The World Bank

Africa Trade and Standards Project (ATSP)[1]

Status Report

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Introduction

Over the last decade, African states have intensified, with varying degrees of success, the implementation of required export-led policy reforms that will spur economic growth. Yet, the continent's share of the world's output continues to decline. Progressive attempts at improving the region's involvement in the world economy appear to be marked by a simultaneous decline in its importance to the global economy. The continent's trade with the rest of the world is declining and foreign direct investment is not forthcoming. General income levels are among the lowest in the world, and the continent's debt overhang has further retarded growth over time. Simply preventing an increase in the number of Africa's poor by 2015 will require an approximate annual growth of more than 7% as well as more equitable distribution of income. To achieve this pace of growth, extending Africa's trade and investment potential within the continent and in the world, fostering regional and global political and economic integration, and improving governance and resolving conflict are of utmost importance.

In 1970, total world trade of goods and services were just US$ 1.5 trillion in current dollars, and made up about 13 percent of GDP. Today, the value of global trade in goods and services stood at nearly US$ 8 trillion. Trade in goods accounts for the lion's share of global flows US$ 6 trillion, followed by trade in commercial services, which represent another US$ 1.5 trillion. For Africa, the reverse has been the case. Research shows that a decline SSA's share of world exports between 1962 to 1964 and 1991 to 1993 alone is equivalent to over $11 billion reduction in its annual exports. Most African economies are small and provide limited national markets for local trade that will spur faster growth rates for development. Africa hosts the world's poorest countries in terms of total continental income, and it represents less than 2% of world trade. The erosion in Africa's share of world trade between 1970s and 1990s represents approximately $70 billion, or one-fifth, of its GDP. Therefore, extending into regional and global markets is inevitable for rapid development to take place.

However, in expanding trade, African countries face significant challenges in their capacity to meet international production and quality standards. Revamping production processes, quality assurance and management systems, monitoring, evaluation, product testing and packaging processes, to respond to the diverse and changing technical requirements and standards of their trading partners will require significant investments. Yet, non-compliance to international standards will cost African firms and farmers their hard-earned global market share – especially in agricultural products like horticulture and fisheries, and in light manufacturing industries like textiles. Also, without addressing market access and international standards compliance issues, Africa will be unable to take full advantage of important regional, bilateral, and multilateral opportunities like AGOA or EBA.

There is therefore a strong need to determine, strengthen effective programs and initiatives designed to improve international trade, enhance compliance to international trade standards, support the harmonization of technical regulations regionally and abroad, foster regional cooperation and conflict resolution within Africa. The Africa Trade

Standards Project (ATSP) responds in part to the above needs by improving understanding of the link between standards and trade in Africa. It also helps identify the main challenges and opportunities facing African firms and farmers in the efforts to respond to the dynamic effects of the changing impacts of standards and technical regulations.

Each of the five[2] country studies undertaken under the project outlines the economic context in which standards apply to each country; examines and assesses the ways in which the country and its representatives have participated in the processes of setting/revising standards and technical regulations at the local and international level; reviews and assesses existing laws and regulations and determines the extent to which they are consistent with current international norms; assesses each country's organizational capacities and physical infrastructure to design and implement standards and technical regulations; discusses and analyzes the application and the estimated impact of various standards, technical regulations, and related production/marketing practices in about thirty specific industry segments in the countries under review.

By providing concrete suggestions regarding how African firms and farmers can improve product quality and reach to international markets across commodity sectors, and examining the constraint and costs of exercising their rights within an increasingly global trading system, the case studies are a unique resource to the development community at large as strategies are developed to improve trade prospects and contribute benefits to poor people in each country.

The results of the ATSP will also serve to inform specific projects that can be implemented through the new ***Standards and Trade Development Facility (STDF)*** - see www.standardsfacility.org. STDF is an interagency facility that will provide stimulus to important new projects for developing countries, and assist them to shape and implement international standards on food safety, plant and animal health. As such, it offers the opportunity to translate the results of the ATSP case studies into concrete actions that can be implemented to boost market access for the poor.

Project Objectives and Expected Output

The World Bank is implementing the ATSP, funded in-part by the U.S. Agency for International Development, under the Africa Trade and Investment Policy Program (ATRIP). The project was conceived with the following objectives:

1) Conduct in-depth analysis of the specific impacts of standards and technical regulations on trade in five (5) African countries - *South Africa, Nigeria, Kenya, Uganda, and Mozambique*

2) Identify specific policy, infrastructure, and capacity needs in these countries, including public and private sector capabilities in standards to support expansion

[2] Kenya, Mozambique, Nigeria, South Africa, and Uganda

of export opportunities and successful participation in the World Trade Organization (WTO),

3) Develop customized Actionable Recommendations for each country under review that will map out pragmatic approaches to expand access to and use of international standards toward greater regional and international market access.

Project Implementation and Status Report

In accordance with the project objectives the following activities have been concluded:

↦ A regional workshop was held in Nairobi in July 2001 including key participants such as U.S. Trade Representative Robert Zoellick, Minister Biwott of Kenya, Mike Moore of the WTO, Nicholas Stern, Senior Vice President of the World Bank, and others.

↦ Local research teams that include trade specialists, economists, and trade policy experts and professionals from each country have concluded in-depth assessment of the current and anticipated use of international standards, and capacity for compliance in each of the five countries. The work is being coordinated with and results provided from the Integrated Framework for Trade Related Assistance to the Least Developed (IF) process as it proceeds in 2002/3 and beyond. The project is also drawing on work underway on trade and standards supported through the UK Department for International Development (DFID) at the Bank, and other related projects in UNCTAD.

↦ Particular attention was given to the role of standards and technical regulations in areas of projected high export potential in each country (e.g. agricultural and food products and light manufacturing goods like textiles, wood products, leather/hides/skins and footwear), together with the standards/regulations associated with important material inputs needed by these industries (e.g. seeds, fertilizer, agro-chemicals, animal feed and animal health products, farm and manufacturing machinery, etc.). The table below shows a list of industry sub-sectors covered in each country. National workshops, focused group sessions, and one-on-one interviews were held to gather input and encourage participation of key private and public sector stakeholders in each country.

Kenya:	Coffee; Fruits & Vegetables; Flowers; Fish & Fishery Products; Cotton & Textile
Mozambique:	Cashew; Sugar; Cotton; Peanuts; Seeds; Salt; Fruits & Vegetables; Flowers; Fish & Fishery Products
Nigeria:	Horticulture; Food & Beverages; Cocoa & Cocoa Products; Textile and Clothing; Fish & Fishery Products
South Africa:	Electro-technical Products; Forestry; Textiles; Fisheries; Fruit Industries; Meat & Livestock
Uganda:	Flowers; Honey; Fish; Manufacturing; Horticulture; Organic Coffee

- ↦ The assessments draw conclusions about the current status of laws, regulations, capacities, and programs in relation to standards, technical regulations, identify areas for priority attention, and recommend key steps which should be taken by government, private organizations, and international development agencies. These recommendations are further crafted into actionable plans and specific project ideas that can be implemented in each country.
- ↦ They assessments and action plans described above have been documented in a new World Bank report. The report: "Standards and Global Trade: A Voice for Africa", John S. Wilson and Victor Abiola, eds. 2003, World Bank, Washington, was launched on June 10, 2003.
- ↦ Nick Stern, Senior Vice-President & Chief Economist chaired a videoconference to launch the report, linking Washington, Geneva, and Midrand South Africa. Trade Minister Carlos Morgado of Mozambique, Minister of Agriculture and Land Affairs, Thoko Didiza of South Africa, Petkay Miriti, Assistant Minister of Trade and Industry of Kenya, senior officials of USTR, the WTO and other organizations participated. In South Africa a seminar was also held, with Country Director Fayez Omar and senior private and public sector representatives, researchers and representatives from SADC, COMESA, and other groups.
- ↦ Subsequent dissemination has been undertaken by the World Bank through presentations of the results at the ACP Trade Ministers and Experts Meetings in Brussels (July 27-30). This event was organized in collaboration with the European Policy Center. A similar seminar in London was organized in collaboration with the UK Department for International Development – DFID.

Economic analysis completed in conjunction with the project has examined the costs of divergent technical standards for market access especially with respect to harmonization at the international arena. For example, the new harmonized European standard on aflatoxin - a common contaminant affecting agricultural products – is estimated to cost African exporters over $670 million per year in lost nut and grain exports.[3] Research has found the cost of not adopting an international standard on aflatoxin– at $38.8 billion in lower global cereals and nuts trade.[4] Lack of consensus on international standards and divergent national regulations on pesticides is costly. For example, if the world were to adopt a standard (chlorpyrifos) at a level of regulatory stringency suggested by Codex – the body charged with setting global standards – in contrast to one set a the level in place in the European Union -- there would be a US$ 5.3 billion loss in world exports.

Summary of Findings (Selected Examples):

The executive summary of the book "Standards and Global Trade: A Voice for Africa", John S. Wilson and Victor Abiola, eds. 2003, World Bank, Washington, contains a very good summary of the findings, and is accessible for free online at: http://publications.worldbank.org/ecommerce/catalog/product?item_id=1688508 . See

[3] Saving Two in A Billion: A Case Study to Quantify the Trade Effect of Food Safety Standards," Tsunehiro Otsuki, John S. Wilson, and Mirvat Sewadeh, Food Policy (26) 2001.

[4] Global Trade and Food Safety: Winners and Losers in a Fragmented System," John S. Wilson and Tsunehiro Otsuki, Policy Research Working Paper #2689, October 2001, World Bank.

Appendix 1 for a more detailed outline of country specific findings. Some highlights include:

- **Problems faced by African exporters include lack of timely and accurate information; simultaneous application of multiple standards and regulations**, the costs and difficulties of testing and verification procedures; perceived lack of scientific data for specific thresholds or limit values, and rapidly changing requirements of overseas markets.

- **Exports from Africa can be subject to excessive restrictions because African firms and farmers are generally "standard takers"**, as is the case in fisheries products in Uganda and the horticulture industry in Kenya. This can result in lower product prices to African producers. Middle-income countries, such as South Africa, have developed strong capacities to influence standards, and in some case have become standards setters.

- **The role of foreign lobbying groups and associations pose challenges for African firms**. For example, in 2001 in Kenya, for example, processed foods from Del Monte were restricted from European markets due to concern over worker safety and environmental standards. Human rights associations argued that Del Monte did not provide adequate safety standards for workers and environmental health standards were not applied. This resulted in a boycott of Del Monte's products in most EU supermarkets.

- **Standards impose different cost structures and investment requirements that can undermine the ability of small and medium sized farmers in Africa to access developed country markets**.

- **Costs of compliance can be prohibitive for African governments, and FDI is not forthcoming**. For example, in Uganda, a feasibility study to upgrade a honey processing center owned by Uganda Honey Association in Kampala to conform to the food safety standards of ISO suggests that UShs300m (about US$175,000) is required for construction of processing facilities and purchase of equipment. This excludes the costs of airtight collection cans and protective gear needed by farmers, establishment of country centers to train farmers in apiary management systems, improving awareness, and modernizing production processes. In the Ugandan coffee industry, the average firm's production costs is said to increase by about 200% if compliance costs for good quality coffee are included.

- **The capacity to undertake food safety risk assessments is very low in Africa – even in middle-income countries like South Africa** – creating potential avenues for trade restrictive practices at the regional levels. For example, a case involving Kenyan ban on imports of one-day old chicks from Mauritius because of alleged detection of avian encephalomyelitis in two shipments was not substantiated by evidence of testing or detailed risk assessment. No notification was made to the

WTO by Kenya. The matter was settled before the case reached the WTO's dispute settlement body.

- **Compliance with SPS measures and environmental requirements may become moving targets** because standards often become more stringent once producers achieve compliance. For example, producers of fresh products in Kenya have to comply to changing laws on maximum residue levels. The most recent is the "analytical" zero requirement set by the EU in a climate that demands the use of frequent applications of pesticides.

- **Essential facilities such as testing laboratories are not adequately staffed in many countries in the region and scientific equipment is outdated.** Systematic collection and storage of records is not undertaken and local certification agencies are not internationally renown. This situation is worsening given the declining levels of public expenditures in many countries. Middle-income countries, such as South Africa, have very good facilities, relatively stronger participation and enforcement levels, and have proactive institutions that respond to and influence changes in international standards. In others, capital will be needed to upgrade private sector and industrial infrastructure e.g. Kenya would need a scientific and technical establishment with experience to defend or challenge adverse decisions under SPS measures imposed by importers in national regulations.

- **Awareness of SPS and food safety measures is generally low in the countries studied**, and may depend on incentives and market structures prevalent in the specific industry. For example, the case study on the fruits and vegetables sector in Kenya confirms that:

    - Where large producers with direct contacts with exporters have higher levels of awareness of standards required by export markets when compared to small producers.
    - Market channels based on forward contracts with farmers create more awareness about standards as opposed to informal contracts. Production contracts also provide a higher level of awareness of standards to producers.
    - The presence of exporter agents creates more awareness about standards to producers as opposed to independent agents.
    - Exporters who sell directly to consumers rather than importers get involved in value adding activities and are more aware of standards required by export markets, and demand producers to meet them.

- **There is limited capacity for self-regulation**. There is need to provide technical assistance to government offices, including the national Standards Bureaus, in areas such as upgrading information technology systems.

- **The lack of rural infrastructure, high transportation costs and insufficient support services**, limited access to technical information and credit, constitute major problems for small holders in the agric sector.

- **Inadequate mechanisms for consultations among national SPS / food safety authorities** and other stakeholders exists.

- **The cost to Africa of not investing in raising standards to international levels is extremely high.** The new EU standard on aflatoxin costs African exporters $670 million in lost exports of nuts, cereals, and dried fruits. Related Bank research also shows that if governments followed international standards for pesticide residues in banana trade - rather than setting their own unique and highly restrictive standards - African exports of bananas would rise by $410 million each year. We cannot allow Africa to fall further behind in trade as we ignore sound science and international standards that already exist.

- **African economic development and trade in beef is damaged by the growing standards gap.** Related Bank research has found that if the trading system followed international guidelines on veterinary drugs developed by Codex, rather than the most restrictive national standards, exports from South Africa alone would rise by at least $160 million, for example.

- In sum, **total gains to Africa with a truly international system of standards in place, one shaped with participation of African nations - are more than $1.2 billion** in the commodities noted above alone.

Tentative Recommendations and Action Items (Selected Examples):

- Strengthen backward and forward linkages between SMEs and large export firms and farmers in Africa by facilitating cost effective upgrades of production and transaction processes, market structures, and export support services to the primary producer. These linkages must provide incentives to employ international standards and must be backed by adequate SME financing instruments. For example, a key strategy employed by South Africa was to develop an incentive scheme called "Competitiveness Fund" under its department of Trade and Industry (DTI). The Fund offers grant fund assistance and comprehensive support of conformity assessment activities to its SMEs. DTI also hosts a "Sector Partnership Fund" that supports five or more firms and organizations in the development and execution of collaborative projects.

- Streamline the roles, responsibilities, and competencies of standards monitoring, certification and enforcement agencies, backed by adequate financing, investment in human, physical, and information assets for risk assessment, and developing strategies for regional collaboration.

- Provide technical assistance, training, and infrastructure for the improving the capacity for human capital needed for standards and trade development.

- Establish integrated information management and reporting tools that can be shared amongst trade development organizations, their memberships and clients,

and international counterparts. There is significant room for ICT based projects that will enhance communication between stakeholders involved in making, monitoring, enforcement and adoption of standards in Africa.

- Support projects which target cost effective accreditation of firms in monitoring, enforcement and certification to international standards. The monitoring and testing services could be provided through local cooperatives to reduce costs and delays in product shipment. Benefits go beyond reduction in costs of certification since the country's capacity to undertake effective certification would be strengthened over time. This should involve expanding local/regional certification systems and developing customized certification schemes for SMEs. For example, South Africa has adopted a group certification scheme for its small-scale timber and pulp producers.

- Strengthen participation of agencies, organizations, civil society, and private sector in international standard setting, support institutions to conduct risk analysis and other scientific research capacity which can provide critical evidence to boost negotiating capacity at international meeting. This would help African firms and farmers better exercise their rights within the confines of the WTO trade agreements

- Harmonize national standards to regional and international norms, as well as harmonization of foreign standards at the global level

- Expand support for the integration of SMEs into the standards development system by helping them to improve farming practices, develop extension services and support systems that leverage the use of technology; expand research capacity for standards with a focus on the impact, benefits, and importance; create better infrastructure for transportation, storage, knowledge sharing; and facilitate better linkages between local firms and foreign counterparts

Next Steps

As part of finalizing the country assessments and action plans, the World Bank will support the following activities:

- Present action plans at consultative group meetings to representatives of country governments, heads of trade agencies, donor agencies, and other groups.
- Coordinate roundtable discussions on donor support for follow-on projects and technical assistance initiatives outlined in the Action Plans.

To explore capacity building projects referenced in the reports, the World Bank will consult with the African, US, and other governments, the G8, relevant development institutions such as UNCTAD, FAO, other donor agencies and financial institutions.

Appendix 1

Kenya:

Agriculture is the largest of all the economic sectors in Kenya after the services sector. Agriculture accounts for about 26% of GDP and around 60% of earnings from total merchandise exports. Eighty per cent of the country's population depends on it for their livelihood with only 20% of the land suitable for cultivation. Manufacturing contributes about 13% and is currently dominated by agro processing and light industrial activities.

Kenya's export in 1993 prior to signing the WTO was US$1.07b, and has since risen to US$1.9b in 2001. Its import volume rose from US$1.5b to US$3.5b during the same period. Agriculture commodities (particularly tea, coffee, pyrethrum, and horticulture products) dominate exports while manufactured products (mainly industry supplies, machinery, and capital equipment) dominate imports. Kenya's main export markets are the EU, EAC, and COMESA, and less than 4% to the rest of the world. Analysis show that there has been no marked difference in the structure of Kenya's trade since it signed on to the WTO.

The Ministry of Trade and Industry (MTI) handles all matters pertaining to WTO agreements including matters related to standards and technical regulations. However, the Kenya Bureau of Standards (KEBS), Kenya Plant Health Inspectorate Services (KEPHIS), and the Department of Veterinary Services (DVS) under the Ministry of Agriculture and Rural Development (MA&RD) are in charge of implementing standards-related commitments. Kenya's dependence on agriculture and agro-processed products and the potential impact of SPS and TBT barriers can have on these products makes compliance and market access issues important concerns for the Kenyan government.

Kenya has established and implemented the necessary structures and procedures to comply with the SPS Agreement. There now exists contact points (described above) for international bodies involved in standards setting which are coordinated by the MTI for purposes of notifying the WTO. The country has also strived to develop local standards that are based on international norms. However, some challenges facing Kenya's standards development agencies in ensuring compliance to international standards still exist, and are summarized below:

Agency	Identified Constraints
Cross-cutting Issues	(i) Though KEBS is accredited as an ISO 9000 certificator by QSAC, there are no internationally recognized standards accrediting bodies in Kenya. This is believed to restrict trade in local firms and farmers have to rely on foreign accrediting bodies, and at additional costs (ii) Though KEBS, KEPHIS, and DVS have online facilities for standards and TBTs, and make use of newsletters and meetings with stakeholders, yet, lack of awareness and effective communication to the general public is a very important constraint to enforcement of standards in Kenya. Dissemination of information has been inadequate partly because of fragmentation of duties among the enquiry points and overlaps in functions among authorities. Hence international standards and their impact on trade is not common knowledge to the local consumers and business community (iii) Other problems encountered in the administration of standards include poor coordination and information management among various actors and weak information flow regarding standards among the various public and private agencies and organizations (iv) There is need to harmonize some domestic legislation with international standards e.g. local standards for processed fruits and vegetables are weaker than the international norm (v)There are weaknesses in export and import certification systems e.g. weaknesses in certifying livestock products for export to market in EU, Japan, and the US
KEBS	Although KEBS' mandate is well defined and the agency has some capabilities to undertake its obligations, it still faces some constraints. (i) Though KEBS has 5 accredited laboratories, the capacity of these laboratories is limited in dealing with Kenya's increasing volume of exports. While the laboratories can diagnose animal diseases, the capacity to test for residues in red meat, poultry and dairy products is limited (ii) Participation of KEBS staff in the development of international standards is still very low (iii) the Codex contact point at KEBS need enhanced communication systems (including computers) to facilitate better linkages and coordination both with local support agencies and organization, as well as their international counterparts.
KEPHIS	KEPHIS coordinates all viewpoints related to plant and plant products and it is the contact point for IPPC. Unlike KEBS, staffs from KEPHIS regularly attend international standards meetings with funds provided by FAO. As a result of its participation and funding, KEPHIS is better equipped to fulfill its obligations, and has done so with relative success.

DVS and Fisheries Dept	DVS overseas animal health services in the country and is the focal point for OIE and Chair of the National Codex Committee. (i) DVS' Participation in international standards setting is also very low. Kenya's attendance in the annual and bi-annual Codex and OIE meetings as well as in technical committees is rare. (ii) Measures developed by OIE such as those related to disease free areas have been difficult to implement in Kenya. This partly explains why Kenya's beef products are restricted from exports to the EU, USA, and Japan (iii) Inadequate financing has also constrained the strong need to implement a residue program to determine the safety of use of drugs and pesticides in livestock products, and, the conduct of necessary risk analysis on various food borne diseases (iv) Exports of meat products are constrained by the presence of significant animal diseases such as foot and mouth disease, Rift Valley fever, contagious Bovine pleuropneumonia, and African swine fever (v) Implementation capacity for risk analysis of various diseases to determine disease free zones in the country is also lacking due to financial constraints
Other Public and Private Organizations	(i) PCPB – registers all pesticides used in the country and licenses their storage premises, monitors dealers to ensure safe a proper use, and coordinates training of pesticide application. (ii) HCDA supports production and marketing of horticultural crops. To carry out its obligations, it levies exporters up to US2.5 per ton of exported produce. This policy is frowned at by stakeholders who are already burdened with the need to invest in better quality produce (iii) MA&RD has overall mandate for implementing standards for plants and animals. However, there are no serious efforts undertaken by the divisions to educate growers on grades and standards. The ministry is also under staffed with a ratio of one staff to 1000 farmers. Liaison activities with research bodies are also not adequate and well coordinated. All these discourage small farmers from consulting extension staff on standards-related concerns (iv) FPEAK is an association of 200 exporters of fruits and vegetables, and its mandate is to link exporters with groups of small farmers to promote smallholder farm production and exports. Farmers and exporters benefit significantly from FPEAK's services. However, the association has suffered financial and organizational challenges since its out-grower scheme was last financed by USAID-Kenya in the 1990s

Private sector participation in standards development in Kenya is mixed, usually by way of industry codes of practice. Kenyan private businesses hardly send representatives to international meetings related to standards. Only about 10% participate in international standards setting activities. The lack of effective participation of Kenyan standards agencies further aggravates this position. As a result, domestic codes of conduct developed in Kenya are hardly recognized or harmonized with similar codes in the export markets. This lack of participation inhibits institutional development. Other sector-specific constraints discussed in the study are summarized below:

Industry	Identified Constraints	Actionable Recommendations
Coffee	(i) Development and monitoring of standards in the sector had been under the Coffee Board of Kenya (CBK) until the sector was liberalized. With respect to monitoring quality, the CBK arrangement worked very well, and as a result, Kenya coffee is sold at a premium at the international market. The main industry concern now is the efficacy of the transfer of responsibility of monitoring coffee quality standards from CBK to independent marketing agents, millers, and factory processors. KPCU is already taking the lead in soliciting and providing financial support to coffee farmers and factories to maintain quality. It is not clear how this new arrangement and regulatory framework will play out on the coffee industry	
Fruits & Vegetables	This sector directly employs about 2m people, and another 0.5m indirectly. The main issues here are (i) good field sanitation, hygiene, use of resistant varieties, and use of chemicals for control of pests and diseases is necessary in a tropical environment like Kenya's. Chemicals are the most effective means, but unfortunately constitute high residues that may be of great health concerns to consumers. The larger the companies, the better their capacity to apply approved chemicals appropriately. Small growers however are at a great disadvantage as they lack the expertise and finance to adopt sophisticated farming practices. Many SMEs and some large firms in Kenya therefore stand to loose substantially from technical regulations like the EU's analytical zero requirement for maximum residue levels (MRL) in fruits (ii) There is need for increased capacity for Pest Risk Analysis (PRA) and Control. (iii) Some standards in this sector are determined by changing consumer tastes and/or social and environmental concerns which can have serious cost implications of producers in Kenya. Such standards are however associated with a price premium, which makes investments in them justified (iv) investments in shared facilities and infrastructure that can help Kenyan firms and farmers more responsive to international standards can be prohibitive. For example, estimates of initial capital costs for facilities to export quality fruits and vegetables from farm level to the airport are as high as US1.2m for a daily capacity of 10 tons (v) Though this sector is a major player in the EU market, it has had little participation in the EU discussions about codes of practice. Efforts at participation through its associations like FPEAK have been unsuccessful	(a) The EU has started a Pest Initiative Program implemented through FPEAK to assist ACP exporters comply with EU zero analytic MRL requirement. This program should be continued and expanded (b) Capacity for pest risk analysis should be enhanced. All importing countries have a list of pest risks, which must be adhered to before exports can be allowed into the country. However, no comprehensive PRA currently exists in Kenya. Besides, the country does not have designated pest free zones for fruits and vegetables. There is also no pest risk analysis based on spot checks and controls during production process. There is ample room for technical and financial assistance and training of personnel in this arena (c) improved and timely communication about changing market standards can help mitigate against production risks due changing standards derives from social or environmental concerns (d) there is need for financing scheme and support for firms and farmers in this sector to induce investment in better production processes consistent with international standards (e) KEBS should invite private sector representatives to international meetings on standards and technical regulations
Flowers	This sector shares largely the same constraints and challenges as those of the fruits and vegetables. In	(a) Develop small grower schemes to help SMEs link up with large

	addition major threats to the industry include: (i) a ban, which may arise from non compliance to MRLs. Such a ban will have a significant impact of an industry currently earning about US180m annually (ii) demise of small growers who cannot afford the intensive capital expenditures required to keep up in this industry. This in turn threatens the livelihood of several thousands employed in this industry.	scale exporters
Fish Products	Like Uganda, Kenya has suffered many bans on its fishing industry. As a result, a lot of restructuring has been done to put the industry back on track. The major concerns now are as follows: (i) need to implement recommendations that would prevent future bans. In doing so, the industry needs better implementation hygiene and standards – especially at the production level (landing beaches). Currently there are no adequate funds to do this. (ii) There's need to increase awareness of hygienic practices for fish processing (iii) capacity building in testing and quality assurance is required to ensure continuous quality fish production	(a) The government has put in place a competent authority – the Fisheries Department - for inspection of fish standards. The department's capacity for testing and quality assurance should be enhanced (b) sectoral associations like AFIPEK should be supported in their mandate to enhance sanitary and health measures in Lake Victoria, and to increase awareness on hygienic practices especially on fish handling at the beaches during (c) Infrastructure development especially the roads to the beaches for better access. The Government of Kenya needs assistance in development of 10 designated landing beaches. This is expected to cost about US$900,000
Cotton & Textile	(i) Cotton lint produced in Kenya, like in Nigeria, is considered to be low quality because of poor quality seed and husbandry practices (ii) cotton seed supply system is poor, and has worsened since the liberalization of the industry (iii) cost of pest control in cotton production is very high (29% of total costs) and failure to control pests can lead to 80% loss in yields. The use of sub-standard pesticides by Kenyan farmers aggravates these constraints (iv) local input suppliers hardly advice farmers on use of inputs and government remains the main providers of extension services. Only about 50% of farmers have access to such services and the rest have no access to information from MA&RD extension staff on better cotton production practices (v) Over half of the ginneries in Kenya lack drying and moisture restoration devices, hence the lint they produce contains imperfections and lacks smoothness. Ginning outrun is low (about 33%) and this low quality leads to loss of revenue (vi) standards enforcement on imports of substandard textiles and garments is lax	(a) Develop strategies to increase cotton yields and quality using available cotton varieties and the control of pest with minimal use of pesticides need to be developed i.e. integrated pest management. KARI is already trying to develop a proposal to address some pf these issues (b) Extension services need to be stepped up. Public-private partnerships need to be developed (c) an action plan must be developed for an integrated development of the upstream and downstream sectors of the textile industry (d) development of a cotton seed management scheme (e) better implementation of standards to imports should be pursued

Mozambique:

Mozambique is one of Africa's low income and highly indebted countries, and among the poorest in the world. Following almost two decades of failed economic development efforts due to its prolonged civil war, Mozambique's economy resumed growth in the early 1990s. The country has experienced a average growth rate of about 8% annually since 1993 (with the exception of a brief decline in 2000 due to the impact of floods on agricultural output. Most of Mozambique's growth derives from the agricultural sector which contributes about 28% of its GDP value-added on average i.e. more than a quarter of Mozambique's aggregate growth can be attributed to performance of the agricultural sector. The sector also employs over 80% of the country's population – who make up the bulk of the poorest and most vulnerable people in the world that are at very high risks of vices like hunger, endemic diseases, and socio-economic deprivation. Hence, developing better agriculture systems, reducing susceptibility to natural disasters, promoting stability, and ensuring better prospects for exports are key objectives of the Mozambican government and its peoples.

The Government program for 2000-2004 has identified agriculture as its basis for socio-economic development, and Mozambique's national agricultural policy objectives prioritizes quality improvement and the development of better product and process standards as well as other supply-side actions to boost production and trade. The principal cash crops are cashew, sugar cane, tea, cotton, tobacco and timber, and Mozambique's main trading partners are Malawi, Zambia, and South Africa. Agriculture production is dominated by small growers and processing firms, but there is a gradual emergence of large scale producers. While the production of export crops and industrial inputs is rapidly expanding, food crop production has been rather slow (except for beans and vegetables) due mainly to lack of technical know-how and modern agricultural practices and technology for SMEs to exploit economies of scale in production, lack of farming inputs and storage facilities resulting in huge post-harvest losses and low quality yields. Poor infrastructures also add to production costs, and the lack of adequate warning systems against random shocks from natural disasters further aggravates the countries supply capacity. There are several development programs (e.g. working in progress at the Early Warning Department in MADER funded in part by FAO, or the Farming Early Warning System (FEWS) funded by USAID etc) already in place to address some of these issues.

With regards to international standards, there is lack of awareness of the potential growth effects of compliance to standards. As a result, quality is not yet perceived as a determining factor in marketing of agricultural products. Moreover, there is little demand for quality products in the local economy due to low level of incomes. This discourages investment in better product quality by producers.

The main institutions in charge of standards development, monitoring, and enforcement are: the National Institute for Standards and Quality (INNOQ), the Ministry of Agriculture and Rural Development (MADER), Ministry of Fisheries consists of the DIP,

IIP, IDPPE; Ministry of Industry and Trade (MIC); Mozambique Customs System, and other listed in the Table below.

Agency	Identified Constraints
Cross-cutting Issues	(i) In promoting rural agro industry, the Office of the Promotion of Commercial Farming in the Ministry of Agriculture has developed 14 business plans for pre-identified agricultural products that have potential for growth. These include: Desiccated coconut factories to be installed in Zambezia and Inhambane; Production and promotion of charcoal from coconut husks in Zambezia and Inhambane; Products from coconut husks in Zambezia and Inhambane; Cashew apple spirit in Nampula, Zambezia and Inhambane; Cashew processing in Nampula, Sofala, Zambezia, Inhambane and Cabo Delgado (medium scale); Cashew processing in Nampula, Sofala, Zambezia, Inhambane and Cabo Delgado (small scale); Dried fruit in Zambézia, Inhambane and Sofala; Preparation of tangerine for export in Inhambane; Maize mills in Niassa and Zambezia; Packaging and export of pulses in Niassa; Processing of pigeon pea for export in Zambezia, Niassa, Nampula and Cabo Delgado; Rice husking in Zambézia, Sofala and Nampula; Processing of sunflower seed in Sofala, Zambezia, Niassa, Nampula and Cabo Delgado; Extraction of castor oil in Nampula and Cabo Delgado (ii) Foreign development assistance given to Mozambique so far has not been focused on the development of infrastructure for quality management. The only foreign assistance that has a specific component related to standards is the 1997-99 SIDA support to INNOQ to help it become more competent institution. As a by-product of this project a five year program for quality management and infrastructure development in Mozambique was developed. Implementation costs are estimated at US$12m (iii) A UNIDO Integrated Industrial Development Project Program has also facilitated the development of a food action plan for improved processing and food safety. UNIDO and The Ministry of Trade and Industry have submitted the TOR for implementation and funding
INNOQ	INNOQ is responsible for developing the national quality system in Mozambique in line with the country's industrial policy and strategy. The Institute oversees the development of standards, strengthening of laboratories, and the development of metrology and accreditation services
Ministry of Health (MISAU). Consists of DHA and LNHAA	(i) DHA is the contact point for Codex and has participated in all its annual meetings. DHA also contributes to technical specifications at Codex. However, it lacks financial resources to cover the production of publicity materials, organize meetings, raise awareness about Codex Alimentarius (ii) there is also lack of funds to replace broken our outdated equipment and machinery in LNHAA

MADER consists of DSV, SNS, DINAP, DNFFB, INCAJU, IAM, IPA, INA, INIVE	(i) a representative of DSV participates in IPPC meetings but exercise very little influence (ii) INCAJU participates in the Technical Committee on Standardization currently developing national standards for cashew nuts and kernels and code of practice for the industry (ii) majority of the Mozambique's regulations on food have not been harmonized to Codex standards, and implementation capacity is weak. This dual regulatory system confuses Mozambican firms and farmers
General constraints to participation in international standards setting	Financial constraints for the payment of subscriptions that are normally high, and for the participation in meetings; The lack of awareness on the part of both the Government and the business community of the importance of using standards, and ignorance of the consequences of not using them; The low production and the low levels of exports, which in most cases do not make failure to comply with standards a problem; The lack of consumer awareness of the quality/standards problem; The lack of technicians who would allow effective participation in the process; Technology-related constraints.

Other sector-specific constraints are summarized below:

Industry	Identified Constraints	Actionable Recommendations
Cashew Agencies involved include INCAJU	In 1972, Mozambique was listed as the first world producer of cashew nut with 48% of world output coming from the country (220,000 tons). This decreased to 24000 tons in 1991 due to political instability. Production has increased since then. Major constraints prevailing in the industry include (i) neglect during the civil war led to declining health of cashew trees and increased susceptibility to pests, and diseases (ii) use of low quality farming inputs (especially seeds) has reduced yields and disease resistance (iii) low rate of replacement of cashew trees is insufficient to maintain national grove at its current size given the natural rate of tree death (iv) limited farmer investment in husbandry (v) early harvesting, sale of immature nuts, inadequate drying and other substandard practices has reduced yields (vi) processing industry in turn faces severe difficulties in acquiring sufficient raw materials. In fact most of the firms are closed, and those operating use manual technology that do not support efficient large scale production (vii) Mozambique currently lacks a grading system for raw nuts. This impedes development by depressing producer incentives to invest in quality, increases acquisition costs of traders, and hurts the industries reputation for quality (viii) unfavorable climatic shocks also influence output	To overcome these constraints, INCAJU is promoting activities set out in the Cashew Master Plan to achieve 100,000 tons in output by 2004: (i) a program to control *oidium* disease was started in 1999. To improve on this program, it will be necessary to train cashew tree owners to identify the disease, maintain treatment, and apply chemical appropriately (ii) A plant multiplication program which aims at producing 1,200,000 grafted seedlings in 2002. This program is on track, and there is need to improve pre-planting distribution system and broaden education campaign on the benefits and care of grafted seedlings among small growers (iii) the government contracts NGOs and the private sector as a way to involve them in the development process. Better engagement mechanisms that would involve the private sector in standards development should be pursued (iv) a grading system, consistent with international norms needs to be developed for cashew nuts and related products. INCAJU already established this in 2000. This system differentiates between producers and traders. The results have been positive in that it has facilitated the export of nuts and kernel directly to neighboring countries by small growers who previously relied on formal export systems. This system should be enhanced (v) INNOQ is working with INCAJU and other stakeholders to develop codes of practice, and standards for cashew nuts and kernels. This process should be supported with awareness campaigns and training programs, and implementation should be broad.
Livestock Production	(i) Mozambique vaccination campaigns, coordination with neighboring agencies, and the introduction of geographic information systems have helped Mozambique to escape episodes of foot and mouth disease experienced by its neighbors	
Sugar Agencies involved include APAMO, SADC	The main problems here are: (i) smuggling from Zimbabwe, Malawi, & Swaziland estimated at 80000 tons/year. This further undermines producer prices in an already depressed market (ii) there's need to create mechanisms that will facilitate better links among SADC members seeking to harmonize	

	agreements on protection on sugar trade	
Agro-industrial Sector	Constraints outlined here include: obsolete technology and equipment; lack of skilled labor; inadequate fiscal and customs policy; lack of incentives to industry; poor infrastructure; inadequate packaging; lack of product and process standards; expensive and low quality raw materials	
Cotton Agencies involved include IAM, Ministry of Agriculture, Mozambican Cotton Association	The peak of cotton production in Mozambique was 144,000 tons in 1973, and the worst seasonal output was 5,000 in 1985 due in part to population displacement effect of war, and firm management problems. Main constraints in this sector include: (i) degeneration and low yields of cotton varieties are reused for several years. Hence yield and quality is compromised (ii) lack of infrastructure in production zones (iii) low level farmer education which reduces their capacity to work through associations and groups (iv) obsolete equipment in gins (v) financial constraints that hamper investment in efficient production processes (vi) complete deterioration of classrooms and laboratory equipment and tools for testing quality (vii) Classification and monitoring of local cotton grading system is below international standards – as poorer quality cotton are graded higher than usual. This benefits cotton farmers and traders, but causes technical problems in the ginneries, and affects cotton-seed separation and processing, ultimately resulting in low quality lint sold at discounted prices	Cotton cultivation, marketing, and export are better regulated than is the case with other crops. However, there is need to (i) Update the seed and lint classification system to conform to international norms as a necessary step to ensure better valuation of cotton products. Perhaps lint classification using High Volume Instrument (HVI) method could be introduced but it is probably is not the best short-term alternative, since the cotton laboratories may not have the necessary space, trained staff and maintenance systems (months ago IAM submitted a proposal for laboratory equipment, including HVI, but it was not accepted by the funding agency). (ii) The IAM should be equipped with better laboratories, classrooms, instruments and reagents, and technical assistance on quality control (iii) prepare and implement a training program for new staff to be recruited for manual and visual lint classification, to fill up the gaps in skills due cause by retirees (iv) implement an extension/ training program to train producers, traders, processors, extension workers and technicians on cotton grades and lint classification, and the requirements for obtaining good quality products and the benefits and losses of good and bad cotton quality
Peanuts	(i) there is need to reduce aflatoxin contamination and mycotoxin problems that affect consumers of peanuts like hepatic diseases (ii) The volume of informal trade in peanuts is very high and this by-passes quality controls (iii) there appears to be no representative evidence from peanut fields and storage facilities that confirms aflatoxin contamination in Mozambique, however, international researchers confirm that Mozambique is one of the countries with very high rate of aflatoxin and other mycotoxin contamination (iv) Mozambique has no specific technical regulation on mycotoxins (v) very little research work has been done concerning better testing	(a) develop better control measures for aflatoxin contamination e.g. through the use of new varieties and agronomic practices in storage facilities (b) conduct risk assessment and analysis to understand degree of occurrence and the exposure of people and animals to mycotoxins, and generate evidence on health risks of consumers. Such analysis will inform the design of better measures and programs to address related food safety concerns (c) create better awareness of international standards on food safety and their impact on domestic markets and exports (d) test and disseminate decontamination methods in conventional warehouses and traditional storage facilities (e) develop partnerships with regional and

	and documentation measures to enhance storage facilities	international institutions, laboratories, and researchers to improve and develop specific assistance programs on mycotoxin
Seeds	Mozambique now has good seed control procedures which were drawn up with collaborative support from several international and regional institutions (i) Mozambique does not have genetically modified seeds but can use existing facilities in South Africa (ii) seed regulations have contributed to better seed supply from other countries i.e. better pest resistant varieties and good quality seeds. However, seed control procedures should be specially designed for emergency situations to avoid delays in seed imports and distribution	
Salt	(i) Salt production is limited, and of low quality because producers use outdated technology and are faced with shortage of skilled technicians (ii) standards, methods of analysis, and sampling protocols governing salt production need to be harmonized	(a) UNICEF is supporting MTI to develop this sector through its iodination program (b) INNOQ has coordinated the formation of Mozambican standards in Iodized salt. This was Mozambique first successful formulation of an industry standard with participation from support institutions and stakeholders. There is now a need to promote the development of salt producer associations, and laboratories for testing near production centers
Fruits & Vegetables Agencies involved include DINA, INIA, Ministry of Health, MADER, INNOQ, FRUTISUL	(i) most of the firms in this sector are closed and some factories have been dismantled (ii) in general, producers pay little attention to quality (iii) some laws and regulations need to be updated to meet international norms, and enforcement is very weak (iv) process of developing these standards and codes of practice is still embryonic (v) Use of low quality farming inputs and raw materials reduce yields (vi) inadequate packaging (vii) food import policies are lax and monitoring of substandard imports is weak (viii) growers are not aware of the requirements of international markets for their produce since many have been absent from international trade for many years. Export was usually through commodity boards (ix) private sector participation in standards development is almost non-existent	(a) need to develop high-yield cultivars, and reactivate the gene collections or banks so that the most appropriate cultivars can be recuperated in the agricultural stations and subsequently disseminated and distributed for production (b) update policies and strategies and draft plans for developing fruit production (c) speed up the process of drafting standards and codes of practice and revise and/or draft new laws and technical regulations to support the different actors in the fruit and vegetable food chain, namely producers, processors, traders and consumers, with a view to obtaining and maintaining quality and safe products, both for the domestic market and for export (d) develop awareness campaigns and training courses in good hygienic practices, HACCP and on the applications of standards as a way to improve quality, protect consumers, and facilitate export (e) continue work on studying the markets for fruit, vegetables and by-products in the region and internationally, prioritizing high-growth species which have not yet been analysed (f) support the organization of producers, processors and other actors in fruit and vegetable producer associations, through which programs and activities can be

		developed and implemented (g) promote agricultural production, renew and replace plantations taking into account the species (including wild species), the seasonality of the species, product characteristics and the most appropriate production conditions for obtaining quality products that are in demand on the international and domestic markets (h) rehabilitate and modernize the industry to process domestic raw material (i) organise annual fruit trade fairs in the main fruit growing cities and regions of the country, with the aim of promoting fruit cultivation by bringing together producers, consumers, researchers, equipment makers, agro-industries and other interested parties (j) promote the participation in international fruit fairs to promote Mozambican fruit and make trade contacts and technical visits for contacts, exchanges of experiences and collecting information on fruit production and processing techniques and technologies
Fish & Fishery Products	Though standards-related activities in this sector are still embryonic, Mozambique has managed to comply with internationally acceptable levels of quality in this sector with the exception of the 1998 EU ban due to an outbreak of cholera. However some of the challenges in the sector include: (i) training of middle and senior level staff of various bodies and companies involved in exports (ii) laboratories for fish testing also need some upgrading (iii) some existing regulations need revising and there is need to step up efforts at developing national standards and codes of practice harmonized at the regional level (iv) the DIP needs financial assistance for its activities like license control; revision of technical manuals; development of certification schemes, etc (v) there is need to prepare private sector technicians for introducing the HACCP system	

Nigeria:

The last three decades in Nigeria can be described as a period of relative macroeconomic instability characterized by a few years of fair output performance and a long period of price instability, unemployment, and economic recession. At the beginning of the decade in 1990, Nigeria's agricultural exports were only about US$302.2m in value while mineral products were as high as US$13.3b (with crude oil exports accounting for up to 99%). In the same period, the value of manufactured and semi manufactured exports was

as low as US$17.1m. Presently, while Nigeria's total exports have increased by about 11%, the share of agriculture has at best remained constant, and has in fact fallen relative to crude oil exports. However, Nigeria's agriculture sector still employs about 70% of the country's total labor force. Any major negative shock to the mineral sector implies that agriculture will emerge as the only veritable source of foreign exchange and employment. Thus, issues related to export diversification, export promotion and market access for Nigeria's traditional and non-traditional agricultural products are central to growth and socio-economic development.

For several reasons, the implementation of SPS and other standards related concerns are relevant, and must be viewed critically along with such other supply-side issues that may constrain Nigeria's capacity to access global markets competitively. This is because: (a) in principle, the level of poverty in many African countries limits local demand for quality products (b) low income countries like Nigeria trade off quality for lower product prices (c) generally low standards of uncertified products implies that they cannot be exported to high income developed countries unless they are upgraded. This process of compliance requires additional resources in terms of variable and fixed cost, and may make these countries less competitive in the global marketplace. In the case of Nigeria, these costs in aggregate have been found to be prohibitive.

Challenges facing Nigerian standards development agencies and private sector stakeholders are summarized below:

Industry	Identified Constraints	Actionable Recommendations
Horticulture/ Floriculture Products	(i) Nigeria is yet to break into this market, though it has the capacity to do so. There have been failed attempts by 3 floriculture enterprises to export related products, due to dearth of skilled operators able to manage the required production techniques for growing export quality products (ii) production is also said to be affected by lack of adequate packing house facilities for post harvest handling, treatment, and packing for export (iii) some of the producers also complained of inability to comply with processing standards due to lack of technical expertise and financial resources (iv) there is potential for the production and export of medicinal plants especially by small holders around the Mambilla Plateau. However, setting up such an industry requires the need to develop a culture of managed cultivation, delivery of full traceability on raw material from origin, improvement of post harvest system using appropriate technologies for drying, storage, handling, sampling, etc, and the development and implementation of industry quality standards (v) Nigeria's vegetable sector faces post harvest problems including lack of post harvest handling facilities and equipment (vi) there is generally a lack of know-how, and little awareness of specific or required internationals to be met by producers (vii) Horticulture products are also very perishable and Nigeria lacks the adequate transportation system and network necessary to facilitate cost effective market quality delivery (viii) upgrading facilities in this sector to ensure compliance to international norms will be prohibitive. Preliminary estimates suggest that about N625m will be required to set up a modern processing unit to handle post harvest activities	(a) Provide technical assistance on generate and how manage up-to-date information on international standards and technical regulations (b) Equip laboratories to cater for testing and pest risk analysis pertaining to the sector (c) build local technical knowledge through training and work shops, and increase awareness about new technologies available for better farming practices (d) facilitate foreign partnership and joint ventures in production and distribution of horticultural exports (e) improve participation in international meetings and standards setting bodies (f) Provide legislative support necessary to ensure proper coding of products and minimal delays of consignments in transit by customs and produce inspectors (g) invest in shared infrastructure that will enhance better packaging, labeling, grading etc for exports
Food & Beverages	(i) Packaging is said to be the most important constraint to both large and small-scale producers in this sector. Meeting packaging requirements of export markets is said to influence product prices significantly, and Nigeria's packaging industry is still at its embryonic stages. Meeting international packaging requirements will require up to N150m investments from the industry (ii) The level of awareness of the importance of standards is also generally low amongst SMEs in the industry (iii) differences in tastes of the local market vis-à-vis consumers in export markets also affects the formation of standards in this sector. As a result there is sometime international standards and export requirements and those prevailing in the local market. This leaves room for the need to harmonize standards and local cultural environment	(a) Organize awareness campaign and workshops for stakeholders in the industry (b) retraining quality control officers (c) providing support to private sector in addressing packaging related constraints (d) improving the participation of key industry players in international and local standards setting within the industry
Cocoa & Cocoa	(i) Since the dissolution of the commodity boards in Nigeria, the quality of cocoa suffered from lack of monitoring and enforcement of necessary production and export standards (ii) rising costs of fumigants vis-à-vis a	(a) Development of appropriate quality and export monitoring agencies/organizations

	removal in subsidies caused cocoa farmers to neglect appropriate treatment of their cocoa crops (iii) lack of improved seedlings to boost output and quality of cocoa harvest (iv) a bypass of quality checks by private cocoa dealers due to a breakdown of the cocoa grading system, pre-port and post inspection process. Indeed, the Nigerian government plans to raise N1.5b to establish three-commodity boards will be managed by the farmers themselves	backed by appropriate regulatory frameworks (b) strengthening emerging associations and service providers that support better grading, storage and store maintenance, dissemination of good farming practices etc (c) training of inspection officers (d) development of small grower schemes that support acquisition of better equipment, and facilities for quality produce (e) development of a quality seed management program

Textile and Clothing	The industry is predominantly focused on the local market, and has just minimal plans to expand into the West African market. This is because the industry is focused on production of local textile products and the garment sub-sector is largely undeveloped. Other limitations include the following: (i) cotton lint production is sub-standard and output is low (ii) there is no grading system for Nigerian cotton, and farmers lack knowledge of good production practices and technologies (iii) there is no well managed cotton seed production, and old seeds are replanted several times – hence reducing output (iv) Polydecontamination of cotton lint undermines the quality of cotton in the ginneries and print factories (v) lack of finance to procure necessary new technologies to enhance production	
Fish & Fishery Products	The Nigerian fish industry seems to be well adapted to exports of fish products – especially prawns. Like in the food and beverage, the industry is broken down into large multinational firms that export shore fish, and small artisan fish farmers that produce for the local market. While the multinational firms are aware ad implement international standards, including HACCP, the small farmers need to be made aware of food safety practices. (i) Post harvest fish processing is a key area of investment to which efforts must be devoted in order to guard against fish losses. There is need for increased awareness on hygienic practices in the area of processing and packaging at the landing beaches (ii) small farmers need better fishing equipment (iii) inspection officers need further training in testing and quality assurance (iv) local demand for fish in Nigeria is still largely unmet and there is significant room for aquaculture. Aquaculture development needs to be intensified so that pressure on coastal waters, rivers and lakes will be relaxed. At present, there is over fishing in most of the inland waters. (v) Piracy on Nigerian waters (vi) There's need for a fisheries terminal in Lagos to facilitate easy fish processing, and provide other synergistic activities like skilled labor, maintenance facilities, banking facilities etc. Currently, Honeywell spends about 25% of its resources on Jetty facilities. A terminal will reduce this cost significantly. Fish terminals in built in Calabar, Port Harcourt and Ondo were set up in areas where they are least utilized. For example, the terminal in Calabar was described as inaccessible due to the absence of a seaport, and vessels have to stream through silted waters. As mentioned earlier, Lagos houses over 95% of the firms in the industry (vii) There is some government inconsistency with policy on jetty (viii) there are concerns within the private sector that fish practices are more stringent as the level of processing increases. The private sector does not seem well equipped for highly processed fish products for exports (viii) there's need to develop better traceability systems among small fish farmers	

Nigeria has a Codex Contact Point (CCP) and National Codex Committee (NCC), which advises the government on food standards and related matters particularly in the context of Codex Alimentarius Commission (CAC) work, and formulates national position papers on circulated codex texts. In pursuing its activities, NCC participates directly in Codex work. Some of the constraints facing standards development agencies in Nigeria are summarized in the table below:

Agency	Identified Constraints
NCC	(i) Participation of stakeholders within NCC is low. A typical NCC meeting has 25% representation from SON, followed closely by academia and research institutes (24%), NAFDAQ (22%), and private sector (18%). Government ministries' represent just about 9% while law enforcement agencies account for less than 3%. This low participation of government officials has a constraining influence on private sector commitment (ii) Haphazard attendance at meetings and non-availability of meeting reports also render follow-up actions on Codex work at the international level almost impossible. For example, representatives from government ministries sent to attend Codex meetings do so on their own without recourse to the NCC secretariat. This creates problems of non-accreditation and refusal of entry visa (iii) Funding for attendance of meetings is also a significant challenge to participation, especially for a poor country like Nigeria, experiencing slow growth (iv) Inadequate flow of information hinders NCC's ability to take informed official positions on Codex matters. A major constraint worth noting here is the late receipts of documents and letters from international standards organizations (v) limited capacity for scientific evaluation to back up its views and contributions. Nigeria's ability o conduct appropriate risk assessment and analysis before responding to Codex requests is suspect, and constrains its ability to justify national positions in deliberations at international meetings (vi) NCC has no adequately furnished and equipped secretariat, competent staff and information management facilities. All these constraints are underscored by lack of funds due to the absence of a separate budgetary vote to run the National Codex Secretariat and conduct necessary codex work
NAFDAQ	NAFDAQ's mandate is to promote and protect public health by ensuring that regulated products (mainly food, drugs, cosmetics, chemicals, and packed water)are of good quality, safe, and adequate for their intended use. Though NAFDAQ appears to be well equipped to achieve its mandate, it still faces some challenges: (i) difficulty in establish dumping according to WTO principles (ii) NAFDAQ is not aware of risk assessment guidelines by the IPPC and the OIE, nor is it equipped to conduct risk assessment, risk management or risk communication activities due to lack of adequate training in these areas. It has noted its interest in training in these areas to NCC (iii) Unlike NCC however, NAFDAQ has adequate communication facilities
Standards Organization of Nigeria (SON)	Its mandate is to coordinate all stakeholders in the NCC, and is the contact point for CAC as well as enquiry point for WTO in Nigeria anchored to the Federal Ministry of Commerce. SON also prepares Nigeria's food standards, monitors and carries out tests and other necessary activities to ensure compliance to approved standards, and established a certification system. SON is faced with the following challenges: (i) circulation of codex documents is not efficient and NCC meetings are irregular due to lack of political will, low commitment to standards, and lack of information infrastructure (ii) Like NAFDAQ, SON is not aware of risk assessment guidelines of the IPPC and OIE, and is not equipped to carry out such activities

General	(i) Private sector in Nigeria does not appear to fully understand the relevance of standardization in the enhancement and advancement of their business (ii) local consumers are also complacent and/or ignorant about standards and food safety related issues (iii) there appears to be strong participation of the private sector in the formation of codes of practice at the national level, this is not the case with international development of industry codes of practice because most large companies in Nigeria are multinational (mainly standard takers). Where Nigeria's private sector participate in international standards development, they do so haphazardly as observers (iv) SMEs and other firms without foreign affiliates appear to have significant problem accessing information about international standards and adopting measures that conform accordingly. Many lack technical expertise and financial resources to comply (v) certification and traceability issues seem to be a central problem for most indigenous Nigerian companies

South Africa:

The advent of full democracy in South Africa in 1994 created the opportunity for urgent changes in the management of the economy especially in the stabilization of the macro economy, normalization of international financial relations, and liberalization of international trade. The primary objective of these changes was to rectify the many structural deficiencies that were apparent in the economy at the time. With regard to liberalizing trade, growth and diversification of exports, and the globalization of the economy were the main objectives. Implicit to achieving these objectives is the challenge of meeting growing consumer demand for compliance to product and quality standards – especially in export markets. Likewise, South Africa's local market also requires improved monitoring of standards and quality, as tariff and other forms of protection are reduced.

Although success has been achieved in many of the afore mentioned objectives, it happened at a cost, mainly in terms of low growth in output and employment as the economy responded to international competition after a long period of economic isolation. South Africa's economy became more open over the past decade with most of the sectors discussed in the study increasing their share of total exports. Developed country markets remain the main destination of exports and source of imports, and there is documented increase in import and export intensities of South African goods and services. As a consequence, South African firms and farmers have had to improve the quality of their products and invest in compliance to foreign standards in other to ensure export penetration, as well as compete effectively with import in their local market, in the face reducing tariffs. Therefore, investment in standards as an underlying facilitator of exports, as well as a defense against imports has increased in prominence. Issues such as cost of compliance to firms and other micro-level and supply–side aspects of trade are also becoming more relevant.

The main domestic regulatory structures/agencies on standards are: The Department of Trade and Industry (DTI); the National Department of Health (NDH) – which encompasses the South African Health System and the Directorate Food Control; the National Department of Agriculture (NDA) which includes the Directorate Plant Health and Quality (DPQH), Directorate of Genetic Resources, Directorate of Veterinary

Services, Directorate Agricultural Production Inputs; the South African Bureau of Standards (SABS); South African National Accreditation Systems (SANAS); and the Perishable Product Export Control Board (PPECB) . These organizations have been given an unprecedented platform on which to promote SQAM issues.

Agency	Identified Constraints
Cross Cutting Issues	(i) There are idiosyncrasies within the SQAM system. For example, whereas NML and SANAS submit their budgets to the MTI for approval, the SABS is allocated funding by way of Parliamentary Science Vote for the Science Councils. The implication is that SABS' funding position is unhealthily equated to that of local research organizations. This lack of funding constrains SABS (ii) The main obstacles to participating in the international standards setting process are: timely notification; capacity in dealing with standards setting process; language barriers; length or protocols; and poor commercial understanding of those charged with negotiating on behalf of industry (iii) there also appears to be problems with respect to industry contact with the national enquiry points for CODEX, IPPC, and ISO-related matters (iv) interaction between departments within government does not appear to be very effective (v) South Africa's participation in the various international committees and working groups is greatly constrained by the voting pressure within these committees especially in disagreements with the EU which dominates most of the meetings (vi) there are also problems in the terms and definitions of standards processes dominated by certain blocks and countries. South African does not have this advantage since most African countries cannot afford participation in these committees (vii) there appears to be a naïve approach on reporting on international regulation by WTO/TBT. Reporting is usually not up-to-date. South Africa is planning to improve its reporting database system based on the Canadian model (viii) The costs of manufacturers declaration showing compliance with applicable EU directive (CE marking) is taking a large toll on South African SMEs. These costs can be prohibitive. (ix) The impact of HIV on South Africa's industry and human capital con not be over-emphasized. The spread of this disease holds serious implications in terms of direct and indirect costs to industry. Direct costs include the cost of treatment (which is estimated to be about twice the per capita GDP of the country, and about R2.3b/year) while indirect costs include lower income absorption and lower consumption expenditure, reduced human and social welfare, and the demise of the country's much needed workforce.

DTI	The DTI is responsible for South Africa's multi and bilateral trade relations and negotiations, trade and export promotion programs, and oversees various development assistance programs, accreditation of test laboratories, and certification bodies. DTI faces the following constraints: (i) Though the Department has stepped up efforts at participating in activities of the WTO-TBT committees, there is ample room for better proactive engagement in developing SADC, South-South alliances with respect to TBT issues (ii) the process of standards harmonization with SADC has been very slow due to financial constraints that undermine participation of member states in technical meetings. As a result, the first harmonization projects identified have took more than 3 years to finalize. There is therefore need for better interaction between government departments (iii) a study by the DTI confirms the following problems with South Africa's SQAM landscape: there is often confusion amongst regulators about responsibilities as well as a duplication of responsibilities; there is no way of measuring the effectiveness of technical regulations contained in legislation; there is a lack of transparency in technical regulations that hinders local trade, particularly for SMEs; it is difficult and time consuming to consult technical regulations contained in legislation; the consumer, ultimately, foots the bill for regulatory inefficiency; the lack of regulatory transparency hampers South Africa's ability to negotiate mutual recognition agreements; the lack of regulatory transparency hinders South Africa's ability to meet international obligations under the WTO Agreement on Technical Barriers to Trade (TBT) (iv) Results of a workshop on Food Safety Capacity Building in Pretoria in April 2002 also confirm the following: an integrated framework of government action and public-private partnership is lacking; potential weaknesses are constraints in surveillance and monitoring of data, human resources due to lacks of education and training, and law enforcement capacity; central registration is lacking, while there is little willingness to share information; No "central" monitoring or surveillance data base systems are available in the country; roles and responsibilities of both the government and the private sector in South Africa need to be clarified; and current legislation pertaining to food safety and quality matters is described as a myriad of laws and regulations, whilst many regulations are cross cutting over several government departments. This state of affairs leads to ineffective policing of policies, uncoordinated application of legislation and dissemination of information.
NDA	NDA faces constraints of limited core personnel, heavy work load, and a high demand from clients and persistence of industry pressure groups wanting to utilize political factors in relation to influence technical issues
SABS	Industrial product standards are developed and monitored under the auspices of SABS. SABS faces the following constraints/challenges: (i) Funding is subject to competition with local research organizations (ii) though SABS' notification link to WTO works well, there is no effective mechanism for notifying South African industry of foreign technical regulations. The industry is therefore often late or ignorant of current information or draft regulations prevailing in other countries

Industry	Identified Constraints	Actionable Recommendations
Electro-technical	Electrical and electronic components appear to be well regulated by SABS. Challenges however still exist in this sector (i) formulation of compulsory specification can be fraught with difficulties because corporate competition creeps into the technical committee arena since technical expertise resides solely in the private sector. This explains why it took SABS technical committee 3350.7 five years to align its circuit breaker standards to that of the IEC (ii) the sector is quite susceptible to bans and TBTs – e.g. the EU ban on the importation of electronically regulated earth leakages, and the costs can be prohibitive (iii) Importing countries do not always adhere to IEC standards and testing. South African firms for example are obliged to test according to EU standards (iv) Other players like labor unions constrain the implementation of standards and market access. In Germany for example, local firms refuse to purchase foreign electrical components since their labor unions do not allow their members to install these products	(a) there is no simple solution to "corporate creep on standards development process in this sector. But there needs to be more attention paid to reducing delays in compliance (b) Promoting private sector participation in the harmonization of foreign standards is very important (c) developing appropriate dispute resolution processes and procedures for addressing bans and export boycotts is necessary to prevent the use of standards as protective instruments that limit trade
Forestry	(i) There is proliferation of regulatory responsibility in this sector. Forestry and its products are regulated by the Department of Water Affairs and Forestry (DWF), Department of Agriculture, DTI, and SABS (ii) South Africa has no specific Forestry Standards but the industry has developed its own Guidelines that dovetails closely with ISO14001. However, the draft criteria for standards and sustainability defined by the DWF's National Advisory Council is seen by the private sector as expensive and impractical because the compliance costs for meeting the environmental standards will hurt. This may jeopardize implementation if the interest of stakeholders are not catered for (iii) The Forestry Stewardship Council (FSC) certifies compliance. FRC requires compliance with South Africa's DWF guidelines, and exporting to major markets is becoming more difficult without FRC certification, especially in the UK. Reliance on a foreign certification body has cost implications, but there are recent initiatives to promote local certification through SGS and SABS Timber Department (iv) Total cost of compliance to foreign standards is generally unknown, but it can be prohibitive for SMEs. This is partly why South Africa is promoting group certification schemes	
Textiles	The main problem facing exporters in this sector is (i) stricter rules of origin in foreign markets. Exporters find it difficult to	

	cater for foreign markets that have origin requirements (ii) exporters of foreign textile products to South Africa also have problems meeting South Africa's stringent humidity testing requirements - with respect to thread and resistance to microorganisms	

Fisheries	This sector appears to be well regulated mainly by SABS as well as DOH, NDA, and DEAT. Enforcement also appears to be effective. The problems encountered in this sector are: (i) Negotiation of an MOA with the US market will take a while, though the US is satisfied, in principle, with the South African HACCP system (ii) Susceptibility to bans e.g. Italy banned fish imports in 1990 due to mercury content problems, while Spain banned fish imports in 2001 due to "parasite infestation". This is partly because different microbiological standards exist across countries. (iii) In 1994 however, there was an unwarranted ban of fish exports to France without adequate opportunity to prove compliance. The occurrence of such unwarranted shocks significantly affect the industry (iv) The EU does not allow aquaculture and mariculture products from South Africa perhaps because these industries are not yet well developed	
Fruit Industries	This sector appears to be well regulated, and private sector participation is very high. Major problems facing this producers in this sector are as follows: (i) South African growers have to comply with 2 certification systems. The absence of a say in setting of foreign regulations like the HACCP, ICM, and EUREPGAP. Many of the growers feel these regulations are out of line with domestic norms, and are enormously time consuming and unrelated to product quality e.g. rules relating to washing facilities and portable toilets. Only one grower was said to have complied with HACCP while most firms do not comply with EUREPGAP (ii) pesticide requirements from the EU. In South Africa, a lot of pesticides are not registered in the products of origin as required in the EU. This process requires 2 years of very costly trails, and depend on the economic importance of the targeted crop (iii) South Africa's pest/disease complex's encountered on deciduous fruit crops. Hence, the range of plant protection products of importance to South Africa differ from those of the EU. As a result, there may no be a call for MRLs for certain pesticide crop combinations that are of importance to the South African industry. The potential loss of several important MRLs in this manner will jeopardize the economic viability of producing deciduous fruits because the chemical industry looses the incentive to invest in data generation of MRLs – especially for crops with minor status that emerge from the EU MRL process. The emerging loss of certain actives regarding mite control is a germane example of the crisis inherent in this one-side development of MRL standards (iv) other packaging and quality constraints have also been found to limit the proportion of exportable products by about 40% (v) standards set in order to prevent spread of diseases from citrus to other producing countries and the paper work also appear to be trade limiting. The most formidable constraint referenced in the study was the regulation on fruits infested with citrus black spot (CBS) (vi) Language barriers were also found to be significant constraints to market access an bilateral negotiations – especially with countries like Japan	
Meat & Livestock	(i) slow processes associated with amending legislation have led to some frustration within the industry e.g. modern	

	abattoirs employ horizontal slaughtering systems which are not permitted in South Africa, though they are more efficient (ii) there are apparent double standards in implementing legislation e.g. larger abattoirs appear to be targeted for standards development and classification, while smaller ones are ignored (iii) few facilities in the industry are HACCP or ISO certified, however, the country has the capacity to audit them since there is a well developed traceability system (iv) there is need for a uniform national traceability system for beef for both local consumption and exports. Though the available traceability systems comply with international standards, exporters currently use different traceability technology which are not compatible nationally (v) quality control is a major problem in the South African leather industry. Hides and Skin are generally of poor quality, and damages are not detected before the wet-blue stage when considerable processing costs have already been incurred. Flaying and hide preparation practices appear to be substandard (v) the meat industry is generally unaware of the activities of the OIE and is not involved in the preparations of submissions (vi) South African representatives at OIE tend to be reactive, and lack of reciprocal communication about OIE requirement with the individual farmer. As a result there is a general lack of confidence in the agency, and farmers have little influence or contributions to OIE standards	

Uganda:

The Ugandan economy is still fundamentally agriculture based, though the share of other sectors in GDP is increasing. Manufacturing for example, increased by 4.4% between 1991 and 2001. The agricultural sector employs more than 80% of Uganda's population and accounted for more than 42% of GDP in 2001 (a decline from 55% in 1992). Exports from this sector accounted for over 80% of the country's export revenues in 2001. Though traditional exports products like coffee still dominate it's export sector, Uganda's diversification strategies have raised the share of non-traditional exports[5] (NTEs) from 14% in 1990 to 47% in 2000. Agricultural output comes almost exclusively from about 2.5 million small holders, about 80% of whom have less than 2 hectares of land each. Of this, food crop production is about 50% of agricultural GDP while cash crop accounts for about 16%. This predominance of smallholder farms, anchored on traditional farming and production techniques, has significant implications for Uganda's capacity to comply with international standards and access world markets - especially in food production.

Uganda's main trading partners are the European Union (EU) and the Common Market for Eastern and Southern Africa (COMESA) but it is gradually extending its trade linkages to the US especially through the AGOA framework. While Uganda's exports to COMESA have decreased from 26% in 1996 to 19% in 1999, exports to the EU has

[5] These include low value staples (e.g. maize, cereals, beans, animal products, and spices), and high value export crops (e.g. vanilla, fish, chilies, ginger, silk, oil seeds, vegetables, and pineapples, timber and wood products).

increased over time from 39% in 1995 to 59% in 1999. Thus as EU becomes a more important export market for Ugandan firms and farmers, restrictions to entry and/or incapacity to meet EU standards will become more critical to the country's export performance. It is therefore important to identify standards and regulatory constraints and challenges undermining the capacity of Ugandan firms and farmers to access foreign markets to maximize export potential.

The main industry constraints and action recommendations are summarized in the Table below:

Industry	Identified Constraints	Actionable Recommendations
Flowers Organizations and associations involved in the flowers sub-sector include UFEA, HORTEXA, Kawanda Crop Protection Dept.,	(i) Compliance in this sector is usually market driven, but growers are now faced with the challenge of adhering to European standards and technical requirements with respect to maximum chemical residue level expected to be enforced in 2003 (ii) though awareness of quality requirements is high amongst firm managers in this sector, it is low amongst unskilled growers (iii) Though there are once-a-month farm visits for inspection, monitoring , evaluation and certification by KCPD, there is no UNBS inspection and certification currently in place to distinguish between those complying with quality requirement and those who do not – perhaps due to UNBS' low capacity (iv) there are no internationally recognized quality assurance auditors necessary to certify and convince foreign consumers of the quality of Ugandan flowers (v) lack of certification serves as a disincentive for private investment in business infrastructure that will improve quality, hence Ugandan flowers are sometimes sold at discounted prices (vi) infrastructure and facilities to monitor standards are also very inadequate, for example, testing of residues is done by observing physical appearance of leaves rather than actual scientific testing (vii) cost of air freight significantly hinders Uganda's capacity to export over 50 other flower varieties as well as pot plants. UFEA has proposed to address this constraint partly by promoting the growth of pot plants and their exports as "cuttings"	(a) Technical assistance through the IDEA USIAD project has improved temperature management and general improvement in market arrival quality of flower products. Exporters now understand the importance of quality management and monitoring at all stages. This work needs to be continued (b) to complement the IDEA project, an awareness campaign is required to reach out to low skilled growers (c) capacity building both in technical assistance and equipment is necessary to strengthen the public institutions involved in enforcing standards. This should include an enhancement of their capacity for Pest Risk Analysis and Residue Levels, creation of a internationally recognized certification schemes, developing adequate transportation and packaging facilities etc.

Honey Organizations and associations involved in the honey sector is UHA (*National Apex Body in Apiculture*)	(i) Transportation constraints – honey from upcountry collection centers needs to be transported in refrigerated trucks, but such trucks are not available either through UHA or the private sector due to lack of funds. (ii) An upgrade/expansion of the current operational capacity of the UHA's honey processing center is necessary. This would include creating bigger storage space, improved temperature control system etc. This is estimated to cost US$170,000 (iii) there is little or no awareness of the international standards governing honey production and export among the Honey Association members in Uganda (iv) there are no established Uganda standards and regulations, or policy for the honey sector. UNBS efforts to create one were not successful due to lack of consultation with stakeholders (v) Regulatory framework and enforcement mechanisms are none existent (vi) Training of farmers, processors, and laboratory technicians in quality control practices, and acquiring necessary equipment at the farm and processing-export level is also necessary	(a) A training and resource center was established at Nakasongola with funding from NORAD. This center should be further enhanced to improve training of farmers, processors, and laboratory technicians in quality control practices, and to increase awareness of the importance and benefits of compliance to international standards within the sector (b) UNBS and the Ministry of Agric, Animal Industry, and Fisheries are jointly developing guidelines and a policy for the sector and have developed a proposal towards establishing national standards. (c) In addition, existing regulatory framework and capacity for monitoring residues in honey should be strengthened by encouraging broad-based consensus with stakeholders, and building capacity for national laboratories to analyze residues and implement quality management systems in collaboration with UHA (d) The provision of shared infrastructure facilities like storage centers, refrigerated trucks, and supporting firms and farmers with credit to acquire necessary equipment at the farm and export processing level (e) The feasibility study for improving the capacity of UHA's honey processing plant in Kampala to comply with food-safety ISO standards can be implemented. The costs of this upgrade are estimated at US$170,000

Fish Organizations and associations involved in the fish sector include the Department of Fisheries Resources (DFR) responsible for certification, UNBS and UFPEA	The Ugandan fish industry has experienced 3 bans in the 1990s. The EU inspections after these bans identified a number of problems including: lack of clear line of command since UNBS and DFR were both involved in monitoring fish standards, and; as a result, inspectors from DFR were unable to perform their duties; suitable laboratories for testing pesticide residuals were non-existent; most landing sites had not been upgraded and their facilities did not meet EU requirements and fish was handled poorly throughout the distribution chain. EU demanded a comprehensive monitoring program, which would determine levels of chlorine and organophosphate pesticides and their trace elements in fish, water, and sedimentation at the lake, and supported this process. The restructuring of the industry left DFR as the responsible agency for monitoring compliance. The fish sector is now deemed capable of monitoring and ensuring compliance to standards, but a continuous evaluation of this capacity is important to ensure Uganda stays in the list of exporters to the EU and other countries	(a) the principles adopted for restructuring the fish industry provide valuable insights on how horticulture and floriculture sub sectors can be strengthened. For example, in the fish sector, the USAID sponsored SPEED project is helping all UFPEA members to become ISO 9001/2 compliant by 2003 and to improve UFPEA ability to improve it outreach through a website, similar initiatives can be designed for the horticulture sub sector. (b) UNBS microbiology laboratory has been fully equipped and technical assistance was provided by UNDP and the government also invested US$180,000 for 2 years in a monitoring program on lake Victoria and recruited 10 inspectors to supervise fish production at processing plants. These initiatives need to be complemented by regional solutions to other environmental challenges in Lake Victoria that might affect quality of fish

Manufacturing (Textile Industry) Organizations and associations involved in the fish sector include UMA	(i) Awareness of the need and importance for process and product standards is still limited among stakeholders, hence application of standards is limited – especially in the local market (ii) considerable improvement is required at the micro-level – especially in the development of infrastructure the induces the adoption of standards that are conducive for SME growth (iii) Communication gaps exist between producers and consumers in the export markets. Hence producers do not fully capture the expectations of these consumers – especially in areas of safety and health related standards (iv) Enforcement of appropriate and accurate labeling of products – particularly ingredients of a given product, and bar coding has been largely unsuccessful (v) Enforcement of standards and associated sanctions of compromising firms is still generally weak (vi) given the already high costs of production and transportation prevailing in most African countries, there appears to be no price premium to investment in compliance in this sector. This serves as a strong disincentive. This is aggravated by the prevailing cheap imports of second hand goods – especially in the textile industry. (vii) SMEs need financial assistance to establish the necessary infrastructure systems that will enable development and implementation of quality systems tailored to different markets. This is partly because some standards in some manufactured products differ by country hence making it difficult for SMEs to service various international market segments (viii) In the textile industry, only limited interaction occurs between UNBS and textile firms and producers. The promotion of standards within the industry is also very limited and weak	

Horticulture Organizations and associations involved in the Uganda horticulture industry include HORTEXA	(i) Maintaining steady supply for some horticultural produce is challenging given the organic nature of Ugandan farming practices in this sector. This however also makes these products desirable (ii) Quality control in handling and packaging remains a big challenge (iii) Most farmers are not well aware of international standards governing their produce (iv) Enforcement and monitoring is done at 2 levels – a coding system at the farm level, and, pre-shipment stage done by SGS. It is likely that sub-standards produce that escapes the first stage may easily make it to the export market (v) Quality standards in export markets can sometimes be difficult to meet, and may require diverse kinds of grading and packaging for different customers. Thus lack of facilities like automated graders and packers makes such tasks quite laborious, costly, and sometimes inaccurate (vi) Horticultural exporters are loosely organized under HORTEXA (in liaison with UEPB). This constrains HORTEXA's ability to coordinate broad based services. Both organizations also lack funding to carry out their activities (for example, publicity and awareness campaigns, developing business linkages between producers and export markets etc (vii) farmers are also constrained by limited capital needed to adopt better farming systems (viii) there is also insufficient staff technical staff at UNBS to provide supervisory services prior to harvesting (ix) inadequate harvesting, cooling, and packaging facilities increase processing time, hence, limit the capacity of farms and farmers to meet requirements in big export markets (x) Meeting packaging and grading requirements remains challenging for operators in this sector due in part to availability of required equipment and expertise for these services (xi) business development and export promotion services that help firms and farmers to identify, inform, communicate and build business relations with potential foreign customers are also found to be weak. This constrains their capacity to penetrate new markets (x) In a land-locked country like Uganda, the lack of efficient land/rail transport and logistics infrastructure poses a significant challenge to farmers in this sector because bad (and usually time consuming) transportation facilities/means constrain their ability to supply clean and damage-free horticulture products	(a) Improve capacity of UNBS to provide technical assistance in liaison with HORTEXA (b) Provision of soft loans to farmers in co-ordination with HORTEXA to improve farming practices and acquire better processing equipments (c) HORTEXA in collaboration with IDEA project has facilitated several training sessions for its members. However, the impact of such training may be minimal due because HORTEXA does not cover all horticultural exporters, and its links to its members are somewhat loose. (d) development of better sorting, grading, packaging and storage systems, as well as improvement of pre-harvest monitoring systems and equipment is necessary to ensure quality and competitiveness of Ugandan horticultural exports (e) development of better business linkages and marketing strategies through trade fairs and other trade promotion activities (f) increased involvement of HORTEXA in the sector strategy and development activities since the association has direct links to the farmers and firms

Coffee Organizations and associations involved in the coffee industry include, UCDA, KARI, SGS, ACE,	(i) Some of the constraints identified include: aged coffee trees, prevalence of pests and diseases (e.g. coffee wilt), over supply in international markets with relatively inelastic demand leading to low prices, poor harvest handling methods at farm and primary processing level. Low prices act as further disincentive against investment in better crop husbandry (ii) Liberalization of the industry led to increased involvement of inexperienced private sector players that compromise quality. This is exacerbated by the fact that compliance to codes of practices is voluntary, enforcement is weak, and penalties for non-compliance are not severe (iii) Enforcement is weak due to unclear mandates amongst regulatory agencies at the production and primary processing levels. There is need to decentralize quality monitoring at the countryside to local authorities. This would requires a new statute to be put in place to clarify the roles of various stakeholders in the process (iv) Current price incentives and penalties for non-compliance are inadequate. For example, penalty for none compliance to standard practices in the industry is equivalent to a deduction of 2 out of every 70kg of coffee. This low cost of non-compliance encourages the production of low quality coffee	
Organic Products (coffee, cotton, sesame, cocoa, vanilla, and horticultural products)	(i) Uganda's traditional farming and production techniques are said to be consistent with rules or organic production, and its farmlands are said to be free from chemicals, however, certification services are still limited and costly. This creates significant revenue losses to the farmers since price premiums on organic products tend to be high and stable. For example only 20% of the organic cotton and sesame produced in 2001 were sold as organic products. (ii) other challenging factors include high costs of monitoring, market identification and development	(i) Excluding certification costs, organic farming seems to be a very viable option for SME growers in Uganda due to the relatively small scale and less chemical use in agricultural practices already prevalent in the country. So the development of an SME scheme to support small organic producers in inspection and certification of their products (e.g. through group certification schemes, creation of regional certification agencies to reduce dependence and high costs of international accreditation etc)

The most prominent public institutions involved in standards setting in Uganda include the Uganda Export Promotion Board (UEPB), Uganda Coffee Development Authority (UCDA), Ministry of Tourism,, Trade, and Industry (MTTI), WTO desk in the MTTI, Uganda National Bureau of Standards (UNBS), the National Environment Authority (NEMA), the Sanitary and Phytosanitary Inspection Services (SPIS) and Private Sector Foundation (PSF). Private organizations such as SGS, ACE, TQM, and other producer/exporters' associations also contribute to the standards development landscape. The constraints facing these institutions are highlighted below:

Agency	Identified Constraints
SPIS Regulates inspects & plant products for importation and export	(i) Inadequate staffing – For example, SPIS serves only 11 government gazetted custom entry points out of 28 required. (ii) infrastructure facilities are unavailable – For example, only visual inspection are carried out at the border points due to lack of laboratory space and equipment. DANIDA is already addressing this but with little focus on HR development (iii) organization of standards and quality assurance, pest risk analysis, and sanitary control at the farm and firm level is particularly challenging in the horticulture sector (iv) coordination between SPIS and customs requires strengthening to prevent exports of unauthorized consignments
UNBS (Apex Body) Promotes, reviews, monitors, & amends standardization in health and safety activities	(i) Does not have permanent enforcement and monitoring units and facilities at district and lower levels. This creates a communication gap between UNBS, producers, consumers, and other stakeholders (ii) Has set up a microbiology laboratory and upgraded 2 other laboratories from US$3 million assistance from UNDP/UNIDO. Four of its other laboratories still seek international recognition and are constrained by lack of equipment and financial resources to commence accreditation process. Overall estimated cost of restructuring all 4 laboratories is estimated at US$12 million. Accreditation of laboratories is expected to drive down certification costs facing Ugandan firms and farmers e.g. costs of shipment of samples for testing abroad is expected to reduce by US$2000 for a representative firm (iii) Lack of staff – for example, about 130 technical staff is required but only 50 are currently available for its laboratories (iv) Inspection of existing facilities such as testing laboratories is rare (v) sanitary conditions particularly in food processing are inadequate except for the fish sector
Others	(i) There is limited capacity (both infrastructure and technical personnel) in most institutions responsible for the setting, monitoring and enforcing standards in the country. There are some efforts underway to harmonise standards across the region mainly the East African community (EAC) and COMESA which may reduce costs of enforcement of compliance with standards (ii) requirements for compliance to standards is largely being spearheaded by producers mainly for export markets, and therefore applies to a small proportion of production. This limits producers from taking advantage of economies of scale and scope in terms of standards development and compliance that would be the case if standards requirements were uniformly applied to output irrespective of the market (iii) there is limited awareness of the nature and existence of standards (at varying levels[6]) among producers particularly on international standards. However some sectors have attempted to develop and enforce standards in form of codes of practice which demonstrates the willingness to comply with standards and appreciation of the importance of standards by producers and exporters (iv) enforcement of standards is more at the export level yet the standards or quality control should start right from the first point of production through the production chain and distribution system (v) inspecting, monitoring and certifying local firms with international recognition are limited and acquiring these services from foreign firms is very expensive for most producers. There are considerable cost savings if local firms are accredited for certification to the level of other international standards-setting bodies. UNBS and other government agencies responsible for developing and enforcing standards are inadequately funded and understaffed, therefore they do not perform to the expectations (vi) incentives for compliance with standards are still weak in some sectors such as coffee but strong in other sectors for example in fish and flowers where no sales can be made without meeting the standards.

[6] For example, the level of awareness about standard requirements is greater in the case of fish compared to the horticultural sector.

Appendix 2

Some recommendations for follow on in Kenya:

1. Commodity/product production support projects which may include the following sub-components

    a. *Cotton Seed Development Facility* – This project will seek to develop a good cottonseed development and distribution system that ensures provision of quality seed to Kenyan farmers. It could provide assistance to small farmers through provision of inputs for cotton production, and to KARI for the development of better cotton varieties. The project could also provide required technical assistance to farmers to help in disease and pests control.

    b. *Textile Products Development Project* - This program could focus on empowering cotton farmer organization/textile producer groups to improve cotton and textile quality through the use of better ginning technologies. The project will develop a mechanism for providing credit to farmers for cotton production linked to ginning, facilitate investments in better ginning technologies, and provide technical and financial assistance to upgrade manufacturing technology and equipment in the textile industry. A second component could involve providing technical assistance to strengthen Kenyan's policy making and regulatory apparatus. The project will also support the development of appropriate strategies to enforce laws that will encourage compliance to international standards for both textile exports and imports.

    c. *Fisheries Quality Management Scheme* - Will support the Kenyan Government and AFIPEK in the development of landing beaches particularly along Lake Victoria. This should be a project for all stakeholders (donor agencies, Kenya Government, fishermen and processors) involved in the industry and can be built on the on-going community based activities to improve sanitary and hygiene standards at the landing beaches. The project could provide technical assistance and programs to increase awareness on hygienic practices especially on fish handling at the beaches during processing amongst fishermen, exporters, fishing associations and agencies. A credit facility could also be established for small fish producers to invest in better fish handling gear and support facilities that will foster better forward linkages to large fish exporters.

    d. *Good Agricultural Practices Program* - Strengthen the capacity of the horticulture sector to utilize input options and production processes that will empower Kenyan farmers and small growers meet international standards for maximum residue limits in vegetables, fruits, and flowers. The project will also strengthen forward and backward linkages between small growers and large-scale exporters of horticultural produce in Kenya. It may also include a credit component that will provide the resources for horticulture producers to purchase better inputs, recruit better personnel to advise on good agricultural practices; and a grant component to develop central/shared facilities (e.g. centrally located refrigerated pack-houses for cooling, cleaning, and sorting out produce). This program can built on USAID-Kenya's planned programs on horticulture, which are aimed at linking small producers to domestic super markets. The total cost of the project will vary with the number of regions selected. Funds can be channeled to producers through farmers' organizations such as FPEAK and KFC.

    e. *Kenyan Coffee Project* - This coffee program should focus on strengthening farmers' associations in coffee processing. This program can be built on the past World Bank assisted coffee projects, which reorganized the coffee industry and monitoring agencies,

and funding farmers through cooperative societies. Components of this project should include funds to farmers as production credit and some funds to coffee societies for investment in processing factories.

2. Public sector support projects:

a. *Kenya Trade Standards Improvement Project*: Will design and implement programs that focus on supporting public institutions in formulation, development and implementation of standards in Kenya. It will directly address institutional weaknesses in export and import certification systems; inadequate testing capabilities including international accreditation; improve information and communication systems amongst monitoring agencies and the private sector, step-up standards awareness campaign, and facilitate better capacity for pest risk analysis and surveillance programs for pests, diseases, chemical residues, food safety. The programs will provide better access to information on international standards requirements. The Ministry of Trade and Industry has identified the required activities, which are outlined below:

Some recommendations for follow-on in Mozambique:

1. *Mozambique Standards Framework Support Project* – to support the development of a modern SQAM (Standards, Quality Assurance, Accreditation, and Meteorology) including development of technical regulations and related standards for agriculture commodities and livestock production, as well as health and food safety. Most of Mozambique's national standards in these areas are outdated. The project could support the following activities: (i) revision of current technical regulations and identification of the international standards underlying agricultural commodities and livestock production (ii) develop national standards in alignment with international norms (iii) provide training & awareness program to producers respective agency representative (iv) draft & revise the technical regulations related to health & food safety (v) update and develop standards & code of practices related to health & food safety (vi) review and propose updates and new legislation for the National Quality System, National Quality Advisory Council, INNOQ (vii) support the development of an internationally acceptable accreditation infrastructure (viii) develop legislation on Metrology (ix) design and implement a standards adoption program in collaboration with INNOQ that will give the agency improved infrastructure for its functions, review and strengthen its organizational skills, train staff and technical committees, and support translation of international standards-related documents (x) identify mechanisms to support Mozambique's participation in SADC SQAM, ISO, IPPC, OIE, CODEX, and OIML meetings

2. *Mozambique Standards Research Project* – This could focus on strengthening regulatory and research institutions under MADER, MIC, and MISAU. It will address the dearth of human and financial resources that constrains these organizations. The project will: (i) strengthen research and regulatory capacity of DSV and DINAP (focal points for OIE and IPPC) (ii) Equip MADER's laboratories and research institutions, and establish quality control systems (ISO 17025) (iii) provide training, technical and financial assistance to DSV and DINAP to improve participation in OIE and IPPC, (iv) Train MIC, MISAU, CHAEM, and LNHAA department staff on regulatory competence (v) establish quality control systems in CHAEM and LNHAA

3. *Quality Awareness Campaign* – This program could be designed to help producers and consumers alike to understand the need and importance of improving product quality. It should also encourage industry participation in national as well as international standards development activities. Activities could include workshops and seminars gear toward private-public sector participants; support for professional and social organizations and associations across key sectors; preparation of quality manuals, video, and campaign materials; continuation and enhancement of the annual Mozambique "Quality Week"; supporting the development of relevant content and insights in Mozambique news broad sheet "Qualitema"; strengthening participation of producers in international meetings, perhaps through stronger participation in meeting of established key

contact points; developing more efficient mechanisms for dissemination of key market requirements. Performing these activities would require technical and financial assistance to INNOQ to determine capacity and scope for equipment, personnel, marketing, training, and management of several institutional players in the country.

4. *SADCA Accreditation Support Program* – This program could assist with the setting up of a National Focal point for accreditation under SADCA framework; develop a basis for implementing a world recognized National Accreditation Capabilities System designed to provide accreditation services to laboratories, certification bodies, and inspection agencies operating in Mozambique; provide formal job training for accreditation auditors to work with partners accreditation bodies in SADC countries

5. *SQAM Information & Management Training Center* – This center is needed to enhance data gathering, knowledge management and information dissemination research groups, stakeholders, local and international standards agencies in Mozambique. Activities of the center should include: upgrading library facilities on standards; establishing a modern and effective database that will enhance the collection of national and international standards and quality management documents – including video training aids. The Center should also strengthen TBT and SPS enquiry points, and enhance capacity for notifications of new technical regulations. Managerial activities of the center should include: provision of complementary professional services to national and/or foreign certification bodies on adapting international best practices into the Mozambican environment; deliver short-term training courses on quality management system for laboratories according to ISO17025; deliver short-term training courses on standardization, quality principles, quality systems, environmental management systems, quality and environmental auditing, metrology etc.

Some recommendations for follow-on in Nigeria:

1. *Information Exchange Center*: The Information exchange center is to serve the purpose of accessing and disseminating standards and technical regulations that may be relevant to the different commodity sector. This project can be located in the MAN and NACCIMA Secretariats in the six geopolitical zones, each secretariat specializing in the product that the zone has comparative advantage in production. A list of equipment that would be required in one zone include:

a.	10 sets of Desktop Computers	N900,000
b.	Internet Connectivity	N1,000,000
c.	Personnel cost for (2years)	N500,000
d.	Contingency (10%) of total cost	N240,000
Total cost		N2,640,000

To make the project sustainable, after a year in operation, user fees should be charged.

2. *Upgrading of Facilities in Public Standards Agencies*: SON and NAFDAC need to strengthen their standards-oriented activities. For them to perform effectively their regulatory functions, their facilities required upgrading to meet modern standardization process including conformity assessment, and testing and certification procedures, while they could even serve the West African markets. As a matter of priority, NAFDAC in particular has identified the provision of modern laboratories. The project would cost about N50 million Naira to supply the laboratory equipment for the sea food laboratory, food compliance laboratories, radiation laboratory and drug laboratory.

3. *Skill Development for Small Holders*: The skill development program for small holders to produce to meet required international standards will involve training of small scale producers through extension and field officers by SON, NAFDAC and other standards related agencies in the Federal and State Ministry of Agriculture and Health. It is however, difficult to put a fixed cost on this program but a guess estimate will be in the neighborhood to N250 million over a period of five years in the five-commodity sector studied.

Some recommendations for follow-on in South Africa:

1. *Develop a Management Information System (MIS) for Regulatory Services (Initial emphasis on NDA)*: This project could support the creation of a database with the following functionalities: (i) inspectors/auditors to capture data in the field on hand held computer technology, and in a pre-established templates either inspection form or audit form (ii) communication of data of each inspection and audit via landline or modem or telecom to a central database (iii) data to be recorded and managed automatically. Data collection is thus fast and consistent and the process consolidation, retrieval, analysis and communication is streamlined (iv) templates of protocols or product standards to be set up according to the standards set in legislation and must be automatically updated on all systems (v) guidance notes to be added, to assist in interpretation where necessary (vi) generate reports automatically (vii) invoicing to be automated (viii) facilitate comparison of data over time, across audits and between audits, to allow for in-depth analysis and performance monitoring (ix) benchmarking and risk scoring within audits, to enable the managers to respond to changing conditions with strategies based on clear presentation of available data (x) flagging of a client to determine next audit according to monitoring program or if the client

2. *Improve, Maintain And Enhance SPS Related Information To Ensure Sustainable Market Access*: This could have the following components:
    a. Registration of agricultural remedies in the case of minor uses in line with GLP and EUREPGAP. This will involve: development of data by means of supervised trials and GLP (good laboratory practices) in support of the registration of agricultural remedies in the case of minor uses of agricultural remedies and generic agricultural remedies; and, an awareness and training program to all producers with regard to good agricultural practices and food safety
    b. Surveillance and listing of pests (imports and exports) - Pest lists are confirmed and updated to enhance international trade and to ensure sustainable market access
    c. Surveillance of microbiological contamination of agricultural products, specifically fresh produce
    d. Development, evaluation and implementation of identification and mitigation techniques for organisms. This would include the development of new pest identification techniques to ensure a quick and accurate identification and ensure that regulatory activities do not affect the timely conveyance of cargo and cost effectiveness

3. *Design and implement a program to ensure that meat and dairy products intended for human consumption on the local market is free from residues of antibiotics*: The program will designed to facilitate testing of imported meat and dairy products for residues of antibiotics in an attempt to monitor this risk, and maintain the benefits these drugs confer on human medicine and agriculture

4. *Develop National laboratory approval program* to validate the competency of laboratories responsible for ensuring that meat and dairy products are safe for human consumption. This must be done to provide a credible independent system to verify that laboratories are competent to carry out tests required to verify hygiene of production

5. *Market Access Program South African animals and animal products:* This program will facilitate: reception, sorting and storage of all the samples; ensure that establishments that take part in the program have a sufficient supply of sampling equipment and packaging materials; train personnel responsible for collecting the samples in the correct procedures to take, wrap and dispatch them; ensure that establishments are regularly informed as to which samples they are required to take; improve management of all related data

6. *National Department of Health (Directorate: Food Control) Support Programs*: This program would include:

a. Milk Hygiene (monitoring) - A survey based on sampling of fresh milk offered for sale to the consumer analyzed for prescribed microbiological indicators to assess the status of fresh milk in respect of compliance to national legal standards
b. Aviation food survey (monitoring) - A survey based on sampling of food served to passengers on international flights analyzed for specific selected microbiological indicators to assess status of food in question in fulfilling the Department's responsibility in terms of the International Regulation Act.
c. Aflatoxin in peanut butter and peanuts program – define a program to reduce aflatoxin levels in peanuts and peanut butter to meet critical need for food safety requirements of consumers
d. Codex Participation Support - This program will investigate ways of improving participation in Codex meeting; and facilitate provision of training to government, industry, consumers and other stakeholders on Codex Alimentarius
e. Food Control Display Unit - Develop and design a display unit to be used to communicate the role of the Directorate in respect of setting national standards. This will help communicate the role and importance of food control to other stakeholders

7. *Develop Measurement Practice Improvement Guide for Small & Medium-sized Firms*: The objective here will be to improve measurement accuracy in SME manufacturing firms. The project will: assess the importance & relevance of measurement in the SME markets; assess the capability of firms capability against the importance of measurement in the SME's market; and suggest actions to improve measurement capability. Both the National Physical Laboratory in the United Kingdom as well as the Mexican Metrology Institute have used similar toolkits to assist SMEs.

8. *Deployment of Rural Mobile Metrology Units*: This will provide measurement capabilities in rural and under developed areas to SME's that have not, traditionally had access to advanced measurement capabilities. The National Metrology Laboratory has just completed a mobile metrology unit for Mozambique (funded by UNIDO). This rugged piece of equipment, which also houses sleeping quarters, is mounted on a truck chassis, four wheel driven and designed for both on and off-road use. The truck has been tested to military specifications and can withstand almost any conditions. It can house calibration equipment for any of the main measurement disciplines such as force, mass, temperature, flow, volume, etc. Accurate measurement is a key component in supporting the legal system (occupational health and safety, etc.), Protecting the consumer (everyday trade weights and measures in mass and volume) and supporting fair trade and competitiveness in industry. Nigeria has already expressed an interest in purchasing two of these mobile units whilst PTB in Germany will probably fund the purchase of a unit for Ethiopia.

9. *Development of an HIV/AIDS System Management Standard for Organizations*: Creating a National HIV/AIDS Management Standards to provide organizations with standard protocols that will guide their policy on designing and implementing HIV/AID programs is very crucial. This can be channeled through a Technical Committee that will: seek an interview with the Presidents AIDS Council; gauge the need for such a standard in the industry and public sector; create a specific National Technical Committee (working group) to develop a draft standard, and thereafter a national standard; a certification system could be developed; embark on a national awareness campaign; engage the SADC role players in this effort. This would cost about R445,000.

10. *Development of Standards for Crafts and Cultural Artifacts in South Africa*: This project will tie in with the Presidential Imperatives, as it forms part of human resource development, the empowerment of rural communities, and will contribute to job creation. The indigenous arts, crafts and cultural artifacts, are an informal activity practiced by many rural people. A large number of these artifacts find their way into foreign countries as souvenirs, thereby inadvertently, achieving export status. Research and development is needed to improve the quality and safety of these products (ensuring materials used do not pose a risk in transmitting diseases). Poor quality goods and imitations, could further damage the reputation of this industry. It will inform people of the benefits that these standards will have on the improvement of their products. Typically standards will be developed to address aspects such as the treatment procedure for raw materials, type and

durability of materials used, sustainable use of materials, etc. Indigenous craftsman and entrepreneurs will participate in the project, covering a wide range of activities. These include the physical manufacture of products, such as arts, carving, pottery, weaving, beadwork, ceramics, paper making and production of charcoal. Natural products such as wood, grass, leather, bone and sometimes blood and gall, are used. Steel, modern textiles as well as materials such as plastics and rubber are also used frequently. Interior and exterior decorating is also practiced commercially, both in African and Western style. Non-tangible, socio-cultural products such as traditional drama, and music, are more difficult areas to venture into. A Crafts and Cultural Artifacts Focus Group has been established by the SABS Standards Development Division during 2001. This focus group will provide guidance on how to proceed on these projects. Once identified, R&D projects could be executed.

11. *Development Of Better Research On The Benefits Of Standardization In South Africa*: The aim of this study is to determine the economic benefits derived from Standardization in South Africa, and will be based on an assessment of the following Industry sectors: Mechanical, Transportation and Civil engineering; Electronic and Electrotechnical; Chemical and Biological sector; Fibre Technology; Information Communication Technology; Systems Management Standards; Consumer sector. The benefits gained by these Industry sectors will be assessed to obtain information on the impact of standards on: Growth of the different industries; Competitiveness of South African industries; Empowerment of Small, Micro and Medium sized enterprises; Regulatory enforcement; Regional and International trade.

12. *A Video Conference Facility To Facilitate The Activities Of SADCSTAN*: The objective is to ensure that the video conferencing facility is set up in such a way that all member states have access to the facility. This may require the installation of special ISDN lines in certain instances. SADCSTAN's objective is to promote the coordination of standardization activities and services in SADC, with the purpose of achieving harmonization of standards and technical regulations. There are currently more than 27 standardization projects for harmonization and agreement has been reached among SADC member states to advance the first eleven projects to the final Draft Harmonized stage. However, the process of harmonization has been very slow mainly due to member states' delegates failing to participate in technical committee meetings because of financial constraints. There is a need to improve communication between SADC standards bodies. Travel and subsistence costs are very high and most member states have limited travel budgets to afford to send delegates each time to attend numerous technical committees. As more and more projects for harmonization are identified, this has put a lot of strain on member states and has slowed the pace for harmonization of standards. It's for this reason that the first harmonization projects that were identified have taken more than three years to be finalized. A regional video conferencing facility would, therefore, greatly facilitate the standards development process and speed up the harmonization of SADC standards.

Some recommendations for follow-on in Uganda:

1. *Uganda Coffee Improvement Project*: This could provide assistance in the following areas: institutional support, applied research, legal and policy formulation, internal organization, and logistics management to producer and exporter private organizations, public institutions, and local authorities involved in the coffee industry to provide production and financial support services to grassroots coffee producers. Such services will encourage small producers to adopt better crop husbandry and production processes that would strengthen forward linkages in the coffee sector, assist primary producers on the pragmatic uses of applied research in dealing with aged coffee trees or pests and diseases (e.g. coffee wilt), improve the legal framework and policy incentives for compliance to international standards, and curb unfair trade practices that impinge on the quality of coffee.

2. *Uganda Flower Certification Program*: The establishment of an independent and internationally recognized/reputable organization to implement activities related to monitoring, inspection, and

certification for compliance with standards in the flower sector. This should build upon the current arrangement where UFEA organizes and contracts a medical doctor to test and monitor the effects of chemical use on the health safety of workers in the flower production. The organization (in collaboration with UFEA) will establish integrated testing certification procedures, and pilot group certification schemes amongst small growers, backed by appropriate infrastructure to distinguish between those strictly complying with quality assurance and those who do not, especially at the points of exit (e.g. airports). It will also champion the development of input control options with flower producers and exporters to ease adoption and compliance with standards, and provide support services for good practices in flower production.

3. *Uganda Small Growers Development Fund*: Will establish a supervised demand-driven grant/loan facility for private small flowers and fruits producers to invest in equipment, tools, and processes that will improve product quality to meet the expectations by standards monitoring agencies and export markets. This should include a re-organization of the small farmers into groups such that targeted support programs and monitoring can be designed and easily delivered in a cost effective manner. This should complement current technical assistance from IDEA that has enabled the flower industry to achieve better temperature management and general improvement in the market arrival quality of flower products.

4. *Uganda Agricultural Research Services Project*: Design research programs in the area of, logistics management, crop husbandry, and extension services that will promote the export of other flower varieties (e.g. pot plants and papyrus reeds) within the industry. This component should build upon the 52 flower varieties on trial at the research laboratory center at the UFEA headquarters, pilot marketing chain development and processing conditions in line with the required international standards for each variety.

5. *Uganda Textile Quality Management and Business Development Program*: could focus on improving textile quality control points, and improving monitoring and surveillance systems. This component should also address on policy options and pragmatic approaches to deal with the issue of substandard second-hand clothing and textiles that crowd out local demand in Uganda. A quality control and surveillance systems will anchored on a business development program that will improve management capacity and use of IT in UTGA to improve information gathering and dissemination of global textile market intelligence, develop strategic business partnering programs with foreign counterparts, and improve extension services to its local member companies. Under this program, UTGA, in collaboration with relevant UNBS officers will deepen industry awareness about international standards e.g. requirements, opportunities, and implications of specific initiatives like AGOA. These campaigns will highlight the necessary product and quality standards necessary to access specific textile markets. These campaigns must also be anchored on supervised demand-driven credit programs that will encourage private investment in upgrading textile production processes and technologies.

6. *Standards Awareness Campaign*: This program could be designed to educate and increase awareness of unskilled workers and local producers at the grassroots level, on good practice of workers' health, product quality, and the environment. Conduct an awareness campaign to raise the level of information and establish an environmental education program that conform to good practices in each sector under review. For example, in the flower sector, fertilizer and chemical quality information, and dissemination of successful pilot activities which have tested better flower quality production systems and monitoring at the local producer levels. Best practice information derived from other relatively more developed sectors (like the horticulture industry) would be incorporated into the campaign.