. Only 12 of these outbreaks were investigated by veterinary teams from the Diagnostics and Epidemiology Centre due to insufficient funding and staffing. Thirty-six districts reported New Castle disease, affecting 304,905 birds, of which 25,882 died. Trypanosomosis was reported in 32 districts, affecting more than one million animals and leading to 903 deaths.

deployed towards procurement of vaccines and campaigns for the control of major epizootic diseases. However, except in the case of Rinderpest, the underlying systems for disease surveillance and animal health service and movement control are very weak.

What this indicates is that although Uganda has benefited from a number of national and regional livestock development programs<sup>17</sup>, the government has found it difficult to sustain and replicate the achievements recorded by past programs. For instance, Uganda's capacity for effective surveillance, emergency preparedness and diagnosis of FMD received a boost from the TCP emergency assistance project (January 2002-September 2003) but when new FMD outbreaks occurred a few months later (mostly in December 2003), not all reported outbreaks could be investigated. Besides the two laboratories equipped and made fully functional under the GTZ supported Animal Health Research Centre Project (1997-1999), recent field interviews indicate that Uganda has still not succeeded in upgrading the remaining district laboratories.

Replication of the Rinderpest surveillance systems developed under the PACE program has not been easy. Generally, Uganda's current disease control approach, with the exception of Rinderpest, tends to be outbreak-driven as opposed to on-going promotion of good practice, prevention, emergency preparedness, effective and continuous disease surveillance, be it of a passive or purposive nature. Besides, the benefits from donor-supported programs tend to be watered down by their fragmented nature. The problem is that most end up as disconnected islands of support failing to link and reinforce each other in addressing the generic problems faced by the sector.

It is now generally agreed that the shift from centralized to decentralized government, implemented since 1997, has resulted in a great deal of confusion over animal health management. Currently, there is no harmonized livestock movement control system as each district has its own priorities, guidelines and livestock control program. The Directorate of Animal Resources (DAR) has invested substantial human resources in enhancing its legislative and policy direction capacity, an effort that has produced a number of important outputs such as the animal diseases act, animal welfare act and others. And, there are several new and revised policies which these acts support. A combination of factors has, however, stifled the translation of these laws and policies into effective public investments for livestock development.<sup>18</sup>

The old reporting system between the districts and the center is almost collapsed. Not surprisingly therefore, discussions are underway to recentralize the animal disease reporting and control program. It remains to be seen whether or not the more holistic Livestock Development Strategy (2003-2010) will succeed in putting in place sustainable

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<sup>17</sup> Many of the major donors to Ugandan agriculture have provided support—in one form or another to animal health systems. On-going programs are being supported by the EU, USAID, DANIDA, the French Government, and ADB. Literally dozens of NGOs have also been active in support Uganda's livestock sector.

<sup>18</sup> The Directorate of Animal Resources has developed a technical manual laying down the principles and procedure for veterinarians (nationwide) to inspect and certify livestock movement. But, unless parallel efforts are made to enhance the directorate's field inspection capacity, reporting and auditing systems, these livestock movement guidelines, like many other policies, will remain difficult to implement.

capacities for more effective information flow, oversight and coordination, promotion of good practices, disease surveillance, inspection and enforcement, and necessary infrastructure development. What is clear is that Uganda does not currently have the necessary capability and SPS infrastructure to support regional and international trade in livestock and livestock products. As highlighted in the MAAIF Animal Health Strategy, 2005/6 -2007/8:

- good animal husbandry practices are not widely adopted,
- the system for veterinary drug inspection and certification suffers from inadequate infrastructure, laws, regulations and law enforcement,
- quarantine stations, stock routes, checkpoints, holding grounds and livestock markets are either non-existent or grossly inadequate,
- the ministry has inadequate veterinary staffing (currently 16 compared with an ideal staffing of 26),
- there are no internationally acceptable abattoirs, most slaughter houses are in a poor state and only a few district laboratories have the basic facilities to remain functional,
- the National Diagnostic Laboratory is functional, yet only to a limited extent and does not meet international standards in relation to staff, procedures, or equipment,
- the handling of meat (slaughter, transportation and display for sale) is generally poor and unhygienic, and, overall
- “the status of veterinary public health countrywide is appalling”

The Animal Resources Directorate of MAAIF has recently published a roadmap in the form of a livestock development strategy and a detailed animal health strategy (2005/06-2007/08). “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 emergency 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”

*Besides dealing with a funding gap of approximately 90 per cent of the budget estimates (Ugshs.247.06 billion for 3 years (2005/06-2007/08), the efficacy and relevance of this long list of strategic areas still requires critical analysis and evaluation. Identified*

*priorities will have to reinforce each other in a cost effective manner. Better linkages will have to be forged between the center and the districts and with other departments, committees and projects within and outside MAAIF and, a cohesive implementation plan will need to be developed. This is one of the priority areas where the Animal Resources Directorate needs technical assistance and associated capacity building support. A related requirement is technical assistance and resources for putting in place capacities for the effective review, implementation, coordination and oversight of the Livestock Development Strategy (2003-2010).*

#### **4.2.5 Inspections and Auditing**

Inspections or audits are key elements of national food safety and agricultural health systems. Inspections or audits are performed to confirm or verify that products, processes, and/or procedures comply with the pertinent requirements (whether domestic regulations, international regulations or private standards). In Uganda, there are various players in the inspection/auditing arena. Those in government include the UNBS, the Government Chemists, the Crop Protection and Fisheries Resources Departments of MAAIF, and the Environmental Health Department of the Ministry of Health. Active players in the private sector include SGS, Chemiphar, the World Food Programme, various trade associations, and others. Some entities perform inspection work in a limited few areas (i.e. DFR inspections of fish processing factories), while others operate in multiple sectors and points in the supply chain.

International experience indicates that the more effective and sustainable inspection operations and organizations feature the following:

- a clearly defined mission,
- overall supporting organizational structure,
- standardized systems and processes,
- well-trained staff
- on-going re-training and education programs
- ample and properly located physical facilities, and
- well-functioning communications and transport equipment

Table 4 provides a summary evaluation of selected Ugandan inspection organizations according to these attributes. Overall, private sector auditing activities are comparatively well organized and capable of performing their functions. These private auditing activities are, increasingly, being internationally recognized. The picture with respect to public sector inspection/auditing work is more varied. The inspection programs of the DFR and the certification activity of UNBS appear to be based on reasonably effective systems and staffing. Yet, the wider picture is less favorable.

In several cases, there is a lack of clarity in relation to the underlying purpose of inspection work. Both the UNBS and Government Chemist conduct market surveillance work for food products, conducting random sample verifications and responding to consumer or government complaints. Both organizations are seeking increased funding to carry out this work—to train staff, acquire equipment, upgrade facilities, etc.—yet in discussions with both organizations it remains unclear how this function fits within their

overall organizational mandates. Responsibility for domestic food safety surveillance also falls within the ambit of the Ministry of Health, MAAIF’s veterinary department and public health and veterinary officers at district levels, yet this function ostensibly ‘falls through the cracks’ due to limited resources, staff training, strategic prioritization, and coordination. Training in food inspection methods and approaches is deficient. There is an evident need to develop courses in this field for training at local universities.

**Table 4: Summary Evaluation of the Capacities of Various Organizations Active in Inspection or Audit Functions**

Attribute	Government Chemists	Public Health Food Safety	UNBS Market Samples	UNBS Certification	Crop Protection	Animal Health	Fisheries	World food Program	SGS
Clearly Defined mission	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Supporting Infrastructure	0	0	1	2	1	1	3	3	4
Standardized Systems	0	0	1	3	2	1	3	3	4
Trained Staff	0	0	2	3	New	2	3	3	4
On-going Training	0	0	0	3	2	0	2	3	3
Facilities	1	0	3	3	1	1	2	4	4
Equipment	1	0	2	3	1	1	2	3	3

0=Lack of system or capacity

1=Some effort to identify capacity need, yet not yet developed.

2=Systems/processes being developed, some competence demonstrated

3=Systems/processes are documented/implemented. Competence largely meets actual need.

4=Systems/processes exist and have been validated through audits. Attribute is operational and meets international standards.

5=Approaches international ‘best practice’

Limited capacities in staffing and facilities are compounded by the lack of coordination. For example, today there are a limited number of border inspections stations that have adequate inspectorate capacity. In discussions with the Ministry of Agriculture and UNBS we learned that there are three organizations that want to have or will have inspectors at these border stations including Crop Protection (plant disease and pests), MAAIF (Animal disease and pests), and UNBS (product safety including food safety). Three organizations need not be involved here. Depending on the volume of materials handled by each station it is practical to combine inspections and instead of having 3 individuals per station this could be reduced to 2 or even 1.5.

Other services are restricted geographically. For example, the only offices that can provide phytosanitary certificates required for export are located at or near the Entebbe airport. This significantly limits the official product exports to those that are shipped via Entebbe Airport (flowers, fish, horticulture products) or to products that are aggregated in

the Kampala/Entebbe area prior to export to other countries. In all other cases, products that are exported are either sent without phytosanitary certificates or are traded cross border on the informal market. It is possible for phytosanitary certificates to be issued at the local border stations. This would require that the border station have the authority to issue certificates and collect the fees for the service. This would provide the Ugandan government with increased revenue streams and potentially provide a mechanism to create higher value for Ugandan products in regional export markets. The Crop Protection Department has recently seen a large increase in its staffing and operating budget, in part to enable more decentralization of services.

Within the inspection arena, there needs to be a rationalization of on-going activity, especially within the public sector. While each Ministry or Department has a specific mission, there appears to be considerable scope to simply and consolidate these efforts and achieve greater results with even the currently available resources through better planning, coordination, and prioritization. In addition, further opportunities for private sector participation in inspection work should be evaluated. There are recent examples in Uganda of the private sector (SGS) providing inspections on behalf of the government (i.e. for maize). These inspections created increased revenue for the government and provided increased service and support to the private sector.

#### **4.2.6 Testing (Diagnostic Capability)**

In determining and signaling compliance with certain trade-related standards, one of the critical supporting infrastructure lies is testing or diagnostic capacity. Testing provides the buyer with the confidence that the product they are purchasing meets the specifications for product attributes (i.e. taste and color), quality, and food safety. Diagnostic testing is an area that impacts more than exports. The abilities to test for chemicals, pathogens, and other contaminants and to determine if drinking water is safe are fundamental testing issues that impact all areas of a country's agribusiness and public health.

Therefore, our evaluation of diagnostic capability included public health laboratories, quality testing and certification organizations, universities, and agriculture-based laboratories. Semi-structured interviews were conducted with laboratory personnel to determine the available infrastructure and the ability of different facilities/organizations to support Uganda's trade. Diagnostic systems were evaluated in terms of (i) testing capacity, (ii) laboratory capabilities, (iii) quality of service and brand awareness, and (iv) knowledge development/ staff training. International experience suggests that these four dimensions underpin the sustainability of a diagnostic system.

*Testing Capacity:* Currently, some \$1.4 million of testing revenue is generated from the testing of Ugandan food and agricultural products. Nile Perch for exports and maize for regional sale or sale to the World Food Programme in combination account for some 60 percent of this testing revenue. The testing of bottled water also generates significant revenues for certain laboratories. Most other testing is for quality parameters, in relation to coffee, tea, cotton, seeds, and other products. Besides for fish, there is little testing for pesticide residues in food or beverage products.

*Overall, Uganda appears to have ample testing capacity to meet today's requirements and be able to support some significant future growth without additional investment. Private agribusinesses in Uganda do not report that their production and/or sales have been impeded by a lack of timely test results.*

The three main laboratories (ChemiPhar, SGS and UNBS) provide the bulk of the laboratory services in Uganda. These laboratories have similar capacity and capabilities. All three have achieved ISO certification, provide similar services, and support an array of clients. In reviewing their sample load and in further discussions with each organization, none of these laboratories had reached their testing capacity. While at times the sample load may be high and result in some delays, in general these laboratories are operating at about 50% of their capacity. This creates a situation where each of the laboratories is looking for additional tests or services that could be offered to increase utilization and revenues.

*Laboratory Capabilities:* Because of the breadth of the markets and products covered by this study, the team used a broad assessment based on ISO 17.025 and Good Laboratory Practices to evaluate capabilities. These standards are used for evaluation of the systems and processes internationally and cover those areas required to have a well-operated diagnostic system. This evaluation covered such areas as management procedures and systems, quality systems, human resources, documentation and control, inspection and calibration of equipment, facilities, equipment, corrective actions, training, standards, and access to reference materials.<sup>19</sup>

Laboratory capabilities ranged from very poor for some facilities to those approximating international standards in others. The major laboratories (SGS, UNBS, and Chemiphar) each have a broad range of capabilities and, in the cases of SGS and ChemiPhar, have access to additional capabilities through their parent organizations. Table 5 provides of a tentative summary of laboratory capabilities in Uganda.<sup>20</sup> The same rating scale as that used in Table 4 is employed.

*Quality and Brand Awareness:* Sustainability of a diagnostic system depends on having long-term customers. For the laboratories in Uganda the driver for testing needs to move from a regulatory/ end user specification market to one where companies desire certification or a mark because it creates value for their products. To do this the testing companies need to create an awareness of the importance of quality and create a certification program that supports the mark. Globally, these “quality seal programs” are

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<sup>19</sup> In addition to determining overall general capabilities, this assessment also evaluated the laboratories ability to conduct a broad range of tests, including those for general product specifications, weights and measures, pesticide residues, microbiological parameters, mycotoxins, and animal and plant diseases. Consideration was also given to the use of standard analytical techniques by each of the laboratories.

<sup>20</sup> The survey team was able to conduct in-depth evaluations of several, although not all of the facilities. The main laboratories evaluated were those of SGS, UNBS, ChemiPhar, NARO, and the Government Chemists. It was unable to visit the Fisheries, Crop Protection or Animal Diagnostics laboratories but interviews were conducted with key personnel. A parallel study team from USAID visited the Drug Administration Laboratory.

a well-known strategy for developing long-term business. Uganda has the beginnings of such a program. All three major laboratories provide a unique quality mark when they certify products. This mark or brand is gaining awareness through the consuming public in that common consumer items such as beer and water broadly advertise their “quality” seals be it ISO or UNBS. In discussion with the private sector many of them saw the quality seal as an important differentiator in the domestic market place and it provides a degree of credibility in the regional and international market place as well.

**Table 5: Summary of Laboratory Capabilities**

Area	MAAIF Laboratories: Crop Protection, Animal Health, Fisheries					
	Government Chemists	NARO	UNBS	ChemiPhar	SGS	
Quality Systems and Process	0	0	0	3.5	4	4
Personnel (Staff Qualifications)	1		3	3	3	3
Personnel (training)	0	0	3	3	3	3
Management Systems	1	0	0	4	4	4
Written procedures, checklists, defined tasks	1	0	0	4	4	4
Microbial testing	0	1	0	4	4	4
Analytical testing (includes pesticide residue and physical measurements)	1	1	1	4	4	4
Entomology	0	1	2-3	0	0	0
Diagnostics						
Animal Zoonotic Disease Tests	0	1	Unk	0	0	0
Plant Pathology	0	0	2-3	3	3	0
Access to Internet	0	0	3	4	4	4
Equipment	1	1	2	4	4	4
Method Development	0	0	2	3	4	3
Testing Methodology	0	Unk	2	3	4	3
Internal Audits	0	0	0	3	3	3
Records/Reports	Unk	Unk	3	4	4	4

Knowledge and Training: Learning and training are key components of sustaining a diagnostic system. Within Uganda this happens as a part of the quality programs of the leading companies and is non-existent within other organizations. Training and knowledge development is a part of the education systems mandate. While training does exist, it is fragmented and there does not appear to be dedicated curricula in the area of conformity assessment. Theoretical lectures in analytical chemistry have not been paired with opportunities for practice experience. Yet, the major laboratories all provide training and development to their staff. Most of this training was provided in-house. It is

interesting to note the SGS and ChemiPhar have arrangements with their parent companies to provide in-house training. These sessions take place at their facilities and cover a broad range of topics.

Looking Ahead: Within the Ugandan diagnostic laboratory system, there is a direct competition between the private sector laboratories (SGS and ChemiPhar) for scarce clients and revenues. It is not usual for a government laboratory to provide commercial testing especially if it has a unique capability or to perform confirmatory testing as a part of an overall program. These are two key roles a national standard laboratory performs. In Uganda, UNBS has gone a step further and is a direct competitor with the private sector. UNBS provides the same services as ChemiPhar and SGS, for essentially the same fees. Yet, unlike the private sector the UNBS laboratory also receives funding from donors and the government. This competition creates tension in the system and in some cases limits the overall capabilities of the system.

Because of the competitive nature of the market place there is little information sharing that occurs between UNBS, ChemiPhar and SGS. While this is not unusual in the private sector it is very unusual between the private sector and public sector. It is important that all testing organizations have a forum to discuss new technologies, methods and standards. While UNBS does try to accomplish these tasks it is inherently hindered by the competitive nature of the business.

Other opportunities for joint action are also being missed:

- UNBS needs to be conducting inter-laboratory testing so that a degree of consistency can be achieved between the all laboratories. In this way a test done at SGS could be compared with one done by ChemiPhar. At present, each of the main laboratories in Uganda are conducting such consistency tests with groups outside, yet not within the country.
- Within Uganda there is no laboratory equipment maintenance company. Much of the equipment being used is sophisticated and requires special tools, parts and equipment to be serviced. One opportunity would be for the laboratories to negotiate a general service contract for all of the laboratories where the prices are fixed based on volume. By combining purchasing power the organizations could obtain better service and potentially lower prices.
- Similarly there is not a laboratory supply company in Uganda. Therefore each laboratory has to keep reagents, supplies and gases on site to support their work. Again it is possible for the companies to join together and create a supply system.

There is a strong desire by many different departments in government to operate laboratories) to meet their own specific mandates or financial needs. Donors are being asked to provide funds for multiple facilities, new equipment, and manpower to support each of these proposed operations. Yet, in general, many of the activities and analyses being performed are quite similar.

One recent example is in the area of improved pesticide residue testing. The equipment needed to perform this analysis (GC-MS) is quite sophisticated, expensive and requires a great deal of support and training. The equipment requires an air-conditioned space, back-up power supplies, a source of carrier gas (that must be shipped in from Europe)

and associated training in sample preparation, method development, and operation of the equipment. It takes about 6 months of training to develop a technician to run the analysis and then it takes a senior scientist to evaluate the results. This is a very expensive and laborious process. Yet, in 2005, the Government Chemists, Animal Health, UNBS, and ChemiPhar all purchased the GC-MS equipment. There is not enough demand for pesticide residue testing to fully utilize even one of these systems!<sup>21</sup>

In relation to diagnostic testing capacities, donor agencies could:

- Coordinate with UNBS, SGS, ChemiPhar, and MAAIF to develop a laboratory plan that rationalizes the existing capacities and creates a central laboratory that can perform the specialized plant and animal health testing that would be used by all of the organizations in the Ministry. This will allow for rationalization of requests, provide for appropriate funding and support, and create less stress on the limited resources in Uganda. The non-specialized testing (microbial pathogen testing, zoonotic disease identification, and product conformance) should be undertaken solely by private sector laboratories.
- Work with Ugandan universities to create a laboratory technician course that provides hands-on testing and training in laboratory management. In relation to this, also support internships and cooperative programs that allow students to work in industry under a grant. This will provide industrial training to the students and prepare them for positions in industry. Support could also be provided for a lecture series that brings in trainers in management techniques, equipment use, and method development for specific products or areas of interest.

#### **Box 4: Uganda's Major and Secondary Laboratories**

Government Chemists: The Government Chemists laboratory is the National Forensic Laboratory of Uganda. As such, it is a key part of criminal and government investigations and provides evidence in the courts. This laboratory also conducts market and retail food surveillance. Further this group would like to become ISO – 17.025 certified. Much of this laboratory is in poor repair. The equipment in many cases is not operable or is in questionable condition. They have in the past written procedures and developed a quality manual, which is in the process of being up-dated. The only unique test that this organization performs is ballistic analysis based on microscope comparison. All other tests are performed by others. The Government Chemists are in the process of requesting funding to upgrade the facilities and to acquire additional equipment.

National Agricultural Research Organization: While it is not a testing laboratory, NARO does have some very unique capabilities and skill sets. NARO and the MAAIF regulatory enforcement entities (Crop Protection, Fisheries, and Animal Health) were once co-located and formed part of the same operations. In the 1990's the regulatory organizations were physically and organizationally separated from NARO and as

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<sup>21</sup> Further, in the case of the Government Chemists the facilities are not capable of supporting the equipment. They have not received proper training in sample preparation or analysis. Similarly the Animal Health organization does not have the facilities to operate the equipment properly. They have sent a technician for training on operations and interpretation. On the other hand, UNBS and ChemiPhar have the facilities and are receiving the training to perform the required tests and data analysis.

such lost a great deal of capability and technical capacity. NARO has extensive expertise in plant pathology, entomology, and zoonotic diseases and has facilities for plant quarantine and evaluation. They also have a genetic engineering research organization.

Ministry of Agriculture Laboratories: The team was unable to view the laboratories but interviews were conducted with key personnel. In general, with the separation from NARO a great deal of technical expertise and capabilities were lost. While in most cases these operations can perform basic tests, they are not equipped or functioning as true laboratories.

UNBS is one of the three major testing laboratories in Uganda. This laboratory has a broad range of capabilities. The microbiological laboratory has achieved ISO 17.025 certification. While the rest of the laboratory is not under the scope of registration it does operate under generally recognized quality practices and is working towards ISO registration. UNBS actively participates in regional method development. UNBS operates and maintains a library of reference materials, journals and standards. UNBS has a metrology laboratory that provides certification of equipment that is tied back to international reference materials.

SGS Uganda is a subsidiary of SGS global. It is one of the three major testing laboratories in Uganda and has achieved ISO 9000 (2000) certification for its laboratory. It provides a broad range of testing for agricultural as well as other products. In addition, as SGS is also an ISO registrar, it also provides ISO certification and quality training to companies in Uganda.

ChemiPhar is a subsidiary of ChemiPhar Belgium. It is one of the three major testing companies and provides a broad range of testing and services. It is internationally certified and provides most of the testing for the fish industry. It has a broad range of capabilities and, if needed, can have tests conducted in Belgium.

#### **4.2.7 International Representation (‘Standards Diplomacy’)**

Since the establishment of the World Trade Organization (WTO) and the implementation of the Sanitary and Phytosanitary (SPS) agreement, many developing countries continue to view the increasingly strict international agricultural health and food safety standards as non-tariff protectionist trade barriers, rather than safeguards for the protection of human, plant and animal health. But others have come to see international standards not as barriers but as modernization tools to upgrade quality standards and secure market access. International representation and effective participation in the standards-setting bodies recognized by the WTO, such as the Codex Alimentarius, OIE and IPPC, is therefore an essential part of an effective national SPS and trade strategy.

The national enquiry point for the SPS and Technical Barriers to Trade (TBT) Agreements is the Uganda National Bureau of Standards (UNBS). This is only one of the many responsibilities assigned to UNBS, but its funding is insufficient to effectively participate in the meetings or raise awareness of SPS issues with the private sector. Uganda still has no real SPS policy, though, according to a recent draft of Uganda’s 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”.

For the most part, Uganda lacks much of the institutional capacity, resources and systematic data needed to substantively contribute to the international standards-making process or international forums, and its sporadic attendance at these meetings is more or less as a spectator. In order for Uganda to effectively participate in international standards

setting or defend itself against unjustified SPS trade barriers, it must more systematically gather and analyze relevant data, and, as noted above, effectively update its food safety and agricultural health legislation and improve its capacities for pest and disease surveillance and priority inspection services.

Among the various international bodies, Uganda has been the most active with its participation and reporting requirements in the OIE. Reporting of animal disease outbreaks in its districts has steadily improved, attributed mostly to donor assisted programs. A professor from Makerere University currently holds a seat on the Aquatic Animals Commission of the OIE, which is strategic for Uganda's large fisheries industry; however the Uganda Fisheries/Exporters Association does not participate in any international fisheries meetings. The Fisheries Association is in the process of forming a regional association together with similar bodies in Kenya and Tanzania to enable representation of the region's industries in international forums.

The Codex Trust Fund has recently helped to improve attendance of Ugandan representatives at Codex meetings, but effective participation is still lacking. The Ugandan National Codex Committee was inaugurated in June 2002 and was established with help and support from FAO. The objective established for the National Codex Committee, as put forward by the FAO Codex training course, is to strengthen food control systems through the increased participation in the Codex process. The committee is multi-sector and chaired by the Ministry of Health but coordinated by the Codex contact point from the UNBS. Selected organizations are delegated to follow developments and represent Uganda in priority committees, though resources are normally inadequate to facilitate this. Responsibilities for specific Codex committees are assigned as follows: Ministry of Health for food hygiene; UNBS for general principles; Government Chemist for contaminants/additives; Makerere University for biotechnology and MOA for crop residues.

The small and unorganized private sector in Uganda makes for limited private-public collaborations on Codex-related issues. The National Codex Committee in Uganda does have active participation from two consumer groups: the Uganda Consumer Protection Association and the Uganda Consumer Education Trust (Consent). The consumer groups have been a valuable addition to the national Codex process, as they can provide information on public sentiment through polls and questioners that the government does not monitor. They also carry out public awareness campaigns and helped draft a Consumer Protection Bill that is to be submitted to Parliament. These consumer groups should be supported as they are severely restrained by funding that limit the amount of information they are able to collect and share with government officials and the public about food quality and safety.

Greater governmental, private sector and donor support for Uganda's increased participation in the SPS committee, Codex, OIE, IPPC and other relevant international forums is needed to allow Ugandan representatives to gain international experience, make important trade contacts and learn the basic procedures of the international bodies. At the same time, there should be a governmental and donor focus on regionalization efforts and

establishing a national food safety policy in order to capitalize on greater international participation and any contacts made. Uganda must also try to work closely with other African countries, in the context of either of the two regional trade agreements—namely the East African Community (EAC) and the Common Market for Eastern and Southern Africa (COMESA)—to improve effective international representation/participation in selected international fora and improve the communication and information sharing that will extend resources and enhance the overall national positions of EAC or COMESA members. In this regard, some recent experience in Latin America is instructive, where collaborative arrangements have resulted in a much stronger international voice for individual countries. (See Box 5)

**Box 5: Voice Through Collaboration: A SPS Initiative for the Americas**

The objective of the initiative by the Inter-American Institute for the Cooperation on Agriculture (IICA) is to promote the presence of capital-based experts at the SPS Committee meetings and develop national capabilities. From June 2000-June 2002, the average attendance of delegates from the Americas at the SPS Committee meetings was 28%. During the initiative, from October 2002-March 2005 this figure rose to 97%, involved some 169 experts. The initiative supported the creation of multi-sectoral and inter-institutional coordination mechanisms that promoted dialogue between ministries of agriculture, trade, health and the private sector in order to generate national agendas including official country positions on matters under discussion in the SPS Committee. Before the initiative, only 21% of the 34 countries in the Americas had formal coordinating mechanisms to establish a national SPS agenda, now 82% do. All countries in the Americas now have established SPS contact points.

Under this initiative, the improved and effective participation of the countries of the Americas has allowed many more entities to assume proactive roles in discussions, including demonstrating leadership on technical issues and participating actively to resolve trade cases. This initiative has shown that countries have benefited and progressed in the area of SPS by: (1) establishing channels of communication between capital institutions and missions in Geneva; 2) gaining understanding of the dynamic of the meetings, issues addressed and their impact at the national level; 3) grasping the benefits and opportunities to be derived from participating actively in the Committee; 4) establishing regional and international contacts with their technical counterparts; 5) strengthening national information and notification points; 6) utilization of mechanisms offered by the agreement and the Committee in order to advance their positions; 7) increasing ability to participate in bilateral negotiations; and 8) forming hemispheric links to discuss and explore technical issues.

Source: IICA document, Initiative on SPS for the countries of the Americas (Evaluation after two years of implementation)

## 5. CASE STUDIES

This section provides a series of case studies illustrating how various industries have dealt with the challenges and opportunities associated with emerging food safety, agricultural health, quality and other standards and identifying outstanding issues that need to be addressed in the short or medium term to better manage existing risks and/or contribute to enhanced competitiveness. The cases cut across selected traditional and non-traditional products, products for which the dominant market orientations have varied (i.e. high-income countries vs. neighboring countries vs. the domestic market), circumstances where standards (non-)compliance has already impacted strongly on trade performance, and circumstances where there are future risks of such impacts.

### 5.1 Sustaining Uganda's Fish Export Trade

#### 5.1.1 Introduction

During the 1980s, Ugandan fish was exported regionally, either on an informal basis via small boats or by insulated trucks servicing several processing facilities which had come up in Western Kenya. Fish processing in Uganda began in the late 1980s and gained impetus after the Ugandan government (in 1991) banned the export of unprocessed fish. The small industry accelerated quickly with exports reaching \$45 million by 1996 and considerable amounts of income being spread amongst the fisher communities in and around Lake Victoria.

Between 1997 and 2000, however, various concerns by selected trading partners, the European Commission, and the Uganda Government itself resulted in a series of extended mandated or voluntary bans/restrictions on Uganda's fish trade with the EU. While market diversification did take place, the value of Uganda's fish exports dropped considerably (to \$25 million in 1999) during this period. Several processing companies went out of business and considerable losses of income were recorded among fishers and intermediate traders. Although for differential lengths of time, similar restrictions were placed on the fish export industries of Kenya and Tanzania.<sup>22</sup>

The restrictions on trade, together with highly favorable commercial demand conditions in Europe stimulated major adjustments in Uganda's regulatory framework and inspectorate oversight of the fisheries supply chain and catalyzed considerable investments by companies to upgrade existing processing factories or develop newer, modern facilities. These and other changes not only brought the industry into designated 'compliance' with EU regulations, but also created the basis for a much stronger industry with a higher level of awareness about fish quality and safety issues and a much increased level of collective action in relation to these and other issues. Uganda's fish exports have since accelerated rapidly, reaching some \$120 million in 2005,<sup>23</sup> and

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<sup>22</sup> For analysis of those countries' experience, see Henson and Mitullah (2004), and World Bank (2005b)

<sup>23</sup> Improvements in factory operations and regulatory oversight have contributed to this expansion yet just as important has been increased enforcement of restrictions in cross-border (or cross-lake) movements in fish. Capacity utilization in Kenyan fish factories has declined as a consequence with one third of the facilities there being closed in 2004.

providing incomes and (direct or indirect) employment for hundreds of thousands of people.

Yet, questions remain about the sustainability of this fish export trade. This concern falls on two fronts. First, there are concerns about the underlying resource base for the Nile Perch fishery in Lake Victoria—the dominant basis of Uganda’s fish trade. Current levels of supply already exceed the Government’s estimate of the maximum sustainable yield (MSY), although there are serious questions about the accuracy of this MSY.<sup>24</sup> Even so, what is clearly evident is that the rates of post-catch rejections--on grounds of quality, size, or freshness--by the export processors is unsustainably large—at some 30-40% of the landed catch. While this rejected fish finds alternative local market uses, these sales realize substantially lower prices than fish exported in fresh fillet or other value-added forms. In the meantime, the Ugandan fish processing industry is utilizing less than 40% of its installed capacity, weakening its cost competitiveness.

Second, there remain rather significant challenges in relation to food safety/hygiene and product quality. Even though considerable changes have been made in factory operations and associated checks and testing, the fish supply chain is highly fragmented, with multiple stages of handling, deficient infrastructure, and insufficient awareness, incentives, and techniques for maintaining fish quality and hygiene from the stage of fish capture through to the landing of fish and on to the delivery of raw materials to processors. While Ugandan fish and systems of regulatory oversight are evidently sufficiently compliant with EU requirements to have not caused trade disruptions in recent years, there are evident ‘weak links’ in the supply chain which pose potentially large risks if not further managed.

#### **Box 6: Structure of the Fish Export Supply Chain**

The fish export supply chain strongly overlaps with that of the domestic fish marketing system. Some 95% of exports consist of Nile Perch fish fillets, or frozen or valued added products derived from this raw material. Nile Perch is caught in Lake Victoria. Tilapia and other species are also caught by Lake Victoria fishers. Fishing on Lake Victoria is operated artisanally. There are some 15,500 wooden boats, three fourths of which are paddled manually. Gill nets and long lines are used. These boats have an estimated crew of 35,000 people. A large proportion of these fishers live and operate from small islands located 10-30 kilometers offshore.

Fishing boats are too small and not properly structured to carry ice. The fishing grounds are often many hours away from the island-based transit/collection points, so fish spoilage or loss of freshness is common. Some 900-1000 collector boats bring fish to the mainland. These are wooden planked boats with outboard motors. Many of these have insulated holds, although not all use ice. They typically stay around the islands for several days in order to fill their capacity prior to returning to the mainland. Some of these collector boats are owner operated with the owners either supplying designated exporters or selling their fish to the highest bidders at landing sites. Other collector boats are owned by the processors themselves, hired out to others included contracted suppliers.

<sup>24</sup> The sustainability of the fish resource base is examined in some detail by Goulding (2005). One of the alternative strategies being considered is the promotion of aquaculture. Goulding also examines the development challenges associated with that strategy. More on this later from the perspective of compliance with SPS standards.

While fish is brought to some 600 landing sites, the bulk of export supplies are apparently landed in only a few dozen sites. Only 30% of these landing sites are accessible by vehicle, and only 25-30 such sites have received investment over the years to provide some infrastructure for quality management and hygiene. Some of these landing sites are owned/managed by processors themselves, while others are run by 'Beach Management Units' and other local authorities. At some 14 'gazetted' landing sites, official inspections are made and health certificates provided. Fish obtained from other landing sites is ostensibly transported to these locales for inspection before onward delivery to processors. A large number of intermediaries buy fish on behalf of processors or on their own account and transport supplies from landing sites to processors.

There are currently 15 operational processing factories owned by twelve companies. The installed production capacity of these factories is some 560 tons/day, although at present, just under 40% of this capacity is utilized. These factories employ some 5000 people. Most of the existing companies have invested upwards of \$3.5 to 6 million in their facilities. According to DFR data, five companies account for three-fourths of the value of Uganda's fish exports.

### 5.1.2 'Non-compliance' and Response

As documented by Ponte (2005), in the early days of Uganda's Nile Perch exports, processing companies did not have operational HACCP plans and there was no regular system of inspections or other regulatory oversight by the competent authority at that time, the Uganda National Bureau of Standards. There was also little effort at that time by the EU to enforce its pertinent regulation (regulation 91/493) on third-country suppliers such as Uganda. By the mid-1990s, however, a series of food safety events or 'crises'—including BSE—had begun to change attitudes toward regulatory enforcement of food safety measures. For East African fishery exports, a trigger event was the detection of high levels of bacteria contamination in Nile Perch in early 1997 and bans placed on this product by Spain and Italy. Ponte (2005) outlines the complex chronology of events involving the emergence of several other concerns and a frequent set of 'inspection missions' sent to Uganda (and other East African countries) by the Commission's Food and Veterinary Organization (FVO) (Box 7).

#### Box 7: Chronology of EU Fish Import Bans

- February 1997 – Spain and Italy claim that their authorities have detected high levels of bacterial contamination (including *salmonella*) in products from Lake Victoria: they impose a bilateral ban on fishery product imports
- March 1997 – EU inspection confirms 'serious microbiological contamination'
- April 1997 – EU requires mandatory tests for salmonella on imports of Nile Perch from the three East African countries; these tests are paid by exporters or importers
- December 1997 - June 1998 – following an outbreak of cholera in East Africa, the EU bans the import of fresh fish and imposes mandatory tests on frozen fish from East Africa; lifted because it was not based on scientific evidence, but on EU claims that the competent authorities were not applying sufficient measures to control the outbreak of cholera.
- November - December 1998 – EC sends a Food and Veterinary Office mission to Uganda to assess compliance of the production conditions of fishery products and to verify corrective measures identified in the 1997 mission; two processing plants are found not compliant; commission requests guarantees in relation to six perceived problems:
  - lack of suspension of plants failing to meet conditions laid out in EU regulation
  - issuing of health certificate for incorrectly labelled products
  - issuing of pre-stamped health certificates

- lack of routine monitoring for presence of chemicals in fish and water
- lack of sanitary infrastructure and fencing at landing sites
- lack of microbiological check tests supporting health certificates
- December 1998 – the two non-compliant plants are removed from the list of approved establishments; in the same month, the Uganda press reports instances of fish poisoning in Lake Victoria.
- March 1999 – Based on press reports, a number of District authorities ban fish sales. UNBS notifies the EU that it cannot guarantee the safety of fish exports despite opposition from UFPEA.
- April 1999 – EU holds a meeting in Brussels with representatives of competent authorities from Uganda, Kenya and Tanzania to discuss the results of tests; the EU announces a ban of exports of fresh and frozen fish from the three countries.
- August 1999 – EU mission to assess resources and capabilities of competent authority in Uganda in relation to control of pesticide residues; mission provides 10 recommendations; EU demands a comprehensive monitoring programme to determine levels of pesticides and sediments from the lake, but country lacks testing facilities. No laboratories could determine pesticide and heavy metal levels in fish, water and sediments on the lake.
- UNBS responds to EU report but does not provide all requested documentation or details
- A private laboratory is established in Kampala – accredited to perform pesticide monitoring tests
- Industry adopts the ‘voluntary code of practice’ for quality control; DFR revises inspection manual
- Transfer of competent authority from UNBS to DFR
- July 2000 – ban lifted as the EU accepts guarantees that Uganda had put in required guarantees for safety of exports; country qualifies for temporary certification in List II
- May 2001 – Uganda goes back to List I

The short-term impact of these bans/restrictions was very negative, with three processing plants closing down and many others operating at greatly reduced capacity. A large proportion of the factory workers were laid off for extended periods. Sizable income losses were incurred in fishing communities and in associated industries (i.e. packaging, transportation, freight-handling). Still, some of the downside was cushioned by exporters targeting alternative markets in the Middle East, Asia and elsewhere.

Based on the recommendations (or mandates) from the EU inspection missions and the Commission, considerable changes were made in Uganda’s regulatory framework for fisheries and major investments made to upgrade certain operations. For example, between 1997 and 2001:

- Revised regulations (Fish Quality Assurance Rules 1998) were put in place, with a strengthened component authority in the DFR;
- Improved monitoring and inspection systems were adopted with the development of inspection manuals and standard operating procedures, and the training of inspectors;
- Investments were taken (with EU assistance) to upgrade a limited number (14) of landing sites, with jetties, concrete slabs, and small storage facilities;
- Technical assistance (by UNIDO and others) was provided to processing plants to facilitate their adoption of HACCP systems;

- Private investments were undertaken to upgrade factory facilities (or establish new ones) to make them fully compliant with EU (and now Ugandan) regulations;<sup>25</sup>
- Investment in two local laboratories in order to conduct the necessary tests. One of these was a private investment by a Belgian company and the other was in the microbiological laboratory at UNBS;
- Mandatory testing—both for microbiological parameters and for pesticide residues—was imposed for each consignment of fish being exported to the EU;
- The formation of a Ugandan Fish Processors and Exporters Association to address pending policy matters and facilitate collective action on technical subjects.
- The formation of an Association of Quality Assurance Managers to address common problems and concerns in this area among the industry players.

The investments undertaken to ‘achieve compliance’ with EU requirements were considerable. Based on survey data gathered by Ponte and the experiences of Uganda’s East African neighbors, the level of private investment in factory refurbishment during this period was probably \$10 to 13 million, while an additional several million dollars was spent (by donors, the GOU, and the private sector) to upgrade management and inspection systems and certain landing sites. Incremental recurrent costs faced by the industry for managing quality and food safety controls—extra labor costs, staff training, certain materials, additional management costs are on the order of \$600,000 per year, while the industry’s annual expenditures on product testing is similar amount. Put in proportional terms, the fixed investment in upgrading factories, management systems, and other infrastructure between 1997 and 2001 was equivalent to some 6 to 8% of the FOB value of exports over that period, while the additional recurrent costs (by the private sector and government) are equal to about 1% of annual export revenue in recent years.<sup>26</sup>

Since Uganda was re-instated as a country whose fish food safety system is ‘equivalent’ to that of the EU, it has experienced few official problems in sales to this market<sup>27</sup>, although there has not been an official inspection mission to Uganda by the FVO since 2000. More regular issues have arisen within the private sector with claims made on quality grounds—related to the freshness, color, and/or sizing of consignments. Still, demand has remained robust and exports have increased considerably in recent years (Figure 4). A few companies have begun to produce value-added products sold under the brand names of international partner companies. Otherwise, Uganda’s Nile Perch is sold through supermarkets or to caterers in Europe without the origin (or even the species) of the fish being known to consumers.

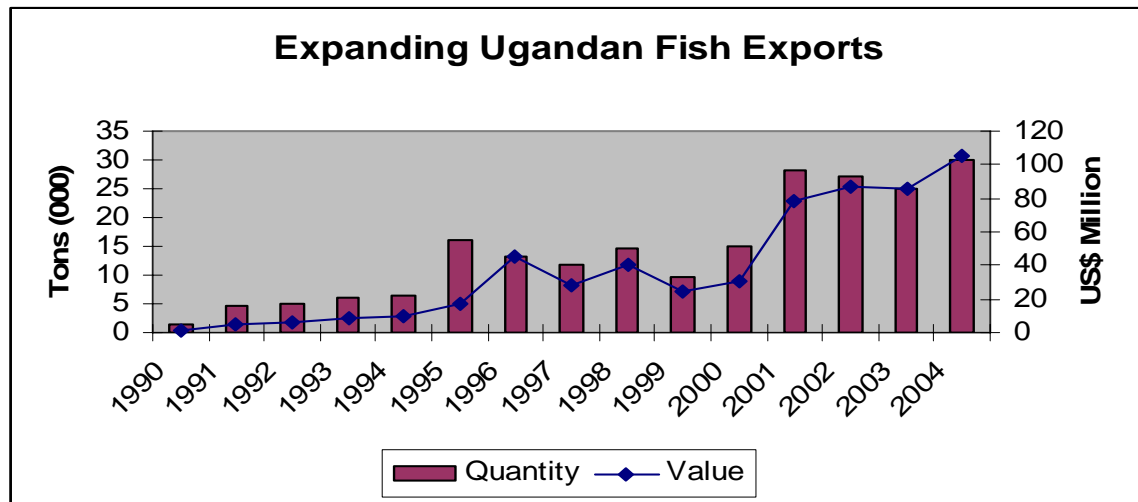
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<sup>25</sup> These investments typically involved changes in factory layout, water supply systems, and storage facilities plus many companies constructed small in-house laboratories.

<sup>26</sup> The non-recurrent and recurrent ‘compliance costs’ faced by Tanzania’s Nile Perch industry are very similar as a proportion of that country’s fish exports (World Bank 2005b)

<sup>27</sup> In 2003 there were two cases of interceptions of Ugandan Nile Perch under the EU rapid alert system due to exceedences of microbiological limits. There were zero such cases in 2004 and 2005.

Figure 4: Expanding Ugandan Fish Exports



### 5.1.3 Outstanding Issues

#### Managing Fish Quality and Hygiene in Artisanal and Fish Collection Operations

As noted by Ponte (2005), Uganda has attained a level of procedural compliance with EU requirements, especially in relation to inspectorate checks on factory operations and the conduct of required testing and other measures of conformity assessment. Yet, there are fundamentally ‘weak links’ elsewhere in the supply chain—at the level of the fishers themselves, the nature of fishing vessels used in the process of fish collection and transport, at the landing sites, and in the movement of fish from there to the factories. Fish destined for export may be handled a dozen or more time, over a period of multiple days, before it reaches the factory gates. Up to this stage, the cold chain may have been broken several times. This fragmented and bisected supply chain frequently results in rather high rates of product loss/wastage, inconsistencies in quality, and circumstances where the industry’s raw material is contaminated externally and thus necessitating that it undergo thorough washing with chlorinated water prior to being filleted and processed.

Industry players and available documentation point to a situation in which the bulk of the artisanal fleet has no access to ice or proper insulation, is provided little or no incentive to preserve the quality of fish—being paid the same for iced as for non-iced fish—and having relatively little awareness about the need for and suitable approaches for quality management and proper hygiene. Fishers, traders and transporters cannot simply be asked to comply with set rules and regulations. They must additionally be provided with public education services in the form of information, training and useful linkages aimed at instilling a ‘culture’ of hygiene and quality assurance as one way of facilitating their compliance with the provisions of the 1998 Fish Quality Assurance Rules.

If the artisanal nature of Uganda’s Nile Perch fishery industry is to be maintained, then there is an evident need to pursue *a program of awareness-raising, promotion and demonstration of low-cost and rewarding technologies for preserving fish quality and*

*hygiene in the critical period from its being caught to its loading into the iced/insulated holds of collection boats. Such a program could involve a public-private partnership, involving the Fish Processors and Exporters Association, the Uganda Fisheries and Fish Conservation Association, the DFR, various lakeshore local councils, and perhaps selected NGOs and research organizations.<sup>28</sup> Additional efforts might be made in designing more appropriate fishing canoes and boats<sup>29</sup>, in using solar or other energy sources to enable ice-making in more remote areas, and deploying a range of other potential technologies and materials.*

### *Towards a System of Product and Raw Material Traceability*

Parallel to such efforts, attempts will need to be made to design workable systems of raw material and product traceability. At present, the industry is able to trace its raw materials only back to specific batches of supplies provided by particular trading intermediaries or, in some cases, to collection boat operators. Yet, traceability is not attempted further back in the supply chain. The fish landed by collection boats is typically comprised of supplies from some 100 to 300 fishers, with the collections having been made over several days of travel in and around off-shore islands. None of this fish is separated and thus it would be difficult if not impossible to trace the source of contaminated, undersized or otherwise problematic raw materials.

Uganda's fish processors believe that it is inevitable that, in the future, a growing number of their buyers will be requesting full traceability of their products and raw materials. Again, if the artisanal fishing basis for the industry is to be maintained, this will necessitate changes, perhaps to the design of the collection boats, but also to the use of crates or other materials to separate supplies and systems of tagging and record-keeping which presently are not employed in the supply chain. *Technical assistance could be provided to examine the feasibility and potential approaches to implementing (over time) a system of traceability into the fish supply chain.*

### *Upgrading of Landing Sites<sup>30</sup>*

There are too many landing sites on Lake Victoria, resulting in inefficient distribution systems and complicated fisheries management. No single landing site meets all of the EU requirements as set out in the Fish (Quality Assurance) Rules of 1998, and only a few have rudimentary facilities for improved quality. Poor quality due to the lack of facilities, the perishability of the product, the lack of concentration of landings, and the monopoly

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<sup>28</sup> A draft proposal to address some of these supply chain issues as well as develop a system for traceability has been prepared by a consortium involving Ssemwanga Research Ltd, the Fisheries Resources Research Institute, the UFPEA, and counterpart agencies in Kenya.

<sup>29</sup> In 2001, the Fisheries Training Institute, DRF, UNIDO and others collectively made an effort, through a training program, to develop a boat prototype or design that would accommodate the requirement for improved collection boats and fishing canoes. The underlying objective was to improve the cleanability of the vessels in addition to their ability to carry ice boxes. The design for collection/transport boars was somewhat better adopted while improved design for fishing canoes appears to have stalled for various reasons including weak economic viability and unclear incentives.

<sup>30</sup> This discussion draws heavily upon Goulding (2005).

position at many smaller landing sites mean that the fishers are price takers with only weak bargaining positions. With hygienic handling and basic storage facilities (ice and an insulated fish store) both Nile Perch and tilapia can be kept at exportable quality grade for at least one week, if not longer. The potential for improved local storage and for consolidating the collection system suggests that there is considerable scope for improving efficiency during first landing and distribution.

To meet the requirements of the Fish (Quality Assurance) Rules of 1998 and of EU Regulations 852/2004 and 853/2004 with respect to hygiene conditions, landings sites would need to include the following features, at a minimum:

- Supply of potable water (eg. filtered and chlorinated lake water)
- Drained hygienic hard standing for vehicles
- Covered area (*banda*) for receiving/displaying fish
- Insulated fish storage facilities
- Facilities for hygienic storage/removal of waste
- Supply of ice (ice store or ice machine)
- Toilet facilities (flushing water closet) and hand washing facilities
- Fencing around fish handling areas to prevent entry of animals/pests
- Facilities for cleaning the landing site, vehicles, vessels and fish boxes etc.

The cost of such upgrading of a landing site depends on the dimensions of the facility. A study in Kenya in 2004<sup>31</sup> indicated that the cost of upgrading a medium sized site to meet a basic minimum standard would be about \$100,000 (excluding any refrigeration equipment and generators). Larger landing sites make the installation of refrigeration and ice plant an economically viable option, providing another argument in favor of concentration of landings. Installation of ice plants and fish storage rooms will be one of the main means by which beaches will provide services to attract fishers and buyers. Typically a 5 ton per day ice plant would cost about US\$20,000, and chill room with refrigeration plant about the same.

There is also a requirement for clear management structures, such that an individual has a clear responsibility for ensuring the hygienic operation of the site. Until now this has only rarely been the case, the exception being a small number of privately owned and operated landing sites under the management of export processing firms.

Government policy considers landing sites to be *public infrastructure*, much in the same way as municipal market halls. Government has assumed responsibility for the capital investment required for the development of landing sites. Thus, it has secured loan and donor finance for the upgrading of up 39 locations. A major part of these will be upgraded under the ADB Fisheries Development Project.<sup>32</sup> The European Development

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<sup>31</sup> Upgrading of the regulatory and coordination framework for export of fishery products from Kenya, Mission Report for the Ministry of Livestock and Fisheries Development Government of Kenya, Ian Goulding, Megapesca Lda., May 2004

<sup>32</sup> Provision is made for the construction and equipping of 30 fish landing sites with management to be contracted to BMUs. Up to 21 fish markets will also be constructed and a fish QC laboratory constructed in

Fund will also support the upgrading of 6 landing sites (through the Lake Victoria Fisheries Management Plan Implementation Project), while JICA will fund two landing sites and China one.

Responsibility for the management of these facilities is delegated to District Councils, and current policy is to encourage the local government to contract (by tender) with Beach Management Units for their management. Local Government has a clear interest in developing functional fish landing sites since they provide a means of generating significant revenues. At present the fishery sector is taxed with a cess tax at landing sites; local taxes are also paid on other economic activities undertaken (vehicle entry, operation of input supply business etc). The tax collection rights at landing sites are privatized, through a system local government tenders to private individuals. However the system is severely dysfunctional and reform of the entire system is overdue (Bahiigwa et al. 2004). With respect to the fishery sector, this reform must be linked to a reduction in the number of collection points and the associated introduction of the levy required for funding the proposed Ugandan Fisheries Authority.<sup>33</sup>

Uganda's fish export trade is profitable. It is a business which continues to attract capital investment. And, it is one in which the main actors understand the sanitary and quality requirements with which they must comply. While the private sector has undertaken considerable investment to upgrade fish factories and made some modest investment to upgrade specific company landing sites, the Government contends that resources are lacking for more full private investment in landing sites and that, in any case, this is a public responsibility. There are several problems with this approach:

- First, the Government has a clear legal responsibility as the Competent Authority to enforce hygiene conditions at landing sites. Ultimately this requires approval of compliant sites, and closure of non-compliant sites. How likely is it that the DFR (or the future UFA) will act strongly against a non-compliant landing site in which it has just invested significant public funds? At present there is a clear conflict of interest within the DFR between the development and regulatory functions. They should be separated.
- Second, public investment funds are insufficient and are generally mobilized (and especially, deployed) too slowly to respond to the demands of a globally integrated export trade.
- Third, the locations, dimensions, and design of the landing sites are being centrally planned by civil servants and consultants, albeit through a consultative process. Given the revenue generating capacity of fish landing sites for local government, there is a justifiable concern regarding political influence and corruption in decision-making. It is likely that there will be a sub-optimal allocation of capital, and in some cases, complete misdirection.

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Entebbe. The project is being implemented by DFR. A list of landings sites has been prepared and procurement notices issued. However, landing site development has been delayed by the need to meet NEMA environmental impact assessment requirements. Recent (January 12, 2006) press reports indicate that the Egyptian government has also made available some \$1.9 million for the construction of various landing sites on lakes Victoria, Kyoga, and Albert.

<sup>33</sup> See Goulding (2005) for an extended discussion of this issue.

- Fourth, the lack of any sense of ownership at the industry level is most likely to result in poor management in the operation of the facilities (for example in maintenance, repair and future development). This is evident from the long and problematic history of government and donor support for fisheries distribution infrastructure in East Africa and elsewhere.
- Finally, Government's persistent and stated assumption of responsibility for development of distribution facilities creates an effective barrier to any private sector investment, by generating uncertainty regarding potential future competition. Who will invest today in a modest facility, if Government might intervene tomorrow with a bigger one next door?

It is evident that the current policy of the Government of Uganda, along with that of the major donors and lending institutions, is not coherent with general policy in respect of roles of government and the private sector<sup>34</sup>. It fails to meet the needs of the sector, in terms of both improving security of fishery livelihoods and achieving the efficiency and quality improvements required for an internationally competitive fishery sector operating within a global market.<sup>35</sup> A new approach to landing sites is urgently required.

Current policy fails to harness the investment and management capacities of the private sector. Ensuring a framework for the allocation of private capital following market principles would significantly reduce, if not eliminate, all of the above problems. The following policy measures for fish landing sites are proposed for developing such a framework.

***1. Leave development and management of landing sites to the private sector***

Government should publicly withdraw from development of facilities at landing sites (except for existing commitments). Landing sites should be regarded for what they are - business units in the distribution chain for fish. As such, they can sell services (landing, auctions, financial services) and goods (fishing inputs such as ice, fuel, gears etc). To ensure equitable management and distribution of benefits, the business assets should be legally owned and managed by the stakeholder communities that is, the Beach Management Units. BMUs could be encouraged to contract out the management of these sites to the private sector.<sup>36</sup>

***2. Re-allocate public funding for fisheries infrastructure***

Government infrastructure funding should be re-focused on genuinely public goods and services, such as rural electrification and road schemes serving

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<sup>34</sup> The approach lacks coherence with the stated role of the private sector in landing site management, described in Section 6.2.5 of the National Fisheries Policy.

<sup>35</sup> This represents a major missed opportunity for Uganda, particularly in relation to competition with Kenya and Tanzania, both of which pursue similar policies and neither of which have EU compliant landing sites. Were Uganda able to claim full EU compliance in advance of her neighbours, the competitive position of the national fishery sector would be significantly strengthened in the global market place. Given the weaker competitive position of Uganda in terms of distribution costs, and the need to adopt a quality based strategy, this approach would appear to be highly desirable.

<sup>36</sup> At present, the technical and managerial capacities of most BMUs are too weak to manage such investments and operations along commercial lines.

fisheries communities. In the broad sense, landing site development would therefore be a genuine public-private partnership (PPP) with the boundary between the two at the gate of the landing site. Investment by communities at landing sites could be given an incentive by the offer of this type of public infrastructure project.

**3. *Beach Management Units should be meaningfully empowered with legally enforceable rights***

Without enforceable legal rights BMUs will remain artifacts of the bureaucracy. BMUs should be encouraged to acquire legal personality through an appropriate form of business, such as company limited by guarantee. The incentive is that properly constituted BMUs meeting appropriate conditions should be offered legally enforceable land use rights at landing sites (for example through a long lease issued by the Local Authority). The lease may have restrictive covenants regarding alternative uses, assignment etc. to address concerns regarding loss of control of the lake shore and bed. Since the leases would have commercial value they could be used as loan collateral if required.

**4. *Beach Management Units should be commercial enterprises***

As corporate bodies, BMUs would be free to charge users of the landing sites market rates for goods and services, in competition with each other. Successful sites will attract landings and buyers. Well-managed landing sites in viable locations will survive; others should be allowed to fail. Consolidation of landings to commercially viable levels is likely to attract a number of buyers to each site, breaking the typical monopsonies which now occur at individual sites. Competition between buyers would be conducive to the development of auctions, processors would be freer to buy directly, and intermediate traders would be forced out of the export supply business, thus improving prices to fishers and margins to processors. The supply chain would shorten, with significant improvements in quality, traceability and reduction of post harvest losses, further encouraged by the availability of ice to fishers and traders at the landing sites. Efficiency gains in the distribution chain would result in a direct improvement in export competitiveness of Ugandan fishery products, and improved prices for fishers, reducing the incentives for cross-border fish smuggling.

**5. *Revise and streamline local government finance from the fishery sector***

Local Government, especially in those regions adjacent to lake shores, relies substantially for income on levies extracted from the fishery sector. The present inefficient tax collection arrangements could be replaced with direct payments from the BMU to the District Council. Payments would be in the form of the site rental as set by the lease agreement, and a landing levy (a system for the collection of which will in any case be required for the financing of the proposed Uganda Fisheries Authority). The base level would be set centrally (as required for the UFA) with an additional local levy imposed and determined by the District Council (which could vary from District to District). Local Authorities would be discouraged from excessive tax extraction due to inter-District competition to

attract more landings and thus optimize revenues. Tax collection efficiency and leakage would improve significantly, providing the incentive for Local Authorities to adopt this approach.

#### **6. Government support for fisheries**

As an exception to the general non-intervention policy Government could chose to subsidise disadvantaged landing sites, for example those communities highly dependent on fisheries<sup>37</sup> which suffer from additional costs due to remoteness or other negative structural features.

Clearly, there are many issues to be explored and potential barriers to be overcome in the development and implementation of such an alternative approach. It is therefore proposed that a Landing Site Pilot Project be launched by MAAIF, with view to testing the measures in a small number of suitable landing sites in receptive Districts. This should investigate best means of incorporation, prepare draft documentation (memoranda and articles of association, model leases, etc), assess financial viability, assess levy issues, determine capacity needs for local authorities and BMUs and monitor investment and business performance in relation to publicly managed sites. The lessons generated would then be incorporated into a national roll-out of the approach. Current resource commitments by donors might then be re-deployed to support this national roll-out.

#### Regulatory Framework for Animal Health/Food Safety in Aquaculture

Uganda may export fishery products to the EU, but only from capture fisheries. Additional requirements are set out for aquaculture products, and no attempt at compliance has been made so far by the Competent Authority. Until the appropriate controls are developed and introduced (see Box 8 below) Uganda will not be able to supply fishery products from aquaculture to the EU. *Technical assistance may be needed for the development of an appropriate regulatory framework, in the training of the competent authority to monitor and enforce those regulations, in the conduct of necessary risk assessments, and in promoting the adoption of 'good aquacultural practices' in this nascent industry. Visits to other countries to examine regulatory, technical and institutional advances in this area could be undertaken.*

#### **Box 8: EU Requirements for Residue Controls and Monitoring In Aquaculture Products**

Council Regulation 2377/90 *laying down a Community procedure for the establishment of maximum residue limits of veterinary medicinal products in foodstuffs of animal origin* requires that only approved pharmacologically active substances are used for the veterinary treatment of animals which are used for human food. Approval procedures are defined. Council Directive 96/23/EC of 29 April 1996 *on measures to monitor certain substances and residues thereof in live animals and animal products* defines measures to monitor certain substances and residues in live animals and animal products.

The main requirements for the control system are:

- Procedures for approval and classification of veterinary medicines

<sup>37</sup> This approach would require a sub-regional fisheries policy, underpinned by a dependency study.

- Controls on import, production and distribution of controlled compounds
- Controls on prescription and application of certain compounds to animals
- Storage and stock controls on farm
- Record keeping of medicinal applications on farm
- Separation of treated and non-treated animals
- Holding of treated animals for withdrawal period prior to slaughter
- Information and communication requirements in respect of animals sold before the end of the withdrawal period.
- Design and implementation of a residue monitoring program to check the extent of compliance with the controls

### *Approach to Testing for Pesticide Residues*

There are several additional issues or challenges related to standards and Uganda's fishery trade. One relates to the *approach to testing in the industry*. Most of the processing companies have in-house laboratories in which they carry out very regular microbiological and chemical tests on water, ice, fish raw material, factory contact surfaces, and final product. They also undertake a range of external tests. Some involve periodic (typically monthly) tests of their water and ice for microbiological parameters. Otherwise, every batch of final product is subjected to testing for various microbiological parameters and testing for (some 15) organochlorine pesticides, including DDT. This testing for pesticides is usual in capture fisheries industries and the testing of each consignment of fish for pesticides is not an EU requirement. Rather, this practice dates back to the single episode in 1998 when some fish were reportedly killed through deliberate use of pesticides in the lake. The DFR subsequently made mandatory the testing of each consignment for pesticides.

Industry and laboratory sources indicate that there has not been a single instance in the past five years where an export consignment of Nile Perch was found to have detectable levels of pesticide residues. Current industry expenditures on such testing are estimated to cost \$\_\_\_\_,\_\_\_\_. Substantial savings could be made by moving to a surveillance approach, whereby the competent authority would take periodic random samples of water, ice, raw materials, and finished product and have these tested for pesticide residues—with any detected problems addressed through a risk management plan.

## **5.2 Re-introducing DDT: Conflict Between Trade and Health Objectives?**

In April 2004, the Ugandan Minister of Health announced the government's plans to reintroduce DDT<sup>38</sup> for use in the National Malaria Control Program. In the early 1960's, DDT had been used to control malaria epidemics in several districts of Uganda with considerable success. However, its use was phased out during the 1970s, in large part due to global concerns about the adverse environmental impacts of DDT (especially when

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<sup>38</sup> DDT (dichlorodiphenyltrichloroethane) is an organochlorine compound that was first synthesized in 1874, first used as an agricultural insecticide in the 1930s and first used for disease control during World War II. The DDT compound can stay in the environment long after its initial use as an insecticide. Harmful effects in wildlife have been linked to DDT use in agriculture.

used as an agricultural pesticide). Recently, several countries--including South Africa, Zambia and Zimbabwe-- have reintroduced DDT to control malaria, with apparently positive results. For example, in early 2000 South Africa began using DDT for malaria control in the province of KwaZulu Natal. Household spraying, in conjunction with improved use of anti-malarial drugs, led to an 80% reduction in the incidence of malaria over a two year period. DDT spraying in Zambia directly contributed to a 50% reduction in malarial cases after only a single spraying season<sup>39</sup>.

Because of its proven effectiveness in killing mosquitoes, DDT is considered by many countries to be (one of) the most effective weapons in the fight against malaria. It is relatively cheap, easy to produce and, when used in indoor residual spraying, only has to be applied two times per year, in diluted formulations, to effectively control mosquitoes in residential areas. Although DDT has been banned for agricultural use in most countries, the Stockholm Convention on Persistent Organic Pollutants<sup>40</sup> permits the production and use of DDT strictly for disease control. The World Health Organization includes DDT among the twelve insecticides that it recommends for indoor residual spraying for malaria vector control. While the Stockholm Convention advocates the use of 'best available techniques' and 'best environmental practices' when using DDT and other insecticides for vector control, the WHO has issued its own set of recommended guidelines and procedures for such use (WHO 2000). Some 31 of the 91 countries that signed the Stockholm Convention have requested exemptions for DDT use in malarial control programs.

In Uganda, the incidence of malaria is widespread and it is the leading cause of death and illness in the population. Approximately 93% of Uganda's population is at risk from malaria and, on average, 80,000 Ugandans die from malaria each year, half of which are children under 5 years of age. According to the Ministry of Health, malaria accounts for up to 40% of all out patient care and families can spend up to 25% of their income on the direct or indirect costs of the disease. In Uganda, some \$50 million is spent annually on malaria treatment. In accordance with the goal set during the African Summit on Roll Back Malaria in 2000, Uganda's objective is to cut in half morbidity and mortality due to the disease by 2010.

Following the government's announcement to reintroduce DDT for malaria control, the Ministry of Health and NEMA organized a joint presentation in January 2005 to key stakeholders. At about that same time, the Ministry and NEMA commissioned an environmental impact assessment to evaluate not only the risks to human health and the environment, but also to determine the potential impact of DDT's renewed use in vector control on Uganda's agricultural export trade. While this study was recently completed, it has not yet been released to the public. The study was supposed to take into account the concerns and viewpoints of many stakeholders, via public hearings, meetings and workshops. At least some stakeholder groups, however, contend that they were not properly consulted. Compared to other African countries, the reintroduction of DDT for

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<sup>39</sup> "Is DDT Safe? Considering Its Use for Malarial Control in Uganda", Health Policy and Development; Vol 2, No. 2, August 2004.

<sup>40</sup> Which was negotiated in 2001 and entered into force on May 17, 2004.

vector control in Uganda has proven to be much more controversial—and no final decision has been made after more than a year and a half of deliberations.

In early February 2005, a representative from the European Union issued the following statement:

*“If Uganda is to use DDT for malaria control, it is advisable to do so under strictly controlled circumstances. The country would also have to set up a parallel system to monitor foodstuffs for the presence of DDT. This would ensure that any contamination of foodstuffs is detected and corrective measures taken. However, these measures may not be sufficient to allay the fears of individual consumers of Uganda’s food products in the EU.”*

Many in Uganda perceived this statement to be a veiled warning to Uganda against its decision to reintroduce DDT. Given Uganda’s experience in the late 1990s with being repeatedly banned from the EU market for perceived or actual problems in its fish export supply chain (including a concern about pesticides in fish), this type of statement appeared ominous to some stakeholders. In February 2005, a meeting was organized by NOGAMU, in conjunction with EPOPA and several other international NGOs, bringing together over 100 participants including exporters of coffee, fish, flowers, horticultural products, academics, government officials and representatives of the EU delegation. This ‘Stakeholders Dialogue’ issued a proclamation at the conclusion of their meeting which included the following concerns or arguments:

- While DDT may be cost effective in the short term, the cost of ensuring its safe application, supervision and monitoring to prevent contamination of the food chain and illegal use as well as rectifying the health and environmental effects could prove very expensive. Alternative methods such as mosquito nets and insecticides could be even cheaper.
- The re-introduction of DDT will negatively affect the reputation of Uganda’s products in the EU market. Because production and use of DDT is banned in the EU with zero tolerance for DDT residues in food products there, *mere mention of DDT use is enough to scare away consumers.*
- EU standards are used in many other countries, such as those in the Middle East, who import many products from developing countries, including Uganda, by way of the EU. If Ugandan products are rejected in the EU, these secondary markets will also be lost by default.
- The possible reintroduction of DDT is a deterrent to foreign investment in the agricultural sector. Many investors have requested the government to clarify its stand on DDT. The use of DDT is likely to scare away potential investors and could potentially force those who have already invested to close down.
- Given the nature of Ugandan housing, especially in rural communities, there is no guarantee that DDT will not spill over into the environment or contaminate agricultural produce. Since most rural farmers keep their produce in their houses,

there is a high possibility of their produce coming in contact with the walls and therefore DDT.

- There are also concerns about how DDT use will be properly monitored and regulated to ensure that it not used illegally as a commercial insecticide and that it does not become a contaminant in the environment and the food chain. It has not been made clear how the equipment and gadgets used in spraying will be cleaned and the water used will be disposed of to avoid contamination and ensure safety.

Hence, the group expressed concerns and fears about how the DDT re-introduction would actually be managed in Uganda, whether there were be un-intended leakage and usage of DDT outside of vector control, and how these measures would be perceived by foreign buyers and consumers. *In essence, these stakeholders implicitly expressed a lack of confidence that DDT could be re-introduced in Uganda in conformity with WHO or other safety guidelines and indicated a sentiment that how these measures would be perceived abroad might well be beyond the control or influence of Ugandans.* The group called on the government to consider alternatives to DDT and to hold wider consultations with all stakeholders including exporters and small holder farmers.<sup>41</sup>

In April 2005, the chief of the EU mission in Uganda noted that:

*“There could be dire consequences for the country's exports to Europe--which account for more than 30 percent of Uganda's total exports--if DDT was detected in export commodities such as horticultural produce. The EU has strict maximum limits of pesticide levels in products meant for animal or human consume, especially on prohibited chemicals such as DDT.”*(UN Newswire)

Recently, Uganda began marketing itself under the “Gifted by Nature” tagline which aims to re-brand the country and highlight its potential for ecotourism, agriculture, horticulture, and agro-processing. This campaign was developed to strategically reposition the country to take advantage of the burgeoning European market for ecotourism and organic agricultural produce. The re-introduction of DDT—regardless of the intended health-related purpose—has been seen by some stakeholders to run counter to this new self image that Uganda is carefully trying to craft in global markets.

The policy debate on the re-introduction of DDT has seemingly stalled within Uganda, with the completed impact assessment yet to be made public. To date, therefore, in the absence of analysis (or publication of analysis), fears, anecdotes, and assertions have filled the void. And, in recent months, the ‘debate’ on this subject has been transferred to the western media, with ideological and other positions and counter-positions taken up with Uganda seemingly relegated to just a bit player in its own play.

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<sup>41</sup> In the event that DDT use should lead to loss of income for farmers and exporters due to loss of markets for Uganda’s agricultural exports, stakeholders have called upon the government put in place a compensatory mechanism.

Eradicating malaria is of critical importance for human development, poverty reduction and economic growth in Uganda. Controlled use of DDT has the potential to save thousands of lives in Uganda. Based on scientific studies, there is fairly broad agreement that *when properly deployed for residual spraying indoors*, DDT poses very little risk to human health and the environment. However, questions about the effective management of such a program abound, even though several other African countries, including some with as limited administrative capacity as Uganda, have managed successful spraying programs for years.

How the properly managed re-introduction of DDT for vector control would affect Uganda's agro-food exports would depend more on perceptual factors than actual risks of residues in fresh produce, fish, or other products. These latter risks can be managed, through more frequent pesticide residue testing. Already at present, all consignments of fish are tested for pesticide residues. Comparatively little other produce destined for Europe is tested for pesticide residues. Additional testing could be re-introduced with some type of cost-sharing given the origins of this concern.

However, given the media and popular coverage of this issue in relation to Uganda, it is certainly possible that some international buyers or foreign consumers might shift their purchases away from Uganda should the DDT re-introduction proceed. While this might not represent rational behavior—especially given much wider pesticide-related and other concerns which might be associated with alternative sources of the same commodities—such behavior cannot be fully ruled out. A more careful rather analysis of this risk—and the potential costs involved—should be undertaken.<sup>42</sup>

### **5.3 Quality and Other Challenges in the Coffee and Tea Sectors**

#### **5.3.1 Coffee**

Coffee has historically been Uganda's largest export product. The last several years have been unfavorable for this sector, adversely affected by a combination of low international market prices, large production losses due to coffee wilt disease (CWD), and problems in maintaining product quality levels and premiums. While accounting for 60% of Uganda's total merchandise exports in 1999, coffee's share fell to just 20% in 2002. Although there was a small decrease in export volumes, the average unit price for such exports fell from \$0.94/Kg to \$0.44/Kg during that short period.<sup>43</sup>

Uganda is the world's fourth largest producer of Robusta, behind Brazil, Vietnam and Indonesia.<sup>44</sup> Due to its particular agro-ecological growing conditions, Uganda's Robusta

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<sup>42</sup> On the surface, it would seem that the risk of consumer or buyer product shifting would be very small. Most European consumers of Ugandan Nile Perch do not know its origin and this fish is referred to by different names in different markets. As noted above, Uganda's fresh produce trade is directed at the ethnic food segment in the U.K. where relatively little attention is focused on matters of pesticide residues.

<sup>43</sup> Uganda Coffee Development Authority, *annual report 2002*

<sup>44</sup> Robusta accounts for 84% of Uganda's coffee production, with the remainder being higher value Arabicas. In recent years, considerable attention has been given to promoting Arabica production, with some success. However, the suitable growing areas for Arabica are quite limited in Uganda.

has characteristics desired by espresso roasters in the EU, enabling it to obtain premium prices above those of Robustas from other sources (Ponte 2003)... Yet, with declining Ugandan output, no improvement in quality, and uncertainty about future investment, there is concern that international buyers will reduce their commitment to Uganda as a preferred supplier—in favor of other up and coming suppliers. The adverse trends in Uganda’s coffee sector and its declining international competitiveness could have major adverse socio-economic implications. Some 500,000 smallholder farm households cultivate coffee and the sector is estimated to provide direct or indirect employment for several million people.

The lower prices and the large loss of trees due to CWD resulted in a dramatic drop in farm incomes, leading most farmers to neglect basic tree maintenance and many farmers to plant alternative crops, including upland rice and vanilla, rather than replace lost trees. Since 1993, CWD has destroyed an estimated 47% of the country’s old Robusta trees, a loss of over 133 million out of an estimated 300 million trees. These factors, in addition to the high proportion of Robusta trees more than 40 years old with declining yields, have resulted in a decline in coffee exports from a peak of around 4.5 million (60 kg) bags in 1996 to 2.5 million bags in recent years. While elements of the international coffee industry are just beginning to recover from the price-induced crisis in the late 1990s, most Ugandan farmers—who were unable or unwilling to replant in recent years, have not benefited from the recent recovery in prices.<sup>45</sup>

**Quality Management:** In the 1970s, under a government-controlled system, Uganda gained a reputation for high-quality coffee. During the subsequent decade, coffee quality suffered as a result of the general political turmoil and economic decline in the country. The coffee sector was deregulated in 1990/91 and Uganda is now considered to have the most liberalized coffee trading environment in East Africa. In the first few years after deregulation, there was massive competition among buyers to establish market share in Uganda. This created incentives to quickly buy up volume without proper quality monitoring, leading to a serious decline in quality because of increased trade in cherry and hulled coffee that was not dry enough. The industry has since consolidated, especially after the recent coffee crisis, to 10 large exporters who control 82% of the market. The industry is now able to better control the quality of coffee it processes and has improved the quality and percent of top grade coffees exported. Still, exporters can normally only control quality once they acquire the raw product.

Exporters now buy from a myriad of intermediaries and local processors who buy dried cherries directly from small farmers who dry it on their own under various conditions.

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<sup>45</sup> New plants generally take five years to go into full production. Government efforts to support replanting with free cloned Robusta trees, resistant to the CWD disease and with better yields, have seen mixed results and have fallen very short of targets. The Government program resulted in the planting of 140 million seedlings, against a target of 300 million with a survival rate approaching 75%. Shortcomings in this initiative have included failure to pay the private nurseries that produced trees, political manipulation of distributions and improper planting times, which lowered survival rates. Donor agencies should be involved in this effort to reduce inefficiencies and help to quickly and equitably distribute seedlings. The faster the lost trees and older, less productive trees are replaced, the sooner volumes and producer incomes should improve.

Quality controls are seldom applied until the coffee reaches the exporters in larger quantities at which point there is no traceability when problems do arise. Once coffee is received by the exporter, checks are made on four quality parameters: moisture content, smell, defect count and screen retention (size of bean). Before export, UCDA must also certify each consignment after carrying out physical and cup testing. According to UCDA data, the proportion of “clean cup” tests on export consignments has improved in recent years. The proportion of coffee that is referred for re-processing has also decreased, indicating improved quality<sup>46</sup>. Quality also fluctuates with market prices; as the market has recently improved, some exporters have already started to implement scaled prices, and are working to establish longer-term relationships with local processors who are more quality focused. Better prices also mean producers now also have the ability and incentive to better maintain their trees.

Because Uganda has an open market and a shortened chain between exporter and producer, producers are getting high farm-gate prices as a percent of export prices (i.e. 78% in 2002/03). Therefore, the focus should be on improving production methods and increasing the volume of the three premium exportable grades of Robusta coffee and reducing the smaller lower grades and Broken Hand Picked beans. When coffee is produced under good husbandry conditions, the beans are generally larger in size. Yields have been known to double just with basic pruning, weeding and addition of some nutrients. Improved post-harvest handling, processing, and storage also greatly contributes to the final quality that is tasted in the cup. Another procedure known as wet processing produces an even better quality of coffee. Although previous efforts to introduce wet processing have not seen strong results, attributed to lack of organized producer groups and lack of investment, it is still seen as an excellent way to quickly improve coffee quality and earn better premiums.

Food Safety Management: The Ugandan coffee industry also faces a challenge related to compliance with emerging food safety regulations. Fungi in coffee can lead to the emergence of ochratoxin A (OTA). In recent years, the EC has proposed lower tolerance levels for OTA in various foods including green coffee. This raised major concerns for developing country coffee exporters. Estimates by the European Coffee Federation found that if proposed limits of 5ppb were established and enforced, rejection rates for lots of coffee would be around 7%, and as high as 18% for some African producers<sup>47</sup>. Because of the obvious negative impacts, the EC agreed to postpone imposing the OTA limits and support prevention measures in problem regions.

In order to address the problem, the FAO, International Coffee Organization (ICO) and the European coffee industry, worked with UCDA as part of the global project “Enhancement of Coffee Quality through the Prevention of Mould Formation”, which began its activities in 2001. Program activities included instruction of farmers in better coffee drying, storing, and fungus monitoring, as well as training technicians in OTA analysis and monitoring. UCDA statistics do show that there has been a reduction in the amount of coffee rejected for wetness, which contributes to OTA formation. And,

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<sup>46</sup> Uganda Coffee Development Authority, Annual Report October 1, 2002 – September 30, 2003

<sup>47</sup> FAO project, *Reducing ochratoxin A in coffee*, [www.coffee-ota.org/proj\\_background.asp](http://www.coffee-ota.org/proj_background.asp)

although farmers have been instructed to dry fruits on tarps and not directly on the ground where the fungus that produces OTA lives, there is still need for more training and improvement in storage. UCDA also now randomly checks for OTA, but it has not, until now, been seen as a serious trade issue for Uganda. Uganda has had only two consignments rejected in the last four years due to OTA. The most recent occurred in 2004, when Slovakia rejected a shipment of Ugandan coffee because of high OTA levels.

*However, the absence of more regular rejections of Ugandan coffee may stem more from the minimal enforcement of the regulations than from Ugandan compliance.* Exporters are apparently not very concerned, as they manage the problem by sorting out diseased and discolored grains, and ensuring that the product purchased from dealers is dried to the required moisture level. This will need to be addressed if and when the EC starts to regularly enforce OTA levels in coffee. When clients do request to analyze samples for OTA in Uganda, there are local labs with the capacity to do so. Therefore the focal area for incremental donor resources might be with farmers who still require awareness-raising programs and help with improving drying methods to reduce contact with soil and amount of under-dried beans<sup>48</sup>.

Specialty Coffee: There have been efforts by different groups, both NGO and private sector, to improve product quality and implement certifications to target niche markets. Work has focused in Uganda's eastern mountains, which do have the conditions for producing Arabica that can compete with gourmet coffees internationally. One company, Kawacom Ltd., has been strong in this area and currently dominates both the organic Arabica and Robusta markets in Uganda. The industry is starting to develop quality-oriented producer organizations to promote shade, organic, gourmet, bird-friendly, UTZ, and Fair Trade coffee, etc.

When premiums are passed on to producers—which apparently is not always the case—organic and other certifications have shown benefits, mostly in Arabica coffees, but still only affect a very small percentage of Robusta production. Because of its higher value and established niche markets, better opportunities already exist for Arabica producers and thus the private sector is more engaged with them. On the other hand because of its lower value, *Robusta has fewer opportunities to become specialized and greater benefits must come mostly from basic production and quality improvements.* The exception is for Fair Trade certification, which was shown to provide substantial premiums to Robusta farmers with less cost and risk (Ponte 2003). This is an area that should get support as it provides the incentive for farmers to organize into larger groups in order to take advantage of Fair Trade certification.<sup>49</sup> Attempts were also made to establish internet coffee auctions to put producers directly in contact with exporters, but these were not very successful.

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<sup>48</sup> A detailed study found that “farmers are not aware, the majority of traders (retailers and wholesalers) are also not aware while those exporters who are aware are not particularly concerned. Therefore knowledge about aflatoxin in Uganda is still a big gap” Draft Report on Mycotoxin Status in Uganda. Archileo N. Kaaya, Department of Food Science and Technology, Makerere University, Kampala

<sup>49</sup> According to one source, the extra income received by farmers selling a half ton of coffee is \$200 for Fair Trade vs. only \$10-15 for organic.

*Though low international market prices have been part of the industry's recent difficulties, the problems of weak industry coordination and the government's limited ability to support major initiatives still exists. The challenge to replant and recover production volumes after the devastating impact of CWD needs greater support from all stakeholders, including the public sector and the donor community.*

Some considerable donor resources have been channeled to support the coffee sector over the past five years, although much attention has been devoted to promoting the 'specialty' dimensions (i.e. organic, Fair Trade), rather than core productivity, quality, and disease issues facing the bulk of growers. These various projects have reached an estimated 52,000 growers—that is, only about 10% of Uganda's smallholder coffee producers. The overall impact of these interventions seems thus far to have been modest. Baffes (2006) has calculated that over the past nine years only 0.21% of Uganda's coffee has been sold under one or another 'specialty' designation. Yet, over that same period, upwards of \$30 to 50 million has been lost due to the effects of CWD. This conjures up a metaphor of exaggerated attention to perfecting the icing while the underlying cake is wilting.

### **5.3.2 Tea**

Tea is another of Uganda's traditional crops, and represents around 6% of Uganda's export earnings. The sector consists of some 12,500 smallholder producers, three large plantation companies, three smaller plantation companies, and a large workforce of tea pickers. Currently there are some 26 operational tea processing factories in Uganda, four of which solely service smallholder production.

Because of its climatic conditions, Uganda does not generally produce very high quality tea. It is mostly used for filler purposes. Ugandan tea contains, on average, only 75% primary grades; in comparison, Kenya typically produces about 93-95% primary grades. The Mombasa tea auction results in November 2005 had Ugandan teas receiving the lowest prices, trailing Kenya, Rwanda, Burundi and Tanzania. Average Kenyan prices were some 50% higher than those for Uganda (i.e. \$1.54/kg vs. \$1.04/kg.)<sup>50</sup>. Producers and processors are currently losing significant amounts of money due to the lower quality. Compared with many other agro-industries, the Uganda tea sector appears to be relatively well organized, and at least the plantation sub-sector has the capacity to correct the quality and production problems that are restricting earnings. Yet, there remain challenges in promoting improvements in smallholder tea productivity, quality, and incentives.

During the 1990s, several donor-assisted programs focused on smallholder tea, with mixed results.<sup>51</sup> Several other initiatives have been pursued more recently. For example, the four processing factories dedicated to smallholder producers have provided some

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<sup>50</sup> East African Tea Trade Association website [www.eatta.com](http://www.eatta.com)

<sup>51</sup> Between 1990 and 2000 the EU provided support through two smallholder tea projects. These programs were successful in raising productivity and quality, yet they fostered a dependency of farmers on external assistance and many improvements have not been sustained.

extension services, including the use of educational radio programs. Additionally, the Uganda Tea Association collects industry data and has developed industry standards concerning the “ethical trading and sourcing” of tea.<sup>52</sup> The industry is working closely with the government to establish a broader National Tea Standard.

Due to the nature of tea production and market forces, mainly from the UK, the Ugandan tea industry is under increasing pressure to meet more stringent quality and food safety regulations, and increase its percent of premium quality teas just to remain competitive. For its largest market, the UK, Uganda tea must meet British Retail Consortium (BRC) standards, including HACCP, minimum quality standards and food hygiene requirements. In addition, more countries are also requiring phytosanitary certificates with tea exports. Most of the larger tea producers are already HACCP certified, but quality issues still persist among smaller producers.

Thus far, the more stringent export requirements have not had significant impact on the Ugandan tea processors because the majority of tea is exported from Mombasa, Kenya, where export requirements are handled by the traders who buy the tea at auctions. In the future, if there is to be any growth of direct exports from Uganda, the producers themselves will have to make improvements to meet the export requirements. *The sector anticipates that forthcoming requirements to test teas for heavy metals and pesticides will have a more direct impact on Ugandan producers. The tea industry will need to work with the government and carry out the necessary assessments and testing to prepare for these new market demands.*

A more refined pricing structure tied better to quality is needed to provide financial incentives to smallholders to increase production volumes and produce better green leaf. Increased quality incentives would also improve the issues of competition between processing factories for green leaf.<sup>53</sup> Future assistance could also be provided to promote GAP among smallholders, improve the sanitary conditions of leaf sheds, and improve the operations of smallholder-dedicated tea factories. Such improvements would be rewarded in the market place for tea.

#### **5.4 Horticulture and Floriculture: Keeping Standards in Proper Perspective**

In recent years, the Government of Uganda has shown considerable interest in the export and poverty-reducing potential of horticultural and floriculture. The nearby example of Kenya—where horticulture and floriculture exports now exceed \$400 million and hundreds of thousands of jobs have been created—has catalyzed this interest. Since the

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<sup>52</sup> Although only 1.5% of Ugandan tea is sold as under an ‘ethical trading’ label.

<sup>53</sup> Tea production has still not recovered to the levels achieved in the 1970s. The larger plantation companies have factories operating below capacity. They purchase from smallholders to top up their own supplies, yet do not pay premiums linked to quality. The factories directly associated with smallholders are forced to buy leaf of any quality in order not to lose deliveries.

mid-1990s, Uganda has developed a very modest export trade in fresh fruit and vegetables and a more sizeable trade in flowers. There exist varied perspectives within and outside the industry as to whether the future growth potential for Uganda in this field is large or only very modest.<sup>54</sup>

Uganda's fresh produce trade has a current estimated value of about \$6 million.<sup>55</sup> Some 80% of this consists of air-freighted supplies of hot pepper, matooke, okra, and selected other commodities, destined primarily to wholesale markets in the UK and Holland and servicing immigrant/ethnic food distributors and restaurants. There are currently 17 small companies involved in this trade and an estimated 1500 (mostly) smallholder farm suppliers. This 'industry' is fragmented, lacks an effective organizational body for collective action, and has featured on-going entry and exit over time. Uganda also has a small cross-border trade, mostly involving bananas but also small quantities of pineapple and melons, valued at an estimated \$1 million per annum. Most of this trade is directed to Kenya. Probably hundreds of small-scale traders are involved, utilizing small vehicles or bicycles. Several thousand farmers produce this fruit which makes its way into neighboring countries. Uganda also has a very small trade in processed horticultural products. This consists primarily of dried fruit, sold as a niche organic product in Europe by a few small companies.

The flower sector has a very different structure. Fifteen companies produce roses on some 170 hectares of greenhouse production and employ about 5000 people. Three additional companies produce chrysanthemum cuttings on 35 hectares and employ about 1000 people. Approximately two-thirds of these operations involve foreign investment and most involve a mix of foreign and Ugandan management. Exports of both roses and chrysanthemum cuttings have increased steadily in recent years. In 2005, the export values are expected to be \$27 million for the former and \$10 million for the latter. Almost all sales are directed to Europe, with the majority of cut flower sales taking place in the Dutch auctions.

Another small segment which involves horticultural 'tradeables' is the higher end domestic market. A limited number of regional supermarket chains and a growing number of restaurants service the middle to higher income urban population.<sup>56</sup> These players have spurred some modest supply chain innovations, yet their impact is small since they probably only account for about 5% of domestic sales. Both the modern retailers and the middle/upper end restaurants source most of their produce needs locally although temperate fruits and most processed fruit and vegetable products are imported. It is not clear if and how this segment of the market will expand, as this will depend upon wider trends in economic growth and the development of the Ugandan tourism industry. Perhaps more significant has been the proliferation of small fresh fruit and vegetable kiosks which provide convenience and better presentation of produce to urban Ugandans.

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<sup>54</sup> For example, contrast the perspectives of Sergeant (2005) and Sonko et al (2005) on the potential for horticultural export growth.

<sup>55</sup> Information on the overall size and structure of Uganda's horticultural and floricultural trade is mostly drawn from Sergeant (2005) and Bear and Goldman (2005).

<sup>56</sup> This gained some impetus from the return of Ugandan Asians and the influx of foreign aid workers.

As elaborated by Sergeant (2005) and others, Ugandan floriculture and especially horticulture faces a number of constraints on its competitiveness and its prospects for growth. Uganda's floricultural sector has been unable to attract new foreign direct investment in recent years. It has experienced shortages of skilled managers and supervisors which has constrained its internal growth. For horticulture, Uganda's climate is unsuitable for growing many of the air-freighted products needed by the European market, while very expensive road and rail transport costs to Mombassa preclude most sea-freighted exports. The fresh produce industry is highly fragmented with few coordinated supply chains and very limited collective action on policy or technical matters.

Compared with many such issues, the standards-related challenges facing the current and near-term prospective trade are rather modest. In relation to floriculture, the main issues relate to phytosanitary risks and inspections, compliance with environmental standards, and some matters related to agro-chemicals:

- *Phytosanitary Matters:* Flower producers encounter some problems with powdery mildew and infestation of white flies, especially during the Ugandan rainy season. At least one (large) consignment of roses was rejected in Holland earlier this year because of the presence of white flies. With a recent expansion in the personnel of the Crop Protection Department there is greatly likelihood that future consignments containing plant pests would be intercepted before shipment. The larger concern of the industry is the costs of phytosanitary inspections abroad. Two years ago the Dutch government introduced changes whereby inspection fees were linked to the number of stems in a flower box rather than per box. They also instituted extra fees for 'overtime': i.e. when consignments arrived late at night or early in the morning. These changes work to the disadvantage of Uganda as its primary exports are of very small 'sweetheart' varieties (with upwards of 800 stems per box) compared with larger sized roses exported by Kenya and others (generally with 300 to 400 stems per box). The UFEA estimates that some \$100,000 per year is spent by the Ugandan industry for such phytosanitary inspections in Europe.
- *Environment and Related Standards:* With the support of the UFEA, the cut flower industry has committed to adopt the *Milieu Programma Sierteelt* (MPS) guidelines, a private protocol (originally developed in the Netherlands) geared toward environmental conservation and risk mitigation.<sup>57</sup> The MPS is one of the types of flower-related protocols which has been benchmarked to EUREPGAP. Reportedly about half of the flower operations have already been certified for MPS while the others are implementing changes to gain such certification. The UFEA has its own technical officer which is working with the various companies and conducting pre-audits. An MPS auditor, based in Kenya, subsequently carries out the audits. Thus far, no Ugandan flower growers have chosen to pursue recognition for 'fair trade' flowers, a social standard which carries with it a price

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<sup>57</sup> MPS themes relate to fertilizer, crop protection, energy, water, and waste management.

premium which is supposed to be channeled to community development programs.

- *Agro-chemicals*: Ugandan flower producers utilize several specialized agro-chemicals which are not more widely used in the country. Ordinarily this would be problematic as these chemicals need to be registered in the country and this requires some three years of testing by NARO before such registration can take place. However, some accommodations have been made, allowing use of selected agro-chemicals for two years (for ‘testing purposes’) prior to their formal registration. There is scope to move to an arrangement of collaboration with pesticide regulation authorities in Kenya and Tanzania to register chemicals which have undergone supervised tests in only one of the three countries. Another issue is the phasing out of use of methyl bromide as Uganda has agreed under the Montreal Protocol. Some farms have adopted a steam sterilization technique. Otherwise, assistance is being provided to carry out tests on two farms for the adoption of hydroponic techniques where flowers are planted in a potted medium and which obviates any need for soil fumigation/sterilization.

Uganda’s current horticultural exports to Europe are encountering few or no significant problems related to compliance with standards. This stems in large part to the product composition and market orientation of this trade. The trade in specialty commodities directed to ‘ethnic’/immigrant communities in Europe (and especially the UK) is primarily governed by considerations of produce variety and taste, with practically no official attention to or private buyer concern about pesticide residues, product traceability, or other parameters which have become increasingly important in the more mainstream segments of the EU fresh produce market or, more specifically, for sales channeled through the leading supermarket chains. Some selected downstream buyers (i.e. some caterers) have begun to ask for additional record-keeping on the sourcing and oversight of the produce supplied, yet this is the exception rather than the norm for Uganda’s fresh produce exports.

An argument could be made that Uganda is ‘stuck’ in the lower margin ethnic produce segment because of a failure of farms and firms to upgrade their operations to become compliant with prevailing supermarket requirements for ‘good agricultural practices’ and the application of certified HACCP systems. Yet, this is not fundamentally an issue of standards compliance. There are many reasons—climatic, logistical, industry structure, etc.—why Ugandan products and supply chains cannot competitively supply fresh fruits and vegetables to the higher end European supermarkets which are more demanding in terms of standards. The ability of the smaller scale exporters to continue to supply any fresh produce to Europe has, in part, depended upon the virtual absence of attention to specific product or process standards in parts of the European market.

Over the past year, a task force, led by the Department of Crop Protection under MAIFF, has formulated draft plans to raise the applicable standards within Uganda’s fresh produce industry and to substantially increase the level of official oversight and inspection of this industry. These plans have included the following draft documents:

- Manual of Standard Operating Procedures for Horticultural Commodity Inspection and Quality Assurance,
- Procedure for the Inspection of Horticultural Commodities for Export, and
- Code of Practice for the Production, Handling, and Processing of Fruits and Vegetables in Uganda

While undoubtedly based on good intentions, this effort seems to be based upon a misunderstanding of the external commercial and official requirements which the Ugandan industry actually faces. For example, there is apparent confusion about the nature and relevance of EUREPGAP, with some parties seemingly confusing this private protocol—involving a limited set of European supermarkets—with the requirements of the European Union. For example, the draft Code of Practice (dated August 2004) states in its *Introduction* that “More than 95% of Uganda’s fruit and vegetables are exported into the EU. Uganda, therefore, has to comply by January 1, 2005, with EUREPGAP regulations in order not to suffer loss of the EU market.” EUREPGAP is a private protocol and not a set of regulations. There is nothing magic about the January 1, 2005 date. Perhaps there is confusion here as the EU’s Food and Feed Act actually came into play on January 1, 2006. But even the provisions for that have been confused, especially in relation to the issue of traceability.

Thus, the Task Force has distributed a set of plans geared toward “Quality Assurance for Horticultural Products to Comply With the EUREPGAP” under the current situation in which there is virtually zero demand for EUREPGAP compliance/certification from the commercial partners of Ugandan exporters. The proposals call for an extensive range of requirements—for quality management, HACCP systems, waste management, etc.--and an attendant inspection, control, and/or testing regime, to be carried out primarily by the recently expanded Crop Protection Department. These plans seem to draw their inspiration from two sources—(i) Uganda’s fish trade ban experience and the subsequent external requirements for elaborated controls/oversights, and (ii) the evolving system of governance in Kenya’s horticultural industry, which, ostensibly would represent ‘good’ and appropriate practice for Uganda.

Given the current structure, state of development, and primary commercial orientation of Uganda’s fresh produce export industry, the Task Force’s proposed set of ‘requirements’ and proposed administrative controls and oversight measures would appear to be most inappropriate. If strictly followed, these recommendations would lead, in the short run, either to the termination of the existing fresh produce trade (as firms would be unable to meet the requirements or see their small margins further contract as buyers do not compensate them for added expenditures), or to widespread petty corruption, as inspectors are given inducements to issue phytosanitary certificates. The current proposals would have the issuance of such certificates being contingent upon firms and firms demonstrating compliance with the various ‘requirements’ which, of course, extend well beyond plant health matters.

*Rather than implement a stifling system of command and control—which is not being requested by Uganda’s external trading partners and buyers—the medium-term objective*

*should be to promote a 'quality culture' in Uganda's fresh produce industry and to facilitate the broader adoption of better agricultural, post-harvest, and packing practices, and associated systems for supply chain management, record-keeping, traceability, etc.. For the foreseeable future, adoption of these practices/systems should be voluntary rather than mandatory; supported by incentives and support services rather than imposed by inspectors and sanctioned by fees, fines, or other penalties.*

The medium-term strategy should be to define and achieve implementation of an UgandaGap, a more modest and less stringent version of EUREPGAP. Industry, government, academe, NGOs and others can and should participate in developing and applying such an UgandaGap. Should, in the future, the external buyers of Uganda's fresh produce require compliance with more stringent technical standards or management systems, then the movement toward UgandaGap compliance will serve as an effective stepping stone plus elements in that protocol can themselves be refined to maintain its relevance to the evolving marketplace.

## **5.5 Tourism and Managing Food Safety Risks**

In the 1960s, Uganda was an important international tourism destination, receiving a comparable number of tourists as Kenya (See Mann 2005). However, two decades of civil instability tarnished Uganda's image and severely weakened its tourism resources and infrastructure. Efforts to promote tourism to Uganda were started anew in the early 1990s. Despite continued bouts of instability within the region, there has been some success in attracting new investment into the sector and an increasing number of tourists.

The actual number of tourists which visit Uganda is difficult to estimate. While the country had more than 500,000 'international visitors' in 2004, most of these were either East African residents who crossed into Uganda for a limited period of time or people transiting through Entebbe Airport. Another large proportion of these visitors were either Ugandans visiting their families (71,000) or people on commercial or other official business (81,000). In 2004, only 86,000 people indicated that their primary reason for visiting Uganda was 'leisure and holidays'. Even this figure may be on the high side. Based on data available on visits to Uganda's main tourist attractions, the actual number of 'real' international tourists may be more in the range of 35,000 to 40,000. In contrast with the situation in Kenya and Tanzania, the vast majority (i.e. 90%+) of tourists were individual travelers rather than coming on packaged tours.

MTTI surveys suggest that the average length of stay for international tourists is about 13 days, while that for business visitors is 6 days. The average expenditures per day range from \$82 for independence travelers to \$145 for business travelers. Assuming that tourist and business visitors spend, on average, about \$20 per day for food and beverages, then the total annual expenditures of such visitors would be in the order of \$20 million.<sup>58</sup> This

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<sup>58</sup> This is based on the assumption of only 40,000 'real' tourists. If one used the figure of 86,000 tourists, then the combined food/beverage expenditure for them and the business visitors would be about \$32 million.

amount of food/beverage ‘trade’ would be on par with the country’s annual trade in cotton.<sup>59</sup>

In Uganda there is little or no official oversight of tourist or restaurant establishments in relation to food hygiene and safety. MTTI has a very small inspectorate unit which makes periodic visits to hotels, yet this unit features no food technologists on its staff and does not generally address food-related issues. The unit also has no effective enforcement capacity in this area under the existing Hotels Act.<sup>60</sup> Local government authorities are involved in licensing food establishments, yet this function is primarily pursued as a revenue-raising rather than a regulatory function. There is no surveillance of tourists to Uganda to determine the incidence of food- or water-borne illnesses. No analysis has been done of the food sourcing policies and experiences of tourist-grade hotels and restaurants, although anecdotal discussions with several food managers suggests regular concerns about either the quality (i.e. fresh fruit and vegetables) or the safety (i.e. certain fish and meat items) of important food products.

As part of a broader program to begin to classify Ugandan hotels and restaurants, a team from the inspection and registration division of MTTI conducted a survey of existing establishments. In relation to food services, this team found, among other things,

- a very low level of professionalism, adversely affecting the quality of services. Most employment is of low skilled personnel with only limited on-the-job training provided.<sup>61</sup>
- that the majority of hotels and restaurants in the lower to middle end of the market were converted from homes or shops and are characterized by limited space and facilities and generally poor functionality.
- There has been limited investment in modern kitchen equipment, cold stores, etc. to enable the preservation of food or for hygienic conditions in food preparation. The primary exceptions are in the larger establishments.

One MTTI analysis concluded that “this state of affairs has been (one of) an amorphous and discordant growth of hotel and restaurant establishments in the country with little or no regard to standards. This has and will cost Uganda’s competitiveness as a premium tourist destination.”

At the level of the East African Community, agreement has been reached on a set of criteria to classify hotels and restaurants. In Uganda, new tourism legislation has been introduced and a new Tourism Board would be responsible for registering and licensing such establishments. MTTI is presently developing the regulatory instruments that would

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<sup>59</sup> MTTI survey data suggest that there are some 1300 registered accommodation establishments in Uganda, although only about 80 are used by international tourists or foreign residents. The number of restaurants or other eating establishments is unknown. The vast majority of both restaurants and accommodation establishments are very small with only rudimentary facilities.

<sup>60</sup> Under the World Bank-supported PAMSU project, the inspectorate unit visited several other countries to increase its awareness of good practice, yet the unit has very limited resources to carry out its work.

<sup>61</sup> Several stakeholders noted the limited effectiveness of MTTI’s training school in Jinja and the need to send staff to places such as Kenya’s Utalii College for serious training in food hygiene and food safety management.

underpin this registration, licensing, and classification system. There is an evident need to strengthen the capacity of various stakeholders in order to enhance the level of food hygiene and safety in the hospitality industry.

MTTI, working together with the Consumer Education Trust and other parties has put together a draft proposal seeking technical assistance in a number of areas, including:

- The conduct of a comprehensive baseline survey and needs assessment on food safety in this industry;
- The development and dissemination of food safety user manuals for hotels, restaurants, and regulators;
- The enhancement of capacity of district authorities to conduct food and hygiene safety inspections;
- The sensitization and training of hotel and restaurant operators on the importance of food safety and the adoption of HACCP systems in all gradable establishments
- The conduct of training for regulators and other experts in this field and the development of monitoring and evaluation tools for use by regulators; and
- The development of a public-private partnership to ensure the implementation and monitoring of quality service and food safety concerns in the industry.

In pursuing such an agenda, it would be valuable to draw upon the experiences of other countries—including perhaps Jamaica and Mauritius—which have employed better practices in this field.

## **5.6 Hides and Skins: A New Pathway for Unlocking Value?**

Uganda's hides and skins (H&S) sector is neglected and currently in a state of decline. So is the entire supply chain to which it belongs. Today, there are only three active exporters of raw hides and three tanneries. H&S exports, which peaked at nearly \$25 million in 2001, have fallen sharply, to \$4.9 million in 2003. The industry is characterized by low levels of capacity utilization, high post-harvest losses, and low product quality. There is presently a lack of public and private sector capacity to introduce, monitor and enforce a functional grading and quality management system.<sup>62</sup>

The H&S trade is dominated by two companies. The largest of these operates H&S collection centers in almost every district of the country located next to slaughter houses where these still exist. Some farmers bring their hides and skins (mostly green) directly to the exporters' collection centre while some transact through a collection agent or trader. The traders also procure green, dried and salted H&S from butchers in rural and peri-urban areas. A common practice is to keep buying and drying on the ground until the trader collects enough to make a truck load. In the 1950s-60s, all major administrative

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<sup>62</sup> The few tanneries and exporters of raw H&S compete for the same raw materials. The use of low-grade raw-materials makes the local manufacture of leather products uncompetitive as it requires more chemicals, more labor and other resources. Available data show a steady rise in imports of leather and related manufactures and a large and growing import bill of finished footwear.

towns had well maintained slaughter houses. Most deteriorated over the years due to mismanagement. Some have now been leased to the private sector but are still lacking in physical and technical infrastructure. It is not uncommon to find others that are totally unable to meet the basic requirements for hygiene. It is at such facilities that farmers bring their animals for sale and slaughter.

The H&S quality chain, however, starts at the stage of rearing animals. In Uganda, animals are raised by smallholders working crop-livestock systems, nomadic and semi-nomadic pastoralists and the a few commercial farmers. In many cases, the quality of H&S of these animals is already poor due to poor nutrition, damage from branding marks, tick bites, and old age culling (owing to the perception of animals as a status symbol and not as a purely commercial commodity). Poor nutrition and husbandry not only lead to high mortality and low productivity, they also result in under-sized animals and H&S. Common diseases such as lumpy skin disease affect the quality of hides. At the slaughtering stage, shortcomings include a lack of technical know how, inadequate physical infrastructure and tools for proper flaying and handling. The cutting pattern and shape is not always correct and the use of improper tools and techniques causes undesirable cuts and perforations. A number of post-slaughter defects are imposed on the H&S due to improper drying and salting practices. Ground drying results in a number of defects such as cracks, abrasions, infestation with insects and rodents and putrefaction due to intermittent periods of high and low temperature. The high rate of H&S putrefaction is also attributed to delayed and insufficient application of salt.

Hence, Uganda's current system of H&S collection and marketing is governed by a few large dealers who pay scanty attention to aspects of quality. According to some observers, exporters and their buying agents tend to determine prices via a non transparent variable grading system. The International Standards Organization has standards for raw skins, hides and pelts (ICS filed, 59.140.20) to guide methods of trim, preservation and descriptions of defects but Uganda does not yet have an equivalent local standard. The government ministry responsible for the H&S sector no longer has staff designated as H&S graders. It has neither grading criteria nor field inspectors.<sup>63</sup>

The development of a road map will have to be the starting point for any efforts aimed at increasing the volume and quality of raw materials (H&S) necessary to revamp the tanning or leather manufacturing industry. However, the offices responsible for H&S at MAAIF will likely not have the resources, technical capacity and influence to spearhead this exercise. At the same time, the H&S exporters association is loosely functional as the key H&S exporters participate only inactively. Given the weak capacities currently characterizing the H&S and leather processing industries in Uganda, external technical assistance will be required to develop the suggested critical analysis, possible interventions and road map for the industry.

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<sup>63</sup> In 2001, the government introduced a 20 per cent levy on raw H&S exports. It remains unclear what is the strategic vision to effectively utilize such funds. A 2005 MAAIF document, "Hides, Skins, and Leather Development" lacks critical analysis of potential solutions and priorities in tackling pertinent supply chain problems.

*Hence, technical assistance could be provided to a taskforce co-led by the Export Promotion Board and Strategic Exports Interventions/Program and comprising of MAAIF officials from the H&S unit, veterinary inspection, SPS and regulation unit as well as the disease control department; the Uganda Leather and Allied Industries Association (ULAIA); the H&S exporters association; the Private Sector Foundation, UNIDO's Uganda Integrated Program (UIP), the PMA Marketing and Agro Processing sub-Committee (MAPS), the Uganda National Bureau of Standards and a few other key actors. Importantly, the process ought to consult with all private and public sector players that participated in the process of crafting the 'Hides, Skins and Leather Development' policy guidelines and strategy taking care not to exclude farmers associations, butchers, transporters and other relevant players in the supply chain. One of the challenges that will be faced by the road map taskforce will have to do with improving the poor relations and communications among the H&S dealers and exporters themselves and between these and the local leather processing and tanning industry. The taskforce might also have to evolve incentive schemes that seek to strengthen the much needed public-private partnerships in the H&S and leather processing industry.*

*In parallel, substantial investment will be required to build the human capital needed to manage effluent systems and the various technical aspects associated with converting H&S into value-added products. Grading, quality and environmental management standards and guidelines will be required. Access to acceptable chemicals and inputs will have to be addressed as well. In other words, a 20 per cent tax levy is just one among many other measures required to improve the H&S sector and the value-addition process. A strategic road map will have to be developed to address these shortcomings.*

## **5.7 Honey: Food Safety Standards and Prospects for a Sweet Success**

Uganda's honey is natural, organically produced and presently the single most important product derived from the bee-keeping industry in Uganda. The honey is trapped using traditional and modern beehives strategically positioned within the jungle and rich-flora forests scattered all around the country. Varied agro-ecological zones and vegetation permit the sourcing of a wide variety of organic honey which is distinguishable by attributes such as flavor, color and viscosity. From this wide variety of vegetation, the honey produced is often a special blend of wild flower nectars, apparently giving it a smoky and exotic flavor. Discussions with various stakeholders in Uganda indicate that this sector is being recognized as an important source of rural incomes and employment.<sup>64</sup>

Officials at the Apiculture Unit at Uganda's ministry of agriculture (MAAIF) estimate the number of active producers to be about 3300 with an average of 5 apiaries each. Annual production (liquid and combed honey combined) is estimated at about 1200 tons per year

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<sup>64</sup> The reported economic importance of the honey sector however, remains anecdotal as national statistics do not presently include the sector's contribution to macro-economic indicators. Annual production and trade statistics are lacking. Data on the sector's contribution to GDP and employment are also unavailable.

valued at about US\$ 1.8 million (approximately Uganda Shillings 3.2 billion). The National Strategic Plan for the Development of Apiculture in Uganda estimates the combined annual honey and bees wax production at 3000 tons. Whatever the actual level, production is dominated by small scale producers who account for over 98 percent of the total production. They are organized in groups of approximately 30 producers that come together to form district level associations. Each of the 56 districts (as of October 2005) had a minimum of 2 bee-keepers associations. The Ugandan National Apiculture Development Organization (TUNADO) is a national umbrella organization which brings together the beekeeper organizations (29 affiliated so far) and processing companies that make up the Ugandan apiary industry. TUNADO, formed in 2003, is the apex body for all beekeepers in Uganda and serves as the link between the private sector and government agencies.

#### **Box 9: Bee-Keeping and Collection Methods in Uganda**

Modern methods of bee-keeping and honey harvesting are relatively new. Starting with the Kenyan top bar hive technology introduced through a project executed by CARE International in the late 70s and early 80s, some producers have now moved on to acquire the more expensive but reportedly more productive Langstroth hive technology as it gives a better yield. The Kenyan top bar hive is however more widely adopted (20 per cent of the producers) and is now locally fabricated although there are still some difficulties in conforming to the right dimensions. While 70 per cent of the producers still use traditional methods of production (woven and hollow-log hives), it is not uncommon to find two or more hive technologies on the same apiary.

The traditional practice of burning hives to harvest honey is still widespread. In the absence of smoking equipment and defensive protective gear, burning the hives not only introduces ash impurities in the honey, it also makes it difficult to check whether or not the honey is ripe for harvesting. The bees that survive the fire also tend to migrate to other geographical locations. Once the honey is harvested, it is taken to a nearby collection centre (often group owned) for grading, weighing and processing<sup>65</sup>. With the help of a refractometer, its moisture content is measured and its grade thus determined. The producer price is subsequently determined by the grade of the honey supplied to the collection centre. Generally, the refining or processing undertaken at these centers is of a small scale type involving removal of the honey from combs, straining, some sorting, honey extraction using presses and further straining. The honey is then left to settle for about three days after which it is packed and distributed for sale. Currently, there are 7 organized, group-managed small scale refineries or processing units located in various geographical areas of the country. For small scale producers and traders operating outside organized groups, the post harvest chain excludes refining activities undertaken at the collection centre and the safety and quality of their product is generally lower. Both chains suffer from the persistent problem of unsuitable packing containers and jars.

There are currently two industrial processing operations for honey in Uganda, of which only one is approved for supplying to the EU. Raw material supply constraints have deterred other potential investors. The existing industrial plants are operating at well below their capacities. Ugandan honey is primarily sold locally, both informally and through the established supermarket chains. The largest industrial processor has also sold product regionally, especially to Kenya. Little trade is officially recorded.<sup>66</sup> Industry observers report that a growing proportion of the honey produced in the Eastern and

<sup>65</sup> Since the early 80s, many of the better organized groups and collection centers have received training and acquired equipment and tools from various development programs and donor interventions.

<sup>66</sup> FAOSTAT indicates only 6 tons of honey exported between 2000 and 2003.

Western parts of Uganda is sold in semi-packaged form through informal cross border channels to Kenya, DRC and Rwanda. And, in the case of Kenya, it is presently unclear whether the bulk of these informal exports are resold as final consumer goods or re-processed into higher grade and quality products.

Since the late 1990s, some considerable external assistance has been provided to Uganda's honey industry. In 1999, the UNIDO-supported Uganda Integrated Program (UIP) set out to collect, analyze and characterize Uganda's honey nationwide. This set the stage for a long process of data collection, analysis and discussion with a number of stakeholders in the bee-keeping industry. It was then realized that the prevailing Uganda Honey standard had to be revised as did pertinent legislation. A process of consultations ensued, lasting from 2001 to 2003. Meanwhile, the EU had placed an outright ban on Chinese honey, ostensibly presenting Uganda with a new market opportunity.

TUNADO exerted pressure on government officials and agencies to comply with the national requirements for exporting honey to the EU. The process of developing Uganda's honey Standard was completed and the Animal Resources Directorate was designated as the official competent authority for all matters concerning honey and other bee products. In addition, the MAAIF developed a national policy on apiculture and a sector development strategy with stakeholder participation. The MAAIF also developed a draft legal framework although the bill has not yet been approved by Parliament. Overall, these developments provided a much needed boost to the structure of the sector.

**Box 10: Core requirements for Third Country Honey imports into the EU**

The EU Council Directive 96/23/EC of 29 April 1996 stipulates that imports of all animals and animal products be subject to an approved residue monitoring plan. Because honey is an animal product, any country that wishes to export honey to the EU must have in place such a plan to ensure the safety of the honey with regard to residues of chemical substances such as pesticides and antibiotics.

The residue monitoring plan is presented to the European Commission once a year and three main groups of products are targeted for examination a) banned veterinary substances, b) authorized veterinary substances and c) environmental pollutants. Samples are collected, analyzed and the results are evaluated in parallel with the previous years' results to monitor changes in contaminants.

The first time a third country submits a residue monitoring plan for approval, it must also demonstrate that it has in place: (i) a legal framework for the residue monitoring plan, (ii) a structure of the official services in charge of the controls, (iii) laboratories to undertake official analysis and their qualifications, and (iv) an official sampling procedure.

Countries whose residue plans are approved are first listed in Council Decision 2000/159/EC on the provisional approval of residue plans of third countries.

One of the requirements for exporting honey to the EU is the development of an annual Residue Monitoring Plan (RMP) by the competent authority. However, approval of the annual RMP would only allow exports for the coming one year with the implication that export approval was to be renewed annually. This would undoubtedly be a costly undertaking as it would require training, re-training and equipping of decentralized inspectors to undertake the monitoring and collection of samples. It would also require the development and annual renewal of strategies to deal with performance deficiencies within the honey supply chain as well as unanticipated difficulties.

With technical assistance from a consultant hired by UIP and with additional support from the Development Finance Company of Uganda (DFCU), Shell Foundation and the NAADS program, a survey was undertaken early in 2005 to collect samples from all the honey producing regions of Uganda. Local personnel received training in sample collection and inspection and a RMP was prepared. This first RMP was sent, along with the samples collected, to a Germany-based laboratory for biological, physical and chemical testing and analysis. Nine months later, in the second half of 2005, authorities in Uganda received official notification from the EU confirming Uganda's short-listing onto the list of honey exporting countries making Uganda one of only five sub-Saharan countries to gain such approval. The Shell Foundation financed a large part of the \$40,000 needed to undertake conformity assessment required for the EU approval with the outcome that honey and fish are now the only animal products permitted entry into the EU.

**Box 11: The Challenge of Managing the Sugar Enzyme HMF**

One of the important challenges facing the industry relates to logistics and managing the temperature of the finished honey product while in transit. Difficulties in controlling temperature and the amount of time containers spend in transit raises the risk of the sugar enzyme HMF (hydroxy-methyl-furfural) rising beyond the EC market standard, which would cause it to be rejected.<sup>1</sup> Honey deteriorates with aging and/or heating and with this the HMF increases. Heating the honey will raise HMF contents rapidly. Original HMF standards were put in place to preserve quality by preventing adulteration of honey with other types of sugar which raises the level of HMF considerably. Even though the CODEX level is currently set at 80 mg/kg, the EU has set its own maximum levels for HMF at 40mg/kg. This level is also still used in Germany, the world's largest honey importer.

This lower EU standard effects the market in that honey that is traded to the EU in bulk form is usually required to be below 10 or 15mg/kg to enable further processing and then give some shelf life before a level of 40 mg/kg is reached. It is not uncommon for honey sold in hot climates to reach well over 100 mg/kg. with this having nothing to do with adulteration. The current EU standard for HMF levels in honey could prove to be a major barrier to Uganda expanding its trade there, as levels of quality production increase. The problem would be much more manageable if the EU were to adopt the CODEX standard for honey.

What this means is that a new window of opportunity has opened up for Uganda to further diversify its revenue base by exporting its organic and unique honey to the remunerative EU market. But it has also put the prevailing weak commercial and SPS management capacities to the test as the necessary commercial arrangements and 'building blocks for SPS management' for an effective response are not yet in place. With the approval of market access to the EU, the CA now needs to implement the RMP. Yet, no computerized surveillance system is in place. Likewise, a system for issuing sanitary certificates, bee movement permits and quarantines is not yet established. Indeed, these are not easy obstacles to overcome and as we might expect, the EU does not expect immediate compliance with these requirements. It is therefore possible to continue the development of a pro-active, but more nuanced response strategy.

Aside from looking at this new development simply as an emergent opportunity to access the EU market, both the public and private sector need to be cautious and aware of the

potential commercial and official consequences of a rushed and opportunistic choice that could expose and stretch the commercial vulnerabilities of the sector (such as discontinuity of deliveries due to the limited supply of honey). The country and sector could also find themselves working in a damage control mode, struggling to restore reputation, succeeding in some aspects but failing to build the necessary structural linkages through the chain and between the chain and other key sectors and players.

In other words, public and private sector players seem to be faced with a classic case of strategy choice and priority balancing. For instance, would it be more prudent to adopt a *wait while getting ready* strategy? That is, a strategy that postpones near-future benefits in order to invest in building the required architecture and capacities? What are the implications, costs and benefits of a *trial and error* strategy and are these strategies necessarily mutually exclusive? Is the current inducement to upgrade and upscale sufficient or would other incentive schemes be required and if so, what form would they take? Existing capacities are too inadequate to meaningfully tackle and resolve such strategic issues and this is the case for both the public and private sector.

Outside the realm of strategic choice and development, the biggest challenge is increasing the supply of high and consistent quality product in an industry dominated by small holder beekeepers using traditional methods. Bee keepers need to access affordable and appropriate beekeeping equipment and efforts to train all participants in the supply chain on quality and handling must be widespread. Donor efforts in the honey sector have been focused on assisting the industry to become authorized by the EU for export and to maintain safety and quality standards. Currently, the EPOPA project of SIDA is assisting honey processors in the industry to become certified organic and DANIDA is setting up an in house quality lab with one of the leading processors for testing of samples and residue monitoring. This company is also working with UNBS to become ISO 9000 and HACCP certified. In spite of these on-going efforts, questions on the phasing and prioritization of support for the sector remain.

In sum, it is evident that the honey sector is still small and struggling. Bee keeping is largely a smallholder based activity but the entry of relatively large and better resourced investors, coupled with the efforts of some public and donor agencies to grow the sector, is beginning to improve its shape and character. Standards for the production, processing and marketing of honey, statutory instruments to establish a functional inspectorate and an apiculture policy and sector development strategy have been produced with stakeholder participation. Such developments notwithstanding, the major elements of an effective food safety control program for the honey sector are not yet in place. Most things are still on paper and a multitude of capacities are missing.

The capacity to effectively address production and post-harvest deficiencies is absent. *One way of tackling this is to support TUNADO and MAAIF to identify and contract selected NGOs, community based organizations or private agencies that could assist TUNADO to upscale the production and collection system of honey. This would likely involve mobilization of outgrowers, group development or strengthening, awareness building of good practices, provision of relevant and modern production and protective equipment and, the provision of training services to bee keepers, small scale processors*

*and fabricators of hives. Selected contractors would also have to build the capacities of TUNADO and its affiliates in order to sustain and grow the production, collection and food safety management effort. Study tours to relevant countries with experience in bee-farming as opposed to wild bee keeping could inject new knowledge and information into the sector.*

*Additionally, links need to be promoted between local research organizations (public and private) and the industry in order to address the various gaps for information and data on the industry. At the same time, discussions would have to be initiated with a consortium of financial institutions comprising DFCU Leasing, Uganda Gatsby Trust, selected Micro Finance Institutes (MFIs), the Development Finance Division of the Bank of Uganda/Uganda Development Bank and other intermediaries to explore financing possibilities and the nature of incentive schemes that would have to be built into a suitable financing arrangement.*

*In addition, the capacities of the Competent Authority will have to be urgently enhanced in order to submit the 2007 RMP by March 2006. The problem is that the apiculture unit at MAAIF receives almost no budgetary allocation from the government yet most donor agencies have taken the stance that it is the government's responsibility to finance the annual RMP process. This stalemate needs to be broken. Coordination is needed to pool the financial, technical and other assistance necessary to prepare the RMP, to set up systems of inspection, export certification, bee movement regulations, disease surveillance and sanitary certificates as well as a computerized data and information system both at TUNADO and at MAAIF.*

*Meanwhile, efforts are also needed to coordinate the support required by TUNADO, MAAIF and other stakeholders to develop an effective and nuanced strategy for sustained and profitable access to the more remunerative markets for Uganda's organic honey. External technical assistance will be required to direct the strategy development process. Clearly, there are many elements and issues--some short term; others longer term--that require concerted effort. It is therefore suggested that an apiculture enhancement program be launched at TUNADO and MAAIF to address these and other pertinent issues.*

## **5.8 Capturing Missed Opportunities in Dairy Product Markets**

Although currently small and underdeveloped, Uganda's dairy sector has significant potential to reduce poverty in rural households, improve the health and nutrition of local consumers, and, on a modest basis, participate in regional trade. Current per capita consumption of dairy products in Uganda, estimated at some 40 liters per year, is far below the level recommended by the FAO of 200 liters per annum. In the domestic market there is, as yet, relatively little recognition of the concept of dairy product quality. The industry's participation in regional trade has been sporadic, essentially missing favorable opportunities to supply the Tanzanian and Rwandan markets as well as service UN organizations operating elsewhere. While production costs for milk in Uganda are

competitive, concerns about quality and food safety, as well as the reliability of supply have constrained this trade. Certain targeted programs have illustrated the scope for achieving improvements throughout the supply chain, although the industry continues to suffer from a dead-weight burden of direct state participation in the marketplace.

The primary source of milk is cattle and current production is estimated at 1 billion liters. Some 80% of this is handled by informal milk dealers; 20% via a formal processing sector. The formal sector operates at just under 60% of its installed capacity. This low level of capacity utilization stems from several factors, including:

- *Production constraints.* There is a prevalence of diseases among Uganda's dairy cattle. Most of these cattle are of low-productivity breeds and many farmers apply poor feeding and forage conservation practices.
- *Transport bottlenecks.* During the rainy season, almost 50 per cent of the milk in South Western Uganda remains unsold creating an artificial localized surplus while the eastern and northern parts of the country cannot readily access milk. Poor transport infrastructure is generally incapable of supporting cold chain activities for dairy products.
- *Parastatal underperformance:* despite recent private sector entry, the formal sector is still dominated by the parastatal Dairy Corporation (DCL). Past attempts to privatize DCL have been unsuccessful. DCL lacks the capital and management to perform at a high standard. It operates at less than 40% of its capacity, yet with continued government support, casts a negative shadow over the entire industry.

The dairy industry was liberalized in 1993 resulting in the entry of 15 private dairy processing firms in addition to tens of private milk collectors and marketing agents. By 2004, some 5 of the 15 industrial processors had closed down and several others face an uncertain future. Twinamasiko (2004) attributes these developments to a combination of poor business management, an inability to compete with informal collectors of milk, and the spillover effects of DCL's flailing operations.

Upon liberalization of the industry, a flurry of small scale operators entered the industry. Most are informal and their sheer number poses supervisory and inspection difficulties. The informal or traditional milk marketing channel trades in milk directly from farms. This is often loose, unprocessed milk usually transported by traders in low cost milk cans and plastic jerry cans on foot, bicycles, motorcycles and open pick-up trucks. Door to door distribution is common. The competitive advantage of these informal milk distribution channels stems from their ability to collect milk from remote locations, to promptly pay a higher price and to manage a cost-effective door to door distribution system. However, for the most part, milk handling practices are poor and milk chilling equipment is often lacking. Informal roadside or tree shade collection points are typically lacking in basic refrigeration equipment and sanitary conditions. The number of cases of brucellosis among consumers has increased along with the emergence of various small yoghurt producers that do not pasteurize their product.

The Dairy Industry Act, 1998 served to establish a Dairy Development Authority (DDA) to develop and regulate a liberalized dairy industry. With a current staffing of 30, DDA promotes production and competition in the dairy industry, monitors the market for milk

and milk products, sets milk hygiene and milk marketing standards and enforces regulations in the dairy industry. Its current program of work is based on the five-year Strategic Plan developed in 2002. Currently, it is spearheading efforts to improve the quality and marketing of milk and milk products in the country as well as enhancing the overall competitiveness and productivity of dairy enterprises.

DDA has spearheaded the process of developing local standards and associated regulations for the production and marketing of milk. The main aspects inspected are adulteration (addition of water to the milk) and contamination with micro organisms. Despite the fact that the standard has been published by the Uganda National Bureau of Standards (UNBS), some of the district-based officers and farmers we interviewed indicated that there was only limited awareness of these standards and there was a lack of equipment and procedures for testing milk. One of the biggest challenges is the limited capacity of DDA and UNBS to enforce standards especially within the informal milk sector. In that segment, commercial incentives also do not provide signals as there is no price differential for higher quality milk.

More promising developments are being fostered by certain private sector entities, including the Uganda National Dairy Traders Association (UNDTA) and Land O' Lakes which, together, have been instrumental in promoting awareness of basic hygiene and quality management across the informal milk traders. A code of conduct covering both the formal and informal sector operators has also been developed. With USAID financing, Land O'Lakes has been working with a number of farmer 'bulking groups', promoting good hygiene practices, cooperative development, quality enhancement, and the development of overall business and advisory services. Technical support is being given to several processors to enable them to adopt ISO 9000 and HACCP-based management systems. Consideration is being given to pursuing a 'seal of quality' program—modeled on a similar program implemented by Land O'Lakes in Macedonia, to strengthen the domestic market for quality dairy products in Uganda. Efforts are also being made to increase consumer awareness of and access to quality dairy products via a school milk program.

There are some significant opportunities for intra-regional trade in dairy products. The DCL has previously sold UHT milk in Tanzania, but proved to be an unreliable supplier. There is a considerable unmet demand for quality milk in Rwanda, although that country requires that milk be pasteurized and properly packaged and, as yet, there has been only limited investment in processing capacity in nearby areas in Uganda. One Dutch/Ugandan joint venture company has been successful in developing a regular export trade in quality cheese to Kenya.

Two main conclusions and recommendations emerge from the foregoing discussion. The first is that the consumption of milk in Uganda needs to be boosted and the proposal to promote higher milk sales through schools certainly looks very promising. If this potentially large market could also provide a price differential for high quality milk supplied by DDA-certified formal and informal suppliers, this might help to boost the consumption of safe and better quality milk in the country. Support might be required by

the key agencies involved in this discussion in order to implement the exploratory and promotion program.

Secondly, the current situation of agro-food safety in the dairy sector is similar to that of many other sectors in Uganda. The capacity to apply basic hygiene and standards for food safety is weak, a situation made worse by the dual nature of the milk marketing system. DDA is struggling to enforce regulations particularly in the informal sector and simply has no capacity to continuously inspect and enforce standards and regulations nationwide. It would appear as though the development of a decentralized but well coordinated system of inspection, enforcement, quality management and advisory services, through the private sector and NGOs, would partly relieve the DDA of its heavy burden. However, the feasibility of sub-contracting or delegating the inspection and enforcement function requires further scrutiny.

### **5.9 Cautious Potential in Promoting Organic Agriculture and Products**

Organic production is one of the fastest growing areas in agriculture, with the demand for certified organic products in developed countries continuing to outpace supply. Uganda is seen as having potential to participate further in this segment of international agro-food trade. Uganda features an abundance of flat agricultural land with fertile soils, low labor costs, and the country enjoys very favorable climatic conditions and a year-round growing season. The majority of farmers in Uganda have not had the resources to purchase agricultural inputs and their traditional small-scale farming methods are compatible with organic practices, thus their products are essentially “organic by default,” making the conversion to certified organic production relatively simple in comparison to conventional agricultural farms in developed nations.

However, important challenges remain to be overcome including, increasing government technical support, lowering costs of certification, shifting focus from production to market development, sanitary and phytosanitary issues, poor availability of crop financing, fragmented supply chains, and unreliable quantity and quality of organic products. These issues combined with a lack of a coordinated organic development policy, have kept Uganda from fully exploiting its current organic production and have discouraged the private sector from investing significantly in this area, leaving it mainly dependant on continued donor support.

Certified organic production in Uganda is relatively recent, having only really taken hold since 2000, as a result of a strong donor focus on organic production. Uganda has since quickly established itself as the leader in Africa in organic production. While still small in aggregate value, Uganda’s exports of organic products increased from \$4.6 to \$7.7 million between 2001 and 2003 and the number of companies selling organic produce grew from 5 to 15. There are approximately 40,000 certified organic farmers in Uganda, of whom approximately 80% concentrate on just three crops, cotton, coffee and sesame. About 125,000 hectares or 1.4% of Uganda’s agricultural land in certified organic production, which is both the largest area and highest percentage of land under certified organic production for any nation in Africa.

The majority of growth in Uganda’s organic exports is currently in coffee, followed by cotton and sesame. Roughly 15,000 producers supply Kawacom Ltd. with organic

Arabica and Robusta coffee (Groslink). More than 12,000 farmers produce organic cotton for the Lango Union. Another 5,800, produce cotton and sesame for Outspan Enterprises Ltd. These crops have minimal sanitary problems, are produced the same as conventional crops and are less perishable making them good for organic production and export. Uganda also exports smaller amounts of organic pineapple, dried fruit, sunflower, sweet banana, spices (vanilla, ginger, and chili), honey, tea and cocoa. The growth potential for exports of organic fresh fruits, vegetables and fresh spices is more limited because of the greater risks due to high perishability, small production quantities, high transportation costs, lack of cold chain and problems with sanitary and phytosanitary issues.

The major hurdles to growing the organic sector are not conversion to organic production methods, but the high costs of organic certification, gaining market share and the difficulty of organizing producers. Typical start up costs to organize organic producers and set up an Internal Control Systems (ICS) required by external certification bodies to document quality assurance and traceability can average US\$30,000 with an additional US\$10,000 for certification. The yearly inspections required to maintain the certification can cost around US\$7,000. Due to the high costs and large number of small-scale farmers, organic production in Uganda is typically certified through “Small Holder Group Certification” (SGC). This allows a group of farmers in the same area or who produce the same product to get certified at the same time, thereby lowering the costs per farm. It also supports the market and lowers transport costs by generating the larger scale and critical volumes needed to sustain the market, which most individual farms could not achieve alone.

Due to the high cost of international organic certification, the fees for yearly inspection and certification of organic production by the international certifying bodies are typically paid by the exporter or processor. They also generally pay for training, transport and packing materials. *Therefore, exporters and/or buyers usually maintain control of the organic certifications for the producers, a situation which then binds the grower to that buyer.* Although some growers do receive premiums above at-gate prices for their organic products, under the above arrangement it is difficult to verify how much of the organic premiums actually reach the growers versus the amount collected by the exporters or buyers who hold the certifications.

The main international organic certifying firm in Uganda is now IMO CONTROL (from Switzerland). Another firm, KRAV (from Sweden), was the largest certification organization, but recently pulled out of Uganda, leaving IMO to maintain its organic certifications. EcoCert is also working in Uganda, mostly in cotton. In an effort to lower certification costs, Uganda’s first national organic certification company, UgoCert, was established in February 2004, with donor funds from EPOPA. UgoCert is currently working to become internationally recognized, which would provide a lower cost alternative for certification services. It is not certain whether UgoCert will survive in the small Ugandan market without long-term donor support.

To better coordinate and assist the organic sector, the National Organic Agricultural Movement of Uganda (NOGAMU), was founded in 2001 as an umbrella organization for the various organic groups. NOGAMU has a national accreditation program (IAP) and is a member of IFOAM, which brings international recognition. NOGAMU is the only national organic organization in Uganda, representing 15 of the 17 organic associations and exporters in the country, or 70% of market, excluding organic coffee. The organization assists farmers with access to organic fertilizers, technical assistance, extension activities, organic standards development, advocacy and marketing of organic products. In addition, NOGAMU is very active in collaborating with the government to develop national organic standards and policies.

Thus far, the support for and growth in Uganda's organic sector has largely come about haphazardly by individual exporters supported by various NGOs working with donor funds. Organic production in Uganda lacks government and university support and research, and what is being done is not necessarily in line with the needs of the private sector. Uganda lacks a national policy and a national organic standard that would give better direction to the movement and enable efforts to be better communicated and more focused. Government agencies such as UNBS and NAADS do try to provide training in production and sanitary controls, but due to extremely limited resources what is offered is very basic and infrequent. In almost all cases, donor support was needed at the start-up phase through completion of the first certification process. The largest source of this type of support in Uganda has come from SIDA's Export Promotion of Organic Products from Africa (EPOPA) program. These projects were also heavily focused on getting organic products into the EU markets but SIDA is currently working to develop regional organic standards that will open new regional market opportunities.

An area of concern for Uganda's organic products is their sanitary status and the impact of increasingly stringent sanitary regulations and market requirements. The requirements that accompany organic certification can improve the quality controls, handling and traceability of organic products, which is lacking in the general market, but they do not include sanitary and quality controls that must also be met, such as HACCP and ISO 9000. The trend is for exporters to be moving away from working directly with small producers, not because of deficiencies in product quality or productivity, but because of high transaction costs, inconsistency of supply, and difficulty implementing standards required by supermarkets, like traceability and demonstration of compliance<sup>67</sup>. There are also market requirements on volume, uniformity, labeling, packaging, logistics and price which are major limiting factors for gaining access to the supermarket chains and their distributors that would support long-term growth of the organic sector in Uganda.

Even though Uganda leads Africa in organic production and has the land to expand production, there have been serious problems successfully marketing its current organic production as organic, leaving many farmers to sell their certified organic products as conventional. The biggest complaint among organic producers is that processors and middlemen routinely do not buy 100% of the production volumes, because they undersell to avoid falling short of their quotas and losing a contract. At times, as much as 50% of

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<sup>67</sup> DFID, *Small Producers and Standards in Agrifood Supply Chains*, Africa Trip Report Feb-Mar 2005

the production is left to be sold in the conventional market, and therefore doesn't earn the organic premiums. In the 2000/01 growing season there were about 12,000 registered farmers producing organic cotton and sesame. These farmers produced an estimated 3,600 tons of sesame and 6,000 bales of cotton. Some growers received premium prices, but only for about 700 tons of sesame and 1,100 bales of cotton, and the rest were forced to sell at conventional crop prices. Processors argue that producer side-selling, transportation problems and the high proportion of low quality product make it difficult to maintain a constant supply to meet quotas of exportable grade product.<sup>68</sup>

It is important that Uganda continue to support its organic producers and maintain its lead position in Africa. Some larger growers can serve to demonstrate effective organic practices and also serve as nuclei for broader supply chains for organic produce. However, the development of certified organic production should not receive a disproportionate amount of donor focus or be promoted as the superior option for the majority of small producers. Uganda still faces major challenges in improving the productivity and risk management capacities of smallholder farmers generally, and in promoting increased awareness and attention to good hygienic and good agricultural practices.

### **5.10 Maize: Supplying the Regional (and Instability) Market**

Over the past decade, maize production, milling, and export have attracted the attention of the Ugandan government and donor organizations. Maize is one of the leading non-traditional export crops, with estimated formal plus informal revenues of \$25 million in 2003. In addition, because of Uganda's relatively low domestic demand for maize it has become one of the largest providers of maize and maize meal to the World Food Program which supports relief projects in Uganda, Rwanda, Sudan, and Congo. In 2005, the World Food Program was slated to purchase about 140,000 metric tones of maize with a value of \$25 million. The Ugandan maize value chain supports about 2 million (mostly smallholder) households.

In Uganda, maize typically is planted twice per year. Production occurs between March and May and again between September and December. Harvesting occurs during the months of January /February and July/ August. At harvest time, the corn generally has a moisture content of 20 –25%. The de-husked cobs are loosely piled for drying and then after 2-4 weeks, the cobs are shelled. Few hand or mechanical shellers are available and so shelling generally placing the cobs in a bag and then beating the bag. Once shelled, the grain is sun dried on the ground or on mats. Upon completion of sun drying, the grain is stored for use or sale. At this point, the grain normally contains 16 –17% moisture. Some maize is sold wet with traders consolidating supplies and applying their own drying and storage methods.

These post harvest methods play a significant role in Ugandan's difficulty in meeting regional quality and safety standards. As recently as 2004, both Rwanda and Kenya have refused shipments of Ugandan grain due to quality problems. The shelling process contributes to broken and damaged grain. This enhances the growth of mold leading to

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<sup>68</sup> Alan Tulip, *Organic Cotton Study, Uganda Case Study*, August 2002

Aflatoxin contamination. The lack of adequate drying (below 14%) leads to discoloration and supports further growth of mold. Drying on the ground or mats leads to the incorporation of dirt, filth and other matter in the product.

Uganda’s grain traders and the industry are faced with a difficult challenge. In order to meet export or WFP quality standards the grain must be segregated, based on quality standards, or face potential rejection at the border or at time of sale to WFP. Proper segregation is costly to achieve, reducing the overall profitability of maize sales and lowering farm-gate prices. In order to bridge the quality gap, APEP has undertaken a program to improve the post harvest practices. The goal here is to provide the farmers with training and technology that can improve drying, and reduce cracks, discoloration, and foreign bodies. The World Food Programme has instituted a quality program that will begin in 2006. Better quality grain will receive premium prices.

Further measures are possible. One would seek to develop low cost on farm post harvest drying techniques, contributing to better quality grain and reduced spoilage. This work can be conducted in collaboration with NARO, which has experience developing a broad range of on-farm post harvest practices. Second, there is scope to adopt and adapt quick, low cost methods for detecting aflatoxin in maize. These have been utilized in other parts of the world.

In 2006, Uganda is witnessing a record demand for maize. Drought conditions in Kenya and Ethiopia, coupled with large purchases by Tanzania and Zambia mean that demand for maize in east and southern Africa will continue to be high. In December 2005/January 2006, there were indications that Kenyan and Tanzanian traders were purchasing large quantities of wet maize, directly from farmers, and then shipping this by truck or ferry to their own countries. Overall regional shortages of supply were leading them to disregard EAC maize quality standards. The long-distance transport of wet maize also presents the risk of Aflatoxin development.

These recent developments seem to be part of a longer pattern of instability in the regional (and humanitarian) maize market in which the effective demand for quality (and food safety) gyrates from year-to-year, thus sending confusing signals and incentives to farmers, intermediate traders, and millers about their management of quality and food safety risks associated with maize.

**Box 12: Regional Harmonization of Maize Standards**

In recent years, progress has been achieved in developing harmonized East African Community standards for maize which are now replacing former national standards. For its regional purchases, the World Food Programme has also recently adopted these EAC standards. As noted in Table below, the EAC standards are more stringent than those which previously were applied within Uganda.

Maize Standards in Uganda and the EAC

Grading Factor	WFP Prior to EAC	UNBS No. 1 Prior to EAC	UNBS No. 2 Prior to EAC	UNBS No. 1	UNBS No.2	EAC No.1	EAC No.2
Moisture, %	14	14	14	13.5	13.5	13.5	13.5

Insect Damage, %	3	2	3	2	3	1	3
Inorganic Matter, %	-	-	-	0.1	0.2	0.25	0.5
Broken Grains, %	2	2	3	2.0	3.0	2.0	4.0
Rotten or Diseased Grain, %	-	-	-	2.0	3.0	2.0	4.0
Discolored grains, %	-	-	-	1.0	1.5	0.5	1.0
Immature/shriveled Grains, %	2	0.2	0.4	0.2	0.4	1.0	2.0
Filth, %	-	-	-	0.1	0.1	0.1	0.1
Aflatoxins	10	-	-	20 ppb	20 ppb	10 ppb max, 5 ppb max B1	10 ppb max, 5 ppb max B1
Total defective grains, %						4.0	5.0

### Box 13: Aflatoxins in East Africa

Aflatoxins are produced primarily by two molds *Aspergillus flavus* and *Aspergillus parasiticus*. Both are found in soils and decaying plant material. Infection of the grain is most commonly occurs after the kernels have been damaged by insects, birds, mites, hail, early frost, heat and drought stress, windstorms and other unfavorable weather. In order to grow, the fungi need proper conditions; moisture in the grain (14 – 25%), they need nutrients such as amino acids, starches, and minerals, and ambient temperatures above 24°C with a relative humidity greater than 60%.

Aflatoxins are toxic and even fatal to livestock and humans. In addition ingestion of small quantities of the toxin over a long period of time has been associated with liver cancer. Acceptable tolerance levels of Aflatoxin in maize for human consumption have been set at 20 parts per billion in the United States and at 10 ppb within the European Union.

In April 2004, Kenya experienced a large outbreak of acute Aflatoxicosis (Aflatoxin poisoning). Aflatoxicosis can cause high fever, rapid progressive jaundice, edema of the limbs, pain, vomiting, swollen livers and finally liver failure. This outbreak resulted in 317 hospitalized cases and 125 deaths and was linked to Aflatoxin-contaminated maize.

During this outbreak, maize from 65 markets, 243 vendors, and a total of 350 maize products were tested for Aflatoxin levels. Fifty-five percent of the samples had levels in excess of the Kenyan standards (20 ppb). Thirty five percent had levels of greater than 100 ppb and 7% had levels greater than 1000 ppb. In fact, some samples measures greater than 10,000 ppb. Based on interviews the researchers found that majority of the maize (88%) was locally grown. Some of the contaminated product may have been imported from Uganda or Tanzania.

## 6. CONCLUSIONS AND RECOMMENDATIONS

In the recent past, Uganda experienced a major, overt challenge to its external trade due to problems of non-compliance with trading partner food safety requirements. Yet, the immediate challenge was met, due to the considerable efforts of the private sector, the Government of Uganda, and supportive donor agencies and trading partners. Uganda was able to restore its access to the EU market for fishery products and such exports have expanded considerably in the years since the crisis.

*Uganda does not currently face any similar overt and immediate challenges to its international market access as a specific result of non-conformity with SPS, quality or other standards. Yet, relatively weak capacities in SPS management and the incidence of low or inconsistent product/raw material quality pervade large segments of Uganda's food and agricultural trade, weakening its overall competitiveness and reducing the*

*returns to primary producers, processors, and traders. While SPS and/or quality management problems are rarely the preponderant weakness within Uganda's agro-food supply chains, they are ever-present. And, there are evident risks of market access problems in the future, both among traditional and non-traditional export products.*

Major weaknesses are evident throughout the so-called 'hierarchy' of standards management needs. The level of consumer, primary producer, agro-enterprise, and policy-maker awareness about the importance of quality and SPS management, about the available techniques and methods, and about their own role in the broader system is both limited and thinly dispersed. The same can be said about the adoption of so-called 'good practices' in agriculture, manufacturing, and regulatory functions. Uganda's pertinent legislation is obsolete, while an extensive range of proposed laws and legal revisions remains unfinished parliamentary business. Some technical agencies have clear mandates; others do not, or have overlapping roles. Many of the pertinent public agencies have inadequate human, financial, and other resources to effectively perform their regulatory or facilitative functions. Uganda is only an intermittent player in the arena of international standard-setting and related diplomacy.

Within Uganda, there exist pockets of enhanced SPS/quality management capacity that have evolved in response to particular problems complying with export market requirements (for example, for fish and fishery products) or the emergence of acute SPS problems (for example, outbreaks of specific animal diseases). Most efforts to upgrade supply chain or regulatory capacities have been in reaction to events or external pressures, rather than part of concerted strategies to use standards management as a basis for improved competitiveness. With only limited exceptions (for example, among investors in the honey and cut flower industries), many of the initiatives to voluntarily adopt more rigorous (and market-rewarding) standards have been driven by external financial and technical support—from donors, NGOs, and others. Except at the very micro (i.e. certain companies or industry groups) level, Uganda essentially lacks a strategy to utilize agro-food standards to enhance its international competitiveness and to further objectives related to protecting human, plant and animal health. Neither 'crisis management' nor the dependence upon donor priorities and largesse constitute strategies.

Uganda faces many development challenges. Simply in relation to the competitiveness of its agro-food exports, there are many other issues beyond standards management that require attention. In such a context, it is difficult to effectively draw attention to standards management needs, except in circumstances of crisis, as with the interruption or threatened interruption of an important trade into a major destination market. The EU trade ban effectively got standards compliance 'on the radar screens' of policy-makers, technical specialists, and the private sector. Since that time, other players have sought to utilize the fisheries ban experience to draw attention to other, parallel needs, for example in relation to quality and phytosanitary management in horticultural supply chains. However, these rather different circumstances likely call for rather different approaches and divisions of institutional responsibility compared with those adopted in the fisheries supply chain.

Uganda lacks a coherent and agreed upon vision for the promotion and management of standards in the contexts of trade and broader economic development. Periodic efforts of coordination or consensus-building have been undertaken—as with the drafting of a

national food safety strategy, and more recent efforts to develop sub-sector strategic plans-- yet the broader picture still seems to be one of fragmentation of effort and a lack of coordination among government agencies, the private sector, and the donor and NGO communities. There appears to be an enormous amount of development assistance geared toward promoting Uganda's agro-food exports and/or strengthening related support or technical services (see Annex 1). Yet, thus far, this assistance appears to have had only modest and isolated success in fostering the development of sustainable SPS/quality management capacities.

*The 'solution' does not lie in more money, more technical assistance, or more pieces of laboratory hardware. It lies in (i) developing improved strategies, (ii) in more clearly prioritizing investments and other capacity-building needs, (iii) in shifting resources so as to give much greater attention to awareness-raising and the promotion of basic/good practices among primary producers, enterprises and regulatory agents, (iv) in better defining the roles and responsibilities of different players, and, (v) in intensifying the levels of collaboration—within the private and public sectors, between them, and among donor agencies—in the implementation of agreed strategies and programs. Uganda certainly has important 'hardware' needs—for example, reliable sources of electricity or the upgrading of selected fish landing sites—yet the effectiveness of existing (or new) hardware has and will be undermined without major gains in the 'software' of standards management—in the forms of awareness, proper legislation, strategic and coordinative fora, data and information management systems, stronger business and product associations, etc.*

The table below provides a series of recommendations for strategy (re-development), policy, legal, or institutional reform, or additional technical assistance/capacity-building support for implementation over the short- or medium-terms. Short-term implies implementation over the coming 18 months while medium-term designates implementation over the next three years. Some of these recommendations cover generic cross-cutting topics; others relate specifically to particular industries or supply chains. A level of priority is assigned to each recommendation, taking into account the magnitude of the pertinent risks and/or opportunities and/or how this measure might impact on other measures being considered by government or the private sector. The sequencing of recommendations more or less follows the structure of the text in above analysis.

**Table 6: Action Matrix for Enhancing Trade-Related SPS and Quality Management Capacity:**

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

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			
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
	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
	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

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			
	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
	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

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			
	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 <i>mandatory</i> adoption of EUREPGAP and other management systems		✓				MAAIF	Short-Term	High
	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

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			
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
	Organize an event in which public 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
	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, MAIF	Medium	Medium
	Develop the necessary capacities and systems of the competent authority to implement the outlined residue monitoring program				✓	✓	MAAIF	Short-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			
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
	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

**Table 7: Matrix of Donor Activities Related to Food Safety and Agricultural Health Standards**

<b>Project</b>	<b>Donor</b>	<b>Description</b>	<b>Main Activities related to food safety and quality</b>	<b>Sectors</b>	<b>Duration</b>
Agricultural Productivity Enhancement Project (APEP)	USAID	APEP aims to expand rural economic opportunities and increase household income in the agricultural sector by increasing food and cash crop productivity and marketing.	<ul style="list-style-type: none"> <li>• Post-harvest handling</li> <li>• Producer organization strengthening</li> <li>• Education and awareness programs</li> <li>• Biotechnology awareness program</li> </ul>	Coffee, Cotton, Bananas Spices: Vanilla, Cardamom, Grains and Oilseeds: Maize, Rice, Sesame, Sunflower, Soya Floriculture	2003 - 2008
Strengthening the Competitiveness of Private Enterprise (SCOPE)	USAID	The project provides targeted technical support to the Poverty Eradication Action Plan, the Medium Term Competitiveness Strategy, and the Programme for the Modernization of Agriculture by strengthening competitiveness in selected sectors.	<ul style="list-style-type: none"> <li>• Promotion of good practices and quality management among industry clusters to reposition industries, enhance export competitiveness, and deepen market access.</li> <li>• Support to the Uganda Gifted by Nature international branding and marketing campaign.</li> </ul>	Tourism, Oilseeds, Fish Cotton, Grains, Floriculture, Coffee Fisheries, Dairy	2004 – 2006
Investment in Developing Export Agriculture (IDEA)	USAID	The goal of IDEA is to increase rural household incomes through increased production and marketing of selected non-traditional agricultural exports and selected food products.	<ul style="list-style-type: none"> <li>• Workshops on maintaining cold chain in floriculture</li> <li>• Post harvest handling, fermenting and drying for vanilla and cocoa.</li> </ul>	Maize and Beans Cut Flowers, Vanilla, Fruits and Vegetables Cocoa Papain,	1995- 2004
Regional Agriculture Trade Expansion Support program (RATES)	USAID	The RATES program is designed to increase the value and volume of agricultural trade within the East and Southern Africa region and between the region and the rest of the world.	<ul style="list-style-type: none"> <li>• Post-harvest handling</li> <li>• Development of internationally recognized standards and certification programs</li> </ul>	Specialty Coffee, Maize and Pulses, Cotton Dairy	2001 -2006
Uganda Private Sector Dairy Industry Development	USAID	The project aims to increase the productivity and competitiveness of commercial dairy farms and enterprises throughout the farm-to-market dairy value chain.	<ul style="list-style-type: none"> <li>• Interventions in milk bulking and handling</li> <li>• Promotion of good practices</li> </ul>	Dairy	2001 – 2004
Uganda Integrated Programme (UIP)	UNIDO	The UIP is a joint initiative of the Government of Uganda and UNIDO to strengthen agro production and enhance value chains.	<ul style="list-style-type: none"> <li>• Development of national coordination system for food inspection and quality control</li> <li>• ISO 9000/14000 and HACCP certification and training</li> <li>• Promotion of clean technology and production</li> <li>• Development of quality assurance systems</li> </ul>	Fish Honey Horticulture Meat	?
Export Promotion of Organic Products from Africa (EPOPA)	SIDA	The aim of the EPOPA program is to increase agricultural production and smallholder farmers' incomes by developing exports of organic products from Africa.	<ul style="list-style-type: none"> <li>• National standards development for organic products</li> <li>• Development of a national Organic certification body (UGOCERT) which is ultimately expected to reach international recognition</li> <li>• Development and revision of Internal Control</li> </ul>	Honey, Fresh And Dried Fruit, Fish, Spices And Seeds, Coffee, Shea Butter.	1997-2008

			<p>System for firms</p> <ul style="list-style-type: none"> <li>• Product quality management</li> </ul>		
Agricultural Sector Support Programme (Phase II)	DANIDA	The Programme focuses on poverty reduction and household food security to improve the livelihood of small-scale farmers by increasing production in the rural areas.	<ul style="list-style-type: none"> <li>• Agricultural education and awareness</li> <li>• Financing of in house quality lab for honey testing</li> <li>• Support to the National Meat Improvement Strategy Plan</li> </ul>	Meat Dairy Honey	2004 – 2009
Strengthening Phytosanitary Capabilities	FAO	The main objective of the project is to strengthen the phytosanitary capabilities of Uganda towards establishing an effective phytosanitary control system in order to facilitate safe trade in agricultural commodities.	<ul style="list-style-type: none"> <li>• Reviewing and modernizing the legal frameworks</li> <li>• Training Government officers and policy level staff to strengthen the national phytosanitary and to encourage compliance with the IPPC, the SPS Agreement and the national phytosanitary regulations</li> <li>• Development of a procedural manual for crop inspectors</li> <li>• Establishing appropriate surveillance systems to support pest risk analysis;</li> <li>• Establishing a Pest/Trade Data Management System to support regulatory decision making</li> <li>• Strengthening the post entry capabilities for regulating high risk plant material</li> </ul>	All plants and plant products	2003-2005
Pesticide Initiative Programme (PIP)	EU-COLEAP	The programme's objective is to enable ACP companies to comply with European food safety and traceability requirements and to consolidate the position of small-scale producers in the ACP horticultural export sector.	<ul style="list-style-type: none"> <li>• Promotion of good company practices</li> <li>• Training staff in food safety procedure</li> <li>• Training on use of pesticides and use of non-chemical alternatives such as integrated pest management</li> <li>• Establishing product traceability systems to keep track of products</li> </ul>	Fruits And Vegetables (Okra, Chilli, Hot Peper, Apple Banana, Ginger)	2001-2006
Lake Victoria Fisheries Management Plan Implementation Project	EU	The purpose of developing a Fisheries Management Plan is to sustain the livelihoods of the communities who depend on the fishery resources of Lake Victoria, and to reduce poverty, food insecurity and unemployment.	<ul style="list-style-type: none"> <li>• Developing proper handling, preservation, processing and storage for fish and fish products.</li> </ul>	Fisheries	?
Pan African Programme for the Control of Epizootics (PACE)	EU	The objective of the programme is to strengthen the capacity at national level to assess the technical aspects of animal diseases and to generate appropriate programmes for their control.	<ul style="list-style-type: none"> <li>• Carry out rinderpest surveillance according to OIE guidelines</li> <li>• Ensure availability of recommended rinderpest test kits in diagnostic centers</li> <li>• Prepare a dossier for the declaration of nation-wide freedom from rinderpest disease as required by OIE.</li> <li>• Strengthen tracing-back of CBPP positive slaughter animals for strategic vaccination</li> <li>• Vaccinate against FMD and CBPP.</li> <li>• Support veterinary legislation and community based initiatives</li> </ul>	Livestock	2004-2007

Farming in Tsetse Controlled Areas (FITCA)	EU	FITCA contribute to improved human health and livestock productivity by having a sustainable approach to tsetse flies and sleeping sickness control.	<ul style="list-style-type: none"> <li>• Control tsetse and trypanosomiasis using technologically simple and environmentally friendly sound methods.</li> <li>• Improve livestock productivity by gradually upgrading indigenous stock.</li> <li>• Strengthen the relevant institutions thru training of staff of agricultural, medical and veterinary institutes.</li> <li>• Introduce land use practices to accompany tsetse control and to stop reinvasion.</li> </ul>	Livestock	2004-2007
Support to Strengthen the cap of the <b>Private Sector Foundation Uganda (PSFU)</b>	EU	To strengthen the capacity of the private sector foundation in Uganda to contribute to the MTCS	Support to Private Sector associations to manage the SPS and TBT requirements for the EU market +support for training, quality assurance, technical assistance, market development and research	Private Sector	2004-2006
Uganda Fisheries Development Project	ADB	This project features a component to upgrade and equip 30 landing sites on Lake Victoria, Kyoga, Albert, George and Edward with modern fish handling facilities.	<ul style="list-style-type: none"> <li>• Construction of cold storage rooms, sorting and loading sheds and piers.</li> <li>• Installation of portable water supply, electricity supply, waste disposal systems, access roads and security fencing</li> </ul>	Fisheries	2005-2010?

