

**Tanzania's Agro-Food Trade and
Emerging Sanitary and Phytosanitary (SPS) Standards:
Toward a Strategic Approach and Action Plan**

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I. INTRODUCTION:

As Tanzania seeks to expand and 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. Such issues were of little importance for Tanzania's trade in the past, given the prevailing structure of its agricultural commodity exports. Yet, restrictions on Tanzanian exports of fish and fishery products to the European Union during the later 1990s served as a 'wake-up call' for Tanzanian officials as well as private sector exporters, 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 Tanzanian non-traditional exports.

Tanzania successfully responded to the challenges posed by the EU ban and it has been able to expand its fish and fishery product exports in recent years. In a few other areas, Tanzanian producers and exporters are beginning to adopt and benefit from higher international food safety and quality standards. Yet, these developments still represent outliers and Tanzania's overall capacity to manage food safety and agricultural health risks remains extremely limited both in the context of international trade and domestic markets. This is the case both in the public and private sectors.

In certain sub-sectors, for example livestock products, this limited capacity has severely constrained Tanzania's agricultural and food exports, although additional supply-side factors have further undercut international competitiveness and even the development of the domestic market. For some commodities, including groundnuts and honey, uncertainty about meeting particular food safety standards has led Tanzanian exporters to adopt a defensive posture, channeling these commodities only to markets where standards are less stringent and/or not rigorously enforced. There are some indications that Tanzania's largest non-traditional 'export', namely tourism, may be vulnerable to the risks associated with poor food hygiene and inadequate monitoring and inspection. For a broad array of traditional and non-traditional export(able) commodities, variable or sub-par quality has resulted in price discounts in international markets.

This paper provides an overview of the emerging challenges and opportunities which Tanzania is facing in relation to food safety and agricultural health standards and trade. Primary attention is given to 'non-traditional' agricultural and food exports. The paper does not aim to provide a comprehensive review of Tanzanian SPS management capacity in terms of in-depth strengths and deficiencies. Rather, it builds upon and extends existing analyses² to provide a strategic framework for Tanzanian 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 Tanzanian 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

² Relevant recent analyses include those by Mwakinbinga and Ekelege (2004) on standards infrastructure, IFAD (2004a; 2004b) on livestock and animal disease controls and UNIDO (2003) on food controls.

and SPS management. This is followed by an overview of the changing structure of Tanzania's agro-food exports and how this has raised the relative importance of SPS management for Tanzanian international competitiveness. The subsequent sections provide summary reviews of Tanzania's standards-related architecture and capacity strengths and weaknesses and on-going efforts to strengthen or harmonize standards and related capacities at the regional level. This is followed by a series of industry/product case studies, illustrating a range of specific issues, approaches taken and impacts of SPS standards. The paper concludes with a set of recommendations for near-term priority action and medium-term attention.

II. STANDARDS, SPS MANAGEMENT AND TRADE - BASIC CONCEPTS:

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 overseas markets is a major factor determining access to those markets and more broadly the capacity to export. 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.

This important role of standards in trade and development arises because:

- Standards are instrumental in facilitating the flow of information between consumers and producers, particularly providing information on unobservable characteristics such as quality. Thus, standards can reduce uncertainty for consumers. Standards indicate to producers the expectations and requirements of consumers in terms of quality and safety. For these reasons standards can contribute to higher levels of economic activity.
- Standards allow governments to effectively achieve their objectives concerning health and safety. Such standards, which are often mandatory, are particularly important in developing countries as they seek to raise living conditions. For example, standards which improve food safety will tend to complement policies to raise productivity and increase economic growth and incomes.
- Standards provide an important mechanism for technology transfer to developing countries. Technology is expressed through standards and standards therefore help to diffuse technical information concerning products and processes. The need to satisfy recognized standards provides incentives to local firms to improve the quality and reliability of their products.
- 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 raw materials made in different places. Harmonized standards between countries and/or industries can reduce transaction costs by reducing duplicative functions of conformity assessment, including testing and certification. The application of recognized standards is also crucial in the services industry. For example, in tourism, important information is conveyed by hotel classifications, while reliable and safe services require the application of certain recognized management systems.

It is useful to distinguish product standards from process standards. The former refer to the characteristics that goods should possess, for example, maximum pesticide residues for agricultural products or performance requirements for equipment. Process standards relate to the conditions under which products are produced and packaged. These standards can define rules for the production of the primary materials or the final good. There may also be standards that are concerned with issues that are indirectly related to production, such as the environment. For example, companies are increasingly requiring that sub-contractors satisfy standards relating to the use of hazardous chemicals in the workplace and substances that are ozone-depleting. A particular good may be subject to a range of both mandatory and voluntary product and process standards. Clear information on relevant standards is therefore crucial to producers.

The particular focus here is on sanitary and phytosanitary (SPS) standards. In recent years, SPS measures have become a major issue in trade in agricultural and food products. While the restriction of trade is not their primary objective, it is evident that such measures can have a significant impact on trade flows. Broadly, SPS measures are aimed at the protection of human, animal and plant health. For example, they might be applied to protect animal or plant health from risks arising from the spread of pests and diseases. They might also be employed to protect human health from additives, contaminants, toxins or disease-causing organisms in foods and beverages. In pursuit of these objectives a wide range of measures can be 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.

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 and also 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.

Of particular concern is the impact of SPS standards and other measures on the ability of developing countries to access export markets. While the globalization of markets for agricultural and food products and the declines in tariff protection can provide opportunities for developing countries to benefit more from trade, there are concerns that SPS standards may continue to hinder market access. 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 widely 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 security 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 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 and dioxins. 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.

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. An example is the application of Hazard Analysis and Critical Control Point (HACCP) by food processors or fresh produce packers. 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.

The development of SPS management systems tends to be closely related to the availability of wider technical, administrative and scientific capacities. In turn, it generally reflects broader patterns of economic development as well as specific demands for food safety and agricultural health controls. For example, at very low levels of economic development, priorities typically include the establishment of very basic standards of hygiene through the supply chain aimed at managing immediate hazards and the development of knowledge and understanding of fundamental SPS management principles.³ At higher levels of economic development, however, focus tends to shift towards the ability to identify SPS hazards as and even before they occur and to take preventative actions. In this context, export-oriented agricultural and food supply chains provide real challenges as external SPS requirements may differ sharply from those prevalent in the domestic market, especially in low-income countries. However, while many developing countries have widespread weaknesses in food safety and agricultural health management capacity, there is evidence that even low-income countries can, selectively, put in place the necessary regulatory, technical and administrative arrangements to meet demanding standards in high-income export markets.

³ Among very low income countries, the most common source of food-borne illness is unsafe water for drinking and food preparation and poor sanitation facilities generally.

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

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 (World Bank, 2005). 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, especially those that are least-developed. However, it is necessary to be pragmatic in such contexts. 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. 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 again 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 ‘problem-solving’ or ‘fire-fighting’.

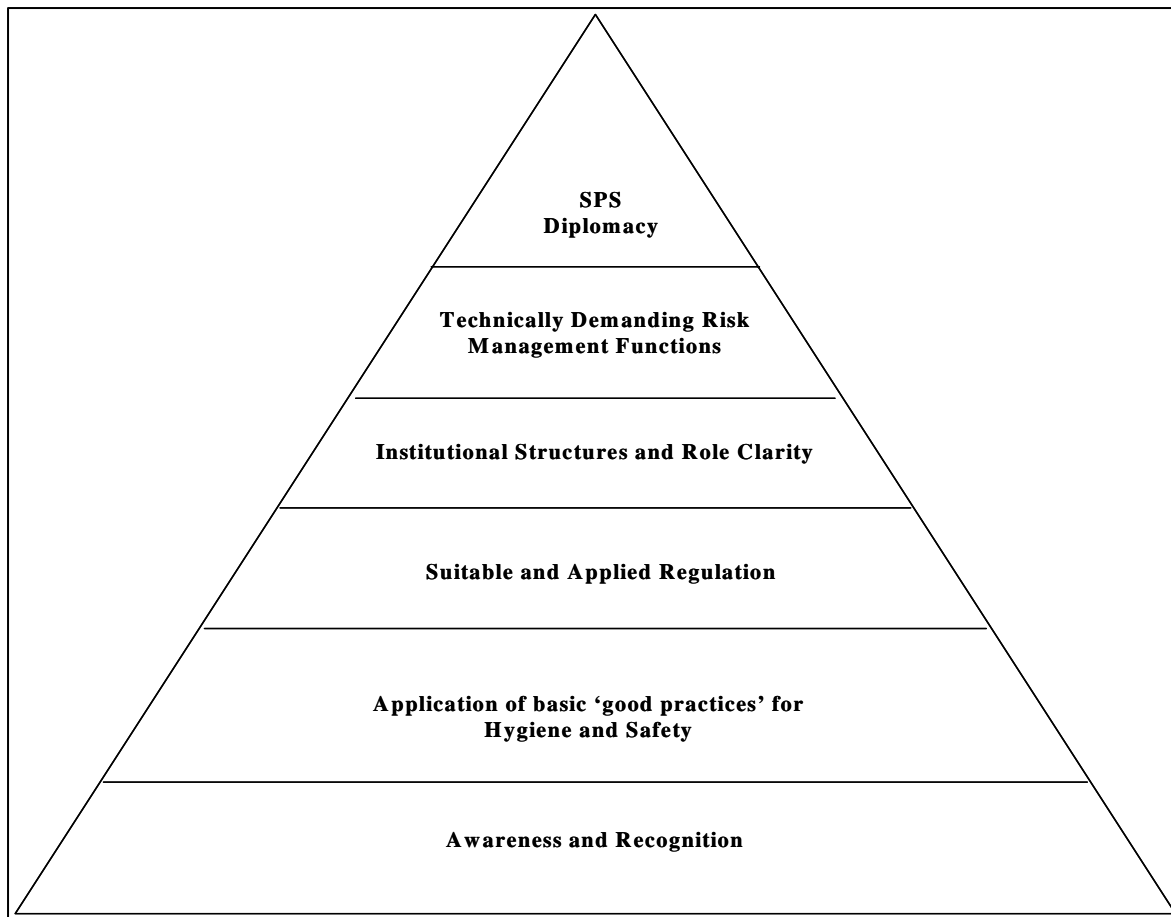
A useful guiding framework in the development of priorities, however, is the concept of a hierarchy of SPS management functions (Figure 1) (World Bank, 2005). On the one hand, this helps to identify those functions that need to be put in place first and, arguably, have the overall highest payoff in terms of the efficacy of SPS management. On the other, it illustrates how the effective development of any 'higher level' SPS management function requires the prior development of 'lower level' functions. In Figure 1, 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. 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.

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 and improved record-keeping related to production practices etc.

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, 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 structures, 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.

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



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' as part of compliance strategies associated with SPS standards (see World Bank, 2005; Jaffee and Henson, 2004). The ability to have an effective 'voice' in such international fora is something that few lesser developed and small countries have yet perfected.

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. 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. 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 a developing (and especially least-developed) country context 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 1. 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. In developing capacity, the public and private sectors have complimentary roles to play. Indeed, in the context of a very low income country such as Tanzania the private sector might legitimately take on a greater role in the development of SPS management capacity directed at compliance with standards in export markets, given that it stands to be one of the major beneficiaries.

The pragmatic, strategic approach involves:

- **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.
- **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-visit on a periodic basis, taking into account new challenges/opportunities as well as lessons from on-going implementation efforts.
- **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.

III. TRADE AND THE RELEVANCE OF SPS STANDARDS:

One of Tanzania's colonial inheritances was its dependence upon a limited set of agricultural commodities for the bulk of its foreign exchange earnings. This narrow commodity dependence carried on for decades following independence, with the Government of Tanzania playing a strong role in the management of commodity supply chains and exports and with the overall level of exports fluctuating in the winds of international commodity prices. At Independence in 1961, only five commodities, namely coffee, cashew nuts, sisal, tea and cotton, accounted for 59 percent of Tanzania's total merchandise exports and 69 percent of its food and agricultural exports. A quarter of a century later, these commodities still accounted for half of Tanzania's total merchandise exports and two-thirds of its agro-food exports.

The primary destination of Tanzania's 'traditional' agricultural exports used to be industrial countries, primarily in Europe. Yet, over the past two decades, significant parts of this trade have shifted to developing country markets. Between 1984 and 2003, the share of developing countries as a destination for Tanzania's 'traditional' agricultural exports increased from only 22 percent to 52 percent. Exports of cashew nuts, cotton and tea are now predominantly directed to developing countries. Among traditional commodities, only coffee and tobacco are still primarily directed to high-income countries (Table 1). India is now the single largest importer of Tanzanian agro-food products, accounting for 17 percent of the total.

Table 1: Tanzanian exports of traditional agricultural commodities by market destination (US\$ Millions):

Commodity	1984			2003		
	World	Developing	OECD	World	Developing	OECD
Coffee	166	9	157	58	4	54
Cotton	50	26	23	45	41	5
Cashew	27	20	7	61	57	4
Tea	31	5	26	12	7	5
Tobacco	16	6	10	46	7	39
Sisal	10	2	8	9	3	6
Sub-Total	300	68	232	231	119	112
Total Agri	376	85	262	484	144	313

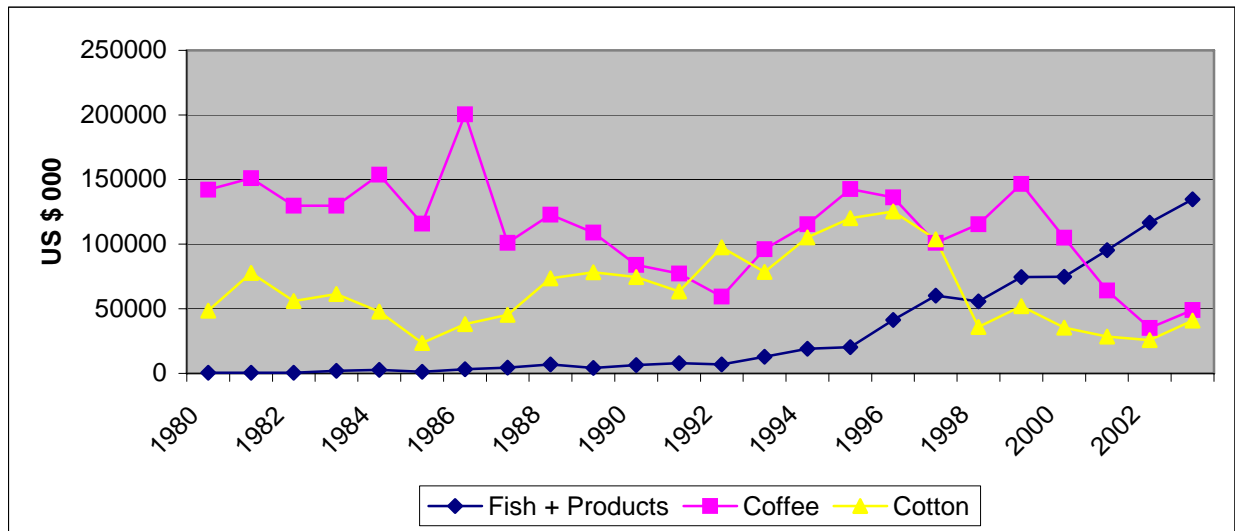
Source: UNCOMTRADE and authors' calculations

Over the past decade, the composition of Tanzania's agro-food exports has dramatically changed, reflecting changing prices and demand patterns in international prices as well as shifts in Tanzanian supply capacities. Falling international prices, the emergence of more robust international competition and various domestic supply-side factors have resulted in the decline or stagnation of many of Tanzania's traditional agricultural commodity exports. For example, the value of Tanzanian coffee exports fell from US\$150 million in the mid-1990s to below US\$50 million in recent years. Tanzanian exports of cotton and tea have similarly dropped precipitously from a decade ago. Among traditional exports, only cashew nuts and tobacco have demonstrated some vibrancy in recent years, albeit with wide year-to-year fluctuations.

At the same time, however, exports of a number of non-traditional and high-value agro-food products have emerged and shown relatively strong growth over the past decade. *As recently as*

1997, these non-traditional agro-food exports had a value of only one-third that of the ‘traditional’ agricultural commodity export basket. Yet, in recent years these non-traditional exports have come to exceed the combined value of the traditional commodity exports, by more than US\$100 million. Fish and fishery products account for nearly one-half of this non-traditional trade. Tanzanian fish and fishery product exports have increased from only US\$1 million in 1984 to nearly US\$150 million in recent years. Other products have contributed to the growth in non-traditional exports, including fruits and vegetables, cut flowers, hides and skins and an array of products traded in comparatively smaller quantities. Figure 2 illustrates the contrasting patterns in trade development for selected products, while Figure 3 shows the overall divergent trends between Tanzania’s traditional and non-traditional exports.

Figure 2. Tanzania’s contrasting product export trends:

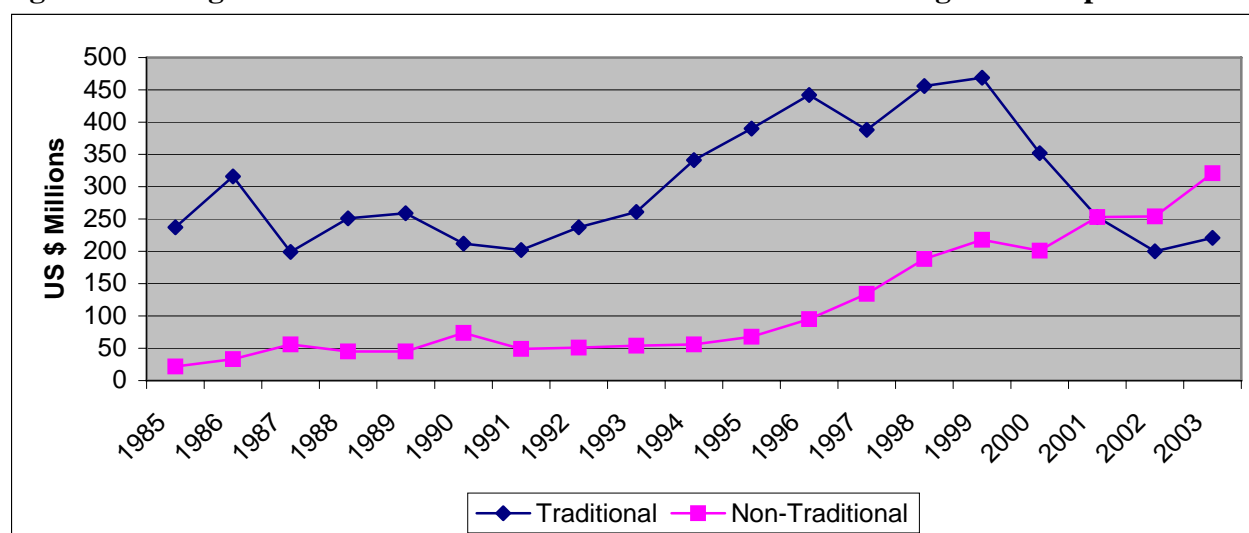


Tanzania’s fish and fishery product exports are predominantly directed to OECD markets, especially the European Union (EU).⁴ The same applies to its exports of cut flowers. Fruit and vegetable exports are split between regional sales (primarily of onions, tomatoes, and oranges to Kenya) and sales to the UK and other EU countries (primarily of green beans, peas and other items in consumer pre-packs). Exports of hides and skins, honey and of some other comparatively minor commodities are largely directed to other developing countries. Overall, some 80 percent of the (recorded) exports in higher value non-traditional products is directed at OECD markets. This contrasts with the emerging trends in Tanzania’s trade in traditional agricultural commodities.⁵

⁴ In 2003, \$138 million of fish was exported to OECD countries, compared with US\$13 million sent to developing countries.

⁵ However, as will be noted below, there is a substantial ‘informal’ cross-border trade in Tanzanian livestock and fruits and vegetables, the value of which far exceeds the official recorded value of trade in these products within Africa.

Figure 3. Divergent trends between traditional and non-traditional agri-food exports:



Notes: Traditional exports include coffee, cotton, tea, tobacco, sisal, and cashew nuts.

Non-traditional exports include fish products, fruits and vegetables, cut flowers, hides and skins, and others.

Source: FAO and authors' calculations

Over the years, several of Tanzania's traditional agro-export sub-sectors have experienced problems related to quality, either due to climatic conditions or to institutional factors which weakened quality control systems or farmer incentives (Box 2). Such problems have led to price discounts in the marketplace. However, Tanzania 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 been specifically applicable in Tanzania.⁶

In contrast, for most of Tanzania's emerging non-traditional agro-food exports, issues related to food safety, agricultural health and related standards are of comparatively greater importance.⁷ For example:

- Major OECD importing countries have severely tightened their standards for 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).

⁶ The Coffee Board reports that no consignments of Tanzanian coffee have been rejected abroad for exceeding established tolerance levels for ochratoxin. Although testing for ochratoxin is not routinely done in Tanzania, the risk of its incidence is managed by applying moisture content standards for both parchment coffee and dried cherries.

⁷ 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 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 Tanzania has severely restricted its trade in livestock products, especially beyond the East Africa region.

Box 2. Quality-Related Problems and Price Discounts in Traditional Commodity Sub-sectors:

In several of Tanzania's traditional commodity export sub-sectors, inconsistent or comparatively low product quality has undercut the value of trade and the incomes accruing to large numbers of smallholder households. For example, Mitchell (2004) notes the apparent decline in raw cashew nut quality since cashew marketing was liberalized in the mid-1990s. The previous system of cashew grading and separation has all but broken down, leading both domestic traders and international buyers to pay discounted prices for raw materials and increasing overall marketing costs as unsorted consignments contain significant amounts of contaminated or otherwise unusable raw material. Recent investments by firms in cashew processing (including one venture geared toward selling branded organic cashews) have largely been unprofitable, in significant part due to persistent problems of securing high-quality raw materials.

Due to climatic, agronomic and institutional factors, Tanzania tea has long been sold at a discount when compared with supplies from other East African countries. Despite important reforms which were implemented in the Tanzanian tea industry in the mid-to-late 1990s, between 1996 and 2001 Tanzanian tea was still discounted by 16 to 38 percent relative to from Kenyan tea and by 12 to 22 percent relative to Rwandan tea in the Mombassa auction. With lower yields and lower prices, Tanzania's smallholder tea growers earn far lower incomes than do their peers in Kenya (see Baffes, 2003).

Ponte (2001) and Baffes (2004) examine changing trends and incentives within Tanzania's coffee industry. They highlight a long-term trend of declining overall quality in the country's coffee crop. Although the proportion of the coffee crop classified as medium grade has remained more or less stable over the past three decades (at about 70 percent), the proportion classified as high grade has dropped substantially, while that classified in the lower grades has increased. Three distinct events were each associated with sharp declines in coffee quality; the nationalization of coffee estates (in the late 1960s), the reinstatement of coffee cooperative unions (in the early 1980s), and major market reforms (in the early to mid-1990s). Most recently, quality-related problems have been associated with declining input use by farmers, fragmented post-harvest activities, the buying practices of inexperienced traders, and other factors. The industry has had only limited success in penetrating the more remunerative international market for 'specialty coffees' (see below).

- 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. Tanzania does not export these products 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 (See Jaffee, forthcoming).

- For many other Tanzanian non-traditional agricultural and food exports there are also applicable food safety, agricultural health or other standards which may come into play when certain external markets are targeted. The picture on these standards is not uniform; for example, the levels and extent of enforcement of SPS and other standards varies between country and regional market destinations.

Table 2 provides a summary of the types of standards which, depending upon the direction of trade, could most affect Tanzania's major traditional and non-traditional exports. More detailed discussion on the actual applicability and impact of these standards on Tanzania's trade is provided in Section V below.

Tanzania's food and agricultural raw material imports totaled US\$325 million in 2003, nearly double their aggregate level a decade earlier.⁸ These imports are dominated by cereals (especially wheat and rice), vegetable oil and sugar. These items accounted for 85 percent of Tanzania's food imports in 2003. Trade in these products does not generally present major SPS risks, although imports of some cereals has led to the international transmission of plant pests (including the grain borer) and, when not properly packed and stored, to movement of product containing potentially hazardous levels of mycotoxins. Although rare, there have been cases of international sales of adulterated vegetable oils.

Although trade has increased somewhat in recent years, Tanzania imports relatively small quantities of beverages and an array of higher value food products (in particular fish, meat, dairy products, horticultural products and canned products) for which potentially more serious food safety risks might exist. Much of these higher value food product imports end up in distribution channels servicing Tanzania's relatively small middle class population as well as its tourist industry. Nearly 70 percent of Tanzania's food imports originate in developing countries, with the leading suppliers being Malaysia (for vegetable oil), Pakistan (for wheat), Thailand (for rice) and South Africa (for sugar). Imports from higher-income countries come primarily from Australia (cereals) and the European Union (beverages). Table 3 summarizes the origins of Tanzania's food imports.

⁸ Food and agricultural imports totaled US\$171 million in 1994.

Table 2. Tanzanian 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 requirements Hygiene requirements	Plant material quarantine Pest risk analysis needs Fumigation requirements	Quality grades General labeling requirements Packaging standards	Pesticide use restrictions Regulations on water/soil contamination Codes for organic practices and certification	Monitoring of child labor Occupational health standards
Fish and Fish Products	Microbiological and foreign matter standards Factory hygiene standards	Bans/restrictions on antibiotic use in aquaculture	Quality grades Labeling requirements Packaging standards	Protection of specific species Fish catch restrictions	-
Live Animals and Meat Products	Vet. drug residue limits Microbiological standards	Disease-free areas Disease surveillance Restrictions on vet. drugs Traceability of animals	Quality grades Labeling requirements Packaging standards	Codes for organic practices and certification Regulations on animal waste effluent	Animal welfare monitoring
Hides and Skins	-	-	Quality attributes	Water effluent regulations Chemical use restrictions	-
Spices and Nuts	Pesticide residue limits Microbiological standards Mycotoxin limits	Fumigation requirements and restrictions	Quality grades Consumer pack labeling requirements Packaging standards	Codes for organic practices and certification	-
Cereals, Oilseeds, and Animal Feed	Microbiological standards Pesticide residue limits Mycotoxin limits	Quarantine requirements Fumigation requirements or restrictions	Quality grades GMO labeling Restrictions on animal feed ingredients Product content and nutritional labeling	Biosafety regulations (for GMOs) Codes for organic practices and certification	-
Cut Flowers	-	Plant material quarantine Phytosanitary certification Pest risk analysis needs Fumigation requirements	Quality attributes Packaging standards	Pesticide use restrictions Regulations on water/soil contamination	Monitoring of child labor Occupational health standards
Coffee, Tea, Cocoa	Microbiological standard Pesticide residue limits	Fumigation requirements	Quality attributes Packaging standards	Codes for organic practices and certification Codes to limit biodiversity loss	Monitoring of child labor
Cotton		GMO variety approval	Quality attributes	Codes for organic practices Restrictions on pesticide use	

Table 3: Structure and Origins of Tanzania’s Food Imports (US \$ Millions):

Commodity	1994			2003		
	World	Developing	OECD	World	Developing	OECD
Cereals	39	19	20	122	77	45
Vegetable Oil	37	29	8	86	80	6
Sugar	41	30	11	35	21	13
Beverages	17	11	7	12	4	8
Other	21	9	12	31	13	18
Total Food	154	97	57	285	195	90

Source: UNCOMTRADE and authors’ calculations

IV. TANZANIA’S SPS MANAGEMENT ARCHITECTURE AND CAPACITY:

While Tanzania’s SPS management system does have the necessary basic legal frameworks, the overall level of SPS and quality management capacity remains low and basic awareness about good hygienic practices and measures for pest and disease control is limited among producers, workers, and consumers. Although efforts have been, and are being, made to develop capacity in areas that are considered strategically important from a trade and/or domestic health perspective, the development of capacity as a whole must be seen as ‘work in progress’. Thus, we see limited pockets of well-developed capacity in both the public and private sectors alongside areas in which there is little or no capability to perform even basic management functions.

Even where capacity has developed, however, this has not generally been the product of coherent and concerted government policy. Indeed the SPS and quality management arena does not appear to be a government priority at the current time. Rather capacity-building efforts have generally been in response to ‘crises’ with capacity being developed in an incremental and piecemeal fashion alongside broader processes of restructuring that have cut across the public sector. This has resulted in considerable overlaps in capacity in some areas, raising questions about the efficiency with which limited resources are being utilized.

4.1. Food Safety:

On a day-to-day basis the management of food safety risks is the responsibility of individual players within the food supply and distribution system, including farmers/fishers, food handlers, food processors, wholesalers, retailers and consumers themselves. When food is internationally traded, importers and exporters (and their foreign suppliers or clients) will be closely involved in ensuring the safety of food. Nevertheless, governments have important roles in maintaining the safety of food for consumers. These may be regulatory (mandating certain practices), educational (for example promoting good hygienic practices by consumers and food handlers), research-related (for example assessing risk levels) or involve conformity assessment (for example testing foods for compliance with certain standards).

Although systematic records are not available, the incidence of food-borne illnesses is undoubtedly very high in Tanzania and serves as an important contributing factor to the country low life expectancy of only 45 years. Less than half of Tanzania’s rural population has access to safe water and this contributes to risks in food preparation and consumption. With only limited

awareness (and application) of basic hygienic practices among consumers and food handlers, there is only so much impact which official controls or risk management capabilities can have.

Tanzania's official system of food safety controls and promotion rests on several pieces of legislation and involves multiple institutions, not always acting in a coordinated fashion. Prior to independence, food safety responsibilities were divided between the Ministries of Health and Agriculture. With the enactment of the Food (Control of Quality) Act No. 10 of 1978, a National Food Control Commission (NFCC) was established to oversee food control activities. Numerous specific regulations were subsequently enacted to deal with specific dimensions of food safety or the safety of particular products.⁹ The NFCC's primary function was to coordinate and audit food inspection activity. Most of the latter was carried out by employees of Local Government Authorities, essentially health, meat, produce or other inspectors. Lines of authority and accountability were problematic and all product testing was centralized in Dar es Salaam.

Meanwhile, various other institutions were also ostensibly monitoring food product quality and safety, including the numerous commodity boards (for dairy, sugar, cashew nuts, etc) established by government., public authorities dealing with animal health and the safety of animal products, and the Tanzania Bureau of Standards (TBS). The latter has become increasingly involved as most of the national standards for food have been made mandatory (see below). A Memorandum of Understanding was signed between the NFCC and the TBS, whereby the former would focus its inspection and monitoring activity on food manufacturing premises, while the TBS would inspect and certify (processed) food products. Still, other Boards or other Ministries were also involved when particular foods were involved (i.e. milk, fish).

In 2003, a Tanzania Food, Drugs, and Cosmetics Act (No 1 of 2003) was enacted, repealing previous food and drug control laws and creating a unified agency, the Tanzania Food and Drugs Authority (TFDA), within the Ministry of Health. The governing regulations under the Food (Control of Quality) Act (now repealed) were to remain in force until new regulations were established. With regard to food, the TFDA's main functions are to:

- Regulate the importation, manufacture, labeling, marking, identification, storage, sale, and distribution of food.
- Test or facilitate the analysis of food and/or food products to ensure safety for human consumption.
- Prescribe minimum quality standards for imported and locally manufactured food.
- Enforce the regulations and apply penalties for non-compliance, and
- Address consumer complaints.

The TFDA's mandate thus centers on protecting domestic consumers. However, its significant mandate has not been accompanied by the requisite resources to implement the required actions. While recognizing its young age, it is clear that this Authority exercises little effective authority

⁹ Importation of food regulations (1982); Food Hygiene regulations (1982; including food premise registration and licensing); Food Labeling Regulations (1989); Treatment and Disposal of Unfit Food Regulations (1994); Iodated Salt Regulations (1994); Transportation of Meat Regulations (1994); Slaughter Houses, Slaughter and Inspection of Meat Regulation (1994); Poultry Slaughterhouses, Slaughtering and Inspection of Poultry Regulations (1994); Marketing of Breast Milk Substitutes and Designated Products Regulations (1994); Edible Palm Oils and Fats Regulations (1998) and Food Additives Regulations (1998).

on food safety matters. Several parts of its mandate overlap with the on-going activities of the TBS, including the prescribing of minimum standards, testing activity, inspecting food imports and other areas. The TBS has access to far larger resources and staff and has a well established reputation within the business community. As yet, there is little formal coordination between the two agencies. There is also no agreed upon division of labor. This would appear to be a necessity given the limited resources and manpower which Tanzania can afford to devote to food safety management and given the need to carefully prioritize interventions in this field, both to protect local consumers and promote the country's trade.

The TFDA has a limited staff and even more limited physical infrastructure. Its eight national auditors are responsible for supervising all inspection activity, yet they have limited capacity for doing so. Most of the inspection activity is carried out by employees of local governments. These are generally health or veterinary officers with little training or specialization in food inspection. In addition to inspecting food markets, these officers are supposed to inspect food manufacturing premises, although most lack knowledge of specific food manufacturing processes and have not been trained in HACCP and related principles. The TFDA has only a skeletal post-market surveillance system (consisting of one staff member), although this too is an area where TBS is involved.

The TFDA observes that there is very little awareness about proper hygiene methods among food handlers in Tanzania and little awareness and adoption of HACCP principles in the food manufacturing sector. It has been doing a limited amount of seminars and other outreach activities in these areas but has been constrained by its financial resources.¹⁰ Thus far, the HACCP approach has been widely adopted only in the export-oriented fish processing sector, as required by certain destination markets. Otherwise there has been very limited HACCP adoption, with a few examples in the dairy and poultry industries.

The TFDA posts inspectors in the major ports of entry, while local government officials inspect foods entering through many relatively minor ports or border posts. Inspectors at most entry points lack communication facilities or field test kits of any sort. In the past there have been several incidences of shipments of cereals involving containing mold or mycotoxins and thus TFDA regularly tests samples from large import consignments of cereals. Otherwise, either random inspection is done or attention focuses on those products and origins for which problems have been experienced in the past. The testing of consignments is done at TFDA's own laboratory which has only limited capacity or outsourced to the Government Chemist Laboratory.¹¹ Meanwhile, the TBS has its own inspectors positioned in the major ports to inspect and subject to testing all foods for which there is a mandatory national standard. Further, since 2003, all imported foods must be tested for radiation by the Tanzania Atomic Energy Commission. Tanzania's limited food imports certainly do seem to be attracting a great deal of attention by inspectors. The costs of these 'services' are paid by consumers.

In late 2003, the TFDA released guidelines for the registration of pre-packaged food products. These apply to both imported and locally manufactured foods. Substantial registration fees would be applied for the inspection of manufacturing premises and for individual food products.

¹⁰ In parallel, the TBS has been doing training activities in quality and environmental management systems.

¹¹ In late 2004 there was a large back-log of samples and it was taking one month or more to obtain test results.

Further, in cases involving dairy, meat, fish or other relatively high-risk products, the applicant must demonstrate that they are implementing a HACCP plan and have a certification of compliance for this plan. These guidelines have not been implemented as several Tanzanian importers and food manufacturers have taken the TFDA to court.

It is not evident that the proposed Guidelines are the most appropriate way to meet the food safety challenges which Tanzania currently faces. Most packaged foods from domestic food processors are already tested and certified under a TBS scheme, either because the products are subject to mandatory national standards or because the manufacturer sees value to obtaining the TBS certificate mark. Many imported pre-packaged foods are sold through supermarkets, retailers, or hotel operators which have a strong incentive to ensure the safety and proper labeling of the items. Random post-market inspection, rather than mandatory pre-registration, would appear to be a more appropriate approach under prevailing circumstances.

While requiring food manufacturers to apply (certified) HACCP systems might be appropriate in the long-term, it almost certainly is not under the present conditions in which there is little general awareness about HACCP, minimal local capacity to provide training and certification of HACCP, and virtually no capacity to enforce such a Guideline. Further, the associated increases in costs could lead to increased food prices; a major economic issue for low-income consumers. In the short to medium term, attention should be focused on awareness building and HACCP system application, perhaps starting with selected industries where risks are seen to be relatively high.

Although the Tanzania Food, Drugs, and Cosmetics Act does make reference to exports, the TFDA has no direct involvement in monitoring foods for export. Neither does the TBS, except in its capacity to certify the quality of certain packaged foods. Few of these are traded in any real quantity. Unlike the situation in many other countries having relatively large tourism industries, in Tanzania there is currently no system of monitoring tourists for incidences of food-borne illness, nor a reliable system in place to inspect and raise the underlying hygiene standards in food establishments catering to tourists. This is not a peripheral issue. The tourism sector is large and growing steadily. Except for fish, the value of the food supply to Tanzania's tourism industry greatly exceeds its non-traditional food exports (see the case study section below).

Tanzania's largest export of a food product with food safety concerns is fresh and frozen fish. The testing of these products and the certification of hygienic processing/handling practices is carried out by the Fisheries Department of the Ministry of Natural Resources and Tourism. In the horticultural sector, European market concerns with pesticide residues are addressed by the export companies themselves and via testing abroad. For many other products, exporters send samples to (external) certified laboratories when this is required by a foreign market regulator or buyer.

Tanzania has many serious communicable disease challenges, especially malaria and cholera, and is struggling to manage against the spread and impact of HIV/AIDS. Compared with these, most food safety concerns can be considered of less importance when allocating scarce public resources. Thus, for protecting domestic consumers it is critical to properly prioritize the areas for attention and investment and to make maximum use of available resources and capacities.

Tanzania has an adequate system of food-related laws, although there would be benefits from updating certain laws and regulations and removing others which are no longer applicable.

The critical medium-term challenge is to build awareness and recognition of food safety matters and basic approaches, at several levels of Tanzanian society, including (1) among politicians and other senior decision-makers (who determine the allocation of public resources); (2) within the food industry, both among larger food companies and smaller food handlers, and (3) within the tourist (including hotel and restaurants) industry, where current weaknesses in food safety management could have the most significant effect on Tanzania's external trade. For the tourism industry there is a need to go beyond awareness-building, but also to develop systems for surveillance of clients (for the incidence of food-borne illnesses) and for monitoring/auditing facilities and practices within the industry (see below).

For the present study, the activities of local health authorities were not reviewed. However, it is likely that local food safety staff lack basic instruments and undertake only visual inspections. Low cost toolkits could be provided to such officers. Their lack of training in relation to the specific foods and industrial factories which they are expected to inspect also needs to be redressed. Given limited resources, inspections of food markets and establishments should be prioritized and systematized, perhaps through a MOU or technical agreement between the TFDA and local/regional authorities. Training may be needed for the officers at the Federal (i.e. TFDA) level to coordinate such a program. The Ministry of Health can also work with local health officers to broadly spread awareness of good hygienic practices to the population at large and to those directly involved in food distribution and trade. Various materials can be disseminated through health clinics, schools, and other venues.¹²

4.2. Quality Assurance:

The Standards Act (1975, amended 1977) empowers the Minister of Industries and Trade to promote standardization and quality assurance within industry and commerce. The Tanzania Bureau of Standards, initially established as the National Standards Institute in 1976, is the leading actor in this field. The TBS has four main areas of activity, namely:

- *Preparation of national standards:* The TBS coordinates an elaborate system of technical committees which draft national standards in the following areas: food and agriculture, textiles, chemicals, environment, engineering, construction and general techniques. There are some 29 technical committees involved, each consisting of representatives from different government ministries/agencies, academia and industry. In practice, most Tanzanian standards are adapted or adopted from those of Codex or the International Standards Organization (ISO).
- *Product and systems certification:* The TBS may issue a 'Mark of Quality', certify a product for which a national standard does not exist, undertake compulsory inspection/clearance for imported or exported goods which could affect health, safety, or the environment, or certify a company's compliance with ISO quality assurance (ISO 9000) or environmental management (ISO 14000) systems.

¹² In each of these areas, Tanzania can learn from recent experiences in Ethiopia which have been supported by a UNIDO program.

- *Provide testing services:* The TSB has seven laboratories that are able to undertake tests in relation to legal metrology, engineering, chemicals, textiles and food products. It is also developing a laboratory for packaging. However, at the current time none of these are internationally accredited, yet there is an on-going program, supported by DANIDA that will facilitate the accreditation of priority laboratories by the South African National Accreditation System (SANAS).
- *Training for industry in quality management and other areas:* The TBS has been undertaking a limited program to train company managers and staff in ISO 9000 and ISO 14000 systems. As this represents a conflict of interest with its certification function, a decision has been made to establish an independent subsidiary to focus on consultancies and training. If there is sufficient demand, then this training would be extended to HACCP systems.

The TBS is also the designated 'National Enquiry Point' for the SPS and TBT Agreements and, through its Agriculture and Foods Section, the 'Contact Point' for the Codex Alimentarius Commission. The TBS is also a member of the tripartite East African Standards Committee which has been actively seeking to harmonize standards within the region and otherwise implement the EAC Protocol on Standards, Quality Assurance, Metrology and Testing (see below).

Through to the end of 2003, some 798 national standards had been promulgated. Of these, 205 relate to food and agriculture. Ninety-eight of the latter are product standards, all of which are compulsory. This goes against emerging international 'good practice' which emphasizes voluntary quality standards for food, except where there are potentially severe human health risks. The prominence of mandatory standards for food also creates a conflict, or at least an overlap, between the food safety oversight functions of the TFDA and those of the TBS. In order to enforce compulsory standards for food and certain other products, the TBS maintains its own team of 50 inspectors at ports of entry and in market places. Hence, for certain imported foods, both the TFDA and the TBS may take samples for testing and clearance against quality/safety standards.

Overall, the demand for TBS services has increased substantially in recent years, reflecting a reasonably favorable reputation within industry. Testing and calibration services have been provided to increasing numbers of firms. However, besides providing the required certification for imported products, demand for certification services has remained modest. For example, as of the end of 2004 only fifteen companies in Tanzania were certified to ISO 9000, compared with 140 in Kenya. As of the same date only four companies had been certified to ISO 14,000, compared with twelve in Kenya. International certifying companies (i.e. SGS, BVQI, and others), rather than TBS itself, have been responsible for most of this certification of Tanzanian firms thus far. Overall awareness about quality management systems is still not very strong in Tanzanian industry, with the exception of certain industries (or supply chains) for which certified

compliance has been required.¹³ There has been little demand for the TBS's pre-export product certification.

The organizational infrastructure of the TBS is currently under review. It has been recognized that its level of operation may require an increase in staffing or improved partnerships with other technical agencies. However, the Bureau faces chronic liquidity problems, stemming, in part, from the limited budgetary resources provided by government, especially for non-demand driven services such as standards formulation. Partly in response, the Bureau has substantially increased the revenues it has raised from certification and other activities. The bulk of the increased revenues have come from its mandatory certification of imported products (especially foods), a 'service' not necessarily provided to facilitate trade (see Table 4).¹⁴ The Bureau's physical infrastructure has been gradually built up over time with the development of offices, laboratories, and housing estates for staff. The DANIDA-supported program is aimed at not only strengthening the capacities of selected TBS laboratories, but also enhancing various other systems and procedures through a twinning arrangement with Denmark's national standards organization.

Table 4. TBS: Budget Allocation from Government and Other Revenues from Services (Tsh Millions):

Source	1999/2000	2000/01	2001/02	2002/03	2003/04
Government Allocation	346	393	469	423	526
Testing Fees	55	82	115	160	171
Calibration	35	25	12	16	13
Motor Vehicle Inspection*	0	0	141	180	136
Quality Certification	145	184	256	237	235
Import Product Certification*	180	141	208	277	577
Other	11	30	12	17	6
Total	772	672	1212	1310	1664
Total US\$ Million	1.04	0.84	1.38	1.35	1.60

* *Mandatory 'services'*

The TBS is presently working on a number of fronts to strengthen its capacities and to ensure its financial sustainability. Given its relatively strong management and staff it will remain a very important institution in the wider drive to improve the quality and safety of Tanzanian products. Yet, there may be aspects where the TBS's corporate strategy does not represent the best available national approach. At a minimum, there is a need for the much closer coordination of activities between the TBS and other agencies, especially (yet not only) the TFDA.

The TBS is endeavoring to establish a subsidiary to undertake training and consultancy services related to quality and other management systems. In order for there to be no conflict of interest

¹³ Examples include the fish export industry, the construction industry and for suppliers to the World Food Programme.

¹⁴ Also, from 2001 TBS has also been responsible for implementing another mandatory requirement, that of motor vehicle inspection. Thus, between 1999/2000 and 2003/04, the functions associated with mandatory inspections have increased their share of the overall resources available to TBS from 23 percent to 43 percent. Discounting government budgetary subventions, these mandatory inspections have increased their share of TBS' own revenue earnings from 42 percent to 63 percent.

with TBS's certification activities, there must be no financial and staff connections between this subsidiary and the TBS. If such connections do exist, then conflicts of interest will be inevitable. An alternative approach might be for the TBS to foster the development of training and consultancy services by training specialists within the private sector, assisting start-up consultancy firms and facilitating joint-ventures between experienced international firms in this area and local technical specialists or entrepreneurs. Kenya has a much more developed market for advisory and certification services featuring multiple (international and local) suppliers of such services. With its more diversified economy, the level of demand for these services in Kenya is certainly higher than is currently the case in Tanzania. Yet, demand is also picking up in Tanzania and the medium term vision should certainly be one of multiple suppliers of specialized advisory and certification services, rather than a system totally dominated by one service provider (i.e. TBS).

4.3. Plant Health Protection:

The Plant Protection Act 1997 and the Plant Protection Regulations 1999 empower the Ministry of Agriculture and Food Security to regulate the import and export of plant products and otherwise manage plant health risks to increase crop productivity and attain national food security. The main Act became effective in 2001. While the Act established a National Plant Protection Advisory Committee and several distinct sub-committees to provide scientific advice to the Minister, the Act did not clearly specify which agency is the national plant protection organization. The legislation also does not include provisions for pest surveillance, pest risk analysis, pest free areas or the protection of threatened species. Hence, while Tanzania has recently become a member of the International Plant Protection Convention (IPPC), in many key respects its legislation and administrative system do not satisfy IPPC requirements.

Two separate entities are ostensibly involved in inspections and the issuance of import permits for food/plant product imports and phytosanitary certificates for exported products--the Plant Health Service (PHS) in the Plant Health Department of the Ministry of Agriculture and Food Security, and the Tropical Pesticides Research Institute (TPRI). Each has additional functions. For example, the PHS is involved in the management of pest outbreaks, promotion of integrated pest management and other training, awareness-building and surveillance activities related to plant health. The TPRI is responsible for the registration of pesticides for use in Tanzania, plant quarantine and managing the National Herbarium Center and National Plant Genetics Research Center. The TPRI also licenses and oversees the work of private companies which provide product fumigation services.

The PHS has some 165 inspectors based at 28 entry points, including the international airports at Dar es Salaam and Kilimanjaro, major sea and lake ports and selected border posts. Many of these staff are generalists, without specific training in phytosanitary matters. Some 20 percent do not meet the basic minimum educational requirement of having a diploma in an agricultural field. At most of the field stations staff do not have reference materials for pest identification and have little or no direct means of communication (by either telephone, fax or computer) with PHS headquarters. Thus many staff members have to use their own personal cell phones! Only at the Dar es Salaam harbor is there a laboratory for immediate testing¹⁵, although the PHS also utilizes other university or government labs. Historically, budgetary resources for phytosanitary

¹⁵ This laboratory was renovated in 2000 with assistance from FAO.

services have been very limited, although in recent years such budgetary resources have increased somewhat¹⁶ and the PHS has been able to raise some revenues via cost recovery fees.¹⁷

Weak communication between PHS and various stakeholders, coupled with a lack of appropriate reporting procedures, has resulted in a system with no regularized pest surveillance. Information exchange with external parties is also uneven and largely informal. Within PHS there is no formally designated liaison unit for enquiries from trading partners and for communications with the IPPC, WTO or others. There is no central repository for documents and data management of pest records or surveillance data. The weak information management system extends also to export documentation. While phytosanitary certificates are issued, there is no computerized system to retrieve export documentation or to trace consignments, nor a formal system for investigating cases of non-conformity in consignments.

According to the PHS, there is little awareness and/or interest amongst farmers and the private sector in matters relating to plant protection. Indeed, there is currently no structured mechanism for raising awareness. Periodic meetings are held but these tend to reach relatively few people and close cooperation between official agencies, farmers and others only seems to occur in the aftermath of major pest outbreaks. These have been a series of such outbreaks, either related to trade or the cross-boundary migration of pests. For example:

- Cassava green mite was first reported in Uganda in 1971 and later identified in Tanzania. If uncontrolled, this pest can cause cassava crop losses of 60 to 80 percent, a major problem given the importance of this crop in the diet of many Tanzanians. In the late 1980s, a program was implemented to introduce a natural enemy to the green mite and also to enhance surveillance and farmer awareness activities. This effort has been very successful.
- In the 1980s the large grain borer was introduced into Tanzania ostensibly via shipments of maize from South America. Control efforts since then have been partly successful, although periodic outbreaks result in significant post-harvest losses in the local maize crop. Certain countries, including Zimbabwe, will not accept Tanzanian maize due to the continued presence of this pest. In its import inspection program, the PHS pays especially close attention to large consignments of cereals, requiring fumigation of consignments when pests are identified.
- In the mid-1990s, woolly white fly was introduced into the Tanzanian citrus crop through imports of fruit or planting materials. A regional program was launched involving the use of a natural pest enemy and the risk was effectively managed.
- In recent years, Uganda experienced the devastating effects of banana wilt disease. The Tanzanian authorities were alerted, after which the PHS increased its inspection activities near the Ugandan border and in nearby marketplaces. Further, farmers in the area were made aware about the disease and potential control measures.
- Tanzania currently faces a major challenge related to the infestation of its citrus and mango-growing areas by an exotic variety of fruit fly. Large parts of the Kenyan coastal area has also been affected and an FAO-supported regional program has been launched to

¹⁶ The allocated budgeted for the PHS was equivalent to US\$953,000 in 2002/03 and US\$1.1 million in 2004/05.

¹⁷ Although the absence of proper offices and lack of own transport has exposed inspection staff to security risks when collecting fees. In 2002/03, PHS obtained some US\$414,000 in fees from its services.

monitor and control (or even eradicate) this pest. Fruit fly could threaten Tanzania's regional exports in oranges and its nascent mango export trade, if not properly controlled (see the case study section below).

Thus, given its severe capacity limitations the prioritization of PHS activity has largely been dictated by pest outbreaks or other needed reactions to adverse events. In a number of cases these specific initiatives have met with considerable success. However, the response to these events has normally been dependent upon substantial donor financial support. Other focused programs have also been strongly underpinned by external financing. For example, over the 1992 to 2003 period, the PHS, with substantial support from the German Agency for Technical Cooperation (GTZ), implemented a significant program of applied research, training and advisory services to promote the uptake of Integrated Pest Management (IPM) techniques among farmers in several zones of the country.

A recently -completed FAO-supported project has provided training, equipment and consultancy services to the Plant Protection Department. Further, FAO is currently supporting efforts to address the risks posed by the fruit fly outbreak. Nevertheless, Tanzania remains highly vulnerable to plant health risks and could run into increased problems with its trading partners if it is unable to meet certain phytosanitary requirements. Existing management systems and infrastructure are only rudimentary, with priority areas for capacity development including the following:

- Intensification of efforts to build farmer and private sector awareness of plant protection/plant health matters through regular awareness programs and more formalized mechanisms, including involvement of farmer and private sector representatives on various advisory committees.
- Enhancement of field inspection capacities (and oversight) through more regular training, provision of basic working tools for inspectors (microscopes, small incinerators etc.), applying an accreditation scheme for inspectors and establishing an internal auditing scheme.
- Amendment or review of existing legislation to specify the PHS as the National Plant Protection Organization and to bring legal instruments into compliance with the IPPC.
- Formalization of the export certification system by preparing/institutionalizing manuals and guidelines for all aspects of export certification, developing a computerized data management system and otherwise determining and acting upon the requirements stated by Tanzania's leading trading partners.
- Development of a pest surveillance system (perhaps initially focused on selected pests) including a regular reporting mechanism, proper documented procedures, a surveillance database system, etc. Further, development of a proper pest reporting system, in line with international standards

4.4. Animal Health:

The restructuring of the Tanzanian economy over the past two decades, and especially the shift from centralized government services to a 'district focus' in service provisioning, has not boded well for the management of animal health.¹⁸ Numerous structural changes at the central government level, the persistent under-funding of central government functions and the periodic lack of clarity regarding the division of responsibilities and line of authority between central and local animal health officials have undoubtedly contributed to severe animal health problems within the country. In turn this has weakened animal productivity, reduced farmer incomes and severely limited the scope for trade in livestock and meat.

Multiple disruptions and partially implemented reforms brought the country's animal health delivery services to the brink of collapse in the late 1990s¹⁹. The situation has improved somewhat since then with a clearer strategic direction, improvements in the available level of resources and through Tanzania's participation in various regional animal disease control programs, supported by the EU, FAO and others. Since 2000, livestock production and animal health matters have been shifted to the Ministry of Water and Livestock Development from the former Ministry of Agriculture and Cooperatives.

The main legislative basis for animal disease control and overall veterinary activity in Tanzania is provided by two recent Acts. One is the Animal Disease Act (2003), which has provisions related to general and compulsory animal disease control measures, measures to protect consumers against diseases found in animals or animal products and the powers of inspectors. Many specific regulations associated with this Act are still under preparation. A second important piece of legislation is the Veterinary Act (2003), which provides for the registration of veterinarians, enlistment of para-professionals, establishment of a Veterinary Council, and regulation of animal health service delivery. There are many other pieces of pertinent legislation related to animal health or animal product quality/safety, several of which are in need of review and updating. Further, there are important areas where new legislation is needed or at least needs to be completed, including for the processing and marketing of meat, animal breeding, and regulation of the animal feed industry.²⁰

The livestock section of the Ministry of Water and Livestock Development is organized into three directorates covering veterinary services, animal production and livestock research and training. The Directorate of Veterinary Services (DVS) is the leading agency on animal health matters with a mandate to control (and where feasible eradicate) animal diseases, protect consumers against livestock borne diseases and support the provision of animal health services. The DVS is the Contact Point for the OIE. It has inspectors at some 22 ports of entry into Tanzania to inspect animals or animal products, although communications between these and central headquarters is weak. It manages seven Veterinary Investigation Centers in different zones of the country and 19 holding grounds which serve as quarantine centers. The DVS itself

¹⁸ A very limited review of on-going animal health measures was undertaken for this study due to the extensive, on-going preparatory work being done for the IFAD-supported Pastoral and Agro-Pastoral Livestock Development Programme (PAPLIDEV). Readers are encouraged to examine the background document for that project for further analysis of the pertinent issues.

¹⁹ With no central government budgetary allocation for three years.. See Ashley *et al* (1999).

²⁰ See IFAD Working Paper #4, Table 3.

only has a limited number (35) of veterinarians on its staff, with some 130 veterinarians working in local governments or regional administrations. The DVS estimates that the number of government veterinarians at central or local levels is about half of that needed to properly coordinate animal health services and undertake effective disease surveillance.²¹ There is also an acute shortage of trained veterinary personnel at the village level. Disease surveillance activities are intermittent, with difficult coordination between local and centrally-based officers. There is no established animal health information system. Currently, there is no academic support network to undertake risk assessment for animals or laboratory quality assurance and animal products.²²

Over the years, Tanzania has received support under an array of regional and national projects, including the Pan-African Program for the Control of Epizootics and Farming-in-Tsetse-Controlled Areas Project both supported by the EU, and Private Sector Delivery of East-Coast Fever Vaccine Project supported by FAO. However, the current status of animal diseases in Tanzania continues to considerably restrict its capacity to export animals and animal products internationally, and leads to significant productivity losses or high rates of mortality in local livestock. For example:²³

- There were outbreaks of Rinderpest in Northern Tanzania in the early 1980s and again in 1997. However, both were eradicated and Tanzania is now seeking to be recognized by the OIE as Rinderpest-free.
- In 2002, Contagious Bovine Pleuropneumonia (CBPP) was reported in 47 of the 120 districts of mainland Tanzania. A year later, 74 outbreaks of this disease were reported. CBPP has been declared a 'national disaster' and, unless controlled, could spread to Tanzania's southern neighboring countries.
- Foot-and Mouth Disease (FMD) is endemic in Tanzania, with the presence of four of the seven serotypes of the disease. In 2003, there were 96 reported outbreaks involving some 11,000 animals.
- Tick-borne diseases, including East Coast Fever, greatly undermine livestock productivity and are responsible for some 70 percent of annual cattle mortality. Other endemic animal diseases which affect productivity or mortality among Tanzania's poultry or small stock include Newcastle disease, African swine fever, and Caprine pluropneumonia.

Overall, Tanzania is presently struggling to control (or eradicate) several of the OIE's List A epidemic diseases which are highly contagious and whose presence highly restrict a country's international market access. The DVS has prioritized Rinderpest, CBPP and Foot and Mouth Disease in its program of surveillance and international collaboration. For Rinderpest, it continues a surveillance program to prove the absence of the disease in Tanzania. For CBPP, Tanzania has agreed with its SADC neighbors to pursue a five year disease control program, involving intensified vaccination, surveillance and animal movement controls. *While the FAO has provided a grant to kick-start the program, provision will have to be made by Government*

²¹ There are also about 50 privately practicing veterinarians, mostly operating in urban or peri-urban areas.

²² The Directorate of Animal Production also influences animal health and quality through its work on animal breeding, rangeland management, and technical advisory services to livestock owners.

²³ This information is drawn from the IFAD background documentation and from the Epidemiology Unit of the Ministry of Water and Livestock Development.

(or the donor community) to enable its full implementation. No strategy has been devised to control Foot and Mouth Disease, although the PAPLIDEV project will assist with constraint analysis and strategy identification. Subsequent resources will be needed to implement this strategy.

In order to enable Tanzanian livestock products to obtain international market access, the government envisions a policy of creating specific disease-free zones which would be recognized by the country's trading partners in accordance with the OIE Terrestrial Animal Health Code. Several preliminary plans for such disease-free zones have been developed. However, *the pursuit of such a strategy requires a full feasibility study, considering the technical and commercial constraints and implications and the overall costs and benefits (and their distribution).* The PAPLIDEV project could facilitate such an analysis. Alternative (and likely lower cost) strategies should also be considered. Disease control requirements are typically less stringent when countries are seeking to export meat products rather than live animals. Yet, such a trade would require (private) investment in modern abattoirs and the develop of the necessary infrastructure and procedures for animal transport, monitoring, and quarantine prior to slaughter. The feasibility of such a 'systems approach' (rather than a disease free zone approach) also needs to be examined.

V. REGIONAL TRADE, INTEGRATION AND SPS AND QUALITY STANDARDS:

Tanzania is a member of the Eastern African Community (EAC) and the Southern African Development Community (SADC). The broad trade agreements which underpin these regional groupings include objectives for eliminating intra-regional barriers to trade, including for food and agricultural products. Further, there are ambitious objectives for intra-regional cooperation in the field of standardization, quality management, metrology and testing. Both the EAC and the SADC trade protocols call for their members to harmonize their SPS measures with international standards and to seek synergies in building up regional capacities in SPS management.

The processes of regional standards harmonization and of collaborative capacity building offer considerable opportunities to Tanzania in its own efforts to build a modern and sustainable system of standards and standards architecture which can facilitate economic growth, industry competitiveness and expanded trade (as depicted in Figure 4). For example, regional cooperation can:

- Facilitate expanded intra-regional trade through the harmonization of standards and mutual recognition of conformity assessment systems.
- Spread knowledge and 'good practices' about how to manage certain SPS-related risks from technical, administrative or other perspectives.
- Enable countries to better manage trans-boundary risks, such as the movement of pests and diseases.
- Serve to realize economies of scale and scope in the delivery of conformity assessment and other services, by expanding the market for these services and fostering specialization of capacities (for example through regional 'centers of excellence').

- Better enable regional enterprises or industries to comply with extra-regional market standards, where collaboration facilitates international accreditation or other recognition of regulatory, conformity assessment or other systems.

To date, however, there has been only modest progress in implementing the ambitious harmonization and capacity-building agenda laid out in the respective regional trade agreements. This section briefly reviews the on-going experience, with primary emphasis placed on that within the EAC.²⁴ The current status and *foci* of these efforts are highlighted and recommendations are made for strengthening the harmonization processes and their impact.

5.1. Tanzania's Regional Agro-food Trade:

The most explicit objectives in the regional trade agreements relate to removing barriers to intra-regional trade. Tanzania's current trade in agro-food products within the region of east and southern Africa is very small and much of that which does take place occurs on an informal and not officially recorded basis. In 2003, Tanzania's officially-recorded food exports to other members of EAC and SADC were US\$10 and US\$12 million respectively, representing only 5 percent of Tanzania's total food exports. Ironically, Tanzania is a country which borders on eight countries and whose fellow EAC and SADC members import large quantities of staple and high-value food products.²⁵ Tanzania's recorded intra-regional exports are dominated by cereals, oilseeds and beverages.

Tanzania's informal intra-regional food trade is likely to be double the level of officially recorded trade. Several recent studies point to a high export volume for Tanzanian oranges, onions and tomatoes across the border into Kenya. The actual FOB value of this trade may be in the order of US\$20 to US\$25 million, compared with officially recorded exports of less than \$500,000. A substantial cross-border trade in cattle also occurs. It is estimated that at least 300,000 head of cattle are moved annually from Tanzania and sold in Kenya. This trade would be valued at some US\$9 million. An additional 100,000 head of cattle are estimated to move annually for sale in Rwanda, a likely future member of EAC. The level of informal food trade with members of SADC is not considered to be significant.

Intra-regional trade also accounts for only a small proportion of Tanzania's imports food imports (Table 5) While such total imports were US\$189 million in 2003, other SADC members provided just under US\$27 million, while other EAC members provided US\$8 million. Tanzania's food imports from other EAC members have not increased in value from a decade ago, although the composition has changed. This trade was previously dominated by beverages (especially beer and other alcoholic beverages), but now includes vegetable oils and an array of higher-value food products (including packaged meats and dairy products), mainly sold through supermarket chains or offered by Tanzanian hotels and restaurants (see below). Tanzanian food imports from SADC countries have increased somewhat from a decade ago. These remain dominated by staple foods (including sugar and cereals), although there has also been a modest trade in higher value foods, probably also related to the operations of a South African supermarket chain within Tanzania since 2000.

²⁴ The launching of the EAC Customs Union in 2005 brings a greater urgency to the regional harmonization of standards and related capacities for this cluster of countries.

²⁵ In 2003, South Africa alone imported \$1.2 billion worth of food.

The absence of harmonized standards and the lack of mutually recognized certification marks or other means of quality conformity assessment among countries cannot be considered a major factor explaining the limited development of intra-regional food trade involving Tanzania. Other factors including tariff barriers, poor communication linkages, underdeveloped transport infrastructure and the consequent high freight costs, similar patterns of production and specialization, limited purchasing power in certain countries and other factors all constrain this trade. However, as tariffs on intra-regional trade are progressively reduced, advances are made in improving the logistics for intra-regional trade, national systems for food distribution are modernized and demographic change and income growth increases demand for higher-value food products, there is much increased potential for intra-regional food trade.

Table 5. Tanzanian food imports from other EAC and SADC members (US\$ million):

Commodity	1994		2003	
	EAC	SADC	EAC	SADC
Total Food	8.0	21.8	7.9	26.8
Sugar		10.8	0.8	10.9
Cereals		2.3	1.5	4.5
Beverages	6.4	3.9	0.5	3.3
Dairy & Eggs			1.2	1.4
Vegetable Oil	1.1		2.9	1.1
Processed fruit & vegetables		0.1	0.1	0.8
Prep. meat & fish			0.5	0.3
Other foods	0.5	4.8	0.2	4.4

Source: UNCOMTRADE and authors' calculations

The weak alignment of standards and lack of capacities or mutual recognition of conformity assessment arrangements could inhibit the future evolution of intra-regional trade. This consideration seems to be driving some of the on-going efforts to collaborate in this field. Thus, the harmonization of standards and the creation of a system of mutual recognition between Tanzania and its trading partners would improve the opportunities available to Tanzanian firms and farmers to access regional markets. Further, the pooling of resources and sharing of expertise with other countries could be especially beneficial to Tanzania given its limited technical expertise and financial resources to invest in SPS management capacities. Rather than have to develop capacities in a full spectrum of areas, Tanzanian agencies and enterprises could draw upon the expertise and capacities of other entities within the region. Finally, coordination and regular information flow is needed for effective management of pests and diseases which don't recognize country borders.

5.2. Developments within the East African Community:

While some collaborate work related to standards did take place while the EAC was active in the 1970s, more concerted efforts to harmonize standards among EAC members began in the mid-1990s. Convening in 1995, the Permanent Tripartite Commission (PTC) for East African Co-operation agreed that the harmonization of standards in goods and services would facilitate trade and investment within the region. It directed the heads of the member state national bureaus of

standards to develop a program of action to pursue this. Periodic meetings were held during the following two years. Further, an East African Standards Committee was formed with representatives from the member states, including some private sector participation. However, while periodic meetings enabled the exchange of views on emerging issues and challenges, relatively little progress was made in the process of harmonizing standards.

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. Under the protocol the three countries committed to, among other things:

- Applying uniform rules and procedures for the formulation of national standards.
- Adopting and implementing East African standards as national standards (EA standards would be drawn from those adopted by the African Regional Organization for Standardization and, where these are not available, suitable international standards).
- Developing and harmonizing environmental standards within the Community.
- Harmonizing procedures, sampling and testing of products for conformity with quality standards.
- Developing adequate capacities for assuring the quality of goods produced and traded within the Community.
- Adopting common rules and procedures for the use of certification marks and providing mutual recognition of each other's national certification marks.
- Adopting a harmonized system for legal, scientific, and industrial metrology.
- Establishing an East African accreditation body to promote the recognition of certification and test laboratories within and outside the region.

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 2003, some 490 'harmonized' standards had been agreed to, of which 160 related to food products. Table 6 below summarizes the various agro-food standards which have been 'harmonized'. 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. These 'harmonized' standards have not been implemented, not published, or shared with the private sector and major external trading partners. None have been formally adopted as national standards in any of the member states.

On other fronts, progress has been very slow. It took more than a year before committees were formed to address the agenda related to metrology, quality assurance or testing. Limited financial resources, lack of clear coordination, lack of any mandate to make resource or functional allocation decisions and the absence of a clear conceptual 'road map' and set of 'good practice' guidelines for regional collaboration have all hampered the efforts of the officials

involved. In order to breathe new life into the stalled processes, in early 2004 the EAC members requested the German National Metrology Institute (PTB) to intervene as facilitator and advisor. A three-year 1.5 million Euro project was launched entitled Establishment of the Regional SQMT Architecture in the East African Community. Under the East African Standards Committee, four technical subcommittees were formed, for standardization, quality assurance and accreditation, metrology and testing. The PTB, in conjunction with the bureaus of standards also identified project targets in relation to five cross-cutting thematic areas, as follows:

Establishment of legal framework:

- Develop acts, regulations, procedures, and ordinance in relevant fields (for example a scheme for certification of goods produced and traded and a scheme for management).
- Develop procedures for harmonization, development, issuance, acceptance and implementation of EAS.
- Design EAC accreditation scheme and establish accreditation body for calibration and testing laboratories.
- Establish funding mechanism for all SQMT activities

Building human resource capacity

- Basic and further training with regard to quality systems and accreditation
- Train and register auditors.
- Train technical staff of NBS.
- Train in selected fields of industrial and legal metrology.
- Train both national accreditation focal points and a pool of regional technical assessors.

Appropriate infrastructure

- Upgrade technical capacities of NBS.
- Extend legal metrology activities (number and new fields of verifications).
- Provide selected basic equipment.
- Compile measurement capabilities.
- Participate in inter-laboratory comparisons to ensure quality control measures.
- Participate in proficiency testing.

Awareness:

- Promote participation of all stakeholders in standardization process.
- Facilitate participation of target group representatives in all relevant committees.
- Conduct awareness seminars for Quality Management in regional and international trade.
- Develop and disseminate information material.

Networking:

- Create information center on EAC SQMT infrastructure.
- Provide regional network including customs and other relevant authorities.
- Publicize EAC standards.
- Revise internal working procedures of SQMT institutions.

The PTB and EAC members have also developed a number of outcome indicators for the project, related to the accreditation of calibration and testing laboratories, the number of firms within the region obtaining certificates for ISO 9000 and 14000 and other dimensions. Since the PTB

support began, the newly formed subcommittees have held a number of meetings and organized several workshops to develop action plans and identify their priority needs. A thorough review has been launched on the process of standards harmonization, with an effort to properly prioritize, edit and receive stakeholder feedback on proposed regional standards.

Table 6. Agro-food standards harmonized but not yet implemented under EAC, 1998-2004:

Product and Process Area	No of Standards	Type of Standards
Processes in the food industry	2	Code of practice, HACCP
General methods of food testing and analysis	9	Specifying methods for different microbiological testing
Cereals, pulses and derived products	25	Specifications /methods of testing
Fruits. Vegetables	27	Specifications, sampling and method of testing
Milk and milk products	24	Specifications, methods of microbiological testing and analysis
Meat, meat products and other animal produce	4	Specifications/method for Nitrogen analysis
Tea. Coffee. Cocoa	5	Specifications/vocabulary
Beverages	18	Specifications/methods of testing
Sugar. Sugar products. Starch	10	Specifications /Methods of chemical analysis
Edible oils and fats. Oilseeds	28	Specifications, sampling method, determination of level of certain metals Code of hygiene for transportation of edible fats and oils in bulk
Spices and condiments. Food additives	8	Labeling of food additives, Specification Sampling and test methods
Prepackaged and prepared foods	2	Specifications, labeling
Tobacco, tobacco products and related equipment	18	Specifications, methods of testing
Animal feeding stuffs	23	Specifications, methods of testing

5.3. Some Observations on the EAC Process to Date:

In retrospect, a number of factors have heavily constrained on-going efforts to align standards and otherwise construct regional standards architecture within the EAC. While the participants in the process have tended to emphasize to lack of sufficient resources for the pertinent committees to meet on a regular basis, there would appear to be more fundamental, structural constraints. These include the following:

- *Limited political and private sector commitment to the process:* Apart from the officials at the national bureaus of standards and perhaps others directly involved in managing agricultural health and food safety risks, there is little direct involvement of national authorities in the regional standardization issues. The private sector in the member countries has also not given priority to regional matters in relation to standards, being more focused on compliance with EU or other external standards, and thus providing little pressure to have the regional efforts bear fruition. Relatively few private sector entities place the lack of standards harmonization near the top (or even the middle) of their list of constraints inhibiting their regional trade.
- *Limited coordination of the overall process:* Until recently, the regional standardization initiative was ostensibly coordinated by the EAC Secretariat, with various functions

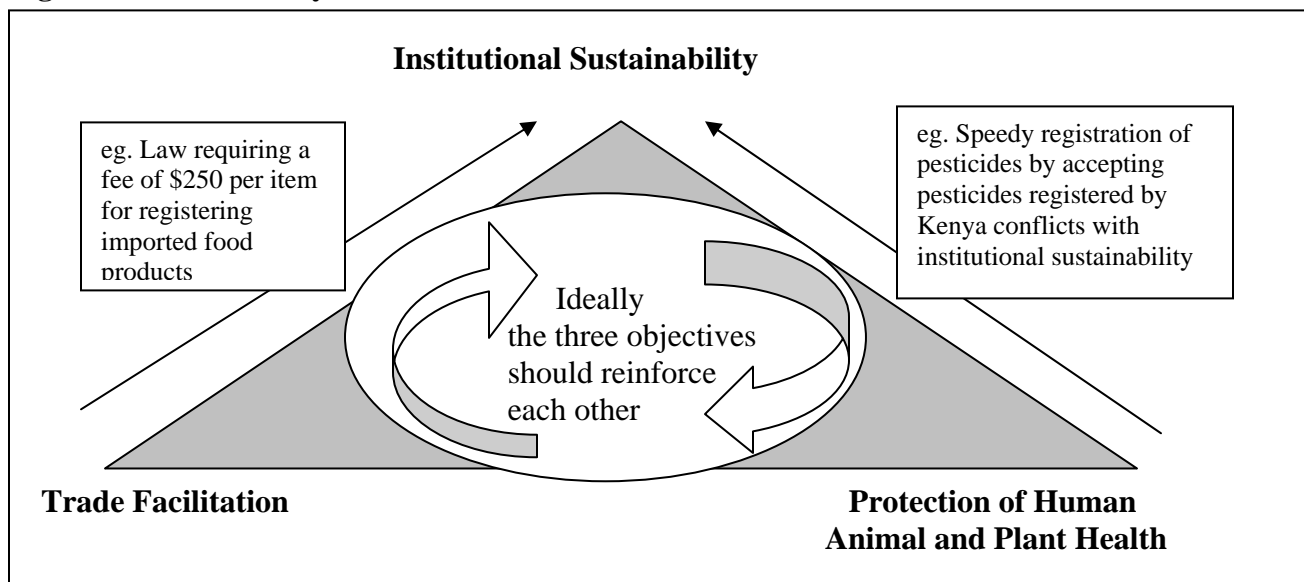
delegating the chairpersons of various committees. Work on the regional agenda was nobody's full-time focus and was a secondary or tertiary activity for all the officials involved. As a result, many of the planned activities were delayed. Competing national commitments normally superceded regional ones and no link was made to international standard-setting organizations

- *Large differences in capacities between member countries:* Among EAC members Kenya has significantly more capacity and better infrastructure than either Tanzania or Uganda. In 2002, for example, Kenya had 17 internationally-accredited laboratories, while the other two EAC members had none. During that year, metrology laboratories in Kenya performed 3820 calibrations, compared to 68 in Tanzania and zero in Uganda. The development of a market in certification services is also far more developed in Kenya than in the other two countries. Coordination, communication and, most importantly, developing a consensus between EAC member countries on regional priorities is seriously hindered by these capacity gaps.
- *Differences in approach to standards:* In Kenya, the vast majority of standards related to food are voluntary standards; in Tanzania, most registered food standards are mandatory and potentially enforced by government. This difference in orientation stems from historical and (past) ideological differences as well as disparities in the prevailing capacities of the private sector. Thus, what would be the status of 'harmonized' regional standards? Would they be voluntary or mandatory? A pre-condition for the effective adoption of any such regional standards would need to be a convergence of approaches or philosophies regarding the role of food standards themselves.
- *Lack of institutionally binding mechanisms.* A legal structure is needed if harmonization of standards and mutual recognition is to be effective for trade. The absence of a binding legal framework is a critical constraint to achieving the objectives established by the SQMT Protocol Diplomacy and cooperation should be accompanied by a legally-binding instrument to ensure that partner countries fulfill their obligations under the agreement including building capacity, adopting harmonized standards into national legislation, withdrawing conflicting national legislation or accepting conformity assessments performed in a partner country.
- *Conflicts between national interest and commitment to regional cooperation:* In many circumstances there may be tensions or conflicts between national interests and commitments made to regional capacity-building. The three EAC members do compete in certain international markets and this may inhibit motivations for collaboration on certain dimensions of standards. When resources are scarce and only limited investment can go toward physical or technical infrastructure for standardization, there is a natural tendency to want to direct resources to one's own infrastructure. One illustration of this relates to on-going efforts led by the Kenya Bureau of Standards to create a national accreditation body precisely at a time when the three EAC members have committed to establish a regional accreditation system. This is certainly not the only case where institutions have sought to create 'facts on the ground', which may or may not be compatible with regional efforts to develop capacity synergies based on areas of relative competence.
- *Conflicts between institutional sustainability and the overall agenda of fostering regional trade.* Ideally, a public agency in charge of protecting human, animal or plant health should be able to pursue those objectives in a manner that also facilitates trade and in an

institutional and financial environment that also ensures its own institutional sustainability. In practice, however, certain risk management measures may unduly restrict trade or there are circumstances where the goal of institutional sustainability takes precedence over either the public good or the objective of promoting trade. Several examples of the latter phenomenon are apparent in Tanzania and there are almost certainly cases of this in Kenya and Uganda.

Recently, the TFDA issued a regulation stating that all imported food items needed to be tested and registered with the Authority, at a cost of US\$250 per item. While ostensibly geared toward pursuing a public health objective, this requirement is inappropriate given the level of risk, limited public capacity, and strong private incentives for self-policing of quality and safety for packaged and branded food products. The proposed registration fee is, however, extremely high and suggests that an objective of revenue generation may be as, or more important, than public health protection. If enacted, this regulation would serve to inhibit trade, especially in packaged foods.²⁶ Indeed, a group of food-importing companies have taken the TFDA to court and stalled the implementation of this measure.

Figure 4. Sustainability of standards infrastructure in Tanzania:



Another example relates to the testing and registration of agro-chemicals by the Tanzania Pesticide Research Institute (TPRI). The TPRI has a responsibility for ensuring that only those pesticides which are effective under Tanzanian growing conditions and have certain properties related to environmental and worker safety and acceptable product labeling are approved for use in Tanzania. Yet, the domestic market for pesticides is quite small in Tanzania and dominated by products used for certainly crops (especially cotton, coffee and tea). The TPRI charges relatively high fees to register an agro-chemical and also requires three years of field testing. It does not recognize the testing done and registration of chemicals in neighboring countries,

²⁶ The supermarket chain Shoprite indicates that it or its brokers would incur an expense of US\$750,000 to register all the products which it sells given that separate registrations would be needed for different sizes and flavors of the same products.

including Kenya. Hence, there are a broad range of newer, more effective and safer chemicals which do not get registered in Tanzania because of the high cost and which are prevented from being legally imported from Kenya or other neighboring countries. The chemical registration revenue imperative of TPRI thus appears to take precedence over a feasible solution of mutual recognition of other (including more rigorous) testing and registration systems. In all likelihood, this type of institutional behavior, practiced by an array of institutions, has contributed to the slow progress of many of the regional efforts to develop synergies in capacities and programs between countries. Until recently, there has not been anybody to ‘blow the whistle’ on this behavior; indeed, there is no incentive for institutions to give up any of their resources or mandate to serve a regional integration agenda.

5.4. Opportunities and Recommendations for the Future:

The misalignment or over-zealous enforcement of quality, food safety and agricultural health standards has almost certainly not been a significant factor inhibiting Tanzania’s intra-regional trade in food (or other products).²⁷ 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.

One note of caution is needed, however, on 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 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.

Rather than standards harmonization, the largest potential gains from regional collaboration would seem to lie in areas where there has been relatively little progress to date. These relate to:

- *Streamlining of regulations and achievement of mutual recognition* The regional standards initiative should include an approach aiming to eliminate as much unnecessary regulation as possible (removing old unused standards) and increasing transparency in the

²⁷ Certainly, plant health or animal disease issues might place an absolute barrier on Tanzania’s ability to export certain products to South Africa, yet these same Tanzanian products are unlikely to be competitive in that market on grounds of quality, price, supply reliability, or other grounds.

standards and control measures being applied. One existing barrier is the lack of mutual recognition of conformity assessment systems in the member countries. Systems need not feature equivalent capacities, yet over a broad range of areas there is scope to introduce common procedures, record-keeping, auditing, etc.

- *Resource pooling for synergies:* Economies of scale and functional/institutional sustainability cannot be achieved by different institutions and countries duplicating analytical, testing, and other capacities. There would be evident gains by having single ‘centers of excellence’ for the testing, registration or other monitoring of inputs or outputs in specialized SQMT areas (for example testing of pesticides, condoms or cosmetics). Competition is normally a good thing, yet this may result in SQMT (and private) institutions competing in the same small markets in every country and failing to make effective use of invested research, equipment and staff. National policy-makers and donor agencies need to consider this carefully. The current imbalance of capacity in favor of Kenya creates both opportunities and obstacles to this regional development of ‘centers of excellence’. The same applies in relation to a regional accreditation body. While certainly the largest, the Kenyan market for accreditation is probably too small to sustain a national accreditation body, yet one operating at the EAC level would probably be viable.
- *Multi-country collaboration for problem solving:* Much of the effort of the regional standardization initiative has involved the member country bureaus of standards. There has seemingly been less direct involvement by other official agencies, research institutes and others who are also directly involved in work to promote the quality of food and agricultural products and to manage agricultural health and food safety risks. Such collaboration, where it occurs, is often ‘forced’ by an event or crisis such as an outbreak of animal disease or the infestation of a broad area by a plant pest. There is ample scope to develop, on a regional level, a variety of surveillance and contingency planning initiatives for selected priority risks. There is also scope for joint programs in a number of fields, involving applied research, pilot programs, stakeholder training etc. for challenges facing firms, farmers or regulator agencies in the three countries which relate to quality and SPS management. To provide incentives and seed capital for such multi-institutional and multi-country initiatives, a regional fund could be created to cost-share such initiatives. The member countries, interested donor agencies and perhaps private sources could endow such a fund whose resources would be allocated on a competitive basis.

Despite the various constraints and limitations noted above, there are reasons to be guardedly optimistic about the scope for progress in EAC standardization work in the coming years. A critical element in this will be the coordination and facilitation of activities and a major effort to sensitize both political leaders and the private sector on the opportunities and challenges associated with the regional initiative. The Council of Ministers has approved the placement of a full-time SQMT program coordinator to be located in the EAC Secretariat.

VI. CASE STUDIES

This section now presents a series of product case studies to illustrate the importance of SPS and quality standards and related infrastructure to Tanzania's agricultural and food exports. In so doing, it illustrates the very different ways and levels to which capacity has been developed in response to trade-related problems.

6.1. Fish Products: - Responding to Evolving EU Requirements:

Fish and fishery products are frequently lauded as an export 'success story' for Tanzania. Through the early to mid-1990s, exports of fish and fishery products expanded rapidly, driven predominantly by the demand for Nile perch fillets in European markets. Towards the end of the 1990s, however, Tanzanian fish and fishery product exports (as well as those of Kenya and Uganda) were subject to a series of restrictions by the EU that impacted, in particular, on the Nile perch supply chain. These restrictions related to concerns over food safety controls. In response, both the Tanzanian government and the fish processing sector were required to implement wide-ranging reforms and investments, which they appear to have done quite successfully. At the same time, however, the Nile perch sector has faced other pressures, including a decline in fish landings and increased international competition, from an unexpected source.

The fisheries sector in Tanzania consists of the marine coastline of the Indian Ocean and a number of freshwater lakes and rivers, most notably Lake Victoria.²⁸ In 2003, total fisheries production was over 351,000 MT²⁹, valued at US\$172 million. The fisheries sector in Tanzania remains essentially artisanal; it is estimated that over 99 percent of production is undertaken by small-scale fishers using traditional methods (System Science Consultants, 2002). There are some 120,000 fishers active in the sector, operating some 37,000 boats (Fisheries Department, 2003). Lake Victoria accounts for about half of the total national fish landings and number of fishers.

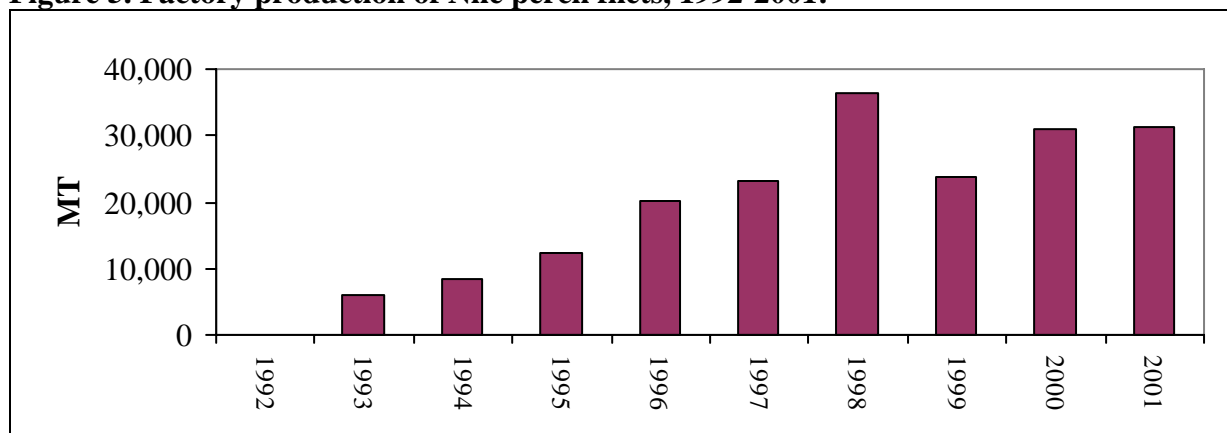
The export of fish and fishery products from Tanzania are dominated by Nile perch, mainly in the form of frozen fillets. Although the fishery itself remains artisanal, indeed motorized trawlers are banned from Lake Victoria as part of conservation measures, an industrial processing sector evolved in the early 1990s specifically to cater for the demand for Nile perch in export markets. Currently, there are ten Nile perch processing facilities situated on or near to the shores of Lake Victoria that produced around 31,000MT of Nile perch fillets in 2001 (Figure 5).³⁰ A number are owned, or at least have close links with, Nile perch processing facilities in Kenya and/or Uganda. Indeed, until quite recently there were considerable cross-border movements of unprocessed or semi-processed Nile perch, especially to facilities in Kenya.

²⁸ For further information on fisheries resources and production in Tanzania see System Science Consultants (2002); Board of External Trade (2003).

²⁹ Freshwater fisheries accounted for 86 percent of production by volume and 80 percent by value.

³⁰ There are an additional 20 processing plants, three factory vessels and 25 freezer vessels that are approved to export to the EU and that process marine fish, for example shrimp and lobster. These are mainly situated in or near Dar es Salaam.

Figure 5. Factory production of Nile perch filets, 1992-2001:



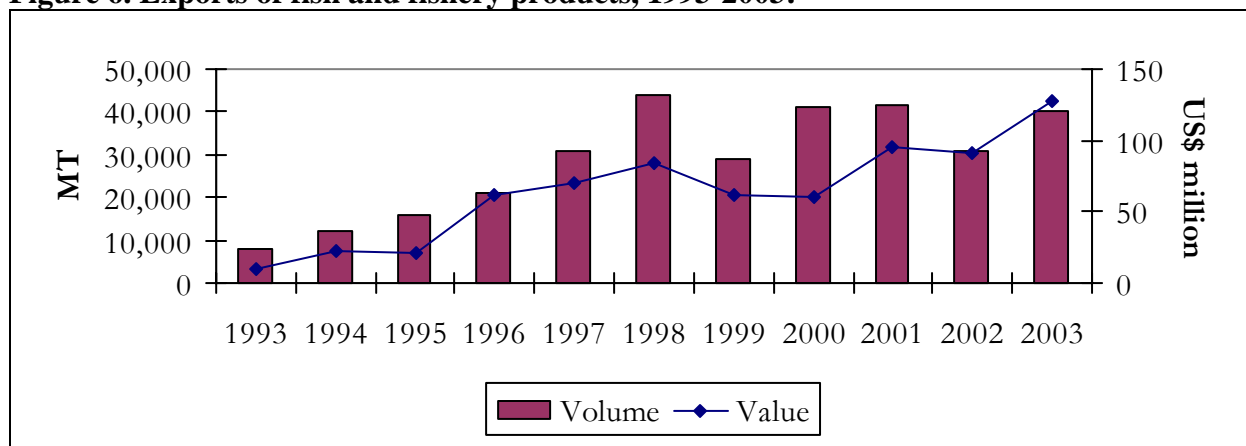
Source: Fisheries Department

Industrial fish processors procure Nile perch from fishers directly and/or through agents. In some cases fishers land their catch directly onto collector boats operated by agents or the landing sites of the processors. In some cases processors provide gear to fishers through their agents in order to secure a reliable supply of fish. This supply chain operates separate to that for fish consumed locally. Only under-sized Nile perch and other species (for example tilapia and *Omena*) enter the local supply chain. The processors agree a price with their agents and take ownership of the fish once it has been delivered to their facility and quality checks have been undertaken.

Although the industrial processing sector was extremely profitable at the time that the first facilities were established in the early to mid-1990s, today the sector is characterized by significant levels of structural over-capacity; many facilities are currently operating at less than 50 percent capacity. Thus, faced with fish supply problems and insufficient operating capital, a number of exporters has explored options for value-addition.

The volume of Tanzanian fish and fishery product exports grew rapidly through the 1990s from 8,120MT in 1993 to a peak of 44,000MT in 1998 (Figure 6). Likewise, the value of fish and fishery product exports increased from US\$9.3 million in 1993 to US\$83.6 million in 1998. There was a decline in the volume and value of exports in 1999 to 2000, when restrictions were applied on exports of Nile perch from Tanzania by the EU (see below), although exports recovered through 2000-2003. In 2003, fish and fishery product exports were valued at US\$127.1 million, accounting for 11.4 percent of total domestic exports. Nile perch accounted for 85 percent of such fish exports.

Figure 6. Exports of fish and fishery products, 1993-2003:



Source: Fisheries Department

Historically, fish and fishery product exports were predominantly directed at markets in the EU; around 70 percent of fish and fishery product exports were to the EU in 1998. Through the period 2000 to 2003, however, exports to non-EU markets have expanded, reflecting attempts by exporters to diversify away from reliance on EU markets following the imposition of restrictions. Thus, by 2002, the EU only accounted for 64 percent of exports, falling further to 48 percent in 2003. Other important markets have included Japan, United Arab Emirates, Australia, Gibraltar, Israel and Kenya.

Aside from their macroeconomic contribution, fish and fishery product exports are a valuable source of government revenue. The Tanzanian government applies a ‘loyalty fee’ to all fish and fishery product exports at a rate of approximately six percent. In 2003, this yielded direct government revenue of US\$5.4 million and over the 1996 to 2003 period more than US\$30 million was raised through this levy.

Since the mid to late-1990s, the fish and fishery products export sector, and the Nile perch sector in particular, have faced considerable challenges meeting food safety requirements in their major export market, the EU. The EU lays down harmonized requirements governing hygiene in the capture, processing, transportation and storage of fish and fishery products (Henson and Mitullah, 2004). European Union legislation lays down detailed requirements regarding the landing of fish, structure of wholesale and auction markets and processing facilities (for example construction of walls and floors, lighting, refrigeration, ventilation, staff hygiene etc.), processing operations, transportation, storage, packaging, checks on finished products, laboratories and water quality. More generally, it requires that fish processing facilities undertake ‘own checks’, broadly based on the principle of HACCP; ‘own checks’ refers to all actions aimed at ensuring and demonstrating compliance with standards laid down by EU legislation

Processing plants are inspected and approved on an individual basis by a specified ‘Competent Authority’ in the country of origin, whether an EU Member State or a Third Country, to ensure they comply with these requirements. The European Commission undertakes checks to ensure

that the Competent Authority undertakes this task in a satisfactory manner and to ensure provisions of the Directive are complied with. Imports from Third Countries are required to comply with requirements that are at least equivalent to those of the EU. Further, specific import conditions are established according to the particular health situation of that country. In most cases the Commission undertakes periodic inspections for the purposes of determining local health conditions and establishing specific import conditions for the country concerned. Only establishments approved by the Competent Authority are permitted to export to the EU. The Competent Authority provides the Commission with a list of approved establishments and this is subsequently published in the Official Journal of the European Communities.³¹

At least initially, Tanzania faced a number of challenges complying with the EU's hygiene requirements and it was not until restrictions were applied to fish and fishery product exports from Tanzania, Kenya and Uganda that specific actions were taken in order to implement the necessary reforms (Table 7). These health concerns emerged towards the end of 1996 when *Salmonella* was detected in a number of consignments of Nile perch from Tanzania, Kenya and Uganda, most notably in Spain. As a result, the Spanish government imposed a prohibition on imports of Nile perch from all three countries on November 27, 1996. The Italian Government soon followed suit. Subsequently, on April 4, 1997 the European Commission introduced a requirement for *Salmonella* testing of all consignments of Nile perch from the region. Imports were subject to positive release, whereby they were held at the border until test results confirmed that the consignment was free of *Salmonella*. This requirement was initially applied for a limited period to June 30, 1997, but was subsequently extended for an additional year.

During the second half of 1997, there was an outbreak of Cholera across East Africa largely associated with the heavy rains brought by *El Nino*. The European Commission had on-going concerns about the efficacy of food safety controls in Tanzania, Kenya and Uganda based on the result of inspections and the detection of *Salmonella* of consignments of Nile perch. In the case of Tanzania, the European Commission undertook inspections of hygiene controls for fish and fishery products in December 1997. These identified significant non-conformities with EU requirements, including hygiene standards in processing facilities and landing beaches, the efficacy of systems of inspection and approval of processing facilities and health certification of exports and effectiveness of procedures and facilities for laboratory testing of fish and water samples. Thus, on December 23, 1997 the Commission introduced a requirement for testing of all consignments of frozen fish from the region for *Salmonella*, *Vibrio cholerae* and *Vibrio parahaemolyticus*. The cost was to be covered by the importer. Further, given the time taken for these tests to be undertaken, imports of fresh fish were prohibited.³²

On June 30 1998, all requirements relating to border testing of fish from Tanzania, Kenya and Uganda were lifted. Instead, the Competent Authority in each country was required to provide a declaration with each consignment that all persons handling fish and fishery products had undergone medical checks. During the period of the restrictions, both the Tanzanian government and the fish processing sector had made great advances in complying with the EU's requirements

³¹ Countries for which the European Commission has approved local requirements as being at least equivalent to those in the EU and for which specific import requirements have been established are subject to reduced physical inspection at the border.

³² The requirement for *Salmonella* and *Vibrio cholerae* testing of marine fish was lifted on 16 January 1998.

and made written guarantees to the Commission addressing the concerns raised in its inspection report. As a result, Tanzania was added to the list of countries that are fully harmonized with EU requirements with the Fisheries Department as the Competent Authority. Tanzania was the first country in the region to achieve full compliance.

Table 7. Food safety restrictions on Tanzanian fish exports to the EU:

Dates	Restrictions	Products/Regions
April 1997 - 30 June 1998	Border testing of all consignments for <i>Salmonella</i>	Nile Perch
23 December 1997 – 30 June 1998	Exports prohibited to EU	Fresh fish
	Border testing of all consignments for <i>Vibrio cholerae</i> and <i>Vibrio parahaemolyticus</i>	Frozen/processed fish not caught at sea and directly landed to EU
12 April 1999 – 31 January 2000	Exports prohibited to EU	Fish from Lake Victoria

During the period July 1998 to March 1999, no restrictions were applied to Tanzanian exports of fish and fishery products and Tanzania gained some competitive advantage over Kenya and Uganda as a fully-harmonized country; products were permitted to freely flow within the EU following export while those from Kenya and Uganda were only permitted to be sold and consumed in the country of initial import. However, in March 1999 a suspected case of fish poisoning with pesticide was identified in Uganda. The Ugandan authorities responded by suspending all exports. While the Tanzanian governments took precautionary measures, it did not suspend exports and, knowing the significant level of cross-border movement of fish between Tanzania, Kenya and Uganda, the European Commission imposed a ban on exports of fresh and frozen Nile perch in April 1999.

Four months later, the European Commission undertook inspections of controls on pesticide residues in fish in Tanzania. The Fisheries Department had implemented a monitoring program for pesticides residues in water from Lake Victoria and fish fillets in December 1998, although this was suspended in July 1999 after only negative analytical results had been found. However, the Commission did establish that the systems of monitoring that had been employed were rigorous, although concerns were raised that there were no written sampling plans. The laboratories being used for the analysis of these samples were not accredited according to international standards.

On the basis of the inspection undertaken in August 1999, the European Commission maintained the restrictions until scientific evidence had been provided, on the basis of analytical results, that no harmful residues of pesticides were to be found in fishery products intended for export to the EU. Subsequently, the Fisheries Department implemented a comprehensive program of testing (see below), and provided written assurances to the Commission in November 1999, with

documentary evidence of test results at an accredited laboratory.³³ On the basis of this evidence, the restrictions were lifted at the end of January 2000. Again, Tanzania was the first of the three countries to have these restrictions lifted.³⁴

While there is little evidence that the Fisheries Department of the Ministry of Natural Resources and Tourism or the industrial fish processors were proactive in taking the actions required to comply with EU requirements, and indeed the weakness of prevailing standards probably explains to a large part the restrictions imposed by the Commission, once access to EU markets was threatened action was immediately taken. Further, when the restrictions were imposed, Tanzania was able to make the reforms and investments required to achieve compliance with EU requirements more rapidly than either Kenya or Uganda

Since 1970, the Fisheries Department has been the designated authority responsible for all aspects of the management of the fish and fishery products sector in Tanzania, including fish quality and safety. Thus, compliance with EU requirements did not require any organizational change, especially relating to the designation and operation of a Competent Authority. Undoubtedly this is a major factor in the ability of the Tanzanian government to respond in a timely manner to the restrictions imposed by the European Commission.

The strengthening of safety and quality capacity is an integral element of the Master Plan on Fisheries Development (System Science Consultants, 2002), which aims to strengthen the capabilities of artisanal fisheries in Tanzania. As part of efforts towards the sustainable development of fishery exports, the Plan includes the enhancement of export product competitiveness through improvements in quality control capabilities, including upgrading of laboratory infrastructure. Further, efforts to enhance infrastructure at landing beaches on Lake Victoria include the construction of landing sites for Nile perch destined for export.

The Fisheries Department harmonized its regulatory controls with those of the EU under the Principal Regulations, Fish Quality Control and Standards Regulations, 2000. To facilitate effective implementation and enforcement, a Manual of Standard Operating Procedures for Fish Inspectors was prepared in October 2001, which is currently under review. Inspection and approval of processing facilities is the responsibility of the Fisheries Quality Control and Standards Division of the Fisheries Department. Fish quality inspections are organized into four zones, namely Lake Victoria, Tanga and Northern Zone, Dar es Salaam and Southern Coast Zone and Western Zone. The Lake Victoria zone has three sub-zones.

The Fisheries Division has invested in a significant increase in its inspection capacity through the hiring of additional inspectors and programs of training. Over the period 1997 to 2004, the number of inspectors in the Lake Victoria zone increased from six to 21, with an associated increase in salary costs from US\$11,500/annum to US\$32,700/annum. Training of fisheries

³³ Ministry of Natural Resources and Tourism (1999).

³⁴ In October 2000, the European Commission again undertook inspection in Tanzania, to assess compliance with the EU's hygiene requirements for fish and fishery products and to ensure the required controls had been implemented for pesticide residues. The inspectors found some non-compliance with EU requirements and the previous written guarantees provided by the Tanzanian government but not sufficient for Tanzania's status or exports to be affected. Written assurances that corrective action was required within one month, and this was provided by the Tanzanian authorities.

inspectors has been provided by UNIDO, FAO and the TBS, the latter with funding from the DANIDA-funded project described in Box 3. This has encompassed HACCP, good manufacturing practice (GMP) and auditing. Despite this considerable investment, however, the current inspection capacity remains inadequate.

In the case of Lake Victoria, laboratory analysis of samples is undertaken at the Nyegezi Fish Inspection and Control Laboratory in Mwanza. This has a laboratory with a staff of four that was upgraded to undertake microbiological analysis in 1997 with funding from the Lake Victoria Fisheries management Project (LVFMP). Previously, the laboratory at the local fisheries training institute was used. However, this laboratory is not able to perform the full range of microbiological tests required and some of the methods are outdated. Further, the capacity of the laboratory is inadequate and it is unable to perform chemical tests, including heavy metals and pesticide residues. Indeed, tests of samples for heavy metals are not currently being undertaken, while those for pesticide residue analysis are sent to South Africa (see below).

Currently, construction of a new laboratory is nearing completion at a cost of around US\$550,000. To date, the equipment needed for the laboratory has not been procured. The Master Plan for Fisheries Development estimates that the basic requirements will cost US\$129,800 (System Science Consultants, 2002), although an estimate of the cost of fully equipping the laboratory provided by staff at Nyegezi was around US\$800,000. This laboratory would be able to undertake the full range of tests required to comply with EU requirements. It is aimed to achieve international accreditation by the end of 2005. A remaining challenge faced by the Nyegezi laboratory is staff training. Personnel involved with laboratory analysis need continuous training in new techniques and exposure to the methods and procedures applied in comparable laboratories in other countries.

One of the major challenges faced by the Fisheries Department in responding to the restrictions on fish exports due to concerns about pesticide residues was the implementation and maintenance of a program of monitoring of fish, water and sediment samples. Although a program was implemented in December 1998 when the issue first arose, this was suspended in mid-1999 because no positive results had been achieved. Thus, when the EU undertook inspections in August 1999, no monitoring program was in place. Following this inspection, the Fisheries Department responded by implementing a multi-phase monitoring program. Given the lack of capacity to undertake analysis of pesticide residues at the Nyegezi laboratory, the Fisheries Department initially contracted an internationally accredited laboratory in the Netherlands. In December 1999, a laboratory was contracted in South Africa at lower cost. To date, over US\$330,000 has been spent on the analysis of fish, water and sediment for pesticides residues at these laboratories. The current annual cost is around US\$35,000 to US\$40,000. This cost will be defrayed when the new laboratory at Nyegezi is up and running.

Alongside the implementation of more effective inspection and monitoring regimes, the Competent Authority has made efforts to be proactive in identifying potential problems and working with the industrial processing sector as and when problems arise. Further, interviews with processors highlighted how the Competent Authority has become proactive in coming forward with suggestions for ways in which hygiene controls can be enhanced in processing operations. At the same time, however, it is evident that the Fisheries Department is under-

resourced, despite the fact that significant amounts of revenue are raised through the Loyalty Fee on fish and fishery product exports. For example, the new laboratory at Nyegezi has taken much longer than originally envisaged to be constructed and funds have yet to be allocated for equipment. Further, some analyses are not undertaken routinely (for example heavy metals) even though these are required for full compliance with EU requirements.

Within the industrial processing sector, major improvements have been made in both the structure of facilities and operating procedures. These included upgrading of the general fabric of processing facilities, rearrangement and segregation of processing operations, installation of flake ice, water treatment and effluent treatment plants, construction of changing rooms and toilet facilities, purchase of new tables and utensils etc. Laboratories had to be installed or upgraded. Staff had to be trained and quality control personnel employed or enhanced in order to implement HACCP. The non-recurring costs of these improvements ranged from US\$1 million to US\$7 million, with an estimated cost for the 10 plants in the Nile perch processing sector as a whole of US\$24.9 million (Table 8). Although this may seem a considerable amount of money, in aggregate it represents only seven percent of the value of Nile perch exports for the period 1999 to 2003. This is perhaps not a huge investment to make for Tanzania to maintain access to EU markets for Nile perch.

The non-recurring costs of compliance with the EU's hygiene standards for fish and fishery products has imposed a considerable burden on certain of the industrial fish processors, in particular those that entered the sector relatively late and have struggled to secure a reliable supply of fish to maintain their operations at a certain minimum level of capacity. Thus, although these non-recurring costs only account for between two and 9.5 percent of aggregate turnover for the period 2000 to 2003, at one facility has recently ceased operating and a further two are operating at very low levels of capacity and might be expected to close in the near future.

Table 8. Non-recurring and recurring costs of compliance in Nile perch processing facilities:

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

Source: Own interviews

Nile perch processors have also incurred recurring costs of compliance that have enhanced their production costs. These include the additional staff required to maintain effective hygiene controls, record-keeping, laboratory analysis, on-going staff training etc. It is estimated that

these costs have enhanced production costs by between 10 and 15 percent (Table 8). Given that Kenyan and Ugandan processors have incurred similar additional costs of production (see for example Henson and Mitullah, 2004) this is unlikely to have had a major impact on export competitiveness. Further, a number of processors highlight the benefits they have achieved from the enhancement of hygiene standards, including improved product quality related to the enhanced diligence of processing staff, lower risks of rejection etc. Further, they highlight the value placed on approval for export to the EU among their customers, even in Non-EU countries and consider this has enabled them to maintain access to other markets.

Until restrictions were applied to exports of fish and fishery products to the EU, there was little, if any, cooperation within the processing sector. Towards the end of the 1990s, however, recognition that the sector needed to ‘speak with one voice’ and that the sharing of experiences would be mutually beneficial, led to the establishment of two industry organizations. The Tanzania Fish Processors Association (TFPA) represents processors of marine products based mainly around Dar es Salaam, while the Lake Victoria Fish Processors Association of Tanzania (LVFPAT) represents processors of Nile perch. Both have played an important role in establishing codes of practice that aid in the implementation of enhanced hygiene controls and promoting best practice, providing updates on legislative changes etc. The LVFAP also has close ties with sister organizations in Kenya and Uganda, aiming to address issues that are of common interest to Nile perch processors across the three countries.³⁵

The one area where considerably more investment is needed is the landing sites for Nile perch. Historically, processors purchased Nile perch from a multitude of beaches with little or no traceability to individual boats or even landing sites. Most processors have made efforts to consolidate their supply base or at least maintain a higher level of control, although in so doing they have been fighting against the decline in Nile perch landings. Thus, there is increased use of collector boats that take fish from fisher craft and land it directly at a jetty near to or at the processing facility. Some processors have also provided training to the fishers that supply them and even invested in the enhancement of hygiene facilities at landing sites, including running water, fencing etc. For example, one processor has invested almost US\$70,000 in upgrading the landing sites from where it obtains fish.

Currently, basic infrastructure at landing sites remains rudimentary, with only five percent having a banda, cold store, or electricity, and less than one-fourth of the sites featuring an all-weather road. As part of efforts to upgrade hygiene standards at landing beaches, the Fisheries Department has designated 54 sites for the landing of fish for export. To date, it has made rudimentary improvements, including a floating barge at which fish is landed, to ten of these sites at a cost of US\$777,000 (Table 9). This suggests an overall cost of upgrading the 52 designated beaches of US\$4 million. Other estimates are considerably higher.³⁶ Immediate

³⁵ At the end of 1999, an organization was also established through which experiences could be shared among quality control technologists in fish processing facilities. The Fish Technologists Association is funded by membership fees and contributions by the exporters. It provides a forum for technologists to share experiences and holds joint meetings with the Competent Authority where problems are addressed.

³⁶ Estimates in the Master Plan for Fisheries Development (System Science Consultants, 2002) include more comprehensive upgrades at three strategic landing sites including ice plants, road improvements and fish handling areas. At certain sites this would involve a cost of US\$1.6 million.

access to finance remains a key constraint and, as a result, progress in the upgrading of landing sites remains slow.

Table 9. Cost of landing beach upgrades:

Type	Unit Cost	Number	Cost (US\$)
Built Barge			
Construction	108,600	1	108,600
Other improvements	181,000		181,000
TOTAL	289,600		289,600
Floating Barge			
Construction	27,100	9	243,900
Other improvements	27,100		243,900
TOTAL	54,200		487,800
GRAND TOTAL			777,400

It is evident that both the Tanzanian government and fish processing sector have made significant improvements to hygiene standards through the supply chain for Nile perch, such that the major elements of an effective system of food safety control is in place. Undoubtedly, significant capacity constraints remain which are likely to limit efforts to upgrade capacity into the future as standards continue to evolve and there is a danger that the capacity that has been developed will gradually creep towards obsolescence. Further, although there is greater cooperation both within the processing sector and between the processing sector and the Fisheries Department and efforts are being made to address issues as and when they arise, the mentality remains oriented towards ‘problem-solving’ rather than ‘proactivity’.

Box 3: Impact of EU Restrictions on Tanzania's Fish Trade

The impact of stricter hygiene standards on fish and fishery exports to the EU alongside the restrictions imposed during the period 1997 to 2000 can be sub-divided into two distinct elements. Firstly, the immediate impact related to the costs of compliance with EU requirements and the specific restrictions imposed on exports from Tanzania, Kenya and Uganda. Secondly, the longer term impact on export competitiveness. Each is now discussed in turn.

The requirements for border testing of fish for *Salmonella*, *Vibrio cholerae* and *Vibrio parahaemoliticus* and eventual prohibition on exports of fresh fish imposed through the period April 1997 to June 1998 appear to have had little impact on exports of fish and fishery products, and Nile perch in particular. Indeed, the value of Nile perch exports in total increased from US\$33.4 million in 1996 to US\$54.8 million in 1997 and US\$65.7 million in 1998. In 1998, over 70 percent of Nile perch exports were destined for the EU, with little sign of attempts to divert exports to alternative markets. The impact of the ban on exports of Nile perch related to controls on pesticide residues over the period April 1999 to January 2000 was, however, immediately apparent. Thus, the volume of exports declined from 36,000MT in 1998 to 24,000MT in 1999, while the value fell to \$51.9 million. At the same time, exports to non-EU countries, including Japan, Israel, United Arab Emirates, Australia, Hong Kong and the United States, were enhanced, such that the share of the EU in Nile perch exports declined to 53 percent. This trade diversion was, however, insufficient to offset the loss of EU markets, on which Tanzanian exporters were heavily dependent, and the total value of Nile perch exports declined 21 percent from 1998 to 1999.

Following the removal of the restrictions related to controls on pesticide residues, the volume of Nile perch quickly recovered to 31,000 tonnes in 2000, although the value of exports actually declined to US\$45.9 million, reflecting low market prices. Through 2000, Tanzanian exporters faced a competitive advantage over their Ugandan and Kenyan competitors that continued to face restrictions on exports to the EU to August 2000 and December 2000 respectively. This enabled Tanzanian exporters to regain their EU customers (and maybe also some of their competitor's) within the context of a market where 11 rather than 35 or 40 processors were competing. At the same time, efforts were made to maintain non-EU markets although competition from Kenyan and Ugandan exporters in these markets was fierce. Thus, the value of Nile perch exports recovered to US\$77.2 million in 2001, of which the EU accounted for 60 percent.

Through 2002 and 2003, exporters of Nile perch faced new challenges. On the one hand, both Kenya and Uganda had regained, at least in part, their place in export markets for Nile perch. On the other, landings of Nile perch diminished and landed prices increased significantly. Thus, the volume of Nile perch exports actually declined from 31,000MT in 2001 to 25,000MT in 2002, recovering to 32,000MT in 2003. The value of exports likewise increased from US\$77.2 million in 2001 to US\$102.4 million in 2003, with the decline in volumes in 2002 being almost entirely offset by increases in the market price for Nile perch. This suggests that there is little or no long-term impact of the restrictions on access to EU markets on the long-term growth of Nile perch exports; indeed the value of exports in 2003 was at an historical high! Indeed, the very opposite appears to be the case. Interviews with Tanzanian exporters suggest that their ability to gain approval to export to the EU is taken as a sign of rigorous food safety controls by their customers world-wide; many exporters highlight the fact that their customers in non-EU countries ask for their EU approval number!

Undoubtedly, the Tanzanian Nile perch sector has made very good progress in addressing the challenges posed by the evolution of stricter food safety requirements in its major export market. However, the associated costs and organizational changes have been incurred alongside wider economic trends that are influencing the future structure and *modus operandi* of the sector. Currently, we are seeing a process of rationalization in the sector with processing facilities

closing or operating at very low levels of capacity in an attempt to recoup at least some of the considerable investment made to upgrade hygiene controls. Within five years it is likely that the entire sector will be controlled by five or so companies, each of which will have one or two processing facilities.

Although the costs of compliance with the EU's food safety requirements have undoubtedly played a role, these have acted to exacerbate existing problems and constraints. In particular, the sector is facing declines in Nile perch landings while having high level of structural over-capacity. While the Fisheries Department has implemented more rigorous controls on fishing methods and attempted to restrict cross-border movements of fish, at the same time there are no data on fish landings through which the efficacy of such measures can be assessed and the processors themselves can judge the likely future supply of fish. Further, the Fisheries Department has approved the construction of two or three new processing facilities. It is evident that more effective and coherent planning is required in order to safeguard the future of the sector in a climate of reduced fish availability.

Many fish processors highlight the 'additional' costs they face in exporting Nile perch that pits them at a competitive disadvantage compared to Kenyan and Ugandan exporters. While the imposition of a loyalty fee on fish exports is the most visible of these, perhaps the more significant are the high transport costs faced by exporters because of the poor infrastructure in the region. Both the road and rail networks are in need of upgrading, indeed there is no paved road to Mwanza and its environs, and delays due to breakdowns are frequent. Indeed, many exporters now route their consignments through Nairobi and/or export by air using charter services airport from Mwanza at relatively high cost.

Finally, an emerging threat facing the Nile perch sector from across East Africa is competition from Basa, a low price variety of catfish, predominantly from Vietnam. This has created particular challenges for Nile perch exporters in EU markets during 2003. Thus, while the average unit value for Nile perch fillets in EU Markets grew strongly between 1997 and 2002, reaching Euro 5.00/kg in 2002, in 2003 they collapsed to Euro 3.80/kg (Eurofish, 2004).

Although Tanzania generally has rather weak capacity related to food safety management, the case of fish and fishery products (and Nile perch in particular) illustrates how the public and private sectors are able and willing to take decisive action when there is a threat to exports that are strategically and economically important. While little was done to upgrade relatively low standards of hygiene through the fish and fishery products supply chain and the lack of rigorous controls on contaminants in food, when restrictions were imposed by the European Commission, the necessary actions to achieve compliance were put in place quickly and effectively. In so doing, Tanzania was able to regain access to EU markets ahead of its regional competitors and gain, at least in the short term, a competitive advantage. Reflecting the prevailing level of capacity, the cost of the required improvements in both public and private sector hygiene standards were considerable and imposed a significant economic burden on certain parts of the processing sector, however compared to the overall value of exports and the benefits of continued access to EU and other markets, both for the macro-economy and the livelihoods of the local fisher populations, these costs clearly represent an economically defensible investment.

Looking forward, the case of Nile perch illustrates the very considerable costs of upgrading food safety capacity from a low level within a rather short period of time. It thus illustrates the costs of a 'reactive' rather than a 'proactive' response to emerging food safety standards in export markets. At the same time, however, it also emphasizes the importance of taking decisive action when problems occur that threaten market action. The main on-going lesson for Tanzania is the need to keep on top of emerging food safety requirements for fish and fishery products now that an enhanced level of capacity has been established in order to avoid creeping obsolescence. At the same time, this capacity might be used as a 'spring board' for the enhancement of food safety controls in other sectors.

6.2. Horticultural and Floricultural Products - Using Standards to Foster Competitiveness:

With its varied agro-climatic conditions, Tanzania produces a broad range of fruits, vegetables, and flowers. The vast majority of this is consumed in rural areas or sold domestically through informal or more formal distribution channels. Tanzania has a long history of exporting certain horticultural products, although it is only in the past decade that such exports have reached any considerable size.³⁷ Much of this trade has been closely related to Kenya, either being spin-offs or extensions of Kenyan export operations for fresh vegetables or cut flowers, or involving sales of widely consumed fruits and vegetables into the Kenyan domestic market itself.

There are several distinct components of Tanzania's horticultural/floricultural trade. In volume terms, by far the largest trade involves exports to Kenya of oranges, onions, tomatoes and potatoes. For each of these products, Tanzanian produce is sold both domestically and over the border, depending upon seasonality and prices. Due to climatic and other factors, Kenyan suppliers are unable to meet local demand from domestic sources, with this deficit being greatest for onions. Tanzanian supplies of onions are estimated to be equivalent to half of Kenya's production and two-thirds of its marketable sales (Tschirley et al 2004). Official trade statistics greatly underestimate this trade which is mostly conducted by small-scale brokers and trading agents. Officially recorded Kenyan imports are some ten times those of officially recorded Tanzanian imports. Further, even the former are estimated to represent only one-fourth of the actual trade. The C&F value of this cross-border trade likely exceeds US\$30 million.

A second major component of export-oriented horticulture involves sales of specialty vegetables (for example green beans, snow peas and baby vegetables) and cut flowers (primarily roses) and flower nursery cuttings to Western Europe. The vegetable trade is directed to supermarkets in the UK and selected other countries. The cut flower trade was traditionally oriented to the Dutch flower auctions, although several exporters are now selling direct to supermarkets or specialty florists. The FOB value of this Europe-oriented trade is about US\$28 million.³⁸

Other efforts to develop horticultural product exports are on-going. One firm has developed a small trade in canned pineapple, containing organically-grown produce. Another has sought to penetrate the European market for raspberries, targeting certain seasonal market windows. Some growers and exporters are seeking to participate in the expanding market for mangoes in the Persian Gulf and South Asian regions.

³⁷ Sargeant (2004) notes that export-oriented horticulture probably dates to the 1950s with the multiplication and export of vegetable seeds. Trade in perishable horticultural products began in the 1970s.

³⁸ Estimated by Sargeant (2004). This includes a small trade in vegetable seeds.

Sargeant (2004) and others have provided insights into the growth opportunities and supply side constraints facing Tanzanian horticultural/floricultural exports. These differ between the Europe-focused and the regional trading aspects, although transport and other logistical constraints are prominent in both. Overall, challenges related to food safety, plant health or other standards do not appear to be a major constraining factor on such exports, yet a recent pest infestation problem could certainly inhibit the future development of cross-border and broader regional trade if not effectively resolved (see below).

For trade with Europe, producers and exporters face an increasingly stringent set of official and (especially) private standards combining good hygienic practices, the safe use and storage of pesticides, other environmental management requirements, worker safety and other social standards, and greater oversight of plant health risks. In both the fresh produce and cut flower industries, these and other standards are being embodied in company and industry protocols (for example EUREPGAP, MPS, Max Havellar etc.) which suppliers are being required to comply with and gain audited certification. Depending upon pre-existing circumstances, obtaining and maintaining such (certified) compliance may require growers and/or exporters to modify their facilities, alter their technologies, upgrade their management systems, undertake additional testing, increase record-keeping etc.. Some of this might involve considerable investment and recurrent costs, yet compliance also normally brings tangible and intangible benefits, in the forms of improved market access, productivity gains, environmental mitigation and (sometimes) more remunerative market prices.

Tanzania's export-oriented trade to Europe presently involves only a limited number of grower and exporter entities, although some 7000 are employed on farms or in pack houses. There are presently only two major exporters of fresh vegetables and seven main cut flower operations. The vegetable exporters utilize a limited pool of outgrowers, mainly medium to larger scale farms which have sought to diversify away from coffee production. The two firms combined have 29 such outgrowers. The exporters provide very intensive support and oversight, covering agronomy, worker/staff training and paperwork. Many of these outgrowers have been or are being prepared to be EUREPGAP certified.³⁹ Both of the exporters have had their pack houses certified for the British Retail Consortium Technical Standard. This implies that these operations employ good hygienic practices and have in place appropriate Hazard Analysis and Critical Control Point (HACCP) systems. Expatriate managers (from Kenya and Zimbabwe) have been used to manage these pack houses. Both companies have benefited from assistance from the EU-supported Pesticides Initiative Programme (PIP), obtaining technical assistance and staff/worker training related to pest management, safe use of pesticides, etc.

Neither exporter has experienced significant technical challenges to comply with official or private standards and to ensure the traceability of fresh produce back to its source. The concentrated and highly-coordinated supply chain structure has contributed to this. But this picture would change if either of the firms sought to expand by utilizing smallholder outgrowers. Indeed, one of the companies has been approached by a cooperative society, whose smallholder members produce very high quality vegetables, yet do so in a locale some 300 km away from the

³⁹ Such farms have typically needed to improve their worker facilities, especially of toilets, water sources, changing rooms, etc. Investment costs of US\$2000 to US\$4000 have been typical on these farms, while EUREPGAP certification has cost US\$2000 to US\$3000.

packhouse and management headquarters of the exporter. That cooperative is already receiving technical and organizational support from a donor agency. The extension of such support would be absolutely necessary to enable these farmers to supply into export channels where EUREPGAP or similar technical or management system standards are being applied.

Tanzania's cut flower industry mostly emerged in the 1990s as an extension of the much larger industry in Kenya as some firms decided to hedge themselves against political or other risks in Kenya. While labor costs in Tanzania are lower, firms have found their Tanzanian operations to be at a disadvantage with those in Kenya in relation to climatic conditions, availability of experienced personnel, air-freight logistics and the costs of purchased inputs, which are mostly procured from or through Kenya. The Tanzanian industry has not attracted new FDI in recent years, although a few of the existing players have been restructuring and expanding their operations. Particular emphasis has been given to increasing productivity, using more commercially appealing varieties, direct marketing, and compliance with private standards.

When selling into the main flower auctions, no premium or recognition was given to flower companies which had gained certification under the Dutch MPS protocol or any other private standard. Yet, with some firms shifting to direct sales to supermarkets or others, the need and opportunity for certification for environmental and/or social standards has increased. The largest flower grower/exporter has obtained certification under EUREPGAP, the British Retailer Consortium (BRC), Dutch MPS, German FLP, and the Max Havellar standard for 'fair trade'. Under the latter consumers in Switzerland pay a 10 percent premium on purchased flowers. The proceeds from this premium have gone into a 'Workers Development Fund', jointly managed by the company and worker representatives. An array of community development and other programs are being supported by this Fund.⁴⁰ Obtaining and maintaining compliance with private standards protocols has required some considerable investment and on-going commitment of management time. Yet, the firms involved considering this investment worthwhile, as it opens new market opportunities and provides the firms with much greater control over their operating systems and costs, thereby yielding efficiencies.

Neither the vegetable nor the cut flower exporters are heavily reliant upon the Tanzanian government to ensure compliance with international standards. Planting material is usually sourced from Europe or Kenya and certified by the appropriate authorities there. This material may be checked by TPRI but usually any temporary quarantine of planting materials is done by the companies themselves. TPRI issues phytosanitary certificates for exported produce, based upon periodic visits to pack houses and minimal inspection. Any testing which is done for pesticide residues is done in Europe, as is the preference of buyers of Kenyan produce.

One area of considerable concern to horticultural exporters is the relatively slow and costly system for the registration of agro-chemicals in Tanzania. The cost to test and register an agro-chemical is three times higher in Tanzania than in Kenya. For this reason, and due to the much larger market for agro-chemicals, most of the major chemical companies register their new products first in Kenya and often do not even seek registration in Tanzania. The result is that many newer, more effective and less toxic substances are available to the horticultural industry

⁴⁰ Completed projects have included tree-planting initiatives, sport field development, potable water projects, equipment for local medical clinics, and training in various fields.

in Kenya yet not to that in Tanzania, unless the products are smuggled over the border (Table 10). The TPRI does not recognize the test results and approval process undertaken in Kenya and demands that the same trials to be conducted in Tanzania. This would appear to be a clear area where collaboration between regulatory authorities within East Africa could speed up the availability of improved (and safer) technologies.

Table 10. List of agro-chemicals available in Kenya but not Tanzania:

Pest	Trade Name	Active Ingredient	TPRI Reg. No.		Kenya PCPB Reg.
Mites	Tedion V-18 EC	Tetradifon		III	R 193
	Floramite	Bifenazate		III	T 133
	Secure 36 SC	Chlorfenapyr	EXP/686	II	T 0003
	Oscar	Tebufenpyrad		III	T 0098
	Apollo	Clofentezine		III	R 0162
	Oberon	Spiromesifen 240/L		III	R 0335
	Magister	Fenazaquin		II	T 0269
	Rufast	Acrnathin		III	T 0253
	Nissuron	Hexythiazox		IV	T 0027
	Phytotech (Biological)	Phytoseilus Persimilis			R 0299
Amblytech (Biological)	Amblyseius Californicus			R 0300	
Nematode	Rugby 10 G	Cadusafos	EXP/276	I	T 0097
	Nemacur	Fenamiphos		I	P 0235
	Metham Sodium	Sodium Methyl Dithiocarbamate		I	T 0053
	Vydate	Oxamyl		I	R 0136
Caterpillars	Runner 240 G/L	Methoxyfenozide		IV	T 0211
	Bestox	Alpha-cypermethrin		II	P 0457
	Methomex 90 SP	Methomyl	EXP/886	I	P 0486
	Xentari (Biological)	Bacillus Thurengesis		IV	R 0262
	Tracer	Spinosad		III	T 0188
	Dimilin	Diflubenzuron	EXP/776	III	P 0476
Powdery Mildew	Meltatox	Dodemorph Acetate	EXP/763	II	P 0452
	Impulse	Spiroxamine		II	R 0292
	Score	Difenconazole		III	T 0021
	Banko	Chlorothalonil		III	R 0005
	Belkutte	Iminoctadine Tris (Albisilate)		II	R 0274
Downy Mildew	Equation Pro	Famaxote/Cympxamil		III	R 0344
	Previcur N	Propamocarb		IV	R 0250
	Aliette	Fosetyl A1	EXP/562	III	R 0125
Botrytis	Switch 62.5 WG	Cyprodinil/Fluxinyl		III	R 0283
	Polar 50WGS	Polyoxin Complex	EXP/931	IV	T 0017
	Flint WG50	Trifloxystrobin		III	R 0271
	Scala	Pyrimethanil		IV	T 0020
	Sporekill	QAC		II	R 0336
	Teldor	Fenhexamid		II	R 0275
	Ortiva	Azoxystrobin		IV	R 0317
White Fly	Applaud 40SC	Buprofenzin		III	R 0276
	Attakan	Imadacloprid			
	Actara 25WG	Thiomethoxam		III	R 0320
	Encartech	Encarsia Formosa			R 0302
Thrips	Evisect	Thiocyclam Hydrooxy		II	R 0202

	Malathion	Dimethyl		III	P 0602
	Mesurool	Methiocarb		1b	P 0518
	Rimon 10EC	Novaluron		IV	T 0250
	Rufast	Acrinathrin		III	T 0253
Leaf Miner	Trigard	Cyromazine		III	R 0256
	Diglyrech (Biological)	Diglyhus Isaea (Parasitic Wasp)			R 0301
	Evisect	Thiocyclam Hydrooxy		III	R 0202
Note: All Nematicides are Class I chemicals but application is always via drip so there is no exposure to humans in any way. These have to be registered as this is the biggest threat to the industry.					

Little information is available on the impact of standards on Tanzania's cross-border and other regional exports of horticultural products. The substantial trade in oranges to Kenya is, in part, facilitated by agronomic problems within Kenya, including the yield-reducing effects of a 'greening disease' which is difficult to control in Kenya's higher altitude areas. The cross-border onion trade is also stimulated by problems experienced within Kenya from fungal diseases which undercut yields. Apparently, higher grade onions are selected in Tanzania for export to Kenya. Given its limited official recording, most of this cross-border trade seems to occur without any official inspection of produce related to quality, plant pests, etc.

Yet, there may be a looming threat to this trade as well as the aspirations of Tanzanian growers and exporters in the Middle East market for mangoes. In early 2003, an outbreak of fruit fly was detected along the Kenyan coast. In December 2003, a surveillance mission also detected heavy infestation of the same type of fruit fly over significant portions of Tanzania. The *Bactrocera dorsalis* is one of the most notorious quarantine pests in the world, with a capacity to infest a wide range of tropical and sub-tropical fruits and vegetables, including citrus, mango, plus, chillies, cucurbits and others. Facing a potentially significant risk to their citrus, mango and vegetable trades, Kenya, Tanzania and Uganda requested the FAO to undertake a regional program to train national staffs, identify and map out the incidence of the pest, and to develop a regional strategy to eradicate or at least manage the pest. There has been a delay in the start-up of this program.

6.3. Tourism and Food Safety - The Need for Better Practices and Risk Management:

Tanzania has a great variety of high quality wildlife, resort, archaeological, cultural and historical assets. The country's tourism industry continues to attract increasing numbers of foreign visitors. In 2002, there were just over 575,000 foreign visitors, some two-thirds of which entered the country primarily for purposes of recreation and sight-seeing. The tourism sector accounts for about 12 percent of national GDP, brings gross foreign exchange revenues of some US\$725 million per year, provides direct employment to 29,000 and incomes to large numbers of people providing goods and services to hotels and restaurants.⁴¹

No specific data are available on the food expenditures by visiting tourists. MIGA (2002) reports that the average length of stay for a tourist is eight days, with an average expenditure of US\$172 per tourist per day.⁴² Taking a conservative estimate of tourist daily food expenditures of US \$25 per tourist per day and assuming that two-thirds of foreign visitors are indeed tourists,

⁴¹ Tanzania is the only medium-to-large country in Africa for which tourism accounts for more than 5% of GDP. And, its tourism receipts are more than double those of any other low-income African country, including Kenya.

⁴² Tanzania has the highest spending per visiting tourist in Africa.

then one can estimate annual tourist expenditures on food at some US\$76 million.⁴³ Leaving fish and fishery products aside, such expenditure approaches the total value of all other non-traditional agro-food exports combined. As Sharma (2005) reports, the hotel and restaurant trade is a very important outlet for Tanzanian agribusiness companies, especially those involved with beef, chicken and fish.

The MIGA (2002) study provides a fairly comprehensive analysis of the status and constraints facing Tanzania's tourism industry. Yet, one dimension not covered relates to the management of food safety within the hotel/restaurant sector and the implications of shortcomings in this field, both for the international reputation of the industry and the health of Tanzania's visitors. In examining the backward linkages of Tanzania's tourism industry, Sharma (2005) emphasizes persistent problems of quality in locally-supplied foods, yet only briefly alludes to prospective food safety hazards.⁴⁴ While in recent years the Government has adopted a number of measures to ensure the environmental sustainability of the tourism industry, parallel efforts have not been made to ensure proper food safety.

The basis for regulation of food safety in the hotel and restaurant sectors comes from the Hotels Act, #22 of 1963, requiring that a licensed hotel make "proper provision ...for the storage, preparation, cooking, and serving of food in the hotel", and the Hotel Regulations, Government Notice #55 of 1982, providing for minimum standards including for 'food preparation'. Little enforcement of these regulations is evident. Tanzania's major hotels are visited once per year (at the time of licensing renewal) by inspectors from the Ministry of Health. This is clearly inadequate as a means of auditing or monitoring these hotels; indeed the leading chain hotels hire third party agencies to conduct quarterly audits of their food establishments. Even an annual audit by Ministry of Health officials does not generally take place for Tanzania's numerous small and medium-sized hotels. It is not clear whether any external audits in fact take place for such operators. While the Ministry of Natural Resources and Tourism (MNRT) is currently developing a system for the grade classification of hotels, sanitation and food safety indicators or systems do not feature in this classification system.

No data are available on the incidence of food-borne illnesses among tourists visiting Tanzania. The MNRT indicates that there have been "two or three serious incidences of food poisonings in recent years" that required the evacuation of visitors, together with periodic other reports of adverse incidences. For the most part, the MNRT has not critically assessed the food safety dimensions of the industry, leaving this to the hotel operators themselves or the local public health authorities. While illness data are not available, there is at least a perspective that there are some serious risks. Many of the small and medium hotels (as well as some of the larger ones) may not have appropriate facilities (for example cold stores, preparation tables, water treatment systems, proper kitchens etc.), properly trained staff or management systems in place to control the potential risks associated with the preparation, storage and service of foods to tourists. Hotel food service managers indicate concerns about the safety of some locally-purchased perishable foods and about the capacity of their kitchen staff to minimize risks during the food preparation process.

⁴³ 380,000 tourists for eight days at US\$25 per day.

⁴⁴ For example, in relation to possible salmonella contamination in fish meal fed to chickens.

There is an evident need for a joint public-private sector program in this field. This program, which could involve various government agencies (including the MNRT, TBS, TFDA etc.) private entities (including the Hotel Keepers Association, Tourism Confederation, agro-industry associations and others) and technical or training institutes, would seek to:

- Build awareness among tourist industry employees about food safety risks.
- Provide classroom and on-the-job training in good hygienic practices.
- Provide technical assistance to hotel/restaurant operators to develop or refine HACCP systems.
- Develop a surveillance/monitoring program to track the incidence of food-borne illnesses amongst tourists.
- Incorporate food service capacities in the national hotel grading system.
- Strengthen inspectorate capacities to ensure that at least minimum standards are applied in restaurant facilities and management systems.
- Develop a 'quality vendor' program, enabling farmer groups and/or agribusiness firms to improve the quality and food safety profile of goods supplied to major hotels/restaurants.

There are a number of planned or on-going donor-supported initiatives within the tourism sector for which aspects of the above program could be adopted. Yet, the next step should be a more thorough baseline analysis, characterizing the current state of play in terms of official and private hotel/restaurant inspection, illustrating representative situations with regard to kitchen/storage facilities and management systems and, more concretely, outlining the industry's needs for training and technical assistance in this area. Part of this work should include references to good practices elsewhere (i.e. in Jamaica, Mauritius) in raising awareness, illness surveillance, and industry monitoring/auditing

6.4. Specialty Coffee - Building Value in a Commodity Market:

The Tanzania coffee industry has a long history. Production and trade has gone through periodic ups and downs and the industry has experienced many structural and policy shifts over the years. The impacts of these reforms and broader market changes on the 400,000 plus Tanzanian smallholder producers of coffee have been examined elsewhere.⁴⁵ In recent years, all significant coffee suppliers have been affected by structural changes in the global coffee market. Production innovations in Brazil, a booming supply from Vietnam and changes in the way coffee is blended and used have resulted in historically low international prices in recent years. Various strategies have been considered. For those producers and regions with a high concentration of lower quality coffee the challenge is seen in terms of diversifying into other crops and industries. For those producers in suitable areas, however, strategies are being devised to improve quality and otherwise potential themselves in the so-called 'specialty coffee' market, associated with particular quality characteristics, brands and social standards (Box 4).

Leading international 'specialty coffee' roasters frequently market Tanzanian coffee as a premium brand. Tanzania's northern and southern Arabica coffees, in particular, have certain potential advantages, including their production in high altitudes with volcanic soils and various brand images, especially that of Mount Kilimanjaro. However, international roasters have been frustrated by the uneven quality of Tanzanian coffee and its very limited supply of product which

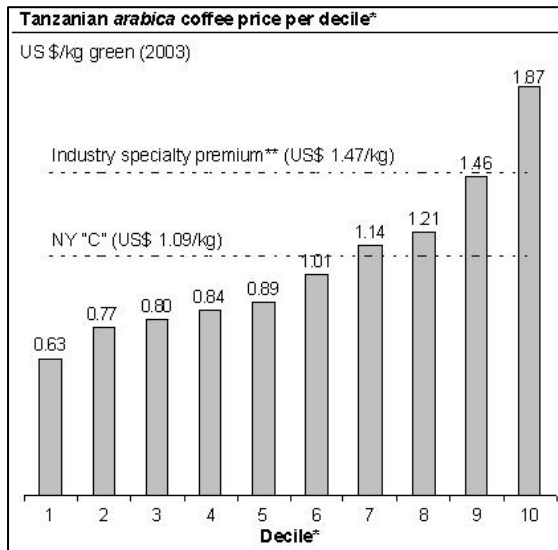
⁴⁵ See, for example, Baffes (2004)

could be marketed as specialty coffee. Most national production comes from some 400,000 smallholders who process their crop in the backyard. Until recently, little of the crop was brought to central pulperies where better processing techniques could be used and better quality control measures employed.⁴⁶

Box 4. Tanzanian specialty coffee:

The strong demand for Tanzanian Specialty Coffee is demonstrated by the differentials received for Tanzania’s top quality coffee. For example, during 2003, the highest 10% of Tanzanian coffee sold at a 22 US cent premium over the New York C benchmark for Arabica coffee. The top quality Tanzanian AA grade coffee (the largest bean size) sold in 2003 at auction for NYC plus 91 US cents. In contrast, 65% of Tanzania coffee was sold at prices below the NYC benchmark, with an average discount of US\$ 0.24.

Specialty Coffee price premiums have enabled some Tanzanian producers (generally foreign-owned estates) to earn exceptional profits at a time when producers of low-quality coffee have been losing money. For example, one Tanzanian Specialty Coffee producer reported a Gross Margin of 30% in 2002 (when average world coffee prices were at their lowest ever) and over 60% in 2003.



Source: Technoserve

However, there has been some progress in this area in recent years. Under an USAID-supported project, Technoserve has been working with farmer groups and an Association of Kilimanjaro Specialty Coffee Growers (AKSCG) to develop a system to generate and reward improved coffee quality and to directly market this specialty coffee to international buyers.⁴⁷ Technoserve has supported 17 farmer groups to establish village-based central pulperies and assisted the AKSCG to develop its management system, marketing strategy, and capacity to inspect/audit the processing facilities and coffee quality which are part of its supply chain. This effort has yielded considerable improvements in realized prices. For example, while traditional commodity coffee sold for US\$1.10 to US\$1.60 per kilogram in 2003/04, that processed through central pulperies and sold as specialty coffee earned US\$2.00 to US\$2.60 per kilogram.

The major challenge is to scale up this type of activity and organization. AKSCG will account for about 10 percent of Tanzania’s Arabica coffee crop in 2004/05. Only a small proportion of its product (about 6 percent by volume and 11 percent by value) is currently processed through central pulperies. Further investment and organizational development will be needed, both among this group of growers and among other coffee companies and grower organizations.

⁴⁶ In contrast, virtually all coffee grown in Kenya is brought to central pulperies.

⁴⁷ AKSCG has more than 7000 members, organized into some 79 farmer business groups in Tanzania’s three Arabica growing areas—Kilimanjaro, Mbinga, and Mbeya.

6.5. Certified Organic Products - From Niche to Generic Sustainable Agriculture:

Over the past decade, there has been strong and steady growth in sales of organic foods, providing producers and marketing agents with an opportunity for differentiation and value addition. The biggest markets for organic foods have been in North America and Western Europe, where some consumers are willing to pay premium prices for certain products which they regard as ‘more safe’ and/or ‘grown more sustainably’. Yet, as the supply of certified organic products has increased, the price premiums paid have been eroding. As commercial growers of organic crops typically incur learning, transition and certification costs, the long-term economics of this shift in technology and farm management depend upon an array of factors.⁴⁸

Organic foods can be considered products derived from certifiable farm management systems using land husbandry techniques and biological and manual methods instead of synthetic inputs. While the production systems of many poor smallholder farmers are by default ‘organic’, because of their inability to afford or purchase most material inputs, the commercial value of organics depends upon the reliable certification of such production systems.⁴⁹ For produce to maintain its status as ‘organic’, particular approaches needed to be used or not used in post-harvest treatment, storage and distribution. There is an array of different organics standards, some of which are private while others are set officially. Generally, private standards continue to dominate this field.

To a limited degree, Tanzanian farmers, estate owners, and exporters have participated in this emerging market for certified organic produce.⁵⁰ In early 2004, some 28,000 farmers were registered as organic producers, serving as members of cooperative societies or out-growers to agro-processors. Some 15,000 hectares of crops were certified as organic, part of this on smallholdings and part on larger estates.⁵¹ The most significant output of organic product is for coffee, tea, and cocoa. Smaller quantities of organic product have also been developed for cashew nuts, herbs and spices, essential oils, sesame, cotton and canned pineapple. In most cases, price premiums of some 10-20 percent have been obtained, with about half of this accruing to farmers or exporters and the balance being absorbed by higher costs, including for certification.

Since the late 1990s, the production and marketing of organic Tanzanian produce has been supported by the SIDA-supported Export Promotion of Organic Products from Africa (EPOPA) program. EPOPA has assisted exporters through market surveys and buyer contacts, technical assistance in product quality management and internal control system development, and training support for company staff and farmers. Typically, the program has entered into three-year projects with particular companies or cooperatives, providing the necessary technical support and facilitating certification and commercial development. The pertinent certification costs are

⁴⁸ See ITC (2001) and IFAD (2005) for broad perspectives on the development of the international market for organics and the incentives and constraints facing producers.

⁴⁹ There may be other non-commercial benefits from organic farm production systems, including health and environmental benefits.

⁵⁰ This note is based on Mwasha and Leijdens (2004), EPOPA (2004) and discussions with key personnel involved in the promotion of organic production in Tanzania.

⁵¹ For comparison, the area of certified organic crop production in other countries is India (76,000 ha.), Mexico (71,500 ha), Costa Rica (42,000 ha.), Argentina (39,000 ha.), Thailand (11,000 ha.), and Guatemala (9000 ha.)

shared between EPOPA and the commercial entities. Hence, EPOPA has fostered the emergence of certified organic products through multiple forms of assistance and cost-sharing.

EPOPA has supported the development of national organics standards, based upon that of IFOAM. Five Europe-based organic certification bodies have been involved in Tanzania. In late 2003 several local NGOs got together and formed TanCert, an association geared towards promoting organic farming and commercialization. With EPOPA's assistance, TanCert has now built up a staff of nine field inspectors and advisors. By the end of 2005, it is hoped that TanCert will be accredited by IFOAM to carry out organic certification. If this can be achieved, then substantial savings can be made by Tanzanian exporters/farmers in certification costs.

There remain certain growth opportunities for Tanzania in the market for organic products, although suppliers in many other countries are pursuing similar paths. EPOPA is hesitant to further promote organic coffee and tea production in Tanzania given the trend toward market saturation (and declining premiums) for these products. There is comparatively more opportunity for expanding sales of organic herbs, spices, honey and safflower, although in each case Tanzania's overall competitiveness is constrained by a variety of supply-side constraints.⁵² International demand for organic cashews is still strong, although the Tanzanian company which has entered that market has experienced persistent losses due to raw material shortfalls, comparatively low factory productivity, and other factors. Hence, to have sustainable impact, the promotion of certified organic production needs to be coupled with broader efforts to promote farm (and factory) productivity. As price premiums for organic products erode, the primary rationale for supporting organically-based farm management systems center around issues of sustainability, risk management and worker safety.

The underlying economics of certified organic production haven't fully been tested yet in Tanzania, due to subsidies underpinning its emergence. Yet, the production techniques being promoted and product traceability components of on-going projects do have a wider relevance. In a global trading environment in which increasing attention is being given to product safety and environmentally sustainable production systems, any promotion of 'good agricultural practices' is valuable and, because of the associated positive externalities, can be logically supported with public resources. Certified organic systems, while not a panacea for poverty reduction or overcoming major competitiveness constraints, can and should be part of the strategy for promoting market development and the promotion of 'good agricultural practices'.

6.6. Livestock and Livestock Products - Overcoming Major Competitiveness Challenges:

Tanzania has the third largest cattle herd in Africa, trailing only Ethiopia and the Sudan, and also a relatively large population of sheep and goats.⁵³ Yet, the country features a relatively low per capita consumption of beef and other meat and of dairy products. Tanzania's livestock is used predominantly for supporting the subsistence of rural households through the provision of food, manure, draught power, supplementary income and a convenient means for savings. Commercial activity is relatively undeveloped, with most meat and milk consumed in rural areas or traded through informal and generally unregulated channels. Tanzania's participation in

⁵² For example, see Caiger (2004) for a review of the potential and constraints for Tanzanian spice exports.

⁵³ While the last animal census was in 1984, it is estimated that Tanzania's cattle herd includes 17.7 million head and that its goat and sheep populations are 12.5 and 3.5 million, respectively.

international trade for livestock and livestock products has been very limited and that trade which does exist is mainly takes place on an informal, unrecorded basis. Despite its large animal population and the large numbers of people involved (in one form or another) with livestock, the livestock sector accounts for only a modest proportion of Tanzania's GDP (about 6 percent in recent years) and has contributed little to GDP growth.

Tanzania's large livestock resource could be a basis for a competitive set of industries that service the domestic, regional, and international markets. Demand for high-quality meat products and quality hides and skins continues to grow in regional and international markets, while there is presently an unmet (and growing) local demand for higher quality meat. There is also scope to increase the incomes of producers, even in the more informal distribution channels that service much of the domestic market. However, in order to increase the commercialization of livestock and livestock products and to realize the trade potential in this area, Tanzania (and its producers and processors) must overcome a series of fundamental constraints:

- *Animal Health Status and Animal Disease Management:* As highlighted earlier, a number of trans-boundary or productivity-depleting animal diseases are either endemic to Tanzania or whose incidence has been significant in recent years. At least for the OIE List A diseases, without better control measures and the recognition of such improved control (and/or disease eradication), Tanzania will not obtain official access to international (and some regional) markets for its livestock or livestock products.
- *Low Quality and Low Productivity:* More than 98 percent of Tanzania's cattle are Shorthorn Zebu selected by herders and the natural environment to survive drought, food shortages, and disease. The remaining 2 percent are improved cattle. The selection process has generally resulted in small cattle with low growth and reproduction rates and a herd of relatively old animals.⁵⁴ Almost all of Tanzania's goats are indigenous types, much smaller in size than those in demand in international markets (i.e. in the Persian Gulf). The respective hides and skins derived from Tanzanian animals are thus much smaller in size than those from competing international suppliers. Similar dominance of unimproved breeding stock exists in Tanzania's poultry and pig populations. By regional (let alone international) standards, productivity levels are low and pre-mature mortality levels high. Some commercial operations exist that do apply improved technologies and management practices, yet these constitute only a small proportion of their overall sub-sectors.
- *Underdeveloped Livestock Marketing System:* Over the past decade increased attention has been given to strengthening the physical and other infrastructure and privatizing parastatal operations involved in livestock product marketing in Tanzania. Under the Tanzania Livestock Marketing Project, supported by the Africa Development Bank, significant numbers of livestock markets, holding grounds and other physical infrastructure were put in place. Under this project a relatively small but modern abattoir was also constructed, together with an adjoining training center for meat handling and processing. Some of this infrastructure, including marketplaces near border areas, is not currently being used and there are serious concerns about the sustainability of some of this investment. The government is looking for a private buyer for the (as yet non-operational) abattoir, yet it is not clear that such a buyer would have ready access to a

⁵⁴ Small and older animals are expensive to transport and derive saleable product from.

supply base which would enable it to meet reliably domestic demand for high-quality meat products. A livestock market information system was devised although there are questions about its usefulness, both from a commercial point of view and for the purpose of market monitoring by government. In each livestock sub-sector there are problems associated with fragmented supply chains and limited use or enforcement of quality standards.⁵⁵

Under various initiatives, including the PAPLIDEV, efforts will be made to address various underlying constraints related to animal productivity and to improve the efficiency and equity of the marketing chain for livestock and selected animal products. Several on-going initiatives are seeking to address animal diseases issues, although, as noted above, additional resources might be needed in the near future for Tanzania to fully implement its commitments related to the control of CBPP and FMD. More systemic issues related to animal health management include the need to review or complete pertinent legislation (and associated regulations) and to facilitate the private provision of animal health services in rural areas.

In the near-term, the most significant trade opportunities for Tanzania lie in the continued informal, cross-border trade of cattle into Kenya and Rwanda, and in substantially raising quality and adding value in its exports of hides and skins. The cross-border trade, at least the larger one with Kenya, is two-way, depending upon seasonal conditions and prices. This is perhaps not a major SPS control issue; the animal disease situation is likely to be quite similar on both sides of the border. Further, imposing formal border controls would be difficult to enforce, would certainly impede this trade and would almost certainly be welfare-reducing for producers, traders and consumers. Given the extensive border area, controls and the associated higher transaction costs would likely be skirted by further informality of trade (that is smuggling). A set of workable measures should be identified and negotiated between Tanzania and its neighbors to balance and pursue considerations of animal disease control, trade facilitation and the welfare of supply chain stakeholders. The prospect for trade in hides and skins is discussed below.⁵⁶

6.7. Hides and Skins - From Discounts to Adding Value:

Despite its sizable cattle herd and population of sheep and goats, Tanzania has never developed a large and competitive trade in leather products or semi-finished hides and skins. For the most part, hides and skins have merely been a by-product, accruing little or no value to animal owners/sellers. Both the size and overall quality of Tanzanian hides and skins have generally been poor, attracting relatively little international buyer interest.⁵⁷ Trade has occurred as much on an informal basis as a formal one. Although Tanzania once had a highly-protected footwear

⁵⁵ See, for example, the recent review of the dairy sector by Kurwijila and Boki (2003) and the report of the Department of Animal Production (2004)

⁵⁶ As noted earlier, the government has a long-term policy to implement disease-free zones in order to facilitate international market access for Tanzanian livestock and livestock products. A feasibility study is needed for such a strategy. In some cases, animal disease control requirements are less stringent when the export product is processed meat rather than live animals. Yet, this would require investments in modern abattoirs and other improvements in food safety management. One potentially attractive market is that of the Middle East for sheep and goat meat. Yet, Tanzania would need to compete in that market with Ethiopia which has more preferred animal varieties and has experienced some considerable private investment in modern abattoirs during the past few years.

⁵⁷ Ethiopian sheep skins generally realize double the price as those from Tanzania. Cow hides from Zambia and Botswana generally obtain double the price (per sq foot) as hides from Tanzania.

and leather goods industry, this was not efficient and did not survive the entry of international competition.

According to FAO statistics, Tanzanian (recorded) hides and skins exports have varied between US\$7 and US\$9 million in recent years. The actual level of trade may be closer to US\$20 million as large quantities of raw materials are sold informally across the border in Kenya and Uganda. Hides and skins from these countries generally receive a 10-20 percent premium over those from Tanzania due to reputation for quality. Much of the formally recorded trade goes to China (hides) and India (skins). This is of raw product rather than ‘wet blue’ or other semi-prepared products.⁵⁸ Technically, Tanzanian raw hide is banned in China due to concerns about the spread of Foot-and-Mouth and other livestock diseases. Yet, this trade has continued, with hides generally channeled through Hong Kong.

The supply chain for hides and skins is characterized by the following shortcomings:

- Very low ‘off-take’ of hides and skins, perhaps with only 50% of these reaching the market.
- Low quality of raw material due to branding practices, poor livestock husbandry, and endemic animal diseases, and the lack of commercial incentives for farmers to change practices.
- Poor slaughtering methods (and apparent long-term loss of knowledge of ‘good practice’) which results in damaged hides/skins.
- Commercial practice of buying hides/skins in mixed lots with no differentiation for quality
- Minimal enforcement of existing legislation and regulations.
- Large underutilization of existing tanning capacity for the production of wet blue hides/skins.
- Absence of chemical effluent discharge standards within the tanning industry.

Efforts are being made to strengthen the hides and skins supply chain and enable Tanzania to realize more effectively its potential in this area. The levy on rawhides and skins has generated some US\$800,000 for a Livestock Development Fund. Additional resources have been provided by the Common Fund for Commodities. A strategy has been developed to increase quality and value-addition within the industry through a joint private-public sector program involving awareness-raising and training, the establishment of a grading and pricing scheme, the establishment of hide/skins auctions, introduction of effluent treatment standards and other measures.

6.8. Poultry Products - Toward Better Production and Processing Practices:

Tanzania’s poultry industry is extremely underdeveloped. Tanzanian per capita consumption of both chickens and eggs is very low by international standards and also low in comparison with other countries in East and Southern Africa. The industry has two distinct segments, one ‘traditional’ and the other ‘commercial’. Some 80 percent of poultry meat and eggs is produced

⁵⁸ In 2003 a 20 percent levy was imposed on the export of raw hides and skins. This was designed to encourage domestic processing and to raise funds for industry improvement initiatives.

from traditional species and is consumed mostly in rural areas. Productivity is very low, disease incidence widespread, and mortality rates relatively high.

The remaining 20 percent of output comes from a commercial sector involving about a dozen hatcheries. All are small by international standards, yet two have the capacity to handle 200,000 chicks per three week cycle. The majority of the hatcheries are operating at below 50 percent of capacity. There are some commercial operations that have adopted a vertical integration model, owning and operating breeding farms, hatcheries, broiler farms, feed mills and slaughter facilities. Poultry processing is an emerging technology, with the majority of birds still sold live. Although improving, the technical performance of most of the industry is low even regional standards. High humidity, costly and uneven quality of animal feed⁵⁹, low staff productivity and high rates of theft are among the constraining factors.

Tanzania imports small quantities of eggs, chicken and other poultry products as the commercial sector is unable to fully meet the quality and other standards set by the more discerning hotel chains and the leading urban supermarket chain, which services primarily a middle-class and expatriate clientele. Part of the issue relates to taste; local feed contains a relatively high proportion of fishmeal which carries over into the taste of chicken. There are also food safety concerns, including the incidence of salmonella both in local feed and in poultry products themselves.

Over the years, there have been periodic bans on imports of poultry products from South Africa (and elsewhere) due to concerns about the spread of Newcastle Disease. These trade restrictions have taken place despite the widespread incidence of this disease within Tanzania itself.⁶⁰ More recently, South African poultry products were banned due to concerns about the possible spread of Avian Influenza. This has created increased demand within Tanzania for local products which some firms are seeking to satisfy.

For example, Interchick, operates a vertically- integrated operation consisting of feed mills, hatchery, contract growers and a processing facility. The company currently provides the feed and chicks to 10 contract growers, with plans to expand this to include thirty others. Production has increased by 20 percent since the ban on South African poultry and poultry products was imposed. The application of good production practices has reduced animal mortality from 30 percent to 10 percent by strategically moving grower operations 30 km inland. To facilitate the growing demand and shortage of eggs, Interchick imports processed poultry products, chicks and eggs from its base plant in Kenya. The limiting factors impacting expansion include the logistics of distribution, limitations of hatchery equipment and capacity, availability of eggs, need for slaughter line upgrades and maintenance, limited human resource capacity and high cost of available investment capital.

⁵⁹ Current legislation regulating animal feed in Tanzania is not harmonized with international standards and only weakly enforced. There is limited laboratory capacity to analyze feed and feed ingredients for chemical, microbiological or other contamination.

⁶⁰ For example, in 1996 there were nearly 29,000 reported cases of Newcastle disease in Tanzania. In 1999, the number of reported cases was 41,000. (Source: FAO 2003 as reported in OIE 2003).

Expansion strategies for Interchick in 2004 include the purchase of another refrigerated truck to enhance distribution, modifications to the slaughter line to improve efficiency, expansion of the hatchery facilities from 260,000 to 600,000 (three week cycle), increasing the number and volume of grower contracts, consumer awareness programs, implementing value-added processing and the adoption of quantity management programs and HACCP-based systems. Future initiatives include identifying alternative sources of feed protein, such as soy, to minimize the risk of introducing salmonella and eliminating the quality issues associated with the fishy smell and taste that may occur as a result of a fish protein based diet. The company is seeking to export its products in the future to the Republic of Congo and Mozambique, the latter currently having a ban on imports of poultry products from Brazil.

VII. CONCLUSIONS AND RECOMMENDATIONS:

The overall picture regarding SPS management capacity and the ability to comply with food safety and agricultural health requirements in export markets is of a generally low level of capacity development within both the public and private sectors. Alongside, however, there are pockets of enhanced 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 animal disease or plant pests). In most cases these pockets have been induced by immediate market access problems (again the case of fish and fishery products is notable here) or with funding from bilateral and/or multilateral donors. Indeed, it is evident that Tanzania's program of capacity development is very much driven, and reliant upon, donor support.

Although basic legislative frameworks are in place, a more extensive and updated framework of regulations needs to be promulgated and institutional structures strengthened across both the public and private sectors. Mechanisms through which management measures are implemented and enforced also need to be strengthened; there is an evident tendency for actions to be taken when problems arise but for these to fade once the immediacy has faded and other issues arise. This emphasizes the need for the sustainability of the system to be underpinned through appropriate levels of resourcing and/or more effective management of those resources that are made available. Relating to this latter point, it is evident that cases exist where functions are duplicated and/or there is a lack of coordination of functions and responsibilities. This creates significant scope for the inefficient use of resources, a situation that Tanzania cannot afford given the evident resource constraints under which public agencies operate.

In identifying recommendations for the development of trade-related SPS management capacity in Tanzania, a distinction can be drawn between the broader strategic basis of capacity-development and recommendations regarding capacity-development in specific areas. The latter are addressed below in Table 11. The overall contention is that SPS management capacity should be developed in a strategic manner that focuses on the opportunities to exploit export market opportunities in a manner that engenders competitive advantage and/or minimizes the associated costs (See World Bank, 2005). This requires that Tanzania positions itself such that capacity-building occurs not in a reactive mode, but as part of a longer-term strategy aimed at enhancing capabilities in a prioritized manner. Further, the focus should be as much on

establishing the core elements of SPS management capacity (as depicted in Figure 1)--building awareness and recognition and 'good practice'--, as on institutional frameworks and 'hard' equipment such as laboratories. In pursuit of this, it is recommended that:

- *A formal mechanism be put in place to achieve greater coordination of national efforts related to promoting quality and managing SPS risks.* One possibility is the creation of a National Quality and SPS Council, with senior representatives from pertinent government agencies, the private sector, and research and professional organizations. This Council would work to more clearly define and demarcate the roles and responsibilities for different governmental and other agencies, promote the establishment of technical agreements among them, and establish and monitor the implementation of pertinent policies and strategies.
- *A concerted campaign is launched to raise both awareness and recognition of the importance of SPS management capacity to Tanzania's competitiveness in international markets for agricultural and food markets and ability to exploit potential opportunities.* This should be directed at both the political and administrative levels of the Tanzanian government, key elements of the private sector and other interest groups. This might take the form of seminars and workshops, at least initially, although more decentralized campaigns, at industry and local levels should be pursued.
- *The government of Tanzania enhance the budget available to the development and maintenance of SPS management capacity.* There needs to be a fundamental shift from reliance on donor support, which is inevitably linked to the donor's own agenda, to the establishment of at least an adequate baseline budget that will ensure a certain minimum level of capacity prevails. While cost-recovery measures may form part of the sustainable resourcing of SPS management systems in Tanzania, these should not be at a level which would weaken the competitiveness of Tanzanian suppliers, and should not be a major driving force behind the prioritization of regulatory and technical services provided by government agencies.
- *The enhancement of SPS management capacity should be incorporated into broader efforts to build the competitiveness of agricultural and food exports and to enhance the productivity of the agricultural and food processing sectors.* This emphasizes again the need for SPS management capacity-building to be viewed strategically and as an integral element of efforts to utilize trade in agricultural and food products as a means to agricultural and rural development and poverty alleviation. In several fields—including in horticulture/floriculture, for animal products, etc.—complementary measures will also be needed to enhance international competitiveness.
- *Tanzania must make concerted efforts to encourage and participate in the development of SPS management capacity and sharing of resources at the regional level.* The concept of regional 'centers of excellence' could provide a very useful model in this regard. In so doing, the government needs to identify areas of common interests in the region that will act as a sustainable locus for collaborative efforts. A related issue is the need to explore areas where the SPS control measures of neighboring countries might be accepted as

equivalent in terms of the ‘level of protection’ to comparable controls in Tanzania. The case of pesticide registration is a clear example.

- *The government of Tanzania should enter into a dialogue with private sector leaders on collaborative efforts to enhance SPS management capacity.* This might include the scope for cost-sharing and/or identification of areas in which the private sector can take a lead in developing capacity either on a collective basis or through individual private enterprises. In so doing, the potential drain on the public purse will be minimized, while the private sector will also recognize its own role in establishing and maintaining a certain level of SPS management capacity aimed at enhancing export competitiveness.
- *The government and private industry should seek to build a consensus of views regarding the most immediate risks and opportunities which the country faces in relation to SPS matters and trade as well as on important medium-term priorities.* This study has highlighted a number of these potential areas, although confirmation/revision of this requires more stakeholder dialogue. This study has noted the potential short-term risks associated with: (i) food safety/food hygiene in the tourism industry, (ii) the unimproved landing sites for Nile Perch, and (iii) the fruit fly infestation of parts of Tanzania and Kenya. If not properly addressed, these could harm the country’s tourism development and its leading non-traditional export industries. Important medium-term opportunities appear to be associated with (i) increasing the quality and value-added of hides and skins, (ii) the sale of specialty and other forms of certified quality coffee, and (iii) further development of trade in certified organics products.

Alongside these rather broad strategic recommendations, a number of more specific areas in which action is required have been identified. These are detailed in Table 11. In each case, the specific action required, the actors involved in capacity-development and the related timeframe are detailed. The priority of each of these items is also indicated in an attempt to provide guidance to the Tanzanian government of what needs to be done first. Some of these action points are in pursuit of the strategic directions identified above, while others address the specific areas of capacity weakness identified throughout this paper.

In conclusion, it is not unexpected to find broad weaknesses in prevailing SPS management capacity in a least-developed country such as Tanzania given the overall level of economic development and availability of financial, technical and human resources. At the same time, the government and private sector in Tanzania as well as the international community must be realistic about what can be achieved in terms of capacity-development in the short to medium-term. Priorities need to be set and capacity developed from the ‘bottom up’ in accordance with the pyramid of capacity presented above and a strategic vision in terms of SPS management capacity in view of export market opportunities and the need to enhance agricultural productivity and domestic food safety. The donor community needs to support this by enabling the establishment and pursuit of a strategic approach to capacity development through the support they provide, and avoiding short-term projects which are not part of this strategic framework and which have little prospect to foster sustainable capacity.

Table 11. Action matrix for enhancing trade-related SPS management capacity:

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

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

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

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

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

VIII. REFERENCES:

- Ashley, S., S. Chema, and T. Dolan (1999) *Stakeholder Consultation on the Process of Animal Health Service Reform. Tanzania: Animal Health Services Programme*. Department for International Development. London.
- Baffes, J. (2004) Tanzania's Coffee Sector: Constraints and Challenges. *Journal of International Development*, 16, p. 1-23.
- Baffes, J. (2004) Tanzania Tea Sector: Constraints and Challenges. Africa Region Working Paper Series No. 69, World Bank. Washington, D.C.
- Board of External Trade (2003). *The Fish Sector Diagnostic Report*. Board of External Trade, Dar es Salaam.
- Board of External Trade (2004) *The Tanzania Leather Sector Export Development Strategy*. Dar es Salaam.
- Caiger, S. (2004) *Tanzania Spice Crop Sector Review: Constraints, Potential, and an Agenda for Support*. Prepared for Tanzania Diagnostic Trade Integration Study. World Bank. Washington, D.C.
- Department of Animal Production (2004) *Performance of Animal Production Department from 2001 to March 2004*. Paper presented at the Livestock Sector Think Tank Meeting, Dodoma, March 29, 2004.
- Development Alternatives Inc. (2003) *Orange Sub-sector Study*. Prepared as part of Private Enterprise Support Activities Project.
- Eurofish (2004). *Europe: A Key market for Nile perch*. Fish InfoNetwork Market Report. FAO, Rome.
- FAO (1997). *Lake Victoria Fisheries Study on Fish Quality Improvement and Related Investment Proposals*. Food and Agriculture Organization, Rome.
- FAO (2003) *Tanzania: Livestock Sector Brief*. Food and Agriculture Organization, Rome.
- Fisheries Department (1999). *Corrective Action and Remarks Regarding Draft Inspection Report Recommendation Coded DG(SANCO)/1128/1999-MR Draft FVO Mission to Tanzania 23-25 August 1999*. Fisheries Department, Ministry of Natural Resources and Tourism, Dar es Salaam.
- Fisheries Department (2003). *Report of Frame Survey 2004*. Fisheries Department, Ministry of Natural Resources and Tourism, Dar es Salaam.

Henson, S.J. and Mitullah, W. (2004). *Kenyan Exports of Nile Perch: Impact of Food safety Standards on an Export-Oriented Supply Chain*. DEC Working Paper, World Bank, Washington DC.

IFAD (2004a) *Veterinary Policy and Institutions*. Working Paper #4, PAPLIDEV Project. International Fund for Agricultural Development, Rome.

IFAD (2004b) *Livestock Sub-Sector Commercialization*. Working Paper #5. PAPLIDEV Project. International Fund for Agricultural Development, Rome.

ISO (2004). *The ISO Survey of ISO9000:2000 and ISO14000 Certificates, 2003*. International Organization for Standardization, Geneva.

Jaffee, S. (forthcoming) *Delivering and Taking the Heat: Indian Spices and Evolving Product and Process Standards*. Case study under World Bank research program on Challenges and Opportunities of Agro-food Standards. Washington, D.C.

Jaffee, S. and Henson, S.J. (2004). *Standards and Agro-Food Exports from Developing Countries: Rebalancing the Debate*. World Bank, Washington DC.

Kaiser, M., J. Kioko, H. Mwakibinga, and D. Eboku (2003) Strategic Plan for Implementation of the EAC Protocol on Standardization, Quality Assurance, Metrology, and Testing.

Kibiriti, P. (n.d.) Towards Harmonized Standards, Quality Assurance, Metrology, and Testing, and Sanitary and Phytosanitary Measures for Enhanced Trade. Paper for the East African Community and the Common Market for Eastern and Southern Africa. Nairobi.

Kurvijila, L. and K. Boki (2003) *A Review of the Small Scale Dairy Sector- Tanzania*. FAO Prevention of Food Losses Programme, Rome.

Mitchell, D. (2004) *Tanzania's Cashew Sector: Constraints and Challenges in a Global Environment*. Africa Region Working Paper Series No. 70, World Bank. Washington, D.C.

Multilateral Investment Guarantee Agency (2002) *Tourism in Tanzania: Investment and Growth for Diversification*. Washington, D.C.

Mwakibinga, H. and C. Ekelege (2004) *Report on Baseline Study on Tanzania's Product Quality Infrastructure*. Ministry of Industry and Trade. Danida Business Sector Programme Support II. Dar es Salaam

Mwasha, A. and M. Leijdens (2004) *Basic Data on Certified Organic Production and Export in Tanzania. Export Promotion of Organic Products from Africa (EPOPA)*. Dar es Salaam.

Ponte, S. (2001) *Coffee Markets in East Africa: Local Responses to Global Challenges or Global Responses to Local Challenges?* Centre for Development Research, Copenhagen.

Sargeant, A. (2005) Horticultural and Floricultural Exports: Constraints, Potential and An Agenda for Support. Prepared for the World Bank as part of the Diagnostic Trade Integration Study.

Sharma, A. (2005) *Tanzania Tourism Backward Supply Chain Linkages*. Prepared for the World Bank for the Diagnostic Trade Integration Study.

System Science Consultants (2002). *The Master Plan Study on Fisheries Development in the United Republic of Tanzania*. System Science Consultants Ltd.

Technoserve (2004) Coffee Brief.

Tschirley, D., K. Muendo, and M. Weber (2004) Improving Kenya's Domestic Horticultural Production and Marketing System. Tegemeo Institute of Agricultural Policy and Development. Egerton, Kenya.

UNIDO (2003). *Food Control System in Tanzania. Regional Programme on Harmonization of Food Control System in East Africa*. United Nations Industrial Development Organization, Vienna.

World Bank (2005). *Food Safety and Agricultural Health Standards: Challenges and Opportunities for Developing Country Exports*. World Bank, Washington DC.

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