REPORT

Volume 2

TANZANIA

Diagnostic trade integration study

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ABBREVIATION AND ACRONYMS

ACP	African Caribbean Pacific
ACPC	The Association of Coffee Producing Countries
ADC	Agribusiness Development Centre
AGOA	Africa Growth and Opportunity Act
APDF	IFC's African Project Development Facility
ATC	Air Tanzania Corporation
BET	Board of External Trade
BOO	Build-Own-Operate
BOT	Bank of Tanzania
BRC	British Retailer Consortium
BSE	Bovine Spongiform Encephalophaphy
C&F	Carriage and Freight
CBPP	Contagious Bovine Pleuropneumonia
CCRF	Clean Report of Findings
CED	Customs and Excise Department
CEM	Country Economic Memorandum
CEO	Chief Executive Officer
CET	Common External Tariff
CIDA	Canadian International Development Agency
COMESA	Common Market for Eastern and Southern Africa
CPI	Country Performance Index
CRMS	Customs Risk Management System
CTI	Confederation of Tanzania Industries
DAI	Development Alternatives Inc
DANIDA	Danish International Development Agency
DFID	UK Department for International Development
DP	Development Partners
DRC	Democratic Republic of Congo
DTIS	Diagnostic Trade Integration Study
EAC	East African Community
EASC	East African Standards Committee
EBA	Every But Arms Initiative
EDP	Export Development Project
EIB	European Investment Bank
EPA	Economic Partnership Agreement
EPOPA	Export Promotion of Organic Products for Africa
EPZ	Export Processing Zone
ERP	Effective Rates of Protection
ESA	Eastern and Southern Africa
ESRF	Economic and Social Research Foundation
EU	European Union
EUREPGAP	Euro-Retailer Produce Working Group Good Agricultural Practices
FAO	Food and Agricultural Organization
FDI	Foreign Director Investment
FIATA	International Federation of Freight Forwarders' Association
FMD	Foot and Mouth Disease
FOB	Free on Board
FPEAK	Flower Producers and Exporters' Association of Kenya
FTA	Free Trade Agreement
FY	Fiscal Year
GAP	Good Agricultural Practice
GDP	Gross Domestic Product
GMP	Good Manufacturing Practice
GOT	Government of Tanzania
GSP	Generalized System of Preferences
GTZ	German Agency for Technical Cooperation
HACCP	Hazard Analysis Critical Control Point Program
HBS	Household Budget Survey
HCDA	Horticultural Crops Development Authority
IDEA	Investment in Developing Export Agriculture
IDF	Import Declaration Form
IF	Integrated Framework for Trade-Related Technical Assistance to Least Developed Countries
IFI	International Finance Institution
IFOAM	International Federation of Organic Agricultural Movements
IITC	Inter-Institutional Technical Committee
IMF	International Monetary Fund
IMTC	Inter-Ministerial Technical Committee
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
ISO	International Standards Organization
ITC	International Trade Center
ITF	Input Trust Fund
JITAP	Joint Integrated Technical Assistance Program
JKIA	Jomo Kenyatta International Airport
KADCO	Kilimanjaro Airports Development Company
KEDS	Kenya Export Development Services
KIA	Kilimanjaro International Airport
KLM	KLM Royal Dutch Airlines
LAFTA	Latin American Free Trade Association
LDCs	Least Developed Countries
LVFMP	Lake Victoria Fisheries Management Project
LVFPAT	Lake Victoria Fish Processors Association
MBP	Millennium Business Park
MCM	Ministry of Cooperatives and Marketing
MCT	Ministry of Communications and Transport
MD	MacDonald Douglas
MDG	Millenium Development Goal
MFAIC	Ministry of Foreign Affairs and International Cooperation
MFN	Most Favored Nation
MIS	Market Information Systems
MIT	Ministry of Industry and Trade
MNRT	Ministry of Natural Resources and Tourism
MOAFS	Ministry of Agriculture and Food Security
MOE	Ministry of Education
MOF	Ministry of Finance
MOH	Ministry of Health
MOU	Memorandum of Understanding
MPS	Milieu Project Sierteelt
MSC	Marine Service Company
MSY	Maximum Sustainable Yield
MWLD	Ministry of Water and Livestock Development
NAFTA	North American Free Trade Agreement
NAMA	Non-Agricultural Market Access
NAO	National Authorizing Office
NBS	National Bureau of Statistics
NCT	National College of Tourism
NDC	National Development Corporation
NETT	National EPA Technical Team
NGO	Non Governmental Organization
NMB	National Microfinance Bank
NRDC	Natural Resources Development College
NSGRP	National Strategy for Growth and Reduction of Poverty
NSSF	National Social Security Fund
NTP	National Trade Policy
NTPTC	National Trade Policy Technical Committee
OECD	Organization for Economic Cooperation and Development
OIE	World Organization for Animal Health
PER	Public Expenditure Review
PESA	Private Enterprise Support Activity
PHS	Plant Health Service
PIP	Pesticide Initiative Programme
POPP	President's Office, Planning and Privatization
PORALG	President's Office Regional Administration and Local Government
PRSC	Poverty Reduction Strategy Credit
PRSP	Poverty Reduction Strategy Paper

PSD	Private Sector Development
PSI	Pre-Shipment Inspection
PTC	Permanent Tripartite Commission
REER	Real Effective Exchange Rate
REPOA	Research on Poverty Alleviation
RETCOS	Regional Transport Companies
RFB	Road Fund Board
RNE	Royal Netherlands Embassy
RSA	Republic of South Africa
RTA	Regional Trade Agreement
SACCO	Savings and Credit Cooperative Organization
SADC	South African Development Community
SANAS	South African National Accreditation Services
SBE	Single Bill of Entry
SECO	Swiss State Secretariat for Economic Affairs
SEDA	Small Enterprise Development Association
SEDO	Small Enterprise Development Organization
SEZ	Special Economic Zone
SIDA	Swedish International Development Corporation
SME	Small and Medium Enterprises
SOP	Standard Operating Procedures
SPEG	Sea Freight Pineapple Exporters of Ghana
SPS	Sanitary and Phyto-sanitary
SQMT	Standardization, Quality Assurance, Metrology and Testing
SSA	Sub-Saharan Africa
SUMATRA	Surface and Marine Transport Regulatory Authority
SWOT	Strengths, Weaknesses, Opportunities and Threats
TAA	Tanzania Airports Authority
TAHA	Tanzania Horticultural Association
TANEXA	Tanzania Exporters Association
TANROADS	Tanzania National Road Agency
TANZAM	Tanzania Zambia Pipeline
TAP	Tax Administration Project
TASTA	Tanzanian Seed Trade Association
TAZARA	Tanzania Zambia Railway Authority
TBS	Tanzania Bureau of Standards
TBT	Technical Barriers to Trade Agreements
TCAA	Tanzania Civil Aviation Authority
TCCIA	Tanzania Chamber of Commerce, Industry and Agriculture
TEU	Twenty Equivalent Unit (20 feet container)
TEVETA	Technical Education, Vocational and Entrepreneurship Training Authority
TFDA	Tanzania Food and Drug Authority
TFPA	Tanzania Fish Processors Association
THA	Tanzania Harbor Authority
THRS	Tengeru Horticultural Research Station
TIC	Tanzania Investment Centre
TICTS	Tanzania International Container Terminal Services
TLA	Tanzania License Act
TPO	Trade Promotion Organization
TPRI	Tropical Pesticide Research Institute
TRA	Tanzania Revenue Authority
TRC	Tanzania Railways Corporation
TRIT	Tea Research Institute of Tanzania
TTPP	Tanzania Trade and Poverty Program
UFEA	Uganda Flower Exporters Association
UK	United Kingdom
UNCOMTRADE	United Nations Commodity Trade
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
UNIDO	United Nations Industrial Development Organization
US$	United States Dollars
USA	United States of America
USAID	United States Agency for International Development
VAT	Value Added Tax
VEK	VEK Adviesgroep
VETA	Vocational Education and Training Authority
WCO	World Customs Organization
WITS	World Integrated Trade Solution
WTO	World Trade Organization
ZEGA	Zambia Export Growers Association

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1. AGRICULTURAL EXPORT CROPS

The agriculture sector is central to GOT's objectives of achieving sustained economic growth and reducing poverty. Agriculture contributes to 50 percent of GDP and over 80 percent of employment. Around 80 percent of the poor reside in rural areas.

Analysis of Tanzania's poverty profile (Volume 1, Chapter 1) indicates that households involved in cash crops are less poor than other rural households. Since almost all cash crops are exportable, boosting agricultural growth through boosting agricultural exports would be particularly important for poverty reduction.

The importance of agricultural export growth to long-term economic growth is supported by the very successful experience of the newly industrialized countries in East Asia. Korea, Malaysia, Taiwan and Thailand which have had rapid economic growth and also large agricultural sectors, have also tended to have rapid growth of agricultural exports. This has led some researchers to view export-led growth as part of an economic growth cycle that begins with exports of primary goods. Over time, economic growth and knowledge change the structure of the domestic economy, which propels the more technology intensive domestic industry to begin exporting.[1]

In addition to directly raising the incomes of farmers, increase in agricultural exports can also raise the incomes of non-farm workers. As will be discussed in the cashew section of this chapter, there is good potential for increasing the production of manually processed cashews for exports, which could generate significant employment for the local population.

Furthermore, increase in agricultural exports can also help raise incomes and reduce poverty through the strong linkages they have to the rest of the economy—both compared to some other African countries as well as compared to urban light manufacturing in Tanzania itself. One study of five African countries found that the average income multiplier for an increase in rural household incomes was 2.47; the income multiplier for export crops in Tanzania was even higher at 3.0.[2] Another study found that the spin-off benefits arising from the demand for consumption goods and services in the surrounding economy, and hence employment or income-generation opportunities for others, are 80 percent for export agriculture while only 20 percent for urban light manufacturing in Tanzania[3].

There is potential for Tanzania to boost its agricultural crop exports, given their much higher levels in the past (Figures 1.1 and 1.2). The liberalization of Tanzanian agricultural sector since the mid-1980s, with food crop marketing liberalization starting in 1985 and export crop marketing liberalization starting in 1993, together with rising international prices, had resulted in increases in agricultural crop exports during the first half of the 1990s. Since then, such exports

[1] Mitchell and Baffes (2002b).
[2] Delgado et al (1998).
[3] World Bank (2000).

had fallen, in part due to the decline in international commodity prices, but there were also specific problems for individual crops, as will be discussed in this chapter.

Figure 1.1: Agricultural Crop Exports (US$m)

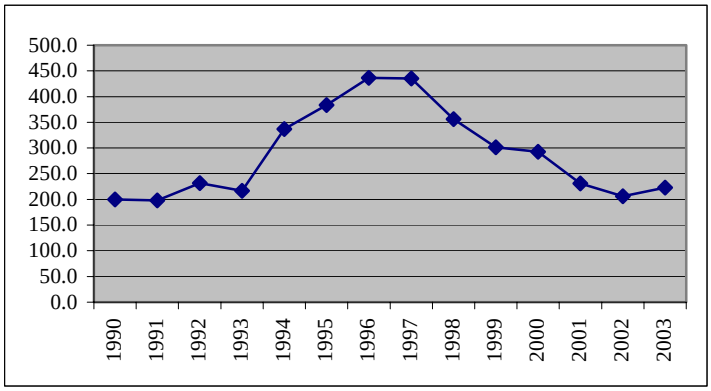
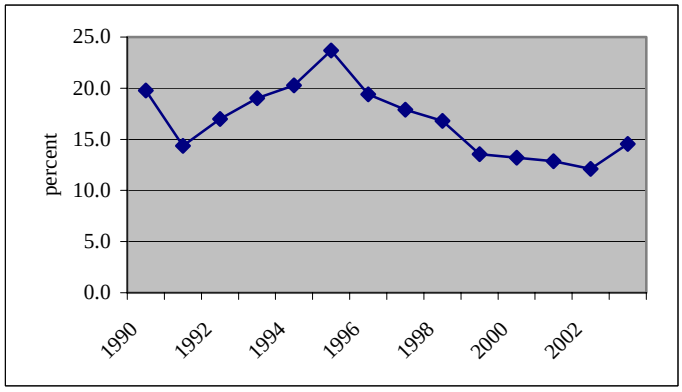


Figure 1.2: Share of Agricultural Exports in Agricultural GDP

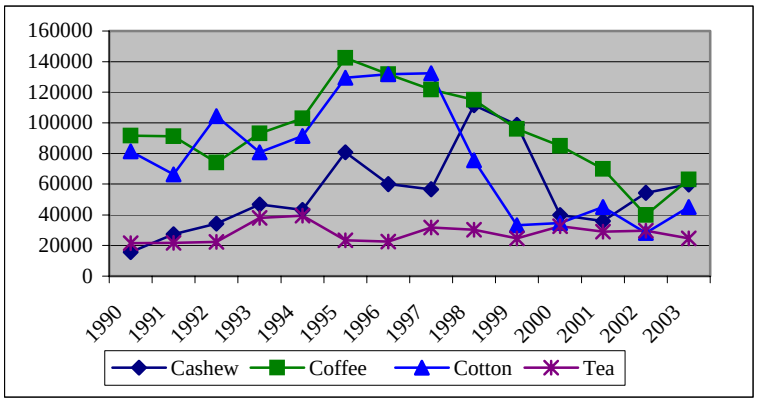


Exports of major crops began to recover in 2003 (Figure 1.3). Some of the increases appear sustainable and holds the promise of further increases (cotton and tea), while others (coffee and cashew) may signal nothing more than a good harvest, due in large part to favorable weather conditions, and a modest recovery in international prices. Policy problems remain in a number of crops, especially coffee and cashews, while policy reforms in tea and tobacco have begun to benefit smallholders. The rest of this chapter will analyze the performance of each of Tanzania's major export crops—cashews, cotton, coffee and tea—and identify policies and constraints that need to be addressed to boost their performance. It will be shown that even in the current environment of declining international commodity prices, which has affected all of Tanzania's major export crops, there is still potential for the country to increase its agricultural exports if the domestic supply constraints facing these crops are tackled.

Among the supply-side constraints, four stand out as cross-cutting ones that affect all the export crops analyzed: the role of the crop boards, and excessive taxation, weak agricultural support services, and price volatility. Crops boards were formed after the marketing liberalization to replace the monopoly of Market Boards for export crops. They were expected to continue with many of the regulatory, reporting and service activities of the former Market Boards, but have retained limited responsibilities in marketing when the private sector was not active. A legislation introduced in 2001 dramatically expanded the powers of the crop boards, which now

have virtually unlimited powers to regulate the industry. They have been intervening in ways (see discussion below for specific crops) that distort the markets and harm the farmers. Funding for the crop boards is from a cess on crop exports levied on producers (which varies across commodities), but the crop boards have not always worked in the interests of the producers. Crop boards need to be restructured, with its functions confined to representing industry, while production, marketing, transportation, storage, processing and input supply activities should be left to the private sector, and regulation, data collection, and extension should be done by the Government.[4] There is also a need to strengthen producers and farmers' associations; technical assistance for capacity building would be needed in this regard.

Figure 1.3: Major Agricultural Crop Exports ('000 US$)



Source: All data except for tea from UNCOMTRADE, partner country imports.
Data for tea from GOT.

Export crops are heavily taxed, in part because taxes are sometimes levied at points of transit, as well as original sale. Taxes on export commodities are roughly 20 percent of sales prices. Local taxes are collected as a cess on volumes, which mean that per unit tax rates are a much higher percentage of total price in low-price years than in high-price years—the opposite of what is desirable. Local taxes remain high despite a directive from the Prime Minister's Office that District Cess should not exceed 5 percent. Taxes have been renamed rather than reduced to bypass this directive, and overall local taxes have not declined. Local municipalities have the authority to pass new levies without oversight from the central government. Heavy taxation has resulted in negative nominal rates of protection and hence a negative incentive to production. There is a need to rationalize and lower taxes, and also to harmonize them across the different crops in order not to distort production incentives. As a first step, a moratorium should be put on new taxes.

A third cross-cutting issue is the need to improve support services to the agricultural sector. In particular, research and extension needs to be strengthened with a view to responding to market demands.

Fourth, all these agricultural commodities—as others—are afflicted by price volatility, with attendant effects on rural incomes. Government interventions all over the world in past decades to reduce risks in markets for internationally traded commodities had turned out to be ineffective and unsustainable. Further, many of these interventions had actually impeded growth because governments that sought to protect producers also tended to tax them. This had led to the

[4] See World Bank (2004) and Mitchell (2003).

abandonment of commodity market interventions both at the national and the international levels. However, the need for risk management remains, especially since the inability of the poor to effectively deal with shocks often lies at the core of their poverty.[5]

The primary international markets for hedging against price movements are futures and options markets for commodities such as coffee.[6] However, significant barriers stand between these risk markets and the risks faced by farmers due to issues of scale, information, and enforcement mechanisms, among others.[7] Some mechanisms have emerged to extend price risk markets, such as warehouse receipt or inventory financing systems.[8] Under these systems, inventory owners place their crops in certified warehouses and enter into a repurchase agreement with the warehouse company, which then offers a loan based on the value of their inventories. When price futures, options, or related markets are available (as in the case of coffee, for example), warehouse companies can use the markets to hedge the value of the inventory collateral. In Tanzania, the World Bank is exploring the potential of linking small-holder coffee and cotton growers to the international financial markets by providing training and education on risk management concepts, and assistance in closing the market gap for local institutions which want to pilot the use of futures and options (see Box 10.1 in Volume 1).

1.1. CASHEWS[9]

Background

Between 1960 and 1970, Tanzania was the second largest producer of cashews in the world, behind Mozambique. By 2002, it had fallen to fourth in ranking due to both a decline in domestic production, as well as increased competition from India, Brazil and Vietnam. In 2002, Tanzania produced 92,000 tons of raw cashews, making up around 8 percent of world production, behind India (350,000 tons), Brazil (180,000 tons), and Vietnam (140,000 tons).

Tanzania is the fourth largest exporter of raw cashew nuts in the world. In 2003, raw cashew exports from Tanzania amounted to US$59.8m., around 5.2 percent of world exports, and behind India, Vietnam and Brazil, which contributed 34, 21 and 12 percent of world exports, respectively. Cashew exports were the second largest agricultural crop exports from Tanzania in 2003, behind coffee.

Cashews are important for poverty reduction. They provide an important source of income for some 250,000 smallholder farmers in Tanzania, who account for 98 percent of cashew production in the country. Cashews are especially important in the southern coastal region, where the districts of Mtwara, Lindi, and Ruvuma account for 80-90 percent of Tanzania's marketed cashew crop. These are also three of the poorest districts in Tanzania, where cashews are often the main source of cash income for poor farmers[10].

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[5] World Bank (2001).
[6] Such exchanges also trade contracts for cocoa, maize, soybeans and soybean products, sugar, wheat, and some livestock.
[7] In the Kilimanjaro region, the World Bank has started pilot projects to explore the potential of linking small-holder coffee growers to the international financial markets via their coffee cooperatives or local agricultural credit institutions or banks.
[8] A warehouse receipt system is being introduced in Uganda, supported by the EU.
[9] Discussion in this section is drawn from Development Alternatives (2003), Technoserve (2003), Mitchell (2004) updated in 2005, and World Bank (2004).
[10] Mitchell (2004).

Compared with most other agricultural commodities, cashews are attractive commodities for smallholders in Tanzania, as well as one of the best opportunities Tanzania has to export agricultural commodities in the global economy. Few crops offer better demand growth prospects, and Tanzania has a revealed comparative advantage in the production of cashews.

Developments in the sector

In the late 1980s, cashew production in Tanzania suffered from a near-collapse due to increasing financial difficulties of the cooperative unions and the Tanzania Cashew Marketing Board, which resulted in large quantities of unsold nuts at the farm or village level at the end of the buying season. Cashew factories were operating at a loss, and 9 of 12 factories closed between 1985 and 1990. Local authorities contributed to the problems of the factories by preventing cashew shipments between factories which would have facilitated processing.

Cashew production made a major recovery in the 1990s, rising from 29,900 tons in 1990 to 122,000 tons in 2000, due to three factors. First is the increase in producer prices which resulted from the large depreciation of the real exchange rate and the privatization of marketing. Between 1985 and 1994, the real effective exchange rate depreciated more than 80 percent. Privatization of marketing in 1994/95 resulted in an influx of private sector buyers, introducing competition and raising the fob prices received by farmers from 30-40 percent paid by the Cashew Marketing Board prior to liberalization, to 60-65 percent. Between the mid-1980s and the mid-1990s, real producer prices for raw cashew nuts tripled. Farmers were also paid on time and in cash after liberalization, compared with several month delays under the regulated marketing system. Second is the export of raw nuts rather than local processing, as the latter had turned out to be unprofitable. Third, the exporting of raw nuts also meant that farmers were paid more quickly and could afford to apply sulfur dust to control powdery mildew, which increased yields.

Export volumes rose around 20 times between 1990 and 1998, from 7,400 to 165,000 tons. World prices fell sharply after 1999 (between 1999 and 2001 export unit values of cashews from Tanzania fell 40 percent) due to large crops in major exporting countries (India and Brazil, although large crops in Mozambique, Vietnam and Tanzania also contributed). This was accompanied by declining volumes of cashew exports from Tanzania of about 40 percent between 1998 and 2001.

World market conditions

World demand for processed nuts is about 176,000 tons per year and is expected to grow by 4.6 percent per annum over 1998-2010 (in constant prices), compared with 7.1 percent per year during the 1990s. The U.S. leads developed country importers, taking 45 percent share of world imports during the 1990s. Other major developed country importers are France, the Netherlands, Germany, U.K. and Japan which together with the U.S. absorbed 75 percent of the world's processed cashew imports.

Cashews have a favorable position among the world's agricultural commodities, with more rapid growth in world import demand, higher relative prices during the past decade, and lower price volatility than most other commodities. Although recent developments in the world cashew market were not favorable, the longer term prospects for world cashew prices are favorable because of the rapid growth in import demand in Europe and the U.S. Cashews are a premium nut in high-income countries because they contain 10-20 percent less fat than other nuts, most of it unsaturated, which is preferred by health-conscious consumers. The large differential in per capita consumption between Japan and most European countries, compared with the U.S., suggests considerable opportunity for increasing demand in Japan and Europe. The relatively

high price elasticity of demand for cashews in Europe points towards considerable opportunity for increasing demand through price competition.

India is the leading importer of raw nuts, importing 320,000 tons a year as well as the leading exporter of processed kernels. Most (93 percent in 2003) of Tanzania's raw cashew nut exports are destined for India. Being able to enter the world market without going through India will be an important goal for Tanzania. Tanzania also faces stiff competition with upcoming production improvements in new producer countries such as Vietnam, which may destabilize the Indian export market. Both these factors point to the need for Tanzania to develop its domestic cashew nut processing capacity to enter the world market for processed nuts. This requires that Tanzania addresses certain domestic policy and institutional issues to enhance both raw as well as processed cashew production.

Main domestic issues

Role of the Cashew Board

The Cashew Board needs to refrain from interfering in the domestic marketing of cashews. In 2000/01, the Cashew Board announced an indicative price that was way above world market prices, and urged farmers to withhold from selling to exporters for less than the indicative price. It also issued a regulation requiring exporters to use sisal bags in place of the traditional jute bags, with the objective of developing the local sisal industry (this regulation was overturned two months after its introduction). These interferences resulted in the delay in sales of cashews by farmers to exporters, the deterioration in the quality of cashews exported, and lower prices for the farmers.

Despite the detrimental effects of these earlier interferences, the Cashew Board is continuing with such behavior. It has set an indicative price, and has advised farmers not to sell cashews for less than this price. Exporters to India are currently paying the indicative price because of strong demand in India, but local processors cannot compete with these prices. Development of the local processing industry is hindered by such interferences. Further, harvesting by alternative cashew suppliers in West Africa (Guinea Bissau) in early 2005 will lead to price declines and problems selling at the indicative price.

The recommendations are that the Cashew Board does not announce indicative prices or regulations that relate to private sector activities; that it does not make statements about the fairness of private sector prices; and that it does not lead farmers to believe that it will buy their crops. Also, the Board should not estimate export prices on which it then collects export levies. Instead, export levies can be based on an international price such as the UK daily spot kernel price. Further, the composition of the Board, its fee structure and activities should be reviewed. The large fees collected by the Board from exporters have resulted in little benefit to the industry. Such funds should be used to provide services to producers that are of a public goods nature (such as expanding research into improved plant materials and production techniques) or to provide inputs to producers at lower costs through bulk purchasing. The Board should also be directly accountable to producers, who pay for its operation through their levies.[11]

[11] See World Bank (2004) for details.

Quality

There is a need to reverse the decline in export crop quality which has occurred since the marketing liberalization of 1994/95, and which is reflected in the decline in average export unit value of 14.8 percent from the pre- to post-liberalization period compared with other Sub-Saharan African countries. This requires changes in the grading system, and improvements in post-harvest handling and storage.

Regarding the grading system, the abandonment of the grading of cashews since liberalization has led to a lowering of both the quality and the average price of nuts exported. In the absence of a grading system, nuts that would have previously been rejected are now purchased and exported. This reduces the price that traders in Tanzania and importers in India (the main export market for Tanzanian raw cashews) will pay for nuts because they do not know the quality. It also reduces the incentives for farmers to produce high quality nuts because they receive the same average price regardless of quality. Further, it deprives local workers (mostly women) of wages for sorting and grading. Finally, the unsorted nuts do not store well because wet or rotten nuts contaminate good nuts.

One solution to this problem is to have nuts graded through an auction sale, with each sale lot (truck load) sampled before the auction. This would provide an incentive for producers to grade nuts and to let buyers know the quality of each lot before purchase. Sampling and grading could be done by auction officials, with the costs of grading deducted from the sale price.

The reasons for poor post-harvesting handling and storage need to be understood. If farmers are unaware of proper storage procedures, extension services could help. If farmers lack proper storage areas, then primary societies might be able to help by leasing storage facilities. And if the pricing and grading system do not discourage poor handling and storage practices, that needs to be corrected along the lines discussed above.

Taxes

Cashews are perceived as a cash crop to be taxed, providing revenues to all levels of government, from the municipalities to the central government. Table 1.1 highlights the range of taxes collected on the marketing channels for cashews. In total, the taxes account for an average of 22 percent of fob earnings for cashew exports per year (in US dollar terms). This is not supportive of the local industry for it to compete favorably with other cashew nut producing countries, although the revenue is used to keep other elements functioning in the region. Further, taxes are collected on gross sales rather than gross margins or profits, which unfairly penalizes producers during low-price years when returns are already low. Taxes also vary district by district, which creates uneven incentives and encourages producers to transport their products to neighboring districts to avoid high local taxes. Much of the taxes go to the upkeep of the closed factories as well as salaries of staff that oversee the upkeep of these closed factories.

The levies need to be rationalized in terms of the points at which they are collected, as well as in terms of their application in the development of the sector. An important consideration is that many of the taxes are charged up front, which add cost to exporters well before they get paid by ultimate buyers. In a market where the cost of market exceeds 20 percent, this adds substantially to the cost of doing business.

There has been a positive recent development on this front. In March 2005, a 5-year memorandum of understanding (MOU) was signed between MOAFS, MIT, MOF, MCM, the

Ministry of Local Governments, the Association of Nut Processors, the Cashew Board, CTI, and Technoserve (a U.S.-based NGO) to abolish unnecessary taxes, levies, cesses, and other charges that increase the cost of cashew processing. Implementation of this MOU is important for promoting the cashew processing industry and exports of processed cashews.

Table 1-1: Levies and Taxes for Cashew Sub-sector

National Level Levies	Comments	Total in 2002/03 (US$)
CBT Export Levy	3% FOB	1,262,379
CIDEF Contributions	Tsh 11.3 per ton	477,149
Phytosanitary Certificate	Tsh 1.05 per kg	86,564
Port Charges	Tsh 21 per kg	1,731,280
CBT District License	Tsh 60,000 per district/buyer/year	
Regional, District, and Village Level		
City Levy	Tsh 1.98 per kg	163,233
District Council Levy	Tsh 10,000-20,000 per district	
Primary Co-operative society levy	Tsh 6 per kg	494,644
District Business License	Tsh 180,000-200,000 per district	
Produce Cess	5% farm-gate value (Tsh 200,000-300,000 per district)	1,497,557
District Development Levy	Tsh 25 per kg	6,122,128
Education Fund Levy	Tsh 4-10 per kg*	
Sports Fund – District & Regional**		
Sherehe Regional Occasions Fund**		
Sherehe District Occasions Fund**		
District Inputs Fund**		

Source: Development Alternatives (2003).
Notes: * depends on the number of districts one buys from ; ** vary from district to district.

Input Supply

The collapse of input credit schemes (managed by former Cooperative Unions) brought on by marketing liberalization in the 1990s has resulted in difficulties for farmers to obtain inputs necessary for cashew production. These difficulties are aggravated for farmers in more remote locations. Rural traders in remote locations do not have access to credit lines for input supply, nor the necessary capital required of them to order inputs in bulk. Farmers end up getting inputs such as sulphur dust (important for averting cashew nut fungus disease) very late and through inefficient means (such as traveling at least 150 km to the nearest source of inputs) which creates serious market inefficiencies.

There are emerging input supply models for addressing such problems. One model is the Tunduru Farmers Input Trust Fund (ITF). Under this ITF, cashew farmers make voluntary contributions into a common fund to purchase agri-inputs. Each contributing member is given a passbook which indicates the savings they have made towards the purchase of inputs as well as draw-downs against the fund. The fund is typically managed by a secretariat employed by the ITF members and these staff manage the procurement and distribution logistics of the agri-inputs.

However, the ITFs have had mixed success, and accountability of office bearers to the contributing farmers are highly questionable within the ITFs.

Financing production

Farmers have difficulties obtaining financing for farming and pre-marketing production activities. Most farmers finance through own savings, or through village lenders, traders, or input suppliers. Past repayment performance has often been poor, which severely limits the number of farmers who can obtain credit. The problem of financing production costs is not unique to cashew producers in Tanzania. It is a problem throughout the region, and a good solution has yet to be found.

Replanting

Tanzania has a good climate for cashew nut production, especially in the southern coastal region bordering Mozambique. However, most of the trees in Tanzania are old, and yields are relatively low. The Research Station in Mtwara developed new clones in the early 1990s that are faster maturing than traditional varieties and yield twice as much, but they have not been widely adopted. The feasibility of a more aggressive replanting program should be investigated.

Increasing international demand for Tanzanian cashews

There is considerable scope for increasing the growth of world demand for Tanzanian cashews by advertising and price competition. Per capita consumption in France and Japan is less than a quarter of that in the U.S., and half that in Germany and the UK. Advertising may be a viable option to increase demand in selected importing countries and a new way to improve export prospects for Tanzania. There may be a role for donor assistance here. A pilot project could be undertaken to test the response to advertising and the willingness of donors to support such an activity.

Domestic Processing

Cashew processing is most successfully done manually by skilled workers, while efforts to mechanize the process have generally been unprofitable compared with low-wage manual labor. Because of this, the mechanized processing facilities that Tanzania had invested in[12] during the 1960s and 1970s had never been productive. In their best years, they operated at 10 percent of capacity; most of them have been closed for years. Eleven of the 12 government factories are not operational, and the twelfth is operating at a fraction of capacity, leased by a private processor. Only 15-17 percent of the nuts are processed. The other 83 percent is exported in raw/unprocessed form, most of which to India for processing to supply India's domestic and export markets. India is the world's largest exporter of processed nuts, at 95,000 tons, with Brazil and Vietnam being the only other major exporters with 38,000 and 77,000 tons each.

The huge reliance on the Indian market exposes Tanzania to the risk of being displaced by other cashew nut producing countries in Africa, as well as by India itself. But prospects of diversifying from the India market are limited. Should the India market collapse, the farmers engaged in cashew production will have very little in terms of crop diversification options. Development of domestic processing capacity would help diversify this risk. The world price of raw nuts compared with processed nuts indicates that it is potentially profitable to process the nuts than to

[12] Supported by the World Bank and other donors.

sell them in raw form. Implementation of the MOU mentioned earlier should help the development of the cashew nut processing industry by the abolishment of unnecessary taxes and charges that raise the cost of processing.

Small and medium processors are developing in Tanzania but their processed production is still negligible compared with the country's cashew nuts production. Four private sector firms are currently operating with a combined processing capacity of 6,600 tons of kernels per year, producing a total of about 3000 tons of kernels per year. The cashew processors are currently supplying diversified markets including the U.S., Japan, UK, Netherlands, South African and Canada. The kernels that are exported to South Africa are used as raw material which goes into higher value marketed product.

Developing a domestic processing industry will take time, as the investments, skills, systems and marketing capacity will need to be put in place. A positive recent development on this front is the introduction by the Swiss Government (the State Secretariat for Economic Affairs (SECO)) of a program to develop processing capacities in the Mtwara and Lindi regions.

In addition, measures should also be taken to attract entrepreneurs and provide business support. Attracting entrepreneurs would require:

- Developing prospectus materials that outline the opportunity in cashew processing and detailing the issues and risks
- Assisting entrepreneurs with development of business plans

Also, a program of business and technical support should be developed for new and existing entrepreneurs. This should entail:

- Training workers in hand processing techniques
- Training entrepreneurs without significant manufacturing experience in labor and financial management
- Building market linkages for individual processors
- Creating an industry forum to disseminate best practices and global industry perspective

There is also an opportunity to promote community-based processing of cashews in conjunction with the private sector. India's competitiveness in processing is in high labor-intensive home based technologies. The local industry can also adapt in that direction. There are already examples of home based processing with good results. A mechanism to expand that kind of low cost technology can be promoted by linking these home based industries with exporters.

1.2. COFFEE[13]

Background

Coffee is Tanzania's largest export crop. In 2003, export earnings from coffee amounted to US$63m., making up around 6 percent of total merchandise export earnings. While this represented a recovery from the 2002 level (thanks to recovery in international prices), it was only about one-third of the level reached in 1995. More favorable weather and better prices led to a production increase of an estimated 40 percent in 2004/05, although the overall trend of production remains stagnant, in no small part due to domestic policies (see later).

[13] Discussion in this section is based on Baffes (2004a), with updated information provided by Mitchell (2005).

OECD countries constitute the bulk of Tanzania's export markets. In 2003, 80 percent of Tanzania's coffee exports went to OECD countries. The top destinations were Germany and Japan, which imported 28 and 25 percent, respectively, of Tanzania's coffee exports.

Coffee plays an important role in poverty reduction. More than 7 percent of the total population in Tanzania depend on their income directly from the coffee sector.[14] Only around 10 percent of coffee is grown in estates, while nearly 90 percent is grown by smallholders on average holdings of 1-2 hectares, providing employment for some 400,000 families.

Tanzania produces about 800,000 60 kilogram bags, or 0.7 percent of world output. About two-thirds is mild Arabica, and the rest is hard Arabica and Robusta. Arabica is grown in the Arusha and Kilimanjaro regions in the north, and the Mbeya and Ruvuma regions in the south. Robusta is grown in the lake zone—mainly the Kagera region. Almost all of Tanzania's coffee production is exported through the Moshi auction.

World Market Conditions

World price prospects for coffee are poor despite the low level of coffee prices, because global production capacity far exceeds current demand. Part of the increase in production in recent years came from Vietnam, which has emerged as the dominant coffee producer, following Brazil. But Brazil has also increased production and has contributed to the imbalance.

Given the rapid expansion of coffee supplies during the past decade, international coffee prices are unlikely to return to the high levels experienced during the mid-1990s. Furthermore, during the last decade, per capita coffee consumption in North America and Western Europe—where more than half of coffee is consumed—has declined. Thus, coffee prices are likely to remain weak and this places increased pressure on Tanzania to produce high quality coffee which will find a buyer even in an overall weak market (see also discussion in Volume 1, Chapter 7). This also underlines the urgency for Tanzania to correct the policy distortions that have been introduced into the coffee sector in recent years, as will be discussed later in this chapter.

Developments in the sector

The coffee sector underwent marketing liberalization in the 1990s. In 1993, the private sector was allowed to participate in the marketing and processing of coffee, and government control in pricing was further reduced. In 1994-95, private buyers could, for the first time in 30 years, purchase and process coffee in their own factories, effectively taking market share away from cooperative unions.

A key impetus for the reforms in 1994 was the declining share of export price received by growers, which was reversed by the reforms. Between 1985/86-1993/94 and 1994/95-1998/99, the average producer's share of Arabica export price rose from 60 to 73 percent, and that for robusta from 59 to 69 percent.[15] The reforms also substantially reduced the delays in payments to coffee growers.

However, the supply response for coffee was limited. There was a 13 percent decline in production between 1985/86-1993/94 and 1994/95-1998/99. Mild Arabica production fell nearly 20 percent while production of hard arabicas and robustas increased by about 10 percent, which

[14] Rutihinda (2004).
[15] The actual increase varied according to the prices used and the periods considered in the calculations, see Baffes (2004a).

means that the supply response occurred for the latter but not the former. The difference is explained by: the old age of some of the Arabica trees in the Arusha area; the drought in 1996/97 and El Niño in 1997/98 which affected mild Arabica much more than robusta and hard arabicas; the coffee berry disease which was more damaging to the older mild Arabica plants; and the 3-4 year delay between new plantings and first harvest.[16]

The quality of coffee has deteriorated, in part due to reduced input use resulting from reduced input credit and the removal of input subsidies after liberalization. Prior to the reforms, the unions (or the Coffee Board)—the monopsony buyers of coffee—had provided credit for inputs to the framers. The reforms had broken this link between inputs and coffee sales and, because of the high default rates (the unions frequently had to be bailed out by the government), credit was only available to very few creditworthy growers. One survey found that only a quarter of coffee growers used purchased inputs after 1994.[17]

On the positive side, many private estates have undertaken extensive rehabilitation, including replanting, since the mid-1990s. Some nationalized estates have been privatized, such as in the Kilimanjaro area. The future of the estates look promising, with a government report acknowledging that Tanzania's best coffee comes from private estates and a few progressive farmers.

New marketing channels have developed. In 1998/99, 67 percent of coffee were marketed by private buyers, 7 percent by estates, compared to only 6 percent by estates and no private buyers in 1994/95. Two-thirds of the private buyers are vertically integrated exporters that buy coffee from growers, process it in their own factories, and export it themselves.

There has been a tremendous increase in processing capacity. Before 1994, there were 4 union-owned coffee processing factories, with a combined processing capacity of 34 tons an hour. There are now many more processing factories (at least 12 have been built since 1993), and the combined coffee processing capacity has more than doubled to 72 tons an hour (40 for Arabica and 32 for robusta), which also means that coffee factories now operate at an average of one-quarter installed capacity. The excess capacity was due to two reasons. First, following the 1994 reforms, unions either did not allow private traders to use their facilities or charged them high fees, so private traders built their own instead. Second, private traders prefer to build new factories that use new technology which produces higher yields at lower cost.

In sum, the reform process has not been totally successful or complete, and new problems have emerged. Among the key constraints are taxation, excessive involvement of the state, and the mandatory nature of the coffee auction. These are discussed next.

Main Issues

Taxation

Taxation of the coffee sector is too high and the tax code too complicated. Overall taxation rose after 1994. In 1998-99, taxes as a share of producer prices were 21 percent for Arabica, and 28 percent for Robusta.[18] With several taxes taking the form of flat fees, the effective tax rate rises

[16] Temu et al (2001) found that demand for coffee planting materials increased from 0.5 million seedlings in 1996 to 13 million in 1999.
[17] The Farm Management Survey carried out by the Economic Research Bureau of the University of Dar Es Salaam.
[18] Based on prices reported in GOT's tax report; see Baffes (2004a).

when world prices decline. Although traders and exporters are eligible for refunds of value-added taxes, in practice refunds could take as long as year, and sometimes they never materialized (either because the traders or exporters give up or because they failed to present all the necessary paperwork). Further, taxes are applied on the export or auction price, which means that producers may not cover their expenses during periods of low world prices.

The recommendations are: substantially reduce taxes; simplify the tax code; and consolidate, rationalize and make uniform taxes across all exports (crops and merchandise). This will introduce a more equitable distribution of the tax burden, and help raise the competitiveness of the sector (Uganda, for example, do not tax their coffee sectors).

Licensing

In a reversal of the liberalization policy, GOT suspended the buying licenses of private traders during the 2000-01 and 2001-02 season to bolster the co-operative unions which had incurred a large exposure from buying coffee from farmers and holding it as world prices collapsed. This resulted in lower prices (even after accounting for the decline in international prices) and delayed payments to producers; unrecorded exports to neighboring countries (such as Uganda and Burundi) which reduced tax revenues and contributed to corruption; co-operative unions handling other commodities demanding similar interventions; and reluctance of entrepreneurs to move back into the sector, let alone expand their activities.

Further, the Coffee Board issued a 'one license regulation' just before the start of the 2002-03 season in the Western coffee zone, limiting applicants for private coffee buying, coffee processing, or green coffee export licenses to just one of these licenses (an exception is given for the combination of private coffee buying and coffee processing licenses). The regulation is clearly designed to help the co-operative unions increase their marketing share at the expense of private traders. Also, a moratorium has also been introduced on new licenses for the construction of coffee curing factories, in an apparent attempt to save the co-operative and government ones from losing further market shares. Finally, there is a requirement that all primary processing must be done in the farm, which lowers the quality of coffee as farmers only have antiquated equipment. Allowing traders and coffee estates to purchase cherry coffee will increase the use of modern processing facilities and enhance the quality of coffee.

The recommendation is to re-examine the Coffee Board's licensing procedures. Licenses should not be issued or suspended in response to requests by the co-operative unions or the Ministry of Co-operatives. Licenses should be renewed automatically and subject to a modest fee to cover administrative costs, not treated as a tax tool.

Coffee auction

All coffee output is sold through the Moshi coffee auction, a statutory body managed and run by the Coffee Board.

The mandatory nature of the auction increases marketing costs tremendously. Coffee owners have to store the coffee at board-certified warehouses, deliver samples to the auction, have a representative present at the auction to repossess the coffee, and go through extensive paperwork. The process can take as long as 8 weeks. During that time, the coffee owners incur storage costs, administrative expenses, foregone interest earnings (had the coffee been liquidated), and the risk of an adverse price movement.

Apart from efficiency gains, elimination of the requirement that all coffee go through the auction will enable coffee traders to market Tanzanian coffee through neighboring countries, especially Kenya and Uganda. Both countries enjoy considerable premia for their coffee (mild Arabica and robusta). Moreover, a substantial portion of Tanzanian robusta is already exported to Uganda.

The recommendation is that the coffee auction should be made voluntary. This will substantially reduce the costs of vertically integrated exporters and estates that have the capacity to market the coffee themselves. It will also enhance cross-border trade so that Tanzanian coffee growers can enjoy the robust and mild Arabica premia enjoyed by their counterparts in Kenya and Uganda.

Discretionary power of the Coffee Board and Ministries

The buying procedures are still tightly controlled by the Coffee Board. For quality control purpose, each year the Board announces the date on which coffee buying should commence. However, the specifics on coffee harvesting are an issue that should concern only the growers and traders, not the bureaucracy.

The Board and the two line ministries (Ministry of Agriculture and Food Security and Ministry of Co-operatives) still have too much power. For example, the latest Coffee Industry Act (2001) stipulates that "The Board shall have the power to do anything which in the opinion of the Board is calculated to facilitate and enhance the proper exercise of the functions of the Board…" Furthermore, the fact that the selection of the board managerial team and membership is made by members of the government, defeats the objective that the Board represents the interests of the industry.

The recommendation is to substantially reduce the power of the Coffee Board and the Ministries, and to clearly define their roles. Selection of the Coffee Board's managerial team should be the industry's responsibility.[19]

1.3. COTTON[20]

Cotton is one of Tanzania's major export crops. In 2003, cotton exports from Tanzania amounted to US$45m., around 4.5 percent of Tanzania's total merchandise exports, and representing a major recovery from the low of US$28m. the year before. Further increases are expected in 2004, as production has increased to 104,640 tons in 2004/2005 compared to the drought-reduced 47,360 tons in 2003/04 and 60,480 tons in 2002/03, brought on by the recovery in international prices as well as the improvements in ginnery-to-farmer linkages that have resulted from the liberalization of ginneries in 1993.

85 percent of Tanzania's cotton exports are destined for developing country markets. In 2003, the top export destination was Indonesia (which absorbed 24 percent of Tanzania's cotton exports), followed by India (18 percent), China (14 percent), Thailand (12 percent), Pakistan (6 percent) and Malaysia (5 percent).

As in the case of the other major agricultural export crops, cotton is important for poverty reduction. It is produced primarily by smallholders on farms of 0.5 to 10 hectares (the average is 1.5 hectares), providing employment to half a million rural households. More than 90 percent of

[19] See World Bank (2004) for details.
[20] The discussion in this section is taken from Baffes (2004b).

cotton is produced south of Lake Victoria in the Mwanza, Shinyanga, Mara, Tabora, Kigoma and Sinigda regions, with Singida, Mwanza and Shinyanga accounting for 80 percent of production, and the rest produced in the Eastern part of the country.

Developments in the sector

Before the 1990s, the Cotton Board and the cooperative unions handled all marketing services for the industry, including the provision of seed and other inputs. In 1992, price controls were relaxed and indicative prices announced instead of prices at which cotton was purchased. The Cotton Act of 1994 eliminated the monopoly held by the Cotton Board and the unions, and allowed competition in cotton marketing and ginning. In 1994/95, 22 private companies started trading cotton, and 8 new private ginneries were constructed, which opened up another marketing channel, especially in western Tanzania.

The reforms raised the cotton grower's share in the fob price by at least 10 percentage points, from 41 to 51 percent. Cotton growers are being paid promptly, instead of the 1-2 year delay prior to the reforms which, combined with inflation rates of 20-30 percent per annum, had meant that money received were halved in real terms.

But the input distribution system practically collapsed. With the reforms, the input supply (mainly chemicals and seeds) and credit for purchasing inputs were no longer integrated into a single cotton marketing channel (the cooperative union). The loss of this single marketing channel, and most importantly the cessation of bail-outs by the government (the cooperative unions had on occasion been insolvent and had to be rescued by public funds), pushed up the costs of marketing chemicals and led to a collapse in their supply and distribution. The average cost of pesticides rose more then 3 times between 1993/94 and 1998/99. Most farmers could not purchase chemicals at market prices, either because they could not afford credit (due to high interest rates), or because credit was denied (due to high probability of default). The quality of seeds also deteriorated when private traders replaced cooperatives which used to be responsible for distributing seeds. In addition, growers received less than the 10 percent of seeds they used to get from the unions, as the increase in ginning capacity (by almost 50 percent in Western Tanzania) has intensified competition for seeds.

These developments together have had a mixed effect on output. Average output nearly doubled in the year following the reforms, from 45,000 to 84,000 tons, but it began falling 2 years later such that by 1998, output had fallen to pre-reform levels.

There may have been some deterioration in the quality of cotton. Factors that could have contributed to the deterioration are four, some of which are reform-related. First, the decline in input use. Second, the fierce competition for seeds arising from additional ginning capacity has led to the abandonment of zoning (seed for planting to come from seed cotton ginned in designated ginneries), and consequent acceleration in the transmission of disease. Third is the mixing of two cotton varieties for use in the Lake and Southern zones following the reforms (this has since been replaced by the improved UK91 variety which will be completed in 2005). Fourth, El Nino and La Nina caused considerable damage to cotton crops during the 1997/9 and 1998/9 seasons.

On the other hand, there are at least 2 factors that point to an increase in quality. First is that the reforms have expedited the sale of cotton, from an average of 36 weeks during 1984/85-1993/94 to 14 weeks after the reform. This means that cotton does not have to stay in storage and hence incurs less deterioration. Second, most of the cotton is being exported after the reforms,

compared with only higher quality cotton prior to the reforms (with lower quality cotton having been consumed domestically). This implies that even if the quality of cotton exported has declined after the reforms, it does not mean that the quality of all cotton has declined. A comparison of Tanzania's cotton price with its Franc Zone counterpart and Cotlook A Index indicates only a very small decline in the premium commanded by Tanzania's cotton.

There has been a large increase in ginning capacity. Before the reforms, there were 34 ginneries in Tanzania. An additional 17 new private ones were built during the first 3 years of reforms, either because the cooperative unions refused to allow private traders to gin their cotton on a contract basis, or because the charges were prohibitive. The new private ginneries added some 16,967 tons of monthly capacity to the existing 19,148 tons in the Western cotton-growing area. Capacity utilization is low—59 percent in private ginneries and only 34 percent in the union ones.

The private sector has increased its share in cotton marketing. In 1997/98, the Board withdrew completely from cotton marketing; currently, the private sector markets two-thirds of the cotton. Private ginneries have now expanded into contract farming, and have imported 100 tractors for cotton farming. Ginneries have also taken over input distribution from the Cotton Board. Although ginneries have not yet provided inputs on credits, they may be able to do so in the future.

World Market Conditions

Cotton prices fell to 30-year nominal lows in 2002, and have since recovered somewhat. However, prices remain severely depressed compared to historical averages. The recent declines were due to an unusually good crop in the U.S. in 2001 following a poor crop in 2000. The long-term prospects for cotton are poor because of slow demand growth, an abundance of producers, and strong competition from synthetic fibers. Fashion trends could change this outlook for a short period, as happened during the mid-1980s, when cotton was suddenly fashionable. But, over the long-term it is unlikely that cotton will avoid the real price declines, relative to manufactures, which has affected it and other major agricultural commodities.

Main Issues

Taxation

Cotton, like all other export crops, is subject to a host of taxes, levies, and fees administered at both district and central government levels. Local taxes include a produce assessment and education fund tax; central taxes include a Cotton Board application fee, export license fee, ginning license fee, Cotton Board fee, stamp duty, withholding tax, and export duty. Then there are other fees—the Cotton Development Fund fee and fees payable to the cooperative unions and primary societies. All the fees and taxes amount to a tax burden of over 20 percent of the price received by producers. Such high taxes have also likely resulted in widespread evasion of taxes.

There is a need to substantially reduce taxes, simplify the tax code, consolidate and rationalize taxes, as well as make tax rates uniform across all exports. A more equitable distribution of the tax burden should help to induce a supply response. Lower taxes would also improve compliance and boost tax revenues.

Role of Cotton Board

The Cotton Board has many roles—it regulates the industry, inspects the quality of flint and other by-products, announces indicative prices, and collects and disseminates statistics. Some of these

roles are redundant and result in corruption (quality monitoring) or market distortions (announcement of indicative prices), while some are important but are not performed satisfactorily (collection of statistics).

For quality monitoring, the Board has hired a private company (funded by the Cotton Development Fund which in turn is funded by fees paid by farmers) which has placed inspectors at every ginnery to monitor the quality of cotton since the 2000/01 season. These inspectors were given the right to "reject" cotton. Not only is it not clear what "rejection" means, but also the quality control scheme does not appear to be functioning at all, with corruption being apparently a major issue. Further, as discussed above, it is not clear that quality is low, and even if it were, it most likely reflects supply and demand conditions (that is, if low quality cotton is being produced and sold, that means it is not cost-beneficial for producers to incur costs to produce high quality cotton). Finally, even if quality were low, it should be up to producers and ginners to address the issue.

The Board also announces indicative prices—minimum prices to be paid to farmers. This leads to market distortions: if the prevailing prices is above the indicative price, the announcement motivates traders to collude and pay no more than the indicative price, whereas if prevailing prices are lower, it motivates farmers to refuse to sell at the prevailing price.

The Board should withdraw from activities such as quality monitoring and announcing indicative prices. It should also, in conjunction with the research station, focus its energy with seed multiplication of the UK91 variety.[21]

1.4. TEA[22]

Tea contributes about US$25m.[23] to Tanzania's export earnings, making it the fifth largest export crop after cashews, coffee, cotton and tobacco. More than three-fourths of Tanzania's tea is exported. Tea provides employment to 50,000 families and directly or indirectly affects as many as 2 million Tanzanians.

The major importers of Tanzania tea are the U.K. (40 percent), Kenya (30 percent), and Pakistan (15 percent). Smaller importers include the U.S. and Canada (6 percent together), and Somalia, South Africa and Sudan (3 percent together). Around two-thirds of exports passed through the Mombasa auction in 2002, indicating it is fairly priced. The rest is well-diversified among European, North American, Asian, and African markets (Table 1.2).

Developments in the sector

Before Tanzania's independence, large estates dominated tea production. By the mid-1960s, the government was encouraging smallholder production, with some success, and by 1985, smallholders accounted for almost 30 percent of output. By the late 1980s, however, there were visible signs of distress in the smallholder sector. Contributing to the decline were low prices, late payments to farmers by the Tea Authority, old and inefficient processing factories, inadequate use of inputs, rundown transport equipment, poorly maintained feeder roads, and low

[21] See World Bank (2004) for details.
[22] This discussion is taken from Baffes (2004c).
[23] Based on GOT statistics. There is a large discrepancy between tea export data reported by GOT, and that from partner country import data from 1994 onwards, with the former showing much larger imports than the latter.

yields due to failure to adopt new clonal varieties. By 1998, the smallholder sector fell to 5 percent, the lowest level since tea was introduced as a smallholder crop.

On the other hand, estate production grew considerably during the 1990s following the privatization and rehabilitation of the two tea estates during 1988 to 1993. These two estates were subsequently merged in 1995. In 1995/96, estate yields were 20 times those of smallholder plots. The high yields reflect, to some extent, the vertical integration of estate production—estates have their own transportation equipment and processing facilities and are not dependent on public infrastructure. The estates also have a constant flow of high quality labor, as housing, medical services, schools and other facilities are provided by the estates.

Privatization and rehabilitation of the two tea estates was important for the success of tea sector reform. Another important step in tea sector reform is the decision to privatize the tea factories. 5 of the 6 Tea Authority-owned tea factories that process smallholder tea have been privatized in 1999/00.

There has been a revival of tea research, after the state of collapse in the mid-1980s. The non-profit Tea Research Institute of Tanzania (TRIT) was established in 1996, followed by the transfer of staff from both a privately-funded research organization (Ngwanzi Tea Research Station) and a government-owned and managed one (Marikitanda Tea Research Station) in 1997 and 1998, respectively. In 1998, Cranfield University (UK) was appointed as the managing agent of TRIT, which reports to the Board of Directors. Tea research appears to be on a solid footing, with research results being successfully disseminated to tea growers.

The reforms had a positive effect on the tea sector. Tea production has risen from 15,500 tons in 1985 to 30,300 tons in 2003. Privatization of the Tea Authority-owned factories has led to revival of smallholder production, which increased from 1,200 tons just prior to the 1999/00 privatization, to 7,100 tons in 2003/04 (Table 1.3). Privatization has resulted in better management of the factories, and more timely payments to farmers for their green leaf tea. The privatized factories have also made improvements in infrastructure such as rural feeder roads and begun to supply farmers with inputs. Increased competition among factories has also led to higher producer prices. The privatization of tea blending has improved the quality of tea sold into the local market and better packaging has prevented adulteration of tea by counterfeiters. International prices have not increased, but the quality of tea produced in Tanzania has increased and this has contributed to increased export earnings.

World Market Conditions

Tea prices have resisted the very sharp declines which have affected other beverages, such as coffee, over the past several years. Tea prices are somewhat linked to crude oil prices and revenues because the countries which export crude oil are also major tea importers (the Middle East and the former Soviet Union), and demand has been strong in these countries. Demand in industrial countries is not growing in per capita terms, thus prospects are linked to demand in traditional tea drinking countries in South Asia and to countries in the Middle East and the former Soviet Union countries.

Production has been increasing at about 2 percent per annum among major exporters (Kenya and Sri Lanka) and global exports have grown by a moderate 1.3 percent over the past decade. Overall, the outlook for tea appears better than for other beverages, but there is a risk that prices will decline if new exporters, such as Vietnam, expand exports significantly.

Table 1-2: Destinations of Tanzania's Tea Exports (tons)

	1970	1980	1990	1995	1999	2000	2001	2002
Europe								
U.K.	5979	9355	5424	4468	8093	5925	4250	4882
Germany		129	394	320	474	414	282	269
Ireland	219	33		61	108	36	43	27
Netherlands	200	286	150	154	110	104	25	14
Other Europe	68	26	15	56	412	255	89	203
North America								
Canada	208	333	27	355	203	9		2
U.S.	147	483	71	988	988	103	116	396
Asia								
Pakistan		455	7007	5451	3350	2267	3426	1853
Singapore				24	243	92	142	25
Sri Lanka				11	34	34	47	
Other Asia				57	520	414	194	406
Africa								
Kenya [1/]	119		140	8163	6268	12007	13168	14308
Somalia		102	532	100		11		
South Africa					271	56	2	13
Sudan		641	1083	126	139	290	23	
Other Africa	56			68	125	230	143	156
Others								
Australia	22			190		191	10	
Rest of the world	37	1326	65		26	24		9
Total	7055	13169	14908	20592	21364	22462	21960	22563

Source: International Tea Committee.
Note: 1/ Tea exported to Kenya represents sales at the Mombassa tea auction.

Table 1-3: Production and Yields of Made Tea

	Production					Yields	
	Estates		Smallholders		Total	Estates	Smallholders
	Tons	Share	Tons	Share	Tons	Kilograms per hectare	
1975/76	10,890	81%	2,614	19%	13,504	1,200	300
1980/81	12,864	84%	2,469	16%	15,333	1,400	400
1985/86	12,050	71%	4,900	29%	16,950	1,300	545
1990/91	13,695	76%	4,397	24%	18,092	1,500	490
1995/96	18,037	91%	1,730	9%	19,767	1,900	190
1998/99	22,473	95%	1,207	5%	23,680	2,368	136
1999/00	20,074	92%	1,806	8%	21,880	2,115	198
2003/04	23,200	77%	7,100	23%	31,200	n.a.	n.a.

Source: Tanzania Smallholders Tea Development Agency.

Main Issues

Taxation

Tea producers are subject to as many as 44 taxes, levies, and licenses, including a district produce cess of 5 percent of farmers' price, stamp duty of 1.2 percent fob, withholding tax of 2 percent fob, 3.5 percent Tea Board and research fee, corporate tax, property tax, VAT, and a service levy of 0.3 percent of VAT net turnover. Administering the taxes takes a substantial amount of staff time for producers and the government. Despite the changes and amendments to the tax code, taxes are not being eliminated or reduced – only names are changed. Streamlining the tax code and reducing the tax burden should be a priority.

Infrastructure

Inadequate infrastructure has been a major reason for the tea sector's poor performance and an impediment to the development of the sector. Because green leaf must be processed within six hours of plucking, rehabilitation of feeder roads used for transporting green leaf from farms to factories must be given priority. But most of the infrastructure problems are not specific to the tea sector and need to be dealt with at a broader level (see Volume 1, Chapter 8).

Role of Tea Board and Ministries

The Tea Board and the Ministry of Agriculture and Food Security has too much discretionary power. For example, Article 22 of the Tea Act of 1997 indicates that the Tea Board may refuse license on "any ground which may appear to it to be sufficient." Article 29 of the 1999 Tea Regulations states that "the Board shall, in issues relating to quality in respect of domestic and export market, be the final arbitrator."

Wielding this power, the Board has denied licenses for imports of made and packed tea, a questionable policy on economic grounds and one that entirely ignores issues of consumer welfare. Regulations and trade policy decisions affecting the welfare of groups other than tea producers should not be the sole responsibility of the Tea Board but should be made at a higher and broader level.[24]

[24] See World Bank (2004) for details.

2. HORTICULTURE AND FLORICULTURE

Horticulture and floriculture are emerging non-traditional exports in Tanzania. According to Tanzanian customs statistics, in 2003, such exports amounted to around US$12m., or around 1.1 percent of total exports. While this is small compared to total exports, it is one of the few exports that has increased its share in total exports since the mid-1990s. Furthermore, interviews with Tanzanian horticulture and floriculture exporters conducted for this study indicate that the official statistics substantially underestimate the true value of such exports (see next section). And, given Tanzania's strengths in this area (see SWOT[25] section later), there is certainly potential for expansion of these exports.

2.1 BACKGROUND

The horticultural export sector in Tanzania is generally regarded as having started in the 1950s with the production of bean seed for selling in Europe, mainly through Holland. Perishable horticultural exports to Europe started in the 1970s, following Kenya's lead in this area. In the mid-1980s, a cut rose industry was established, followed by the development of a cuttings industry based on chrysanthemums. More recently, there has been specialized investments in the propagation of hybrid vegetable seeds, higher value fruits and cutflowers other than roses.

The main destination for horticulture and floriculture exports is Europe. According to Tanzanian customs statistics, US$10.6m. of the total US$12m. of such exports were destined for Europe in 2003[26]. Regional trade made up the balance (US$1m), mainly to Kenya with some exports to the Democratic Republic of the Congo.

Tanzanian customs data indicate that floriculture products made up around half of total exports (US$6.1m.), sold almost entirely to Europe. Unrooted cuttings (US$3.8m.) are the main item of floricultural export followed by roses (US$2.2m.). Vegetable exports (US$5.4m.) are also dominated by sales to Europe (US$4.4m.), with the main product line being peas.[27] Regional trade in vegetables amounted to US$0.8m. Fruit exports were smaller (US$0.5m.), almost half of which were dates destined for the UK. The following summarizes the current status of the main horticulture exports by market.

The European Market

Interviews conducted with exporters for this study indicate that official statistics substantially underestimate the true scale of exports to Europe, especially floriculture exports. Table 2.1 shows official statistics for 2003 and industry estimates for 2004/2005[28]—the large differences between the two sets of data cannot be due to growth of the industry alone, as the discussion later will show. As will also be shown later, industry estimates provide a more accurate picture of the true position of Tanzania's horticulture and floriculture exports.

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[25] SWOT is Strengths, Weaknesses, Opportunities and Threats.
[26] See Appendix 1 for detailed Tanzanian customs data on horticulture and floriculture exports.
[27] Mainly mangetout (snow peas) and sugar snap peas.
[28] Exporters in northern Tanzania work on a June 1 to May 31 financial year basis, which makes comparison with Eurostat or Tanzanian customs data difficult given the latter two provide data on a calendar year basis.

Table 2-1: Horticulture and Floriculture Exports to Europe: Official Data and Industry Estimates

	Industry(2004/5)		Official (2003)
	Volume (tons)	**Value ('000 US$)**	**Value ('000US$)**
Cut-roses	3,250	12,675	2,248
Other flowers	500	1,268	41
Cuttings	929	7,605	3,755
Horticulture	2,400	5,760	4,594
Others/vegetable seeds		1,000	0
Total	7,079	28,308	10,638

Note: Official data is from Tanzanian customs authorities; industry estimates are based on consultant interviews with producers and exporters. Horticulture includes fruits and vegetables.

Vegetable Exports

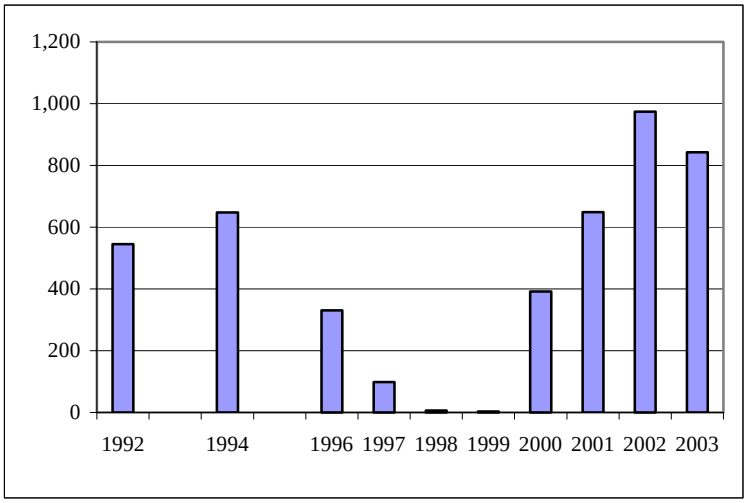
Vegetable exports to Europe started in the 1970s, consisting mainly of green bean and Asian vegetables to the United Kingdom. Vegetable exports increased slowly—much slower than Kenyan exports – and by the early 1990s exports had only reached about 600 tons per year (Figure 2.1). The industry then collapsed and exports were virtually non-existent, some of the reasons for which were air freight and the "side-selling" by small-farmers.[29] Exports began to recover from 2000 with the establishment of two vegetable export companies, Gomba Estates and Serengeti Fresh. The companies expect to export 2300 tons (US$5.5m.) of vegetables to Europe in 2004/2005, which would represent a significant increase from a little over 800 tons (US$2.3m.) in 2003.

The two exporters obtain most of the vegetables from outgrowers who produce under contract. Because of issues associated with securing EUREGAP (Euro-Retailer Produce Working Group on Good Agricultural Practices) approval, both vegetable exporters will be reducing the number of outgrowers, from 27 in November 2004 to just under 20 in 2005, discarding the less efficient (and generally smaller ones). As the companies expect to increase their exports, this means the remaining outgrowers will increase their output as well as the number of workers employed. This consolidation is an important step in the establishment of a competitive industry as only the best managed-farms will be suitable for producing export quality vegetables.

Whilst Tanzanian exports may have increased considerably since 2000, it lags well behind other Sub-Saharan African (SSA) countries (Table 2.2). Imports into the EU from SSA are mainly supplied by Kenya and South Africa, which between them account for over 60% of the imported vegetables. In 2003, Tanzania is only 13th on the list of SSA suppliers of vegetables to Europe.

[29] Side-selling is where farmers who have contracts to grow crops for a specific buyer and take inputs from the buyer on credit, but at harvest sell the crop to another buyer. The motivation for this is that they avoid repaying the inputs. Buyers are, of course, equally at fault as they are "side-buying" and enticing the farmer to side-sell.

Figure 2.1: Tanzanian vegetable exports to the EU (tons)



Source: Eurostat supplied by VEK Adviesgroep (VEK), Netherlands.

Table 2-2: Sub-Saharan African vegetable exports to the EU, 2003

	Volume (tons)	Share of Total
Kenya	48,183	41.8%
South Africa	22,112	19.2%
Senegal	8,551	7.4%
Zimbabwe	7,810	6.8%
Ghana	7,719	6.7%
Zambia	7,132	6.2%
Uganda	3,189	2.8%
Ethiopía	2,840	2.5%
Burkina Faso	1,375	1.2%
Madagascar	1,179	1.0%
Gambia	1,074	0.9%
Ivory Coast	1,014	0.9%
Tanzania	*842*	*0.7%*
Others	2,146	1.9%
Total	115,166	100.0%

Source: Eurostat supplied by VEK.

The Tanzanian vegetable industry is now established as a small player in the EU market, with a narrow base of vegetable exports—mainly green beans with some mangetout (or snow peas) and baby corn[30]. Its development is about 5 to 10 years behind Kenya, in both the range of vegetables grown and the development of added-value prepared products. Green beans, mangetout and

[30] Note that these observations are derived from interviewers with exporters, which are not reflected in the data provided by the Tanzanian customs where peas were the main vegetable exports in 2003, bean exports were very small and there was no specific mention of baby corn, which might be recorded as "other vegetables" (this is a very minor export item to the EU). It is important that differences between what the farmers report and what the customs record are clarified and that the data reflects what is actually happening.

baby-corn are product lines that Kenya has been exporting for many years and are regarded as low-profit items for Kenya[31]. In addition, Kenya has, over the last 5-10 years, moved on to developing significant exports of runner beans, a crop that Tanzanian exporters have not yet commercially developed. Kenyan exporters are also making a much higher margin on a range of "prepared products"[32] that are made in "high-care facilities", which they have developed over the last five to seven years. This is an area that Tanzanian vegetable exporting companies are planning to move into—they have plans to invest in high-care facilities within the next 12 months to replace the traditional pack-houses they currently use, which should greatly increase their profitability. Investments in high-care facilities will also stimulate a wider range of crops being grown, most of which will be higher-value than mangetout and green beans.[33]

Cut Flower Exports

Following the successful introduction of cut-roses in Kenya, attempts were made to establish a similar industry in Tanzania in the mid-1980s. Following a steep learning curve during which some business folded, a small cutflower industry has been established that has shown steady growth from the mid 1990s to 2001 (Fig 2.2). Exports to the EU fell in 2002 and 2003 as some of the companies restructured their operations—removing some old varieties and replacing them with newer ones as part of a strategy to make production more market orientated.

Interviews with exporters indicates that cut-rose exports in 2004/2005 will be about US$12.7m.(3,250 tons), which is nearly double the value of the official Eurostat data for 2003 (1,700 tons). The growers explained that there would be an increase due to improved management made by the larger farmers and some new investments in more green-houses. Since there has not been sufficient investment to account for a doubling in the value of exports, this means either that the Eurostat data is incorrect, or some of the Tanzanian exports are posted as Kenyan, or the growers have badly underestimated the value of their exports.

Based on the area under cultivation (70 hectares), the estimated yield (200 to 250 stems per hectare per year) and FOB price (US$0.9 per stem)[34], this report concludes that most accurate source of the value of cutflower exports is from the industry interviews. Since at least half the Tanzanian cutflower production is exported via Nairobi (see discussion later), it is possible that the Eurostat data mis-record them as originating in Kenya; further, there could also be problems with compiling the Tanzanian customs data as they would have to be collated from three different

[31] Exports of these items are very competitive with some countries now starting to sea freight them (for example Senegal). The Kenyan exporters often supply these products at low margins to ensure that their air freight capacity is maintained and to offer a more complete range of products to the supermarkets.

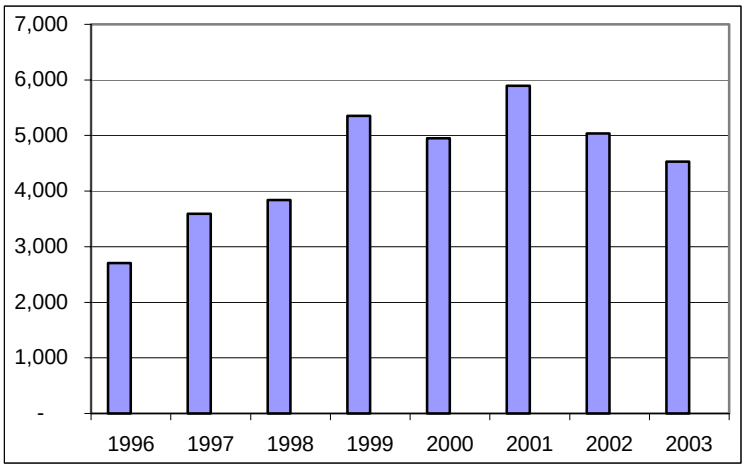
[32] Prepared products are ones that can be eaten by the retail consumer – they include mixed packs of salads, mixtures ready for steaming, grilling or cooking. To have a successful business based on prepared products, a significant investment is needed in the preparation facility (i.e., the high-care facility) and it is necessary to have access to a wide range of vegetables (which inevitably means access to wide range of climates to allow them to be grown easily).

[33] It is not just Tanzania that will find it difficult to "catch-up" with Kenya; most other African countries that are targeting vegetable exports are finding it difficult to establish competitive advantage. Correctly, the Tanzanian exporters are trying to develop a wider range of crops and products and then establish its own niche rather than relentlessly trying to copy Kenya, which will be exceedingly difficult.

[34] If the Tanzanian exporters got much lower yields and received lower prices, they would not be in business. The estimate of 70 ha of greenhouses was obtained from a number of different sources – in fact most estimated at between 70 to 75 ha, or 70 to 80 ha, which means that the 70 ha assumed in this calculation is already on the conservative side.

export points (the Tanzania/Kenya border at Namanga, Kilimanjaro International Airport, and the small portion that is exported from Dar Es Salaam).

Figure 2.2: Tanzanian Flower Exports to the EU, 1996-2003(thous. US$)



Source: Eurostat supplied by VEK and Accord Associates LLP.
Note: The export data is presented in FOB terms, converted from C&F (carriage and freight) collected by Eurostat by assuming that 35 percent of the C&F value is freight costs.

Tanzania cutflower exports to Europe made up only 2.6 percent of all such exports from SSA in 2002. Kenya dominates in this market, supplying 62 percent of all SSA cutflower exports to Europe that year (Table 2.3).

Table 2-3: Cutflower imports (C&F) into Europe from SSA, 2002

Country	Value (thous US$)	Share of Total
Kenya	222,664	61.6%
Zimbabwe	72,887	20.2%
Zambia	24,587	6.8%
Uganda	15,008	4.2%
South Africa	12,108	3.4%
Tanzania	*9,293*	*2.6%*
Ivory Coast	4,703	1.3%
Total imports	361,251	100.0%

Source: Eurostat supplied by VEK.

Virtually all of the Tanzanian flower exports have been cut-roses, with between 70 and 80 hectares grown in greenhouses. Most of the recent increase in the area under greenhouses has been due to expansion by existing producers – investment by new entrants has virtually stopped[35]. This is in contrast to some neighboring countries that are increasing very rapidly with both expansion of existing suppliers and new foreign investment. For example, Kenya has now

[35] The reasons given by the industry for the lack of foreign investment are the better incentives that are offered and implemented in other countries in the region (for example Ethiopia and Uganda) and the better returns to investment that can be achieved elsewhere, for example Kenya.

reached about 1,500 ha of roses and Uganda has about 170 ha (an increase from 120 ha in 2002). The Tanzanian cutflower producers recognize that they have not been as profitable as they perhaps should have been, but many have now placed much greater emphasis on better marketing strategies and improved quality by investing in improved varieties and agronomic techniques.

The cut-rose industry is in the hands of about 7 companies, with one (Kiliflora) accounting for about half the production (37 ha). Because of the high capital investment needed for roses[36], the industry will always be concentrated in the hands of a few large players. The exporters have successfully adopted the social, environmental and quality standards required by many of the main retail outlets (for example, Milieu Project Sierteelt (MPS)[37] and Max Havelaar).

In addition to roses, there has been a significant investment in hypericum production (in Kenya as well) to fill in the shortfall in production in Zimbabwe because of political unrest. However, the European market demand for hypericum is smaller than roses and is expanding less rapidly, so market saturation could be a concern. The Tanzanian hypericum project only started in late 2002; it is too early to tell whether it would be successful.

Specialised/niche exports

After the success in producing cut-roses, there has been diversification into other floricultural products, notably cuttings, seed propagation and raspberry. Diversification has been helped by Dutch partners and POSM[38] grants. In the case of cuttings and seed propagation, Dutch partners provide the mother plant-material on the condition that all the output is sold back to them for retailing.

Cuttings. In the late 1990s, spurred by rising costs of labor and energy in Europe, European-based propagators looked for countries where they could more cheaply multiply their stock.[39] The successful establishment of cutting companies in East Africa provided confidence to the European cutting companies, and Arusha Cuttings was established to propagate chrysanthemum cuttings for supplying to Europe. Following Arusha Cuttings, another chrysanthemum cuttings company was established (Dekkar-Bruins) with a different European partner. The European partner is crucial for the supply of mother plants and for the marketing of the cuttings in Europe. It is estimated by the industry that the exports of cuttings will have an FOB sales value of about US$7.6m. in 2004/05.

[36] Independent consultants believe that a rose company in East Africa needs a minimum of 20 ha to be competitive. One Tanzanian grower stated that it required €35-40 per ha (US$46-52/ha) to establish a new rose project, therefore the minimum investment required now would be about €7.5m. (US$9.8m. or almost Tsh 10bn). However, a Kenyan company is establishing a new 20 ha state-of- the-art rose project for a total financing of € 4m. (US$5.2m.) – a significant difference. It is unlikely that this difference is due to the cost differentials between the two countries, but more likely it demonstrates the difficulties of obtaining accurate and reliable data in Tanzania.

[37] There are a number of different MPS standards; the majority of flower farm managers interviewed stated that they were registered to the highest level of social standards within MPS.

[38] PSOM or Programma Samenwerking Opkomende Market (Program Cooperation for Emerging Markets) is a program of grants available in certain African countries that allows entrepreneurs to develop innovative ideas in cooperation with a Dutch partner. POSM grants have been made available to at least four companies.

[39] Some chrysanthemum companies looked at the Canary Islands and even at West Africa before it was concluded that East Africa was the preferable location.

Seeds. Two companies (Enza Zaden and Q-Sem) have been established to produce hybrid seed. These companies have invested on the basis of cheaper labor (compared to Europe) and a climate that permits all-year-production with no heating costs. As with the cuttings industry, a viable cutflower sector gave the international investors confidence that there are sufficient skills and services available to establish hybrid seed production units.

Raspberry. There has been a significant investment in a raspberry export project (Kilihortex). This project hopes eventually to export 200 tons of fruit per year to Northern Europe (with an estimated FOB value of US$1m. per year). So far the farmer claims that yields and quality are acceptable, and there are no problems with the warmer weather in January to February (see discussion on climate in constraints section). As it expects to export virtually all-year-round, it will face competition from a number of sources—Spain, Eastern Europe and North America in the European summer, and Chile and other South American countries in the winter. The raspberry farm will have a climate advantage over the European producers that will give it a longer production season and it will also have a labor cost comparative advantage over most of its competitors.

Regional Market

Regional exports—in particular exports to Kenya—constitute the other significant outlet for Tanzania's horticulture exports in addition to Europe.[40] According to Tanzanian customs data, 7,000 tons of onions, tomatoes, potatoes and oranges worth Tsh 440m. (US$424,000) were exported to Kenya.[41] However, market surveys done in Kenya indicate that these official export data significantly underestimate the real scale of the trade. For instance, there are estimates[42] that the actual volume of imports of oranges from Tanzania into Kenya were 4 to 10 times larger than the Tanzanian customs data. This report's estimates of selected horticultural exports to Kenya are shown below in Table 2.4.

Table 2-4: Exports of selected horticulture exports to Kenya, 2004.

	Volume (tons)	Value (m. US$)
Oranges	40,000	9.20
Onions	40,000	16.32
Tomatoes	13,000	1.43

Source: consultant estimates; orange data based on DAI PESA market survey; onion data based on Muendo et al.

Oranges. Tanzanian oranges have the comparative advantage of being free from "greening disease", which is a serious problem for the Kenyan crop. Tanzanian orange production takes place at lower altitudes where the vector that transmits the disease does not occur, whereas most of the Kenyan production is grown in areas of "mid-altitude" where the vector is prevalent. The lack of this disease gives Tanzanian fruit a better appearance and, importantly, the market regards

[40] In addition to Kenya, there are also some regional exports to Zambia, the DRC, Uganda, Rwanda, Burundi, and RSA.

[41] See Sergeant (2005), background paper for DTIS for Tanzanian customs data on horticulture exports to Kenya.

[42] A study by Muendo, Tschirley and Weber (2004) estimates that actual horticultural imports from Tanzania into Kenya are 4 times higher than the officially recorded statistics indicate (or formal imports). The Dai Pesa market survey (2003) estimates that 40,000 tons of oranges were exported from Tanzania to Kenya, which would be 10 times the official data. See Sergeant (2005) for a more detailed discussion.

it as being better quality than the local Kenyan production. The disease has caused Kenyan production to stagnate and allow imports from Tanzania to meet the increasing demand.

Most of the oranges sold to Kenya are from the Tanga region, which in the 1970s had benefited from a supply of new planting material from Government, which helped establish it as a significant production cluster. In addition, a USAID-funded DAI PESA (Development Alternatives Incorporated's Private Enterprise Support Activity) project has made considerable efforts to promote the efficient marketing of oranges in Tanga. The project promotes the formation of farmer associations to improve marketing and provides them with market information, including Kenyan market price data, to facilitate more equitable price negotiations. The project also claims that it has been successful in helping farmers shorten the supply chain, by introducing the farmer associations to Nairobi-based traders.[43] As a result of these initiatives, the project maintains that since it started operating in the Tanga region, the farmers are receiving much higher farm-gate prices (by about double) and the traders' cartel has effectively been broken. The project has also recognized that traders are paying various duties or levies[44] on the produce during the transport to the border. It intends to investigate this further to quantify it and to evaluate whether they could be eliminated. The removal of any these duties or levies in a competitive and efficient marketing chain would mean more money going back to the farmers.

Onions. Tanzania onions are very significant in the Kenyan market, representing about half of the total quantity of onions sold in Kenya, in addition to having a reputation for good quality in the Nairobi markets.[45] Tanzania onions mainly originate from the Mang'ola in Arusha region, and are sold in Kenya throughout the year. Nearly all the onion exports pass through the Namanga border post on the way to markets in Nairobi. Local Kenyan production has been reasonably consistent over the last 10 years and the increase in market demand has been fulfilled by the imports from Tanzania. Interviews with Arusha-based onion traders stated that the best quality onions are exported to Kenya, while the second quality are sold on the Tanzanian market.

The comparative advantage for onion production in Tanzania is based on it being a lower cost producer than Kenya and having the marketing links to meet the shortfall in the Kenyan market. The lower unit production cost is achieved because despite a higher cost base, Mang'ola farmers get higher yields resulting in lower unit production costs[46]. The higher yields achieved in Tanzania are probably due to production being in suitable climatic regions, whereas most of the Kenyan onions are grown in the wetter highland areas which encourages fungal diseases resulting in lower yields. Additionally, the Tanzanian export position is strengthened because the farmers grade the onions and export the better ones; this helps strengthen the Tanzanian reputation for quality in the Nairobi market.

Mangoes. The Association of Mango Growers is making an effort to develop exports. Most of their efforts are targeted at the Middle East and Asia because they recognize that Tanzanian mangoes will not be competitive in the European and USA markets. The main Tanzanian mango season is November to January, which coincides with the Kenyan season. The Tanzanian season also coincides with production from Peru, Brazil and South Africa – these countries have low sea freight costs to Europe[47], which give them a comparative advantage over Tanzania in the European market. The Tanzanian growers are planting Asian varieties, for example Alphonso

[43] Of course, the Nairobi-based traders are also encouraged to go straight to the farmer associations too!
[44] These are often referred to as a cess.
[45] Muendo et al (2004).
[46] Mundeo et al note that Tanzanian yields are 50% higher than those in Kenya.
[47] Based on the very large volumes of perishable produce seas freight across the Atlantic Ocean to Europe.

and the apple mango, which are in demand in their target market. In addition, there have been some efforts to plant Floridian varieties, such as Tommy Atkins. So far, the Association members have only exported trial samples to Dubai and Muscat, so the commercial viability of these exports is not proven[48].

The Association claims that Tanzanian's comparative advantage in mango exports in the Middle East and Asia is based on seasonality, that is, it can produce at times when some countries in the target market cannot. In addition, Tanzania has cheaper freight to these markets than South America, and land is cheaper in Tanzania than in Kenya. However, the Association recognizes that it needs to improve quality and is considering employing a quality control officer. It also wants to set quality standards and establish a brand in the export markets. The Association organizes regular meetings where members visit each other's farms to exchange technical advice. It has benefited from ITC's support for study tours to the Middle East and the EU. USAID has helped some members visit production sites in the USA.

The Association notes that there is a problem with fruit fly on some farms, but the Food and Agriculture Organization is helping them develop Integrated Pest Management methods to control this problem. Unless the fruit fly issue is contained, it will certainly preclude exports to the EU in the longer-term.

What is encouraging about these efforts is that the mango producers have made an initiative to establish an association and are targeting markets where they may have comparative advantage. However, it still needs help in identifying the scale of the market opportunity and whether mango exports can be truly competitive.

2.2 LESSONS FROM OTHER COUNTRIES

Lessons of experience of high-value horticulture exports from Kenya, Uganda, Zimbabwe, Zambia and Ghana have been derived for the purpose of this report. These countries have been selected based, firstly, on the consultant's experience in the development of such exports in these countries,[49] and because of their proximity to Tanzania or because specific lessons can be learnt.

The detailed discussion of the key factors of success for each of these countries can be found in Appendix 2. This section here summarizes these success factors by selecting the five most important ones for each country, then ranking them by order of importance (Table 2.5).

For the five countries as a group, the most important success factor is climate, followed by freight and support from donors. Having a vibrant private sector is next, followed by cooperation amongst the exporters. Freight is the second most important factor probably because it is such an important element in profitability, and its availability is crucial for the expansion of the industry. What is perhaps surprising is the importance of donor support. It was not regarded as important for Kenya, but in the countries that had less comparative advantage, for example Uganda, Zambia and Ghana, it was much more important. Having good cooperation amongst the exporters was only the fifth most important factor, but cooperation has also been vital in obtaining the best from

[48] Samples have also been sent to Holland, but it is recognized that for the foreseeable future, Tanzania will not be competitive in this market because of lack of quality and the wrong varieties.

[49] The consultant managed what was at the time the biggest export farm in Zambia; he was involved with establishment of what has become one of the biggest perishable exporting companies in Kenya; and he worked on USAID projects in Ghana, Uganda, Zimbabwe as well Zambia.

donor support as it is often linked to active associations.[50] Indeed, cooperation is also vital in securing sufficient reliable and cheap freight. In all the cases reviewed, the key to the exporters cooperating was that as a group, they recognized the importance of working together. It is not too surprising that a group of entrepreneurs can see the benefits of cooperation and then unite to form a coherent group. Once the benefit of cooperation is demonstrated, for example through increased air freight capacity and lower prices and access to donor finance, then the bonds within the group are strengthened. But the key must be that the exporters themselves recognize the benefits of cooperation and drive the cooperation themselves.

Table 2-5: Ranking of factors critical to the current success of horticultural and floricultural exports in Africa

	Kenya	Uganda	Zimbabwe	Zambia	Ghana	Total	Ranking
Climate	5	5	4	4	5	23	1st
Commercial sector Infrastructure	3		5	1		9	4th
Freight	4	3	2	2	4	15	2nd
Externalise forex			3			3	7th
Govt support	2	2			1	5	6th
Donor support		4		5	3	12	3rd
Economies of scale	1					1	=8th
Exporter cooperation		1		3	2	6	5th
Cheap labour							
Cheap finance			1			1	=8th
Market linkages							
R&D/Training							

Source: Consultant's estimtes based on his experience and interviews.
Note: The ranking is from 1 to 5 with 5 being the most important.

Support from Government is ranked in the aggregate as only the 6th most important factor in the successful development of an export industry. This may underestimate the role of Government. Most exporters in the countries reviewed would agree that their Governments have created an "enabling environment" and their role has often been to support the private sector, including promoting donor-funded projects. In Kenya, for example, the government body Horticultural Crops Development Authority had supported the industry in the past by reacting to the industry's lead, but is now entirely funded by exporters.

Finally, it is also interesting to note that access to finance, or cheap finance, is not considered an important issue. Many exporters tend to note that with a good business proposition, finance is not a problem, and that it only becomes a serious constraint when the business concept is not good.

2.3 CONSTRAINTS TO EXPANSION

The European Market

Interviews with exporters conducted for the purpose of this report highlighted four major constraints to profitability and hence expansion of exports. These are: climate; air-freight; shortage of skilled middle-management and supervisors; poor implementation of export facilitation measures; and problems with registration of agrochemicals.

[50] For example the Zambia Export Growers Association (ZEGA), the Uganda Flower Exporters Association (UFEA), and the Sea Freight Pineapple Exporters of Ghana (SPEG). The role of these associations in developing horticulture exports in their respective countries is discussed in Appendix 2.

Climate

The rose growers repeatedly stated that climate was a significant inhibiting factor to profitable exports; the warm weather in January through to March caused problems with flower quality[51], at the time when European prices are at their best. The effect of the increased temperature can be minimized by improved management practices[52], but the industry still claimed that it was at a disadvantage compared with, say, Kenya and Ethiopia.

However, meteorological data[53] shows that Naivasha (where about a third of Kenya's roses are grown) and Addis Ababa, and, to a lesser degree Kampala all have warmer temperatures than Arusha in January to March, with temperature differences in Naivasha being much greater than in Arusha. Therefore, whilst the temperature rises that the Tanzanian exporters reported might cause some inconvenience, it should not be a major inhibitor of profitability[54].

The continued success of the vegetable industry in Kenya has been built on the wide range of altitudes where large-scale commercial horticulture can take place. The range of altitudes allows a variety of crops to be grown, which is essential if mixed vegetable products are going to be produced in the proposed high-care facilities. Tanzania does have a wide range of altitude, but not necessarily where there is good infrastructure and links to exporter's packhouse facilities.

Freight

The vegetable, flower and to a lesser extent the cutting producers all reported that freight was a key constraint. Some also thought that freight charges are high—by far the largest cost component of horticulture and floriculture exports is freight, which adds between 50-55 percent to the fob value of cutflowers, and as much as 65% to the fob value of horticultural exports. Therefore, any reduction in freight rates will be very important for their profitability.

However, the main issue with freight is the lack of adequate capacity from KIA on a regular basis. Tanzanian exporters currently have two options – either fly their produce out of KIA or truck it to JKIA in Nairobi and put it on a freighter in Kenya. There are advantages and disadvantages to both options (Table 2.6).

[51] The warmer weather led to smaller flowers.
[52] One rose exporter noted that he was able to minimize the effect of rising temperatures on flower quality by undertaking a number of practices that reduced the ambient temperatures in his green-house, for example he planted grass around the green-houses, and kept the floor of the green-houses damp.
[53] See Sergeant (2005).
[54] Rose specialists in Kenya also noted that the temperature rise at Naivasha should not cause excessive problems.

Table 2-6: Comparison of exporting perishable produce via KIA and JKIA

KIA	JKIA
Advantages • Shorter journey time means better shelf/vase life • Quality should be improved by reduced handling • Good airport handling facilities • Long runway – heavily-loaded freighters can take off safely • Exporter can easily oversee the dispatch and is on-hand to overcome any logistical problems • If the exporters of fresh fish out of Mwanza would cooperate with KIA, there is sufficient critical mass to operate regular freight services	**Advantages** • Many freighters flying to different destinations makes it is easier to access more markets without transhipping • Good airport handling facilities • Some multinational buyers are based in Kenya who buy FOB Nairobi
Disadvantages • Over reliance on KLM Royal Dutch Airlines (KLM) • Not enough capacity to attract freighters • Reportedly higher costs of cargo handling, landing fees and aviation fuel	**Disadvantages** • Added cost of trucking to Kenya • Reduction in vase/shelf life • Quality is affected by extra handling and temperature loss during transit through Kenyan border

Source: Based on interviews with freight agents and exporters.

Currently, most of the perishable produce air-freighted out of KIA is carried by KLM, which has a MacDonald Douglas MD landing daily at KIA enroute to Dar Es Salaam. The cargo capacity of the plane is approximately 18 tons, about half of which is taken up by passengers' baggage and the rest is available for freight. Since July 2004, MK Airlines has added to the airfreight capacity at KIA by landing a narrow-bodied cargo plane once a week, collecting 7-10 tons of cargo most weeks, with the highest uplift being just less than 13 tons (below the targeted break-even level for the service). The plane then collects further cargo at either Nairobi or Entebbe[55]. The rates that are being charged were US$1.88/kg to UK and US$1.84/kg to Amsterdam, which are comparable to rates charged out of Nairobi.

It is estimated that around 3300 tons per year is exported from KIA[56], and around 4,000 tons per year is being trucked to Nairobi for export to Europe.[57] The former costs between US$1.76-1.88 per kg, which is cheaper than the latter which costs between US$1.85-$2.10 per kg (Table 2.7), but exporters have no alternative given the lack of adequate cargo space on the daily KLM

[55] The aircraft lands in Northern Europe and the vegetables are trucked to the UK and the flowers are taken by road to Holland.

[56] Interviews with freight companies and exporters indicate an average of 8 tons per flight on KLM, or 56 tons per week which, together with an average of 9 tons per week on MK Airlines, amount to 65 tons/week, or 3,300 tons per year. Data on freight out of KIA is not available since the latter's concession to a private company.

[57] This is the difference between a total of around 7,100 tons is being exported to Europe per year (Table 2.1) and 3,300 tons being exported out of KIA.

flights, and the only once a week landing of MK Airlines. Some exporters transport produce from northern Tanzania to Dar Es Salaam where it is placed on one of the other passenger airlines other than KLM flying to Europe – but it is reported that only small amounts are exported through this routing.

Most of the Tanzanian exporters probably prefer to export on KLM rather than MK Airlines because it is cheaper (companies that carry freight on passenger aircraft such as KLM, have much more flexibility on pricing than companies that operate freight-only aircraft, and can offer cheaper rates). However, for the long-term future of the industry, it would be more sensible for the exporters to put sufficient freight on the MK aircraft to ensure that they continued to operate regularly. Other countries have done this successfully to ensure that the whole industry has sufficient freight capacity and to take the strategic step from being dependent on passenger aircraft to being able to utilize dedicated freight aircraft (for example, Zambia, see Appendix 2).

Finally, it was reported that the costs of landing, handling, and aviation fuel is more expensive than other airports in East Africa. These issues are being reviewed in the context of a regional air transport study being undertaken by the World Bank.

Table 2-7: Freight rates to Northern Europe from East Africa – November 2004

From	Destination	Airline	Rate (USD/kg)
KIA	Holland	KLM	**1.76**
	UK	KLM	**1.79**
	Holland	MK	**1.84**
	UK	MK	**1.88**
JKIA	UK	Various	**1.75 to 1.95**
	Holland	Various	**1.75 to 1.95**
Arusha via JKIA	UK	Various	**1.85 to 2.10**
	Holland	Various	**1.85 to 2.10**

Source: Interviews in Tanzania and Kenya.
Note: *This assumes that the cost of road transport from Arusha to JKIA is US$0.10 to US$0.15; information supplied by Tanzanian exporters.*

Shortage of skilled middle-management, supervisors and workers

One of the key constraints reported by exporters is the shortage of skilled and experienced Tanzanian middle-managers. Many of the exporters have to recruit Kenyan staff to fill these positions.[58] However, to encourage Kenyan staff to move, they have to be offered higher salaries, thus increasing Tanzanian cost competitive disadvantage. The longer-established exporters now are starting to build up a group of competent Tanzanian middle-managers, but if there is going to be significant expansion of the industry in the short to medium-term, it will still be necessary to recruit externally. Also, if Tanzania is to develop niche products for niche markets and to overcome the climate disadvantage for the cut-roses, it is important that it does not simply continue to rely on Kenyan expertise, but it must develop its own technology and have a cadre of middle-managers who understand the issues that relate specifically to Tanzania.

[58] It was observed by a Kenyan manager that the Tanzanian farmers tend to recruit supervisors and put them in middle-management positions.

Another concern raised by a number of exporters is the shortage of skilled horticultural and floricultural workers because of the small size and relatively recent introduction of modern production technologies. Once the workforce is trained, productivity is comparable with neighboring countries, but greater emphasis had to be placed on training than a new start-up project in, say, Kenya.

Measures to facilitate exports

Exporters all consistently reported problems with the implementation of measures for facilitating exports offered by the Government through the Tanzania Investment Center (TIC). These measures include duty and VAT-free status for inputs, allowance to carry losses forward, and ease of obtaining permits. While these measures are attractive and comparable with most of their competition, all too frequently inputs for their businesses were held up at the border points and officials would not release them until duty was paid – despite the fact that they should be duty-free. In theory, the duty could be claimed back, but this is reportedly a long and often futile task. Similarly, the exporters are meant to be VAT exempt, but it was claimed that it often took two years to reclaim, which wasted a considerable amount of management time and resources. This situation is a major disincentive to foreign direct investment, especially when compared to Ethiopia where investors get considerable help with ensuring access to such measures.

Another concern for exporters is the very slow and costly system of registering agro-chemicals. Because the industry is small, most agro-chemical manufacturers do not register their products in Tanzania until they are sure that there is a proven significant market. They tend to register new chemicals in Kenya first because of the larger market and less costly registration process there. These newer chemicals are often more effective, and importantly, safer to use than existing ones. The Tropical Pesticide Research Institute (TPRI) based at Arusha, which has the task of registering new agro-chemicals, does not recognize the results of their equivalent organization in Kenya. Instead it wants to repeat the trials that already have been undertaken in Kenya.

Finally, some exporters mentioned that the issue of obtaining leasehold on land can be problematic. They indicated that obtaining 33, 66 or 99 year leaseholds were adequate for securing their investments, but sometimes it was very difficult and laborious to get the leases correctly documented.

Other issues

Finance. As discussed earlier, finance is not a major critical factor in most of the successful floriculture and horticultural exporting countries. The exceptions were Zimbabwe and Zambia where the sources for finance were profits from other crops and an international development bank.[59] In Tanzania, some exporters have requested that GOT through the Bank of Tanzania (BOT) provide guarantees for long-term debt up to US$35m. to facilitate their expansion to create sufficient freight to operate freighters regularly from KIA. However, the issue of having adequate freight for the operation of a regular freighter service at KIA can be addressed by combining fish exports from Mwanza and horticultural and floricultural exports from around Arusha (see section later on Strategies and Actions for Expansion and Enhanced Competitiveness).

The provision of finance, or guarantees by Governments, has not been tried in other countries. There are a number of reasons why the provision of finance or guarantees have not been tried in

[59] See Appendix 2.

the past – these include that they might be "anti-competitive" favoring the companies that have the guarantees over those that do not. Even if guarantees were extended to all companies, there is still the serious problem of encouraging unsound investments since exporters would be absolved of these debts in the case of failure. Governments that have successfully assisted horticulture and floriculture exports do this by providing an appropriate enabling environment including infrastructure. Therefore, it is strongly recommended that GOT does not provide loan guarantees but concentrates on these other areas just mentioned. However, if GOT does provide loan guarantees and if the objective of the guarantee is to encourage exporters to use KIA, then the condition for any beneficiary should be that exports must go through KIA[60].

Theft. One exporter mentioned that theft was a constraint. In his case, he wanted to have a cattle herd feed on the by-products of the baby corn crop[61], but each time cattle were bought, they were stolen from the farm. Most exporters spend a considerable amount of resources and time on security as well as employing a significant number of guards. It was felt that the police force was not sufficiently active in containing petty crime. It should be noted that an attraction for investing in Ethiopia is that the security situation there is much better.

Donor support. Cross-country experience discussed earlier indicates that many of the countries that have comparative disadvantages have received considerable support from donors. To date, the Tanzania exporters have received very little assistance. The PSOM grants have certainly helped some companies and the Dutch Government is helping fund the CEO of TAHA. It is possible that if the Tanzanian industry had received as much help as, say, the Ugandan and Zambian industries, it would be now much larger.

Cooperation between growers. Another important success factor in many other countries has been the cooperation between exporters. Invariably there has been a driver to bring the exporters together – in many cases it has been the need to secure a long-term solution to solving the issue of freight. The recently formed Tanzanian Horticultural Association (TAHA) should provide an excellent vehicle for cooperation amongst exporters. TAHA has already started to address some of the issues within the industry, such as the issue of exporters not being able to use agrochemicals approved in Kenya, although it has a long way to go before the growers can use the same range of chemicals as their competition.

Summary

Of the constraints raised by the exporters, climate is not really serious – in fact, it is one of the main reasons why some of the recent investments in hybrid seed production have been made. The other constraints that were raised—freight, difficulties with implementation of incentives agrochemical registration, and shortage of skilled middle management and supervisors—all can be addressed. Perhaps the absolute key for the successful expansion of the exports is for the growers to work together to address these issues. It is important that the exporters recognize that many of the solutions are in their own hands if they attempt to address them together for the sake of the whole industry.

[60] And of course it is important that the beneficiaries demonstrate that they will cooperate to ensure that a freighters can be filled

[61] Baby-corn is a notoriously unprofitable crop and many farmers are only able to justify growing it if they are able to feed the by-products to their cattle.

The Regional Market

The commercial opportunity for selling onions, oranges and other horticultural produce into Kenya was first recognized and developed by private sector traders, who filled the gap in the Kenyan market which was not being met by Kenyan production. Although it has been claimed that these traders tried to manipulate the marketing chain to their advantage by creating cartels, it is important that their efforts are appreciated and that they receive support and encouragement with the aim of increasing competition amongst them.

It has been noted that "improved infrastructure and fewer regulations in Tanzania may be one key reason that it is able to export more successfully to Kenya than Kenya is to Tanzania. Unlike Kenya, Tanzania has continued to tarmac roads to its border posts. Tanzania authorities have made issuance of trade permits administratively easy and cheap, whereas in Kenya, procedures for issuing permits and import brokerage are complex and only known traders can clear goods."[62] This is an interesting observation, and if it does truly confer competitive advantage, then it is important that Government and donors ensure it is maintained and even enhanced.

The DAI PESA project working with the orange exporters believed that the first constraint that had to be addressed was to improve the marketing supply chain, and it claims that this has been done satisfactorily. It appears that similar constraints exist in the onion supply chain and probably with other crops. The onion supply chain has many actors, including rural-based agents who identify farmers with onions available for sale and for a small fee introduce them to a trader. The trader buys the crop from the farmer, organizes the packing into sacks and hires transport to take it to Arusha market where the produce is unloaded for the wholesale market-based trader to sell to a Nairobi-based trader. This wholesale market-based trader immediately pays for the transport charges from field to market on behalf of the rural-trader, but the rural-trader is not paid for the goods until the produce is sold. Whilst all these actors provide a service, the number of transactions could be reduced. For example, the transactions in Arusha appear totally superfluous – if the Nairobi-based trader could work directly with a Tanzanian trader who buys direct from the farmer, then the costs and extra handling at Arusha market could be eliminated[63]. This would save handling costs, market fees and the wholesaler's margin and should allow a greater portion of the sales price to be returned to the farmer. Any reductions in the number of times onions are handled will also improve quality.

Traders also claim that there is a law or rule that all produce destined for Nairobi has to be traded through the Arusha market. If there is such a rule or law, it needs to be seriously investigated because it is a cost that effectively the farmer has to bear.

[62] Mundeo et al (2004).

[63] Of course it would be even more advantageous if the Nairobi-based trader was able to buy directly from farmer groups.

2.4 COMPETITIVE POSITION AND SWOT ANALYSIS

Floricultural and horticultural exports to Europe

Strengths	**Weaknesses**
• Political stability • Climate that gives all year round growing season • Cheap labor • Technical support and inputs available from Kenya • Excellent facilities at KIA • Export facilitation measures offered by TIC • PSOM grants have helped diversify horticulture/floriculture output • Formation of TAHA should enhance co-operation within the industry • Cheap and plentiful land	• The temperature rise in Jan to March in Arusha reduces rose flower quality • Inexperienced labor and shortage of skilled management and supervisors • Export facilitation measures not recognized by some GOT departments • Registration of agro-chemicals is slow – often cannot use inputs used by competition • Poor financial performance of some of the early horticulture/floriculture investments has made bankers nervous • A tradition of lack of cohesion and cooperation amongst exporters • Lack of economies of scale • Shortage of regular air cargo capacity out of KIA • The industry has received very little donor support • Limited amount of flat land with good infrastructure at different altitudes near to Arusha • Relatively small base of commercial farmers • High cost structure
Opportunities	**Threats**
• Expanding market opportunities as production increasingly moves away from Europe • Political unrest in Zimbabwe gives opportunity for new suppliers	• Other countries offer more attractive incentives and provide a quicker, more helpful support service to new investors, for example Ethiopia • Other countries have better growing climate, for example Ethiopia and Kenya

The comparative/competitive advantages for export floriculture and horticulture in Tanzania include:

- Climate, which gives reasonable potential to grow a range of temperate and sub-tropical crops;
- Good airport facilities at KIA;
- Relatively large areas of land that are readily available and cheaper than in other East African countries; and
- Experience of some floricultural and horticultural exports that could form the basis for further expansion and diversification.

The main constraints that have been identified:

- Shortage of regular freight capacity out of KIA;
- Shortage of skilled and experienced middle-management and supervisors;
- Problems with implementing measures to facilitate exports and registration of agrochemicals; and
- Exporters are only tentatively working cohesively for the benefit of the industry, with a tendency to put historical differences ahead of recognizing the benefits of future cooperation.

Regional horticultural exports

Strengths	**Weaknesses**
• Less pressure on land than Kenya gives opportunities to expand exports as the Kenyan market expands • Orange production in an area where the greening disease vector does not occur • Good yields for some crops – which despite high input costs give lower unit costs of production than Kenya • Good road system to Kenyan borders • Traders and farmers are starting to build up considerable experience in regional trade • DAI PESA has helped Muheza farmers expand their exports and improve farm-gate prices • A reputation for supplying good quality on some of the regional markets.	• Poor infrastructure in many rural areas • Under-developed marketing system with poor market information systems for farmers and traders • Some unnecessary processes and duties in the marketing chain • Lack of rural collection centers for farmer groups • Tradition dictates that there is an excessive number of actors in the supply chain, that is, it is "too long" • Shortage of skilled management and supervisors • Poor financial performance of much of the commercial agricultural industry has made bankers nervous • Lack of cohesion amongst the exporters • Lack of economies of scale • Apart from DAI PESA, the industry has received very little donor support to help improve technical and management skills
Opportunities	**Threats**
• Expanding market opportunities as the Kenyan market expands • Develop mango exports to the Middle East and possibly into the Far East	• Only very small and slow-growing opportunities in countries other than Kenya • Kenya may stimulate orange production at lower altitudes • Kenyan farmers may start to grow onions in areas that are more suitable and give better yields • Kenyan farmers may be given more technical support to produce for the local market • Failure to control fruit flies in the mango orchards

The comparative/competitive advantages for regional horticultural exports from Tanzania include:

- Kenya has serious land pressure problems that will prevent it from expanding production to keep up with increased market demand;
- The climate and soils in some parts of Tanzania give excellent yields for some crops;
- The private sector has started to identify some regional export opportunities and traders are competing to exploit this opportunity; and
- It is starting to gain some economies of scale and a reputation for providing good quality to the major Kenyan markets.

The main constraints that have to be addressed include:

- Improving farmers' marketing skills and helping form marketing groups;
- Shortening the marketing chain to ensure that Tanzanian exports continue to be competitive and greater returns are brought back to the rural areas;
- Improving efficiency and effectiveness of the performance of the current traders;
- Adding-value to the produce through improving quality, packaging or presentation, or by processing; increasing range of products; and encouraging farmers to produce the exact quality and service demanded by the import market; and
- Ensuring local cesses and duties do not become excessive[64].

2.5 STRATEGIES AND ACTIONS FOR EXPANSION AND ENHANCED COMPETITIVENESS

Infrastructure

Improvements in road, power and telecommunication infrastructure can strengthen and broaden the vegetable export base by expanding cultivation to areas where the climate might be better for either improving the quality of crops or for growing other crops. These improvements to infrastructure should initially be near existing pack-houses to reduce internal transport costs, but as the industry grows, it could be possible to widen much more the area where export crops are produced. In a well-established horticultural producing country such as Kenya, a considerable amount of produce is trucked 5-8 hours from the areas of production (for example Eldoret and near the Masai Mara) to packhouses in Nairobi for preparation and subsequent export.

TAHA should have a constructive role to play in recommending areas where GOT and development partners (DPs) could help with improving infrastructure. It could start with producing a justification for developing a new area, highlighting the new infrastructure needed, and undertaking a cost and benefit analysis for the investment.

Cost and availability of air freight

The most important contribution to increasing the competitiveness of exports to Europe will be to improve the freight situation out of KIA. The option of combining chilled fish air-freighted out of Mwanza with perishable produce grown in the Arusha and Moshe regions should be explored. In 2003, around 12,311 tons of cargo are flown out of Mwanza airport[65], the vast majority of which are believed to be Nile Perch from Lake Victoria that are sold in Europe. If the fish exports are combined with horticultural and floricultural produce, this could give as much as 19,000 tons. This is a significant amount of freight and would certainly be attractive for cargo companies to organize a regular freighter aircraft service landing at both Mwanza and KIA. It should be noted that one of the reasons why Uganda was successful in developing its exports was

[64] The DAI PESA project has recognized that this might be a serious impediment to the expansion of regional exports and therefore it hopes to conduct a study to investigate this more fully.
[65] See Volume 1, Chapter 8.

that it combined the exports of Nile Perch and floricultural produce to attract freight aircraft. The situation is slightly different in Tanzania because the produce would have to be freighted from two different airports – this would mean extra landing charges, but these would not be prohibitive. Combining exports from both Mwanza and KIA should be beneficial for both sets of exporters.

Another option is to take off the dry (non-perishable) cargo—which makes up most of the inbound freight—destined for Dar Es Salaam at KIA, and truck it by road to its final destination. This would release space for the perishable horticulture produce to be loaded, which can then be carried to Dar Es Salaam for onward shipping to Amsterdam. This situation may not be ideal for both KLM and the exporter, but it does give the Tanzanian exporters between 8 to 9 tons of extra freight capacity each day.

Perhaps the key to achieving regular freighter service operating out of KIA is to have TAHA play a lead role in getting the exporters to cooperate for the long-term benefit of their industry. Exporters' cooperation is needed to get all Tanzanian horticultural and floricultural exports air freighted from KIA; and to give priority to filling freight aircraft rather than putting it on passenger airplanes.

Training and research

Tanzania could use the Tengeru Horticultural Research Station (THRS) near Arusha as a base for establishing a high-value crop research and training farm, along the lines of the Zambian Research and Training Farm which has been established using donor finance.[66] This research and training farm should give students theoretical *and* practical training in export horticulture and floriculture at the diploma level. The curriculum should be divided equally between theory taught in the classroom and field-work on all the latest and best practices, standards and business techniques for floriculture and horticulture. The students should be managing field trials and commercial plots. Key features of the curriculum should be that it is designed by the export industry, the facilities must be managed and/or controlled by the industry, and the students should be suitable for working in the industry after graduation.

TAHA should have a pivotal role in the establishment of the research and training farm. It could seek funds to commission a study to confirm that the current exporters will be pro-active in establishing this facility and that they would be prepared to have some of the students gain work experience by working on their farms. The study would also evaluate the opportunities for including regional exports and seed bean as part of the curriculum and trials program. The study would estimate the cost of establishing the facility and would talk with Government and donors about possibly financing it. Then TAHA would seek further funds to establish the research and training farm, and should play a lead role in the supervision of the establishment and management of the facility.

Measures to facilitate exports

GOT needs to ensure that the measures for facilitating exports are implemented. It is recommended that the exporters, working through TAHA, clearly sets out the scale and magnitude of the problems and present clear solutions to GOT. It is also important that GOT

[66] See Appendix 3 for further background to the Zambian Research and Training Farm. UFEA in Uganda is seeking donor finance to develop a similar concept.

creates a culture in which civil servants help and not hinder exporters. Finally, there should be a process within GOT for addressing these issues quickly.

The system for registering agro-chemicals needs to be addressed. Exporters claim that it would be more sensible for TPRI to issue temporary registration permits based on research done in other East African countries prior to doing their own research – otherwise, it puts the exporters at an even further competitive disadvantage. As a first step to clearly identifying the scale of this issue, TAHA should prepare a short report that clearly identifies the agrochemicals that can be used in Kenya and that are not officially available in Tanzania. The report should state what product the Tanzanian exporters have to use instead, and if possible quantify, the "disadvantage[67]" to the Tanzania exporter and how long Kenyan exporters have used the improved product. The exporters have recently produced a list of chemicals that are available in Kenya and are not available in Tanzania.[68]

Other regulations should be made simpler, quicker and more efficient, for example obtaining work permits and obtaining the documentation for leasehold on land.

Support to TAHA

If the floricultural and horticultural industry is going to expand, it is important that the exporters work together to create critical mass to improve freight, establish a research and training farm and ensure that they benefit from incentives. As already mentioned, the most appropriate vehicle for creating this critical mass is TAHA. In addition, the Association of Mango Growers should also have an important role in helping fostering cooperation within the entire horticultural industry.

Currently, the Dutch Government plans to support the appointment of TAHA's CEO. It is hoped that the new CEO will have a good understanding of the perishable produce export industry, including freight, and also have the skills to negotiate with Government and donors. An important task for TAHA would be to attract donor support for the sector, given the importance of donor funding for the success of horticulture exports in many African countries as earlier mentioned.

Support to regional exports

There is already a significant amount of regional horticultural trade which provides commercial opportunities for many small-farmers. Most of this trade was established with very little support from Government or DPs. This regional trade could be expanded by increasing the level of existing trade, as well as by diversifying both product and market opportunities.

The DAI PESA project has started to improve farm-gate returns for the orange exporters in the Tanga region through establishing marketing groups and reducing transaction costs. Similar project interventions could be encouraged for onions and other crops. Farmers should be encouraged to work with those traders that are actively reducing marketing costs.

What is needed first is a comprehensive analysis of the market chain for these regional exports—such an analysis is important for understanding where costs can be reduced in the chain and also helps identify where efficiencies can be made. Other interventions should concentrate on

[67] For example, quantify the cost disparity, the toxicity differences etc
[68] See Appendix 4.

improving on-farm productivity through better agronomic and management techniques and improved marketing. In particular the improved marketing should concentrate on:

- Encouraging the formation of marketing groups.
- Increasing the efficiency of the supply chain by attempting to reduce the number of transactions and the transaction costs.
- Improving the efficiency and effectiveness of the services providers to the market chain.[69]
- Introducing a market information system.
- Training to improve product quality, packaging and the level of service offered to the buyers.
- Ensuring that there are not excessive cesses or provincial taxes (both formal and informal) that constrain the development of regional trade.
- Helping identify and support ways of adding-value to exports.

2.6 PROSPECTS FOR EXPANSION

The European Market

Horticulture

Horticultural exports to Europe are currently made by two vegetable companies and one fruit farm. Any major investment or contraction by any of them will have a substantial impact on the entire horticulture export industry. The European market for imported African vegetables is still growing quickly as production is increasingly moving away from Europe, and leading African exporting countries are meeting the standards and product quality demanded by European supermarkets. Kenyan vegetable exports are likely to expand by at least 15% in 2004 in volume terms compared to 2003.[70] It is not likely that the Tanzanian vegetable exporters will achieve the same rate of increase; a more realistic figure would be 10%, which is more in line with the rate of increase in vegetable exports from Africa to Europe over the past few years.[71] A 10 percent per annum growth would mean reaching export value of US$9.2m. by 2009/10, compared to US$5.8m. in 2004/2005. Again, it must be stressed that this industry is extremely competitive and Tanzania has a very narrow base, therefore there is considerable risk that the industry could contract if one of the businesses becomes non-viable.

The main markets for Tanzanian vegetables outside Africa will, in the short to medium-term, be Europe and mainly the UK. The reasons for this are simply that Europe is one of the three main markets for fresh vegetables: the other two being the USA and Japan. Tanzania will not be competitive in these two other markets, as other countries which are much nearer to those markets will have the comparative advantage. As the exporters become more sophisticated and develop a

[69] Improving the efficiency of the supply chain by attempting to reduce the number of transactions and the transaction costs and increasing the efficiency and effectiveness of the services providers can be achieved by a number of interventions specifically aimed at improving the performance of traders (market intermediaries) and service providers. These improvements could be implemented by either a project or by a donor-funded project. Further background information and the benefits of helping market intermediaries and service providers is given in Appendix 5.

[70] Based on data from the Horticultural Crops Development Authority of Kenya.

[71] Although Tanzanian exporters have plans to install high-care facilities, as mentioned earlier, this may depend on whether they can identify a market opportunity. Virtually all of the high-care output is retailed via supermarkets, and most of the main supermarket chains already have their preferred suppliers, which will make it more difficult for Tanzanian exporters.

range of competent outgrowers in different climatic zones, it *might* be possible to move away from the over-reliance on the UK and Europe to develop exports to other countries.

Cut-roses

It is projected that the cut flower export industry would probably increase at about US$1m. a year as the existing companies increase their area under production, and improve yields and quality. If this happens, the industry could reach US$18m. per year in 5 years, from US$12.7m. in 2004/2005.

The main market for the short to medium-term for Tanzanian roses will be Europe because this is where the main airfreight links are and where there is the most efficient marketing and re-distribution system. Some of the flowers that are currently traded over the Dutch auctions will sometimes be sold to other countries such as the USA or into the Middle East, but because of the marketing channels, it would still be preferable for most of the Tanzanian production to be marketed though Europe. A flower auction is currently being built in Dubai, with considerable support from the Emirates Government. The Tanzanian exporters might be able to supply this auction, but it will only mean that some of the marketing channels will be changed, it will not have too much effect on where the flowers are eventually retailed.

The market share for African roses in Europe is driven by the increasingly high costs of producing in Holland. Since the mid-1990s, the Dutch production of small-flowered roses (sweethearts) has declined from about 1.5 bn. stems to 0.5 bn. stems, and has been replaced by imports. Even though the Dutch supply of larger flowered roses has increased, the supply of imports to the Dutch market has increased even more dramatically.[72] It is expected that these trends will continue and the market for imported flowers will continue to increase. However, the increase in plantings of roses and other flower types in Kenya (and to a lesser degree, Ethiopia) has been dramatic, and the increase in supply would likely lead to a decline in real prices, potentially forcing a major restructuring of the Kenyan industry. This means that companies that have poorer management, and are located in areas of climate disadvantage and/or have significant debt levels, will come under pressure and will probably cease trading. In some cases, the larger, more efficient companies will probably buy the assets and keep producing. Tanzanian flower companies need to be aware that if they have significant debt and/or below average management, they will come under increasing financial pressure in the medium-term.

Other floricultural and niche products

As costs continue to rise in Holland and more European-based cuttings companies look to producing in East Africa, there is potential for expansion of the current cutting and vegetable seed operations in Tanzania, as well as for further investments. The two companies that have invested in hybrid vegetable seed propagation have plans for significant expansion if their initial investments work well, and early indications are promising. Because the northern Tanzanian region is well suited to cutting and vegetable seed production and there is already a viable industry, it is expected that the output of the current investments will double over the next 5 years. When these existing operations have demonstrated that they are successful, it will provide further evidence of Tanzania's suitability for these crops.

[72] See Sergeant (2005).

Similarly, if the hypericum exporter is successful, it should encourage other entrepreneurs to invest in other cutflower types. The current political and economic problems in Zimbabwe mean that there is a potential shortfall in some flower types in Europe and some importers will consider stimulating investment in Tanzania.

Finally, if the issues that are constraining horticultural and floricultural expansion are successfully addressed (see previous sections on constraints, and on strategy and actions to address these constraints), Tanzania would become much more attractive for new FDI, although it would still face considerable competition from other countries (for example Ethiopia but also Kenya and Uganda) which are also trying to attract the same potential investors. With improvements in the enabling environment, there could be two more significant investments in hybrid seed production or other "very high-value" horticultural or floricultural operation over the next 5 years.

The Regional Market

The rate of growth over the last few years of horticultural exports to Kenya has been very dramatic, in particular onion and orange exports, driven by the increase in Kenyan population, urban drift, as well as specific agricultural issues that restrict Kenyan competitiveness. Tanzania has the competitive edge over Kenyan oranges as the latter are planted at the wrong altitude, and over Kenyan onions because of better yields and quality. If there were a concerted effort by Kenya to redirect orange and onion production to more suitable areas, then the Tanzanian supplied horticultural produce would be squeezed.

Most observers of the Kenyan market expect demand to increase by about 5 percent per annum due to a combination of increase in population and urban drift. If all this increase were met by Tanzanian exports, it would result in an increase of horticultural exports of between 10 to 15 percent per annum[73]. Taking the more conservative estimate (10 percent per annum increase), this means that horticultural exports to Kenya would reach US$41.1m. by 2009/10.

Table 2.8 summarizes the projections of Tanzania's horticulture and floriculture exports.

[73] For example – onion data presented in Mundeo et al are about 85,000 tons. A 5 percent increase translates to 4,250 tons. If this were all met by Tanzania exports, it would be an increase of 10.6% per annum of these exports. Data from the same source shows 122,000 tons of oranges being marketed, with a 5% growth translating to an increase in demand of 6,100 tons. If this were met by Tanzanian exports, it would mean an increase of 15%.

Table 2-8: Current estimates and projections of horticultural and floricultural exports

	2004/05		2009/10	
	Volume (tons)	Value ('000 US$)	Volume (tons)	Value ('000 US$)
Exports to Europe				
Cut-roses	3,250	12,675	4,000	18,000
Other flowers	500	1,268	1,000	2,500
Cuttings	929	7,605	1,876	12,500
Horticulture	2,400	5,760	3,860	9,264
Others/veg seed		1,000		3,000
Total		28,308		45,264
Regional exports		26,950		41,100
TOTAL EXPORTS		55,258		86,364

Source *: Consultant's estimates***.**

2.7 EMPLOYMENT GENERATION AND POVERTY REDUCTION

The expansion of horticultural and floricultural exports to Europe has had a significantly positive impact on the population around Arusha and Moshe—permanent jobs with job security have been created, and social services such as medical care, schools, and meals are now provided in the area. It is estimated that the vegetable export industry employs about 2600 people, the cut-flower industry about 1800 people (mainly women), and the cutting, flower seed multiplication and other cut-flower industries about 2500 people.

As for exports to Kenya, DAI PESA estimates that about 1800 farmers belong to the orange marketing associations that its project supports. It is probable that a similar number of farmers are involved in producing onions for exports, which means a total of 3000-4000 farmers producing horticultural crops for exports to Kenya. In addition to the farmer and family labor, jobs would have been created for people to harvest, pack and load the produce. Most of these jobs are expected to be full-time.

The potential poverty reduction impact of the export horticulture industry in Tanzania could possibly be surmised from the Kenyan experience, where research[74] has shown that export horticulture has had a positive impact on poverty-reduction. Another study[75] indicates that "the over-riding perception among employees is that participation in the [Kenyan horticulture] industry has made a positive impact on their life. This view was strongest among female packhouse workers (the majority of the workforce), who attributed their new-found sense of autonomy and empowerment to their horticulture wages. Yet irrespective of gender and/or employment status, the wages garnered through employment have clearly elicited some positive outcomes".

[74] John Humphrey, Neil McCulloch and Masako Ota, "The Impact of European Market Changes on Employment in the Kenyan Horticultural Sector", Journal of International Development, 2004.

[75] Catherine S. Dolan and Kirsty Sutherland, 2002, "Gender and Employment in the Kenya Horticulture Value Chain".

Based on the above employment estimates, if exports to Europe expand at a rate projected in Table 2.8, then 4,000 to 5,000 full-time jobs would be created.

Table 2-9: Estimated employment generated by floricultural and horticultural exports to Europe

	mid 2004/05	mid 2009/10
Cut-flowers	2,000	2,462
Cuttings, etc	2,500	5,033
Horticulture	2,600	4,182
Total	**7,100**	**11,676**

Source: exporter interviews.

3. TOURISM

3.1 BACKGROUND

Tanzania is endowed with a variety of world-class tourism assets—wildlife, resort, archaeological, cultural and historical—that are in high demand in the international tourism markets. Among those that have received international recognition are its six World Heritage Sites, which are prime tourist attractions. These are: Ngorongoro Conservation Area, Serengeti National Park, Selous Game Reserve, Kilimanjaro National Park, Stone Town of Zanzibar, the Ruins of Kilwa Kisiwani, and the Ruins of Songo Mnara. In light of the fragility of its natural assets, as well as internal transport limitations, GOT has rightly targeted low-volume, high yield tourism in line with the image of exclusivity that its outstanding assets have made feasible.

Wildlife is currently Tanzania's prime asset; it is also the one with the highest scarcity value and can be the mainstay of Tanzania's tourism for years to come. In terms of quality, quantity, diversity, and visibility, wildlife in Tanzania's National Parks is considered superior to that in competing destinations. Tanzania also has exceptional marine assets, although much of the Mainland coast is still largely underdeveloped—this is expected to change when infrastructure improves. Within the broad categories of wildlife viewing and resort tourism, Tanzania can also offer assets that appeal to specialized segments of tourism demand: bird-watching, adventure tourism, deep-sea fishing, scuba diving, cultural tourism, and hunting.

Tourism is both a major foreign exchange earner as well as an important contributor to overall economic growth in Tanzania. For every year between 1993 and 2003, foreign exchange receipts from tourism constituted the single largest item in Tanzania's exports of goods and services, with an average share of 30 percent, and a peak of 45 percent in 1995.[76] Within the domestic economy, the trade, hotels and restaurant sector is the second largest sector after agriculture, making up around 16 percent of GDP between 1990 and 2003 and, with an average annual real growth of 4 percent per annum, was also the second largest contributor to overall economic growth after agriculture.

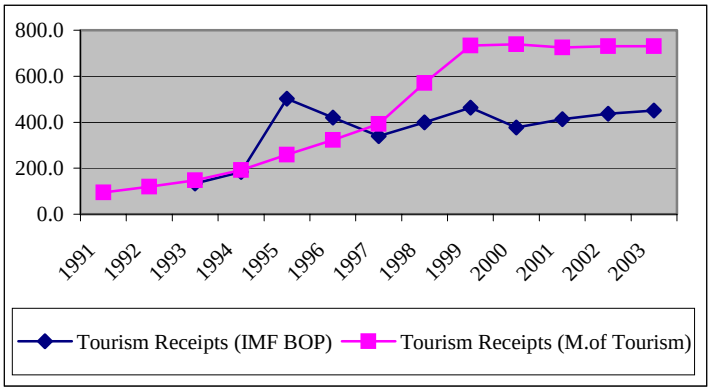
Tourism earnings accelerated in the early part of the 1990s, but have been stagnating over the last 5 years or so. Regardless of the source of tourism data (there is substantial discrepancy in tourism earnings data—especially after 1997—between that provided in the balance of payments[77] and that provided by the Ministry of Tourism and Natural Resources and the National Bureau of Statistics), tourism earnings have been stagnating since 1999 (Figure 3.1).

The contribution of tourism to growth comes not only from the tourist industry itself, but also indirectly through the linkages it has with other sectors of the economy. One study[78] found that the output multiplier for tourism in Tanzania is 1.8, which means that an investment of one million shillings leads to an increase of 1.8 million shillings to the economy. The same study also found that the output multiplier for tourism is higher than that agriculture, manufacturing and

[76] Tourism earning figures are from IMF, Balance of Payments (BOP) Statistics; exports of good and services data are taken from the balance of payments data from the Economic Survey 2004, Government of Tanzania.
[77] Reported in the IMF, Balance of Payments Statistics.
[78] Kweka (2001).

other services. Further, tourism was found to lead the other three sectors in terms of backward and forward linkages, and was second to agriculture in terms of inter-sector effects among 23 sectors. Whereas tourism requires 44 percent of its inputs from other sectors, the average for all sectors was 26 percent. These results are echoed in another study on Tanzania[79] that, in addition, characterizes tourism as "labor-intensive, in that a given level of revenue or capital investment creates many more jobs in tourism than the same level of revenue or investment would in agriculture or manufacturing industry." The above findings for Tanzania are in line with international experience that finds tourism has significant effects on the food processing, and beverage and retail trade sub-sectors.

Figure 3.1: Tourism Receipts in Tanzania (US$m)



Tourism is important for reducing poverty. Between 1991 and 2003, employment in tourism grew from 45,000 to 160,500, an average increase of 11 percent per year (Table 3.1). Actual employment generated by the tourist industry is higher when employment in sectors that are linked to the tourist industry is included. According to analysis of the poverty profile (Volume 1, Chapter 1), households that are involved in tourism have lower poverty rates than food crop producers, fish producers, and mining sector households.

Table 3-1: Key Tourism Statistics

	1991	1995	1999	2000	2001	2002	2003
Total number of tourists	186,800	295,312	627,325	501,669	525,122	575,000	576,000
Total earnings (US$m)	94	259	733	739	725	730	731
Average earnings per tourist (US$)	507	879	1169	1473	1381	1270	1269
Average daily expenditure per tourist (US$)	72	122	152	184	173	172	172
Number of hotels	205	210	321	326	329	465	469
Number of hotel rooms	5,484	6,935	9,575	10,025	10,325	25,300	30,600
Number of hotel beds	9,878	12,145	15,325	17,303	18,284	45,500	55,500
Average hotel occupancy rate/year	56	57	64	54	59	51	47
Number of employees	45,000	96,000	148,000	156,050	156,500	160,200	160,500

Source: Ministry of Tourism and Natural Resources and the National Bureau of Statistics, Tanzania.

[79] Bank of Tanzania, National Bureau of Statistics, and the Ministry of Natural Resources and Tourism (2003).

There is general consensus that Tanzania has not yet fully exploited its tourism potential, which means that tourism in Tanzania can make an even greater contribution to growth and poverty reduction. For instance, although Tanzania has more than four times the land mass conserved as national parks compared with neighboring Kenya,[80] it receives a lot few visitors, around 575,000 compared with Kenya's 838,000 in 2002.[81]

Further exploitation of Tanzania's tourism potential while ensuring long-term sustainability requires attention to various issues by public and private actors. This chapter will not focus on these issues, which have been addressed in other reports.[82] Instead, this chapter will focus on the backward linkages of tourism, given that this is an area not analyzed before, and given the large potential backward linkages have in terms of raising value-added in the economy, in turn raising employment and reducing poverty.

3.2 DEVELOPING TOURISM BACKWARD LINKAGES

As mentioned earlier, the contribution of tourism to economic growth and poverty reduction comes not just from the tourist industry itself, but also from the linkages that tourism has to the rest of the economy. Strengthening these linkages would be important for overall growth and poverty reduction. This implies increasing value-added of these sectors—that is, raising local production to replace imports. Strengthening linkages also addresses the concern of "leakage" regarding tourism—that is, the part of the tourist dollar that leaves the country to pay for the imports consumed by the tourism sector.

Tourism's backward linkages in Tanzania are spread out over many sectors (Figure 3.2). The key ones are: agriculture (fruits and vegetables), livestock (beef, lamb, and pork); poultry (chicken and eggs); fisheries (fish and seafood); dairy; manufacturing (equipment and furniture), non-perishable foods and dry goods (floor, rice, sugar); ground transport (tour operator transfers and packages, and local taxis), and handicrafts. Table 3.2 provides estimates of shares of products that are bought locally and those that are imported by the tourism industry.

While many of the products are sourced locally, they are not necessarily produced in Tanzania. Furniture and dry and non-perishable foods (for example sugar and coffee packets, sauces, plastic plates and spoons) are mostly imported, from China, South Africa, Dubai, Kenya, and Europe. Almost all machinery items are imported, for example, refrigerators, cooking ranges, air-conditioners, and so on. Chicken is sourced within the country for the most part, but other meats like beef and lamb are imported from South Africa and Kenya. Fruits, vegetables, fish, and other seafood are mostly (almost all) produced and bought in Tanzania.

Even though some products are produced locally, tourism businesses choose to import them because of limited availability of variety and quantity, and relatively lower quality. For example, round/construction bars, tiles, paint, ketchup, baked beans, and tomato puree are all produced locally but tourism businesses choose to import them. Most of the construction material is imported, including glass (Spain and Dubai); card locks (Sweden); and doors (Nairobi).

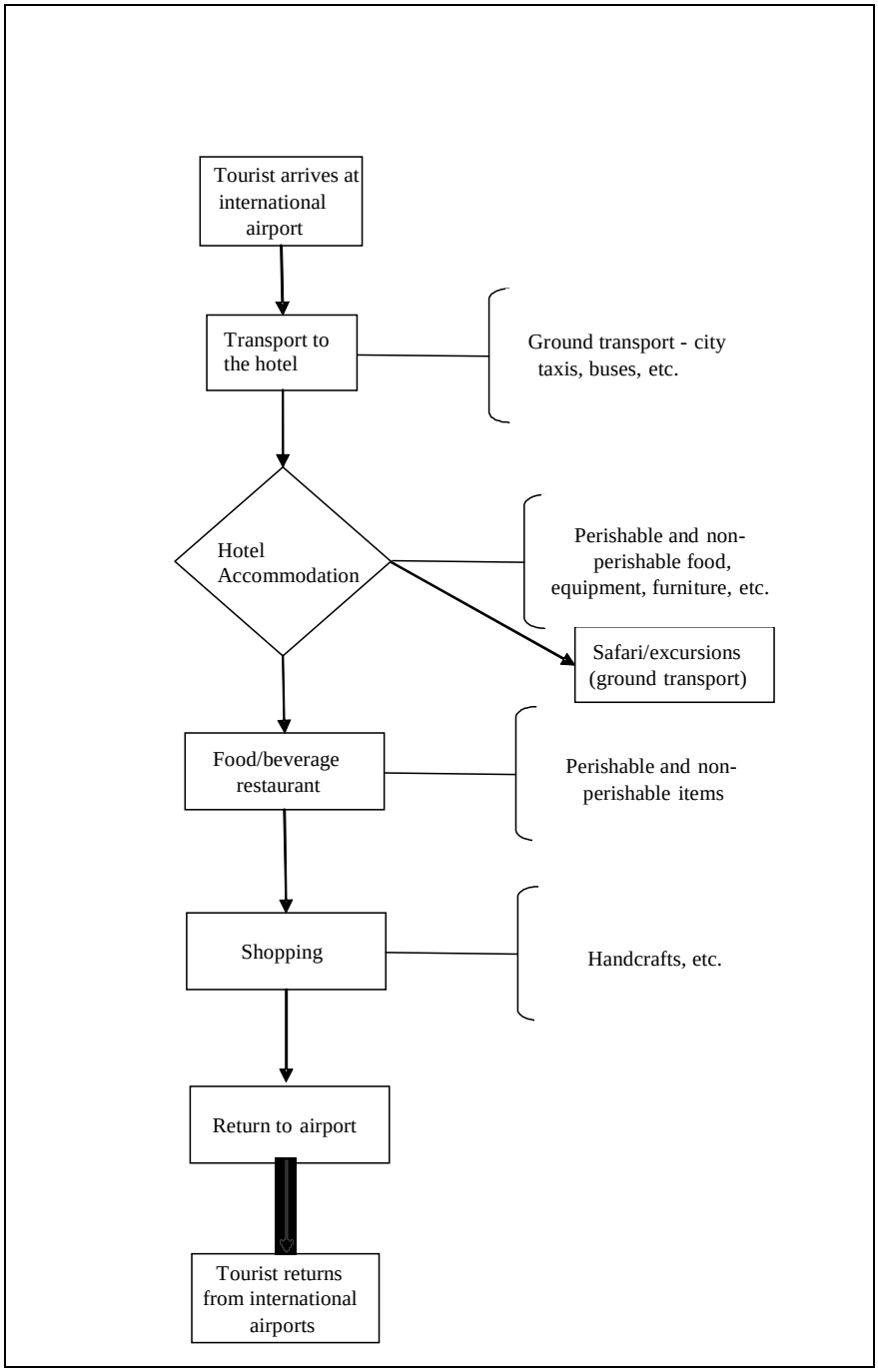
[80] Semboja and Chami (2004).

[81] Tourism data from Kenya is from the World Tourist Organization website, http://www.world-tourism.org/facts/tmt.html.

[82] These are the Tourism Master Plan (1996) which was updated recently with funding from the EU, and the World Bank (2002) report, executed by MIGA. The MIGA report also discusses the measures that are being undertaken to address some of the issues, and which development partners are involved.

Agricultural produce is also inconsistent – beans are uneven in size; canned products have low quality packing and they do not guarantee shelf life; and certain products' taste is variable.

Figure 3.2: Tourism flow in Tanzania and supply chain linkages



Importing products is not easy because procedures are complex. Therefore, most large operators hire clearing agents, which increases the cost of imports. Nevertheless, some products bought in Dubai, Thailand, Indonesia, and China are still cheaper than if they were produced locally. This is especially true for furniture and for some dry goods and non-perishable foods.

In general, a supplier of locally produced products provides neither a reliable supply of quantity nor quality for tourism industries. There is also a lack of continuity and reliability of supplies despite the apparent demand for such products. Another challenge for local suppliers is their ability to deliver on time. This is an important consideration for hotels, restaurants, and tour operators who have little room for delays in providing service to customers. Further, there is almost no merchandising of products, which makes the purchasing process inconvenient for tourism businesses. Such a situation is also not beneficial for suppliers as they may be unable to market and sell high margin items.

Table 3-2: Estimates of local linkages of select products used by the tourism industry

Products	Locally bought*	Imported	Products	Locally bought*	Imported
Furniture	51%	49%	Sugar	100%	0%
Fixtures and fittings	48%	52%	Other dry foods	78%	22%
Equipment (refrigerators, cooking ranges, etc.)	43%	57%	Beer	80%	20%
Furnishings (drapes etc.)	43%	58%	Wine	90%	10%
Garments (uniforms etc.)	83%	18%	Soft drinks	100%	0%
Fruits	99%	1%	Water	100%	0%
Vegetables	100%	0%	Milk	100%	0%
Chicken	94%	6%	Stationary	99%	1%
Fish	100%	0%	Insurance service	100%	0%
Prawn / Shrimp	100%	0%	Security Contract service	100%	0%
Beef	80%	20%	Telecommunications	100%	0%
Lamb	75%	25%	Coal / gas fuel	100%	0%
Pork	94%	6%	Electricity and water	100%	0%
Floor	94%	6%	Vehicles	100%	0%
Rice	99%	11%	Petrol	100%	0%

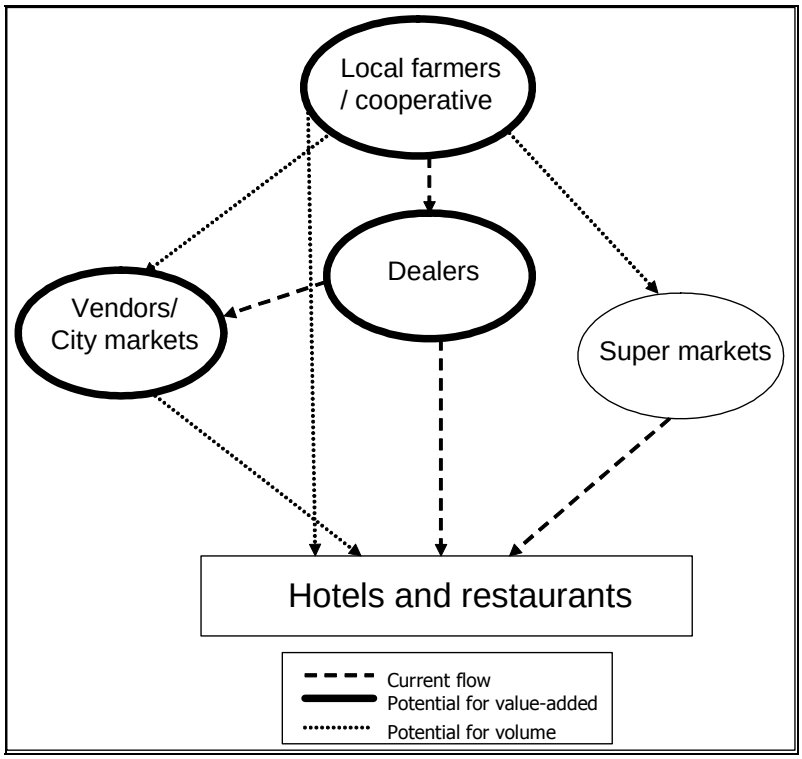
Source: Based on field interviews by consultant, December 2004-January 2005 of 10 hotels and 4 tour operators in Dar Es Salaam and Arusha.

In sum, the backward linkages from tourism industries like hotels, restaurants, and tour operators are extensive, ranging from agricultural products, manufactured items and business services. However, some of them are not realizing their maximum potential to both add value and increase employment. The rest of this chapter provides an overview of the current status and constraints in selected tourism backward linkages, and an analysis of each of the supply chains.

3.3 FRUITS AND VEGETABLES

Figure 3.3 presents the supply flow for fruits and vegetables. Farmers sell their produce to hotels and restaurants largely through dealers or vendors and supermarkets. Small amounts are sometimes sold directly. For example, in Arusha, hotels and restaurants mostly buy fruits and vegetables directly from the central market and Kilombero market and not so much from super market stores. Fruits come from Tanga, Dar, and Arusha while vegetables come from the Mt. Meru area.

Figure 3.3: Supply flow for fruits and vegetables



Locally produced fruits and vegetables have low yields (almost 50-60 percent lower than similar farms in Europe) and almost 10-15 percent of the products purchased by hotels and restaurants are not usable because of low quality controls. Local farmers also lack variety, for example, tomatoes and maize are popular produce. Certain high value items like mushrooms are not available in large quantities. These are in demand but they must be imported from Kenya on a weekly basis. Only dried mushrooms are available in Tanzania.

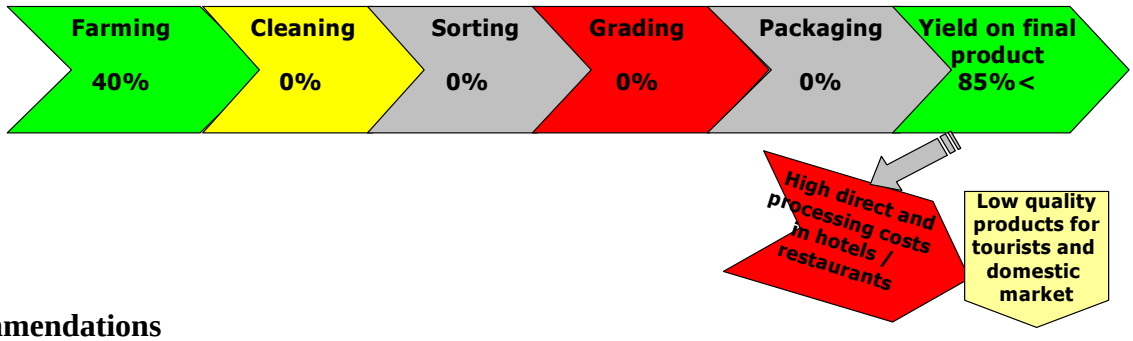
Constraints to adding value

1. Lack of skills. There is a gap in required skills, most notably at the production level of the supply chain. Farmers lack knowledge of effective production techniques related to plantation, use of chemicals, use of equipment, and taking crop. Only two commercial farmers are known to employ expatriates for providing essential and technical training. Figure 3.4 shows efficiencies at various stages of value chain for farm products.
2. Lack of capacity. Capacity is lacking at the production level because farmers do not have resources to invest in equipment, and also at the vendor or seller stage where there is limited capacity to add value to the products (such as by washing and cutting head-tail of beans).
3. Weak distribution channels. The local markets in Dar and Arusha have limited capacity to cater to a variety of clienteles, limited space, unhygienic conditions, and limited marketability, especially to clients (such as hotels and restaurants) whose business is to remarket these products to the final consumer. The two large markets in Arusha lack hygienic conditions, although the small vendors there pay a stall tax of Tsh 60,000 per year and another levy of Tsh 200 per day to the municipality which is responsible for maintenance of the space. Spatially, the two markets are also not ideal for marketing and merchandising produce. For example, vendors in Kilambero need additional space

for displaying products, and the central market needs improved monitoring of quality standards. All these factors are restricting the ability of vendors and sellers to maximize their revenue potential, both in Dar Es Salaam and Arusha.

4. Lack of communication. There appears to be a lack of communication between buyers and sellers in what the former want as product quality, quantity, and price specifications. This communication currently exists at an informal level. As a consequence, processes and procedures are not consistent.

Figure 3.4: Small farmers and producers – Efficiencies in value chain



Recommendations

Short- to Medium-term

1. "Farm to fork association". Organize a farmer-owned and operated association that would bring together many small farmers for a common purpose to produce and sell possibly high quantities of good quality produce.[83] The association will require initial support to build capacity but in time it could be run independently by all member producers, each of whom will be part owner of the association. The objective of this initial support should be to generate an interest among group (s) of farmers to:
    a. Understand benefits of working collectively in an association for a common goal;
    b. Technicalities of setting up an association; and
    c. Abilities required for initiating a small operation with a select group of association members and buyers.

    The following is recommended as initial support for the association:
    a. Dialogues, discussions, and workshops with a select group of farmers who have the potential to be members of an association;
    b. Development, presentation and training through a 6-12 month strategic plan of an association to generate interest for the association and create capacity;
    c. Ongoing capacity development for these associations; and
    d. Facilitating the establishment of these associations including providing initial financing through small business loans. The facilitation process would include features that are currently present in TIC's role for promoting investments.

The initial capacity building support should include skill development for farming, quality and food hygiene control, grading, processing, packaging, merchandising, building seller-buyer

[83] See Appendix 6 for an example of a similar association in Iowa in the U.S.

relationships, and effectively distributing the produce. One such trial association could be started in close proximity to Dar and/or Arusha. Vendors could also be licensed and brought in the formal sector to ensure monitoring. Such a farm association could be helpful in ensuring quality and safety of products, competitive prices, and production capacities to meet high varying demands.

Medium-term

1. The Tanzania Bureau of Standards (TBS) would need to increase the effectiveness of monitoring local fruit and vegetable markets through municipalities; additional staff may be needed to ensure an effective process.
2. Regional cooperation: the fruit and vegetable association could develop through regional cooperation with one or both of the other EAC partners. National experiences could be shared amongst association owners in this region to learn from best practices.

3.4 DRY GOODS AND NON-PERISHABLE FOODS

Figure 3.5 presents the supply chain flow of dry goods and non-perishable food items. Hotels and restaurants import around 70-80 percent of all their supplies of dry goods and non-perishable foods. The remainder supplies are locally produced but these are of varying standards and quality. The supply chain flows through two primary channels. The main channel is import by local retailers which then resell them to tourism businesses. The other channel—for a few special products that are bought infrequently—is direct import by hotels and restaurants.

Hotels and restaurants import a variety of products from Dubai, Europe, Kenya, and Asia, including plastic ware, plates, spoons, napkins, tissues, and cutlery from Dubai; cereals from U.K.; canned fruits and vegetable juices from Dubai and UK; flour and pulses from Dubai; sugar from India and Brazil; rice, herbs and spices from India. Soaps, cheeses and paper products are also imported. Some cleaning supplies and all soft drinks are locally produced.

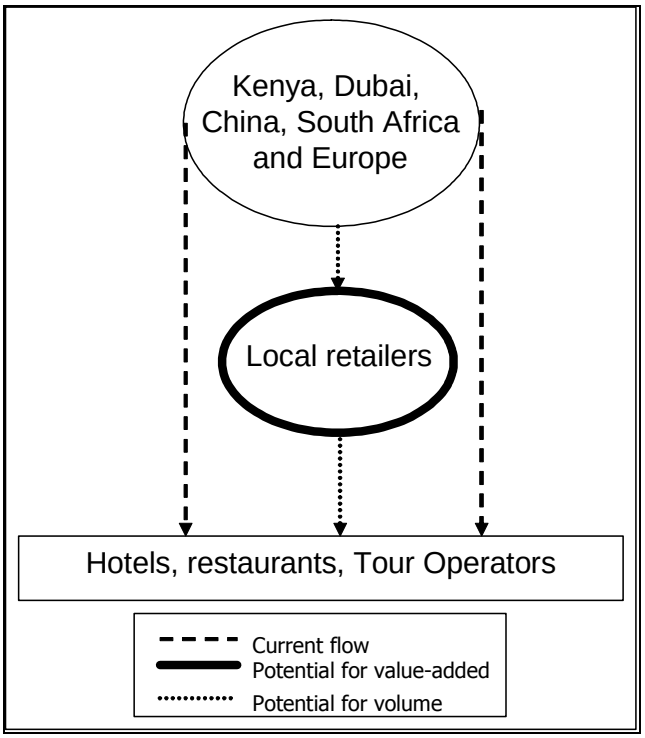
Consistent supplies are one of the main reasons that the tourism businesses locally purchase imported dry and non-perishable goods (despite the high margins charged by the suppliers of these goods), and the bureaucratic constraints to directly importing such goods. The cost of import includes: freight on board (FOB) plus insurance (1.2 percent) plus ancillary charges (4 percent - bank charges etc.) plus 25 percent import duty on the total cost of the product. There is also an additional 20 percent VAT on this amount. In addition, there are *demurrage* charges of $90 per day from the third day after the shipment arrives. Usually it takes longer than 3 days to process all papers so buyers end up paying demurrage through no fault of the importers. GOT is trying to speed up this process but as these offices do not work on weekends, there may at least be a charge for an additional two days. On top of high costs, there could also be delays of up to 3-6 weeks for release of containers. Meanwhile, the importer is losing time and also paying demurrage. There is also a risk of food spoilage and theft—approximately 0.5 percent value of imported goods is lost due to these reasons. Furthermore, when the product comes in late, it could be close to its expiry date.

Despite the high costs and bureaucratic constraints, many of the supplies of non-perishables are imported because local production is either not sufficient to meet demand (for example, flour and soya beans), or it is of low quality (for example, spices[84]), or there is no supply even though they could be produced locally (for example dried fruits, pasta, and supply items like straws, and better

[84] See also Chapter 4 of this Volume.

quality paper plates). Also, even when locally produced goods are available, the local retailers are not professionally managed, with the result that there is a general lack of awareness amongst hotels and restaurant, especially the smaller properties, of the range of products that can be sourced through these traders. The wage rates for employees range between Tsh 50,000-Tsh 80,000 per month, compared with the minimum wage rate of Tsh 45,000.

Figure 3.5: Dry goods, non-perishable foods, machinery, and equipment



There remains unrealized demand from small-and medium-sized hotels and restaurants which could be met from locally produced products, provided certain constraints are addressed.

Constraints

1. Raw materials either have low yields (for example fruits and vegetables) or are of poor quality (spices, pulses, and beans). Locally made spices are poorly packed and unhygienically handled. Portioning is also not accurate; for example, a 100 kg bag of red beans will weigh no more than 90 kg. And because all locally produced items must be cleaned and repacked by retailers, this results in an additional loss of 3-5 percent (from cleaning). There are items of better quality, for example, organic rice, but they carry no proof of origin.
2. There is a lack of skills, for example in communication, multitasking, customer service awareness, and reliability.
3. Packaging material lack quality, or is costly (because of high import duties) and not conveniently available.
4. The cost of utilities is high and there are frequent outages.
5. There is limited local demand which discourages improvements in quality as well as large investments.

6. There is lack of financing from local commercial banks. Investment banks are not interested in lending to such suppliers and even if they were, interest rates are 18-22 percent on US dollar loans.

There is interest among local investors to collaborate with international investors to set up more production facilities but project development requires time and resources for assessment of viability. Also, local operators do not have contacts for potential international collaborators.

Recommendations

Short- to Medium-term

1. Promote local production of certain items including spices, and processed fruits and vegetables. This could be done through a focused TIC-led marketing campaign. Some of these are already being produced locally but are not of good quality. For these sectors, TIC may consider promoting reinvestment and refurbishment in plant and equipment.
2. Organize a "trade fair" specifically for tourism businesses to improve communication between suppliers and tourism businesses, which is currently mostly informal and weak. This could be organized as a partnership between the Ministry of Natural Resources and Tourism (MNRT) and the tourism private sector organizations. There appears to be local support for such an initiative.

Medium-term

1. TBS should consider including quality standards for spices and other dry goods targeted for local markets—similar to their program for export oriented products—with special emphasis on implementation and monitoring. This could be an extension of their current program on Hazard Analysis Critical Control Point (HACCP) training program for food processing industries.

3.5 MEATS, CHICKEN, FISH AND SEAFOOD

Figure 3.6 presents the flow of goats, beef, lamb and pork through the supply chain, while Figure 3.7 presents the flow of seafood and chicken through the supply chain.

Most meat-processing plants sell products to hotels and restaurants. As much as 85 percent of processing plant revenues could come from these customers. The sources of meats are various. In the north, lamb is bought through brokers from Arusha, Mwanza, and Shinyaga; and pork from Arusha, Kilimanjaro, and Babati-Manyara (but this is usually infected with measles and other infections). There is plenty of goat meat but lamb is not available in sufficient quantities. What is available is of low quality and does not appear to be hygienically safe. Importing meat is not easy and for this reason tourism operators would much prefer to buy locally, if only appropriate types and quantities of products were available. Casings for making sausages, vacuum pouches, and spices are imported for use in processed meat products. Machinery used in the plants is outdated, which affect the quality and yields of meat products. Yields for beef are 69-70 percent (where low quality would be 75 percent), and for lamb are 60-80 percent (where low quality would be 80 percent). Production costs for a typical meat-processing supplier include labor (15 percent), utilities (15 percent), raw materials (39 percent), overheads (20 percent), leaving a profit margin of 11 percent. Monthly wages of employees in such processing plants range from Tsh 50,000 to Tsh 70,000.

Figure 3.6: Meats (goat, beef, lamb, and pork)

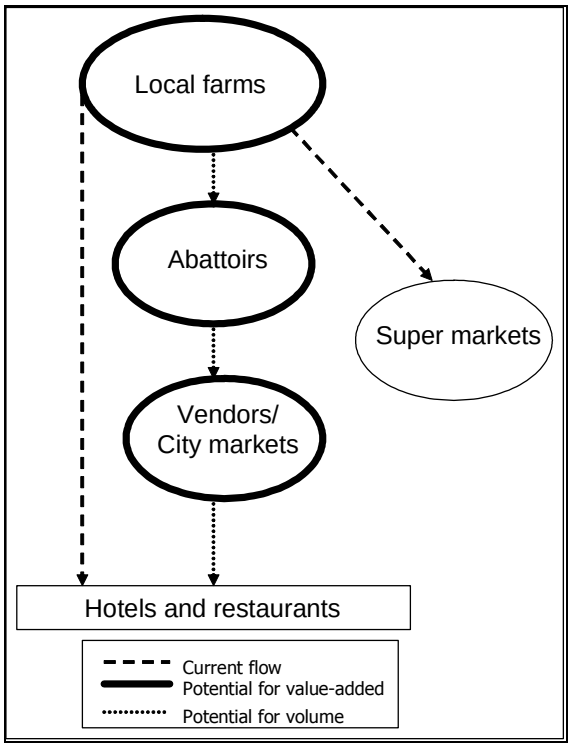


Figure 3.7: Seafood, fish and chicken

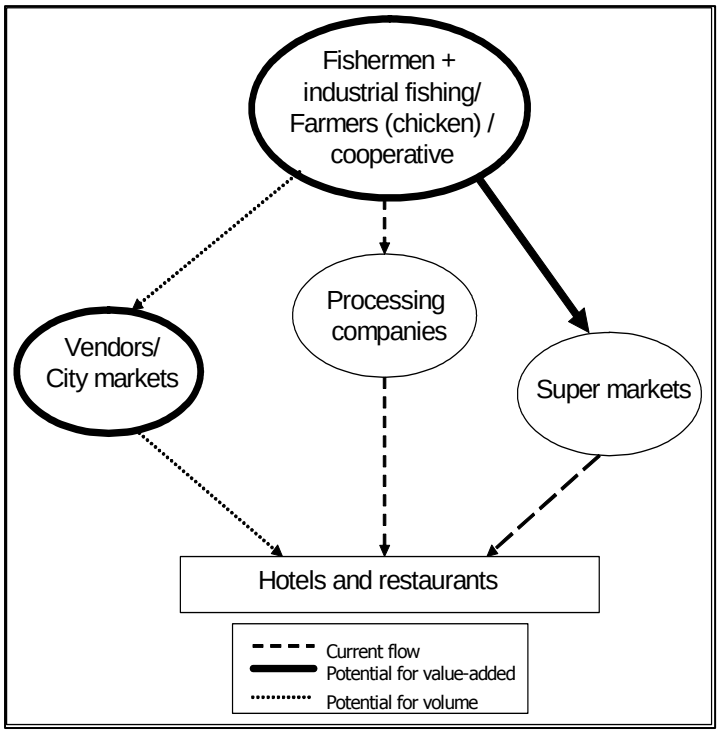


Table 3-3: Sales mix of a typical meat-processing supplier

Meat products	Percentage of total sales
Sausages	50%
Ham, bacon, beef, pork, and lamb (some sell chicken also)	30%
Others (including fresh cuts)	20%

Tanzania's poultry industry is extremely underdeveloped. The industry has two distinct segments, one "traditional" and the other "commercial". The tourism businesses are supplied by the "commercial" segment, which produces 20 percent of the poultry meat and eggs (the remaining 80 percent is produced from traditional species and is consumed mostly in rural areas). The commercial sector involves about a dozen hatcheries, all of which are small by international standards, although two have the capacity to handle 200,000 chicks per three week cycle. The majority of the hatcheries are operating at below 50 percent of capacity. Hotels and restaurants are important customers for domestic chicken processors as up to 35 percent of the latter's revenues can come from sales to these businesses.

There are some commercial operations that have adopted a vertical integration model, owning and operating breeding farms, hatcheries, broiler farms, feed mills and slaughter facilities. Poultry processing is an emerging technology, with the majority of birds still sold live. Although improving, the technical performance of most of the industry is low even by regional standards.

The commercial sector is unable to fully meet the quality and other standards set by the more discerning hotel chains and the leading urban supermarket chain, which services primarily a middle-class and expatriate clientele. There is also an inadequate supply of chicken to meet

demand during the months of June-August and the winter months. Consequently, chickens are imported from South Africa, Belgium, Mauritius, and Kenya to meet the demand. But imported chicken is expensive, and processing companies feel that if constraints are removed, it is possible to significantly reduce imports. Eggs are partly sourced domestically (43 percent from local farms) and partly imported (50 percent from Kenya and 7 percent from Zambia). However, producers would rather source up to 80 percent locally as it would be more cost effective.

Over the years, there have been periodic bans on imports of poultry products from South Africa (and elsewhere) due to concerns about the spread of Newcastle Disease. These trade restrictions have taken place despite the widespread incidence of this disease within Tanzania itself.[85] More recently, South African poultry products were banned due to concerns about the possible spread of Avian Influenza. This has created increased demand within Tanzania for local products which some firms are seeking to satisfy.

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

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

Fish and seafood processing companies and fish markets in Arusha and Dar Es Salaam are the main suppliers of products to hotels and restaurants (Figure 3.7). Up to 20 percent of seafood processing companies' revenues is from tourism businesses. However, it is challenging for processing companies to sell to hotels and restaurants, as the latter do not fully understand the product range available from suppliers. Products supplied by processing companies are octopus (35 percent of revenues); prawns (25 percent of revenues), and fish and squid (45 percent of revenues). Seafood processing companies purchase part of these products from fishermen and supplement it with their own commercial fishing supplies. Productivity of fishermen for these items differs: 100kg/person/day for prawns, up to 100kg/person/day for octopus, and 10kg/person/day for fish and squid. There is lack of training for fishermen and, as a consequence, much produce is not handled properly which reduces yields: for example, prawns

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

are delivered torn and without heads. Areas where capacity building would help include: how to handle fish, store it, and transport it. Storage requires a minimum investment in insulated boxes. But fishermen do not have these. Some companies are providing 15 kg boxes for fishermen and giving it to them on a loan basis, with the cost being slowly deducted from subsequent supplies. Training for merchandising can also benefit the fishermen sell effectively. They do not know various grades and variety of products. Suppliers are not certain of continuity and therefore must maintain high inventories.

On average a fisherman brings approximately 50 kilograms of seafood and earns an income of $2.50 per day. With minimum training for merchandising and ability to operate in the formal sector this income could double. However, not all businesses understand the value of processing as communication channels between suppliers and buyers are informal and weak.

Compared to current market shares, suppliers expect to increase their sales to hotels and restaurant by 30 percent per year. Costs of production are being influenced by lack of electricity on the grid, which requires processing plants to revert to generators. The logistics of moving products from production site to the market are not convenient.

Constraints

Beef and Lamb

1. Lack of technical expertise and poor quality control. Beef is of low quality because farmers do not manage animals professionally, and meat houses are not graded. There is a lack of standards on farms as well as storage standards for meats. Also, there is poor monitoring of sources of meet in the supply chain. While all meat is supposed to be inspected and cleared through meat houses, some of it is sourced directly from farm to businesses (bypassing inspection).
2. Lack of efficient processing capacity. Suppliers lack training and have no techniques for merchandising, marketing, or pricing of their products. Instead of cutting the cow into types of cuts, usually the whole carcass is found hanging. Lamb portioning is also not done properly. Furthermore, there is no proper packing of meat products.

Chicken

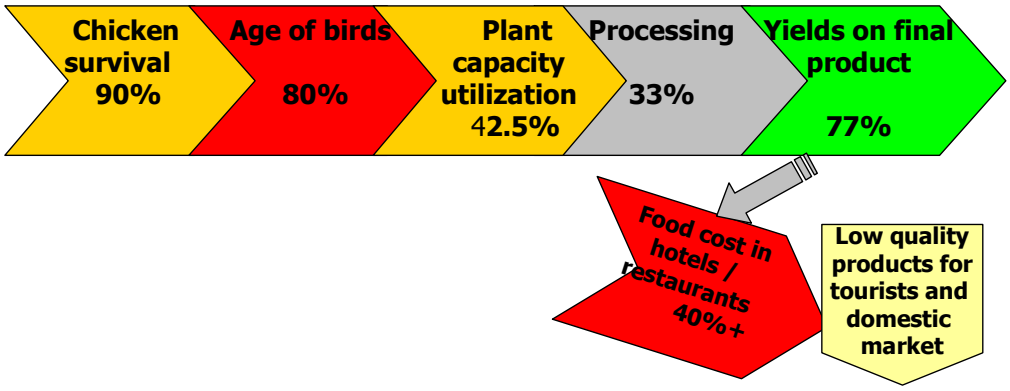
1. Quality of feed. The quality of locally produced chicken is low because of the quality of feed used.[86] There are two problems with the feed. First is the excessive use of daga fish in the fish meal used for feeding chickens, which affect the taste. While soybeans can replace daga in the feed as a protein supplement to help increase the growth of chickens, soybeans are not conveniently available in the local market, and importing soybeans is an expensive alternative (daga-based feed is $250-300 per ton versus soybean-based feed at $400 per ton). Second is the contamination of local feed with salmonella from the fish because fish ingredients are not decontaminated, and the processes are not monitored.
2. Capacity constraints. One key constraint to local farming and production is that there are not enough commercial raisers of chicken. Larger companies are ready to contract farmers to raise chickens and also willing to provide day-old chicks, feed, and technical support, including training. On their end, the farmers need to provide land, water, chick

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

houses, and electricity. However, individual farmers do not have enough financing, especially those that are inland. The continued deterioration in the quality of chickens has resulted in general meat-processing suppliers moving away from producing chicken, and processing companies are operating at lower efficiencies than companies in Kenya, Zambia, and South Africa.

3. Lack of skills. While labor is cheap, productivity is low as workers lack training, which introduces inefficiencies in the supply chain from farms through the processing of chicken. Productivity could be increased by at least 40 percent if employees were better trained to do multiple tasks like slaughtering, cutting, packaging, labeling, and weighing. An average employee in Tanzania can multitask 2 of these activities, compared to a Chinese employee who can multitask 9 activities – over 300 percent more. This has resulted in a much lower number of chickens produced per week—2300-3000 in the case of the Chinese, compared to 468 (and even as low as 166) in Tanzania. Low productivity of staff also implies that management must engage in constant monitoring and centralized decision making. This means that these managers could be spending over 70 percent of their time on the production floor, leaving less time for making strategic decisions.
4. Location constraints. The varying weather conditions in Dar increases the amount of time needed to raise chickens to maturity, from the norm of 35 days to 42 days. This raises the cost of feed and also the mortality rate of chicken because the longer maturity time increases the risk of disease or infection (mortality of chicken in Tanzania is up to 10 percent, compared to 5 percent in South Africa and Zambia). All of this raises the cost of production for chicken processors. However, moving farms inland to higher altitudes is an expensive option, as it would triple the current transportation cost of Tsh 40/km cost. The varying weather conditions also result in low productivity. For example, a shed of 200 sq/m in Dar holds 1,700 birds compared to a similar shed inland (higher altitude) that could hold up to 4,000 birds—over 135 percent more. This also implies that assets on the coast are being underutilized. The appropriate number of birds per square meter is 18, whereas in Dar-Es-Salaam the current number is 6 in the summer and 8 in the winter. Figure 3.8 shows efficiencies that are currently achieved at various stages of the value chain.

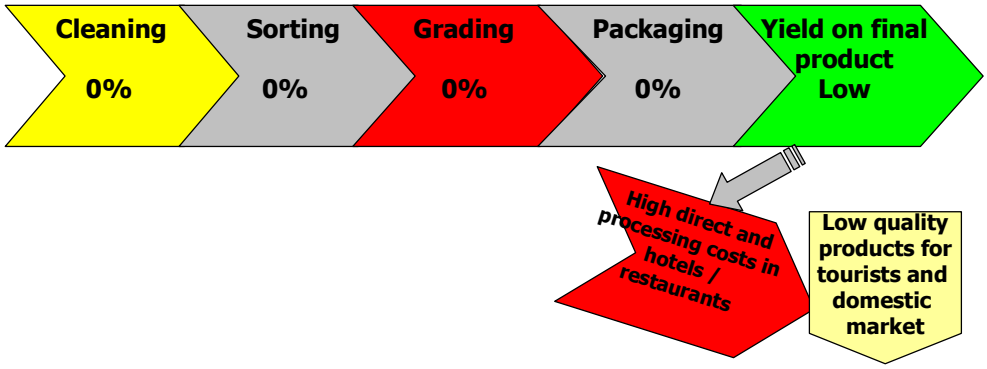
Figure 3.8: Efficiencies in value chain for chicken farmers and processors



Fish

Fishermen are a crucial link in this supply chain, and for the most part they lack training to catch, handle, store, and transport seafood. They are also weak in merchandising and even minimum processing skills that can add direct value to the product. Figure 3.9 shows these weaknesses in the value chain process.

Figure 3.9: Prawns from fishermen – efficiencies in value chain



Recommendations

Short-to-Medium-term

1. Improve quality standards for chicken feed. TBS could introduce a choice of "recipe standards" to produce *quality* feed. Even if daga is to be used (in appropriate proportions), the feed should be decontaminated so that there is less risk of salmonella. Furthermore, improved monitoring by local/municipal authorities can help ensure that farming and production practices are appropriate.
2. Promote development of associations for chicken farmers and fishermen with the objective of providing training in merchandising, marketing, and basic processing skill that would add value to these products. Initial support for such associations should aim at increasing awareness of farmers to create associations, developing capacity through focused training and skill development, and facilitating the process of establishing an association, including providing initial financing through small business loans (see recommendation section on fruits and vegetables). The facilitation process would include features that are currently present in TIC's role for promoting investments.

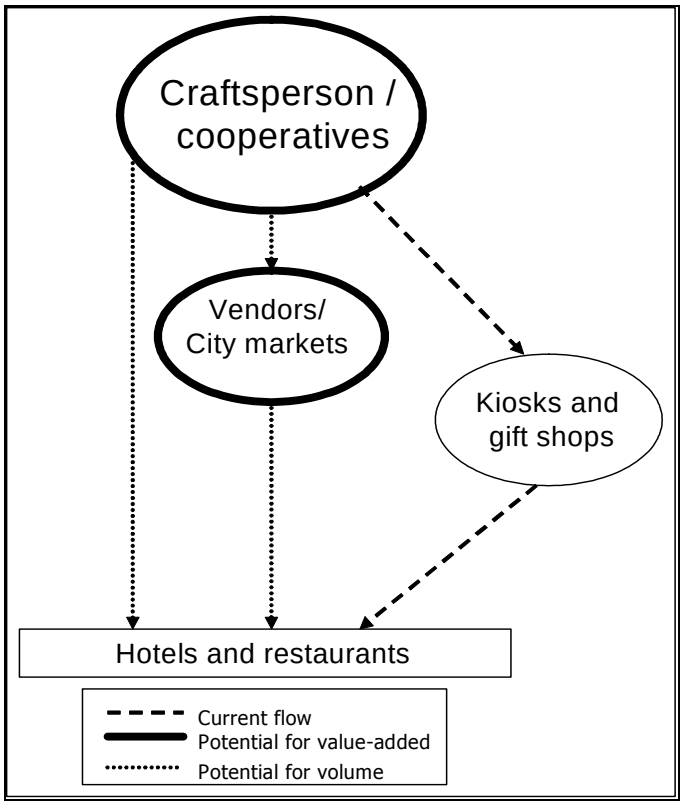
Medium-term

3. Improve the quality of beef and lamb by improving regulation and monitoring of meat houses, increased transparency of meat going through these clearing houses so as to regulate and control their quality. The traceability project at TBS could also consider training livestock farmers and certifying critical steps in the supply chain of products for domestic market. See Volume 1, Chapter 7 for a more detailed discussion of SPS issues and recommended measures regarding livestock and livestock products.

3.6 HANDICRAFTS

Figure 3.10 presents the supply chain for handicrafts. Tanzania produces many different types of handicraft products, and is particularly renowned for its Makonde sculptures in wood (from the south of the country on the Mozambique border). Various other types of handicraft products are produced in Tanga, Dar, Knaga, Mtwara, Kigoma, Bkoba, Moshi, Iringa. The other products include baskets (Iringa and Singid), spears (Dodoma), ebony (Dar), rose wood carvings (Tanga), and drums (Bkoba). Typically, producers sell their products to middlemen (vendors) or to kiosks located strategically in high tourist areas, for example in hotels, city centers, and on the way to national parks.

Figure 3.10: Handicrafts



City center vendors are numerous and an important part of the supply chain, but most of them are not well organized. The main market in Dar is about 20 kilometers from where the tourist hotels are located. The new arena in Arusha provides a better example of vendors coming together to sell their handicrafts. Prior to this, vendors were spread out on streets in the town area. Now there are 185 stores in the same location, with each selling and marketing its products independently. Each shop has two individuals running it, one owner and one helper. The monthly income for each store can be in the range of Tsh 100,000 to Tsh 250,000, with 60 percent going to the owner, 30 percent to the employee, and 10 percent for expenses including transportation and food. Each store could have as many as 5 producers supplying them.

Having one location provides convenience and safety for customers. Another positive aspect is that after moving to the new location, vendors experienced fewer objections to their obtaining licenses, registration, and even taxing. Therefore, all stores are licensed and registered. The

drawback is the inside location off the main road, which makes it difficult for vendors to effectively market their wares. The vendors are countering this by having advertisements in 4-5 places around the city.

Constraints

1. Vendors and operators require merchandising, marketing, selling, and pricing skills to capture clients, especially during low season. For example, tourists do visit Arusha in the low season but handicrafts markets are unable to attract them. Monthly income for each store can be in the range of Ts. 100,000 – Ts. 250,000 per month for two people. With appropriate marketing, advertising, and merchandising, this has the possibility to increase 10 folds.
2. Producers of handicrafts can benefit from inputs on design to broaden their products lines.

Recommendations

Short-term

1. Consider developing similar models as the Arusha handicrafts market place in Dar Es Salaam and other high tourist areas, including national parks. Such models provide easy accessibility to tourists as well as permanence for vendors for their operations. Such a model will help vendors operate in the formal economy, and provide an opportunity for them to get merchandising, marketing, and pricing training.

Medium-term

1. Provision of inputs on design and marketing to broaden the product line, assure quality and increase sales.
2. Consider introducing the concept of "fair trade" organizations in handicrafts sector as a separate project to ensure that actual producers do not get an unfair deal and are equal partners in the supply chain.

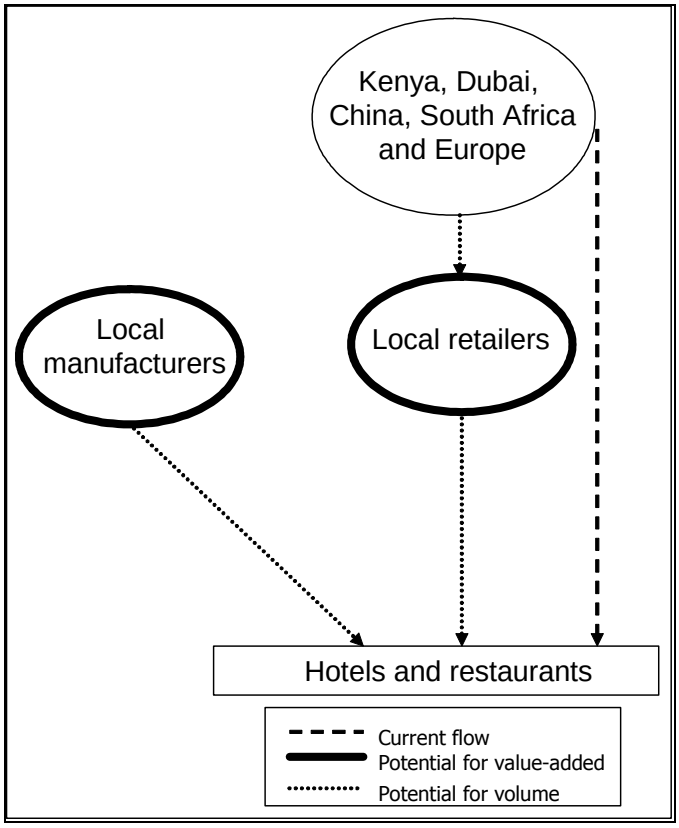
3.7 FURNITURE

Furniture that is produced in Tanzania is not of good quality, lacks the finer appearance that most hotel and restaurant establishments would like to purchase, and appears to be less durable and weather resistant largely due to the use of untreated wood. The timber is mostly untreated because it takes time to process and there is also a lack of professionalism in techniques. As a result, tourism operators are importing finished furniture from Kenya, China, and South Africa, amongst other countries, despite reasonable prices of locally-made furniture (Figure 3.11). However, there is a high potential for furniture manufacturers to sell their products to hotels, restaurants, and tour operators. Two key advantages of selling to tourism business are: high volume from single customers, and demand for potentially high margin items.

Currently, about 70 percent of furniture is imported, mostly directly by hotels, restaurants, and tour operators rather than through furniture houses. This is because the tourism business benefit from duty exemptions which are not available to furniture houses, and also because the latter charges high margins (up to 40 percent). However, the cost of importing is high, particularly for large items. For example, freight costs are as much as $210 per sofa set. This provides

opportunities for local manufacturing of such products. In fact, a few larger manufacturers are planning to increase local production, and the share of imported furniture used in the tourism business is likely to decrease to 50 percent in the future. Despite the currently high import share, there has been a fourfold increase in revenue over the last 7 years for local furniture manufacturers, or an average increase of over 50 percent every year.

Figure 3.11: Furniture



There are a few (6-8) large furniture manufacturers, and many smaller ones. A large furniture manufacturer could employ as many as 160 individuals, of which 30 would be in sales, 70 in administration, and 60 in production. Sales staff earns up to Tsh 120,000, administrative staff could earn Tsh 300,000, and production staff doing manual work could earn Tsh 80,000 per month. The growth in wages over the last year has been as follows: 15 percent for sales, 20 percent for production, and 10 percent for administration.

The current labor productivity for all types of staff is not at optimal levels, and can increase twice with essential training. For instance, the current monthly wages of Tsh 80,000 for production staff can increase to Tsh 120,000 with training, an increase of 50 percent. The lack of trained employees is limiting the variety of products that can be produced, especially those that require specializations, and for which there is no appropriately trained staff.

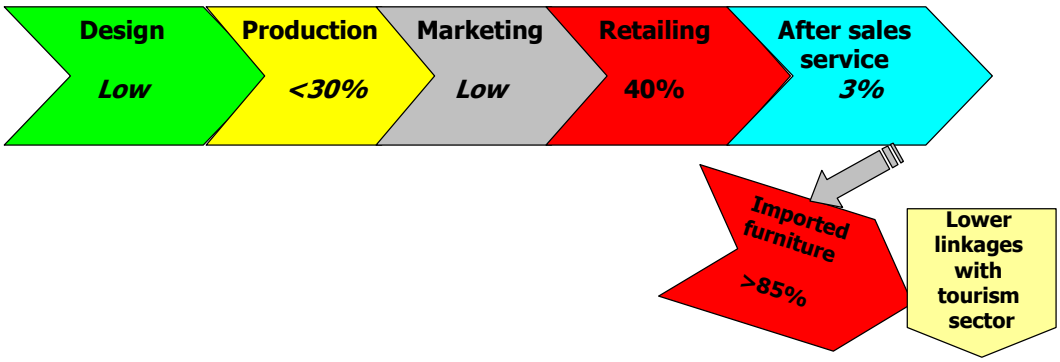
Constraints

1. The cost of production is high compared to other countries from where furniture is imported, especially China. It can be as high as 50 percent more on certain items like

sofa sets. The cost of production is high due to utility costs and labor cost, the latter due largely to the lack of skilled labor. Technicians have to be imported into Tanzania to train the local employees, and expatriate salaries of production staff could be as high as 10 times more than that of local employees.

Although this is a growing industry, the lack of reasonably priced financing for investment to increase capacity is delaying its expansion.

Figure 3.12: Furniture, single store operation – linkages in the value chain



Recommendations

Short-term

1. Review the curriculum of the Vocational Education Training Authority (VETA) and consider including relevant courses that strengthen skills required for this sector, through private sector participation. This is also likely to have an economy wide impact.

Medium-term

1. Review the role of VETA's 6 percent levy, and review the VAT rate of 20 percent, as it is higher in Tanzania than in other neighboring countries (VAT is 17 percent in Uganda, 14 percent in Kenya, and 14 percent in South Africa).
2. TIC could consider a focused marketing program to encourage local investment in production of good quality furniture. The demand does exists, both local and through tourism businesses.

3.8 MACHINERY AND EQUIPMENT

Figure 3.5 above presents the supply chain flow of machinery and equipment bought by tourism businesses (same supply chain as for dry goods). All products are imported and sold locally. Those hotels with TIC duty-exemption on imported goods prefer to import equipment directly, while others buy from local suppliers. The types of products sold to hotels, restaurants, and tour operators include small-to-medium-sized equipment.

Table 3.4 presents the types of products sold to tourism businesses by a typical local supplier of imported equipment. Such a supplier would employ 70 percent staff in administrative jobs, 12 percent in sales, and the rest (18 percent) as technicians. One of

the reasons for such a high number of administrative employees is because the productivity of staff in administration (for example, secretaries) is low. Monthly wages range between Tsh150,000-200,000 for sales staff, Tsh 48,000 for administrative staff, and $1,500-2,000 for expatriates. Expatriates, which are costly, need to be imported because of the unavailability of qualified local employees.

Table 3-4: Sales mix of a typical equipment retailer

Equipment	Percentage of total sales	Percentage of sales to tourism businesses
Photocopiers	25%	3%
TABX systems (phone)	Marginal	Marginal
Software for phones	Marginal	Marginal
Cash registers	Marginal	Marginal
Computers	15%	2%
Fax machines	30%	2%
Safes	Marginal	Marginal
Maintenance services	30%	3%

The current service component of machinery and equipment sales to tourism businesses is 30 percent, but it could increase to as much as 40-45 percent if buyers are aware of the services these suppliers can provide for installation and maintenance of machines, and if there are appropriately trained staff.

Constraints

1. Cumbersome and time-consuming importing procedures are increasing costs to the local suppliers. Paper processing on ports takes longer than a week. It is also difficult to locate shipments as the "long room" (area where all imported consignments are stored) is not well organized. As a consequence of delays, businesses must hold inventories of up to 3½ months, whereas ideally they would hold for 45 days. Because of this, inventory value for some companies can be as high as $1 million. Reducing the inventory holding time would also raise the likelihood of providing a better variety of products, which would generate more business for them. Businesses suggest they could possibly increase sales by 5-10 percent if inventory levels are lower. Furthermore, if funds locked up in inventory were available for capital investments, it would be possible for them to increase sales by an additional 15-20 percent. Finally, the list of items that are exempt through TIC investment program is not clearly stated for either tourism businesses or suppliers.
2. Poor communication channels between suppliers and tourism businesses.
3. Low labor productivity, especially that of administrative and technical employees.

Recommendations

Short-term

1. Clarify and better publicize the list of products approved for TIC duty exemptions for the tourism businesses. This will encourage suppliers to consider importing on behalf of hoteliers and also increase the range of products that they import.
2. Review the curriculum of VETA. It is also recommended that as an initial step, VETA could include private sector representatives on the advisory committees that develop the

curricula. This will ensure that curriculum will reflect relevant courses that strengthen skills required for current private sector realities.

3. Review importing procedures that cause delays in clearance of shipments (see Volume 1, Chapter 9).
4. Organize a "trade fair" specifically for tourism industries (recommended earlier for dry goods and perishables also).

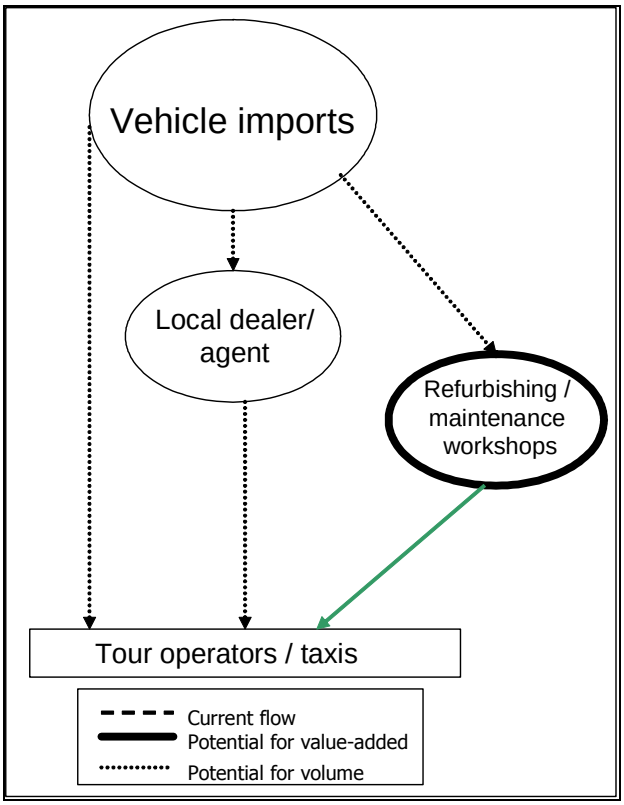
Medium-term

1. TIC should consider a focused marketing program to encourage local production in select machinery items. These items could be identified in association with the larger suppliers who are aware of demand opportunities.

3.9 GROUND TRANSPORT

The supply chain for ground transport is presented in Figure 3.13. The tour operators are the most crucial providers of ground transport. Other providers are local and intercity taxi services. The total numbers of tour operators in Tanzania are approximately 200 and total employment in these businesses is 1000, that is, an average of 5 employees per tour operator. This is a relatively low average number of employees because most operators are small in size. Salaries for these employees range from Tsh 80,000 to $1,000 per month. Drivers could earn between Tsh 80,000 and Tsh 100,000, administrative staff between Tsh 300,000 and Tsh 400,000, and managers between Tsh 800,000 and Tsh 1000,000.

Figure 3.13: Ground transport



The estimated total numbers of safari vehicles currently operating are 1,200-1,500. New cars/land rovers cost around UK£19,000 (US$30,000 - $34,200) each; most of them are bought through local suppliers. These vehicles are then outfitted to increase their durability and capacity as safari vehicles. The cost of refurbishment ranges from $6,000 to $12,000 per vehicle. Approximately 10-20 percent of vehicles are refurbished each year, and a large portion of the refurbishment cost is spent on imported material. For example, out of a total $12,000 for refurbishing new vehicles, $9000 is spent on imported items including drive trains (South Africa), windows (South Africa), springs (Australia), shock absorbers, rhino lining (South Africa), and paint (Netherlands). Locally produced items that are used in these refurbishments include body sheets and paint. However, body sheets are not of consistent quality and could damage the machinery, while the quality of paint is neither good nor consistent with no two batches being exactly the same.

There is a potential to increase labor productivity by at least 20-50 percent. Absenteeism in the form of 'sick leave' is becoming a challenge and labor laws dictate full pay for 3 months, which is a loophole that employees take advantage of. When full-time staff is absent, companies must hire part time employees who are not trained properly which means customer service suffers. Even though 6 percent (of wage bill) is paid as a levy to VETA, the benefits of this contribution are not directly apparent.

The costs of production for safari vehicles include the cost of petrol at approximately Ts. 158/km, maintenance and upkeep (including tires, batteries, and spare parts) of approximately Ts. 25/km, and fixed expense for insurance. While spare parts are bought locally, all of these are imported and sold by local suppliers. Precision tools and expertise in maintaining vehicles can be done locally but there are few tools of high quality, and a shortage of trained technicians. This becomes a critical ongoing factor in ensuring high quality vehicles, and given that maintenance of vehicles can be as much as 14 percent of operating costs, it is a significant issue that tour operators face on a day-to-day basis.

Table 3.5 provides an overview of the costs and potential of a typical city taxi unit. Up to 70 percent of daily revenue

Table 3-5: Services Sector within Dar Es Salaam city limits

	Costs/Sales Price
Purchase price (used car)	$5,000
Supplier's cost	$4,000
Commission	$1,000 (20%)
Average daily kilometers	76 km
Average price for customer	$1/km
Petrol cost (% of sales price)	$0.10 / km (10%)
Maintenance cost (% of sales price)	$0.02 / km (2%)
License cost (for registration / year)	Ts. 248,000
Salaries / commissions for drivers	Up to 70% of daily revenues*

*All maintenance costs are covered by owners; cost of petrol is paid by drivers.

Constraints

1. There are many taxis but few are of good quality due to lack of financing for new or maintained cars.
2. There is a shortage of expert technicians who could save money to tour operators as changing parts is a usually an expensive option.

3. Multiple licenses and permits are required, and a taxi could pay as much as Ts. 248,000 per year on all these permits.
4. Financing is not available for small-and medium-sized operators.

Recommendations

Short-term

1. Review license and permit procedures for cars used as taxis.
2. Review VETA curricula and consider including relevant courses that strengthen skills required for this sector.

Medium-term

1. The small and medium sized transport businesses still have little or no access to financing. This issue will need to be addressed in the future.

3.10 OVERARCHING ISSUES

There are three sets of overarching issues: those relating to product standards, and those relating to incentives provided by TIC. Product standard issues are addressed separately in Volume 1, Chapter 7.

TIC provides two incentives for exporting that apply to the tourist sector also: duty exemption on capital goods, and deferment of VAT. However, there needs to be more clarity and publicity regarding these incentives. For instance, businesses are not clear on when the deferred VAT payments are due. There also appears to be a separate list of capital goods imports approved for duty exemption for hotels and restaurant, but businesses are not clear as to what is on the list, and what the exemption procedures are. Finally, while foreign investors are aware of the scheme, many local investors are not; there is plenty of room to increase its visibility through focused marketing efforts.

Recommendations

1. TIC could explore introducing a focused campaign to encourage local investments in products that are 'most likely' candidates for local production: dry and processed fruits and vegetables, select small machinery items, and furniture.
2. TIC exemptions on capital goods for tourism businesses are not clear. These products require individual exemption, piece by piece, and it can be a tedious and costly process. One way to develop a program for TIC to effectively monitor exemptions on capital goods for tourism businesses could include the following features:
    a. Create a list of all potential items that hotels and restaurants may require in construction, operations, and refurbishments – this list can be developed through a standard purchasing list (example in Appendix 7);
    b. Develop a general formula to estimate how much of these quantities are required given the size and capacity of the business register; and

Create other checkpoints like assessing maximum annual requirements for each type of products (in cooperation with private sector associations) to ensure that orders are for businesses' requirements only – otherwise, a manual check may be required or a physical inspection.

3.11 IMPACT ON POVERTY REDUCTION

The impact on poverty through the above recommendations could be considerable if they are implemented:

1. More people are employed in agriculture than in any other sector. Several sub-sectors (fruits, vegetables, poultry, and meat) would benefit from increased employment in supply chains that have higher value products. It will also help them access essential skills that will be transferable for farming of other similar products, making them better prepared to diversify their work.
2. These initiatives will also improve the general entrepreneurship environment and support local investment. One of the biggest challenges for Tanzania is to move from being a trader to a producer. Increasing the production capacity of the nation will also have a significant influence on reducing poverty.

Finally, the expected increase in overall skill levels of employees will increase wages and also their ability to get better jobs, as well as overall labor productivity.

3.12 CONCLUSIONS

While tourism sector linkages to the Tanzanian economy exist, there are significant opportunities to increase and strengthen them. Based on hotel expenditure data gathered for this report,[87] there is substantial potential for increasing backward linkages of tourism to the local economy. Currently, on average, an international hotel spends $18 on locally produced items for every hotel room it sells. With a hotel room selling for an average of $120, that means only 15 percent of such sales are spent on the local economy. The equivalent data for a locally owned hotel is over 50 percent ($42 spending on the local economy for every room sold at an average of $80). The implications from these statistics is that there is significant potential for both types of hotel to increase their backward linkages, and much more so for international hotels than locally-owned ones.

The potential to increase backward linkages is both in terms of volumes and also through inclusion of additional sectors/industries that are currently not benefiting from these linkages. The fruit and vegetable linkage exists but most suppliers are in the informal sector with limited capacity. This makes it hard for them to be competitive and they also lose out on adding value to the product. Similarly, chicken and egg processors exist but low yields and lack of product quality are limiting their utilization of existing capacities. Again, other sectors like furniture, processed foods, and other small operating supplies could be produced and sourced locally, but there is limited access to capital and expertise. Finally, labor productivity is low, due to lack of trade skills, low literacy levels, and general lack of professionalism.

If Tanzania is to maximize the economic contribution of tourism, these linkages must be strengthened. To do this, a strategic and realistic approach must be adopted. The recommendations identified under each supply chain review will help achieve this objective. It is further suggested that priorities amongst recommendations be clearly identified by GOT and reforms introduced progressively. For example, increasing and strengthening linkages with agriculture and farm sector will be relatively easier. Even in this sector, it would help to initiate this process by solely focusing on fruits, vegetables, chicken, and egg. Slowly, other sector supply chains could also be included in this process.

[87] See Appendix 8.

The relatively less complicated initiatives like organizing a supplier trade fair will bring momentum to the process and also increase confidence amongst stakeholders. It is suggested that ongoing lines of research be identified to assess available alternatives that would help Tanzania maximize tourism's backward linkages. In particular, detailed value chain analyses for fruits, vegetables, chicken, meats, food processing, furniture and small manufacturing supply chains can further reveal gaps that need to be filled to realize their maximum linkages with tourism (and other demand) sector(s).

Below is action plan that summarizes recommendations for the linked sub-sectors. Cross-cutting recommendations are found in the Action Plan in Volume 1.

Action Plan: Recommendations for strengthening backward linkages of tourism

Objectives	Action recommended	Requirements			Time frame and agencies
		Implement existing policy	Policy/ legislation change	Technical assistance	
Fruits and vegetables					
Farm to fork association	Develop strategic plan to generate interest for association and create capacity.			Yes	Short term MIT, MCM, DP
	Organize discussions and workshops with select group of farmers that have potential to be members of association.			Yes	Short term MIT, MCM, DP
	Facilitate establishment of associations through loans as initial financial support.			Yes	Short term MIT, MCM, DP
	Provide capacity building support for associations for administering and managing such operations.			Yes	Short term MIT, MCM, DP
Develop Regional Fruit and Vegetable Association	Develop fruit and vegetable association (see above) in cooperation with EAC partners by sharing resources, capacity, and best practice.			Yes	Medium term MIT, MCM, DP
Meats and Chicken					
Chicken Feed	Improve quality standards for chicken feed.		Yes	Yes	Short term TBS, MIT, DP
Chicken Farmers Association	Promote development of associations for chicken farmers by raising awareness of farmers to create associations.			Yes	Short term MIT, MCM, DP
	Facilitate establishment of associations through loans as initial financial support.			Yes	Short term MIT, MCM , DP
	Provide capacity building support for associations for administering and managing such operations.			Yes	Short term MIT, MCM, DP
Meat house monitoring	Improve regulation and monitoring of meat houses and increase transparency of meat going through these clearinghouses to regulate and monitor the quality of beef and lamb.	Yes		Yes	Short term TBS, MIT, Municipalities, DP

Objectives	Action recommended	Requirements			Time frame and agencies
		Implement existing policy	Policy/ legislation change	Technical assistance	
Handicrafts					
Develop handicraft producer/vendor markets	Develop handicraft markets based on Arusha handicraft market model which allows easy accessibility by tourists and permanence for vendor operations.		Yes	Yes	Short term MIT, private sector, DP
"Fair Trade" in handicrafts	Introduce concept of "fair trade" organizations in handicraft sector to ensure actual producers do not get an unfair deal and are equal partners in supply chain.		Yes	Yes	Medium term MIT, DP
Ground Transport					
Licensing	Review licenses and permit procedures for cars used as taxis.	Yes			Short term

Short- term= within12 months, Medium- term = within 2 years, Longer-term = 2 to 5 years

DP denotes development partners.

4. SPICES

The current spice production and export sector in Tanzania is small, with estimated exports levels of less than US$5m. per year (excluding clove exports which in 2003 amounted to around US$11m., virtually all of which are produced in Zanzibar). Export levels and market destinations vary from year to year. Potential is identified to increase exports of a limited range of crops – vanilla, cardamom, paprika, pepper and ginger – to around US$15 to 20 million per year. Regional markets, particularly Kenya, and those of the Middle East and South Asia, are important destinations for current exports, and should offer considerable scope for increased development in the short term while production volumes are raised to allow targeting of the major international markets.

4.1 BACKGROUND

Tanzania is primarily known for the production of cloves from Zanzibar (Pemba Island[88]). The major end market is Indonesia (for keretek cigarettes) although much of the trade is routed through Singapore. On the back of this long established (since the early 1900's) position in the volume spice trade (annual production of up to 12,000 tons[89]), a wide range of other spices were introduced and tested in Zanzibar. Zanzibar has been exporting cloves, black pepper, cardamom, cinnamon, hot chillies, ginger, and so on internationally but in particular to the Gulf States and the Far East. These spice exports have been significant factors in boosting Zanzibar's economic growth, and Zanzibar intends to exploit these important natural resources through encouraging private foreign and domestic investment in increased production capacity and expanded market networks.

Mainland Tanzania is not recognized as a major spice producing origin, but does have a long established position as a minor supplier of sun-dried (straw-colored) cardamoms. A wide range of other spices are also present in the mainland agricultural sector, partly due to the proximity and activities in Zanzibar, and partly due to the wide range of climatic niches found in the country. Clove, pepper, vanilla, cinnamon, ginger, turmeric, the capsicums, coriander and cumin are all present. Nutmeg (and mace) is present in Zanzibar, and exports are recorded, so it may also be present on the mainland. In summary, a broad range of spices are present in the country, the plant material is likely to be of good intrinsic quality (chemical content and aroma profile), and the genetic base of the material is likely to be narrow.

4.2 CURRENT STATUS AND STRUCTURE OF THE INDUSTRY

The sector is small, based on smallholder production. With the exception of the annual crops (capsicums, ginger, turmeric, the spice seeds), there appears to be little active crop management, and the process is more of collection than production. There has been no significant development of professional specialist companies within the sector. There is no vertical organization, and there is absence of large-scale commercial production and large-scale irrigation developments.

There is very little application of improved technology in production (fertilizer and pesticide inputs, irrigation, etc.) or processing (improved drying etc); productivity and quality are therefore low. Collectors do not appear to differentiate product quality on price, resulting in little interest

[88] Also known at the "Island of Aromatic and Romantic Spices."
[89] Ton throughout this chapter refers to ton=1000 kilograms.

in improvement of output, and in the absence of other effective channels of training and information, the sector is static. There is a small spice grinding sector, primarily based in Dar Es Salaam, supplying ground spices and spice mixes to the domestic market. However, grinding frequently adds no value. There is no spice extraction facility (for the production of spice oleoresins), and there is no competitive basis – or prospect of – to support such a development. The lack of knowledge of products throughout the system from producer through to exporter results in high losses in production volume and quality. There are few specialist exporters given the small size of the sector. Producers are linked with exporters through a network of collectors – either working opportunistically or to the order of exporters. The few exporters with a long history of exporting cardamoms have a clear understanding of export market requirements and grade product received to export quality, but without vertical integration within the supply chain are unable to influence the volume and quality of the base supply.

The notable exceptions to the above are the current developments in paprika and vanilla (see discussion later). With the exception of these two spice crops, the trade is handled by general trading companies with more or less experience in the products depending on their background. Four large trading companies dominate the formal spice export sector, and a number of other smaller companies have developed operations.[90] Some of the small companies report a focus on organic production, and many are based in Zanzibar.

There is no survey data on the number of farmers involved in cultivation of spices as cash crops. Data provided for the small commercial developments of paprika (8,000 farmers) and vanilla (5,000 farmers) indicate that large numbers can become rapidly involved when profitable cash crops are promoted.

An industry association (the Spice Exporters Association) has been set up by the Board of External Trade (BET), as part of its support to the sector, and the BET provides the secretariat for the Association. However, the Association is not active in any meaningful sense and does not provide an effective forum and voice for the sector.

Until recently, spice crops were classified as Alternative and Non-Traditional Crops, and received no specific focus. A Spice Crop Research Program is in the process of being drawn up, and a number of research stations are initiating research activities. Given the probable narrow genetic base to most crops present, the (understandable) lack of expertise in the crops, the Program has an understandable long term focus and it is hard to project significant cost benefits to it. However, the current need of the spice sector is short term – it either receives a significant boost to development or it will remain small and fragmented and deliver little commercial benefit to producers or the nation.

With no previous experience of working with spices, and no on-going research program delivering results and therefore recommendations and materials for the extension service, the research and extension services are not playing a significant role in the sector at present. Donor funded programs address the lack of/weakness in extension through the establishment of independent product focused extension and training programs (as seen in the USAID DAIPesa paprika program, see discussion later), but whilst these are very positive in the short term, long term viability is usually strongly linked to the continuing presence of the donor project. For long term sustainability, the only viable solution is systems run by buyers/exporters (including central

[90] Caiger (2004) provides a listing of the companies.

estate/outgrower operations). These systems are generally the only ones that can deliver a cost structure and output results compatible with sustainability[91].

4.3 EXPORT PERFORMANCE

Export volumes across the full range of spice crops are low and erratic, and are largely the result of opportunistic activities of general trading companies, with no consistency in market destination[92]. The existing industry with limited technology and quality control and assurance systems[93] would have no relevance to any development of ground spice exports to the major international markets.

Excluding cloves, annual export volumes of any spice are mostly less than 100 tons, with only **black pepper** and **capsicums** occasionally exceeding 200 tons. Given the lack of organized structure in the sector and the smallholder production base, the result is not unexpected – there has been no consistent focus on the development of spice production and export. Non-western destinations are important – Kenya, the Middle East, and South Asia (India, Sri Lanka). **Cardamom** exports vary in the range of less than 10 tons to 90 tons. **Paprika** exports have only been made in the last 2 years, with export volumes of around 175 tons (2003) and 250 tons (2004). Almost all **vanilla** has reportedly been exported to Uganda (as both fresh green and cured beans) – but total exports are unlikely to be more than 2 to 3 tons cured beans (or fresh green equivalent)[94].

Customs export data will not include informal cross-border exports to Kenya and other neighboring countries. There are no estimates – products or volumes – of this trade, but presumably it would substantially increase total export volume, particularly for those products that are not handled by the few major export houses (ginger, the spice seeds, and possibly black pepper and cinnamon). A significant part of the Kenya trade is reported to be in the form of Kenyan buyers coming to Tanzania to purchase locally, rather than Tanzanian's exporting to Kenya – an important difference when the capability of the business sector to export is being assessed.

4.4 CURRENT COMPETITIVE POSITION

Spices from origin are primarily traded as the whole dried spice, ground spice, and as oleoresin (the solvent extract). The major international trade is in the basic whole dried spice. Trade in dried ground spice is limited, although volumes are increasing, with most trade concentrated in capsicums (primarily paprika), pepper cinnamon/cassia and ginger. Production of oleoresins at origin has increased substantially over the last 15 years, led by the development of the industry in India and China.

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[91] The buyer/exporter system run extension system was the base of the Ugandan vanilla development (see Appendix 9), and a very similar model is being promoted by SIDA in Tanzania under their Export Promotion of Organic Products for Africa (EPOPA) program.

[92] See Annex 3 in Caiger (2004).

[93] The sample of ground cinnamon brought at a leading Dar supermarket was found to contain a spent match on opening.

[94] The data for vanilla export in Annex 3, Caiger (2004) should be ignored unless they can be clarified further, as the volume/value figures are not compatible with any relation to real market prices or the extent of plantings reported in Bukoba. It is likely that the data is a mixture of fresh green bean exports (therefore divide by 6 or 7 to give cured bean weights) and miss-coding.

Tanzania's potential in spice trade is basically only in dried spice.[95] Nonetheless, even though the spice types present are of good intrinsic quality, and a wide range of spices are present and cultivated, and the range of climatic niches available in the country provides for good cultivation conditions for all of the spices, the overall competitive position for the production of the basic dried spice of commerce is weak, due primarily to:

- limited areas of existing plantings and low existing production levels for most crops, resulting in long lead times (3 to 5 years) to bring significant areas of new plantings to commercial bearing for all but the annual crops;
- low productivity in the production and post harvest system due to limited use of improved technologies resulting in high effective costs of production and consequent low margins to production;
- lack of structure in the industry, resulting in a disjointed supply chain preventing the effective transfer of crop and product information and requirements between producers and exporters;
- limited number of companies having strong understanding of the products and markets;
- high costs of transport from interior production zones to export borders;
- excessive export procedures, resulting in unnecessary cost and time penalties for exporters.

The effect of high transport costs on the profitability of spices can be significant, particularly for the bulky annual spice crops which offer the most potential for rapid expansion. For example, paprika is purchased at the factory gate in Iringa. Transport costs from the more remote Songera production zone are around 10% (Tsh 90/kg) of the buying price. Container transport costs from Iringa to Dar Es Salaam (full out, empty return, US$800-1,200) are higher than the freight charges Dar to market (Spain, US$800). Ginger provides another example. Fresh ginger is both bulky and heavy, and with the exception of the same district production zone that is close to the regional market in Mombassa, it is unlikely that Tanzania has any potential for the development of this product trade. Dry ginger is also bulky, and the Kigoma District production zone is far from the potential regional markets of Southern Africa and the international export point of Dar Es Salaam (neighboring countries to the west and north-west are unlikely to be significant markets as they are likely to have adequate domestic production).

With respect to export procedures, exporters have to comply with a range of requirements dictated by buyers in the particular end market and additional GOT requirements. Both impact business competitiveness – through direct cost and time requirements. No market justification was identified for the Radiation Certificate required for export. Analytical charges of the few laboratories available to provide services are high – there is a strong element of institutions using their capability to maximize their revenues rather than providing a low cost essential service in the facilitation of export development[96].

[95] Caiger (2004) has a discussion on Tanzania's lack of potential in ground spice and oleoresins trade.

[96] The schedule of charges levied by government agencies for services to businesses needs to be addressed. This study attempted to source 25 year histories for rainfall and temperatures for each Region of Tanzania from the Department of Meteorology – a standard request. The charge requested – initially US$2,100, then reduced to US$700 – prevented access and use of the data. This report therefore uses information collated and published by FAO in 1982, and in the public domain (see Annex 4 in Caiger, 2004). Access to such information is essential for consideration of any agricultural investment and the level of prices would certainly represent a barrier – and reliance of 25 year old data should not be considered an acceptable substitute. The history of the Groundnut Scheme in Tanzania provides direct evidence of the importance of these data to development planning.

The results of the weak competitive position are seen in the slow rate of new export developments—paprika and vanilla—and the low and erratic level of spice export volumes, and variability in destination origins. The constraints giving rise to this can be addressed, and the situation changed. In this light, the fundamental competitive advantage that Tanzania can mobilize in comparison with other countries considering a spice diversification and development program is the established presence of many spice crops, and the range of required climatic niches. Programs of crop introductions, and the identification and appraisal of agro-climatic zones are not required, and this advantage should not be underestimated.

4.5 POTENTIAL AND CONSTRAINTS OF SPICE CROP DEVELOPMENT

Three case studies are presented below to illustrate the potentials and constraints to spice crop development in Tanzania.

Paprika

A Spanish company, EVESA, that was previously involved in the development of paprika production in Zimbabwe has set up a local subsidiary, Tanzania Spices, in Iringa for the development of paprika and other spices. Tanzania Spices has a stated demand for 2,000 tons of dried paprika, fixes a buying price prior to the start of the cultivation season, and has been providing seed to farmers. Production is almost entirely smallholder based. Currently an estimated 8,000 farmers are involved, and it is projected that this will rise to 12,000. The USAID-funded Private Enterprise Support Activities Project (DAI-Pesa) is actively involved in the organization of farmers, the provision of training, the introduction of technology and parallel support to the development of Savings and Credit Cooperative Organizations (SACCO's). The crop is highly profitable for farmers[97], with projected gross margins from rain-fed production in the range Tsh 150,000 to Tsh 350,000 per acre depending on the level of inputs used. Irrigation would more than double yields, and gross margins would be substantially higher. Against this background, total production in the second year (2003) of 174 tons of dried paprika was achieved, and 254 tons in 2004 – despite making available seed sufficient to deliver 2,000 tons of crop. Actual farmer yields achieved are very low and only increasing slowly from 172 kg/acre to 184 kg/acre, whereas minimum target yields for rain-fed production should be 300-400 kg/acre, and double this[98] if adequate inputs (primarily fertilizers, also pesticides) are used.

Unless substantial and rapid progress can be made in increasing total production to commercially viable levels that would secure the long term interest of the investor/buyer – say 1,000 tons minimum – the risk of the buyer withdrawing must be considered high with the likely consequent collapse of the crop sector. It has to be questioned whether the smallholder sector is capable of leading the development of production of these crops.

Vanilla

Vanilla cultivation has been developing in the Bukoba region since around 1994/1995 – stimulated by the successful and highly profitable development of the crop in Uganda. The development has essentially been led by a local Farmers Association – Mayawa – that managed to secure some assistance from a Belgian NGO – TRIAS. Currently there are around 5,000 farmers and an estimated 113,000 plants. The Association has divided the area into 6 zones, and has farmer field workers in each zone (originally a total of 6, now 10) to provide advice to

[97] Competitive Analysis of the Paprika Industry in Tanzania, Final Report May 2004, USAID/DAIPesa.
[98] Based on DAIPesa projections and Consultants estimates.

growers. The Association set up its own curing facility in 2002, and in 2004 produced around 750 kg of cured beans (from 4,500 kg of green beans). They report that cured quality is very high. The Association sells its product to a Ugandan company, and farmers also sell green beans direct to Ugandan buyers. The Association purchases beans from farmers on a 2-part payment system – a first payment on delivery of the beans for curing, and a second payment after the cured beans have been sold. Total output of cured vanilla (including green bean sales to Uganda) is probably around 2 to 3 tons. TRIAS is continuing support to extension and training but has ended support to marketing.

Whilst the vanilla development has been successful in terms of farmers independently identifying and taking up a new crop, securing some donor support and developing exports, the rate of progress has been very slow. Although development of vanilla started a few years earlier in Uganda (1990), Uganda now has cured bean production in the 50 to 100 ton range, whilst Tanzania is around 2 to 3 tons. An association is unlikely to be (and has not been) able to drive forward crop development aggressively and develop the necessary relations with international buyers to both secure market access and obtain price/supply/demand feedback. During the 2004 season, the Association has made a first payment on green beans purchased of US$10/kg – indicating a minimum cured bean price of US$65/kg without any allowance for curing costs and margins. In the current market they are very unlikely to be able secure such prices and are likely to be forced to sell at a substantial loss. Through lack of external linkages the Association has purchased beans on last season's price structure – in all other origins this year green bean prices have been in the range US$3 to US$5/kg.

Cardamom

The main area of cardamom production is in the Usambara Mountains, inland from Tanga. The area has high rainfall (above 1,700 mm) and a long rainy season (9 months) and offers excellent conditions for cardamom cultivation. Based on the capsule shape it is likely that it is the Mysore type that is cultivated. The crop has been cultivated by both smallholders and estates (the Bombay Burmah tea estates planted over 100 acres, for example). The crop should be established under thinned forest canopy (so providing a sustainable cash cropping system for forest hill lands), but smallholder plantings are reported to be mostly in cleared (open) land – this system gives an earlier and higher initial yield, but plants collapse after 4 or 5 years, and cannot provide a viable basis for long term crop development. It is reported that many of the estate plantings were given up due to excessive theft of crop from the plants. Most of the samples seen suggest excessive harvesting of immature capsules. It is likely that growers are simply harvesting entire panicles rather than harvesting the capsules individually as they ripen. Exporters report that collectors buy without regard to quality and farmers sell whatever can be collected when a collector appears. Product is sold as both fresh and dry capsules, and the dry product is frequently inadequately dried. Historic export levels of 140 to 170 tons[99] and annual purchases of almost 500 tons in the early 1980's[100] have declined to erratic exports in the formal sector in the range a few tons to 90 tons. Current productive capacity is estimated at around 100 tons/yr. The crop is sun dried, giving straw colored capsules.

The premium market is for green capsules: the capsules are harvested at maturity when still green, and dried in the dark using artificially heated air (indirect firing systems). This preserves the green color. The Mysore type (which it is thought Tanzania has) is particularly suited to this,

[99] Source: Spices, Volume 2, JW Purseglove, EG Brown, CL Green and SRJ Robbins, Longman Scientific and Technical, 1981.
[100] Basic Data Agriculture and Livestock Sector 1983/84 – 1987/88, National Bureau of Statistics.

in contrast to the Malabar type where the capsule loses color at maturity. Some years ago the Fila Hussein company established 3 driers for the production of green cardamoms in a collaboration with a Guatemalan company (the major source of green cardamoms to the international market, with the Tanzanian crop coming during the Guatemalan off-season). Despite establishing 2 of the driers at Tanga it was only able to source sufficient crop for the production of 5 tons (against a target of 100 tons), and dropped the attempt. Without strong vertical integration of the supply chain and a commitment from the producers to supply what the buyers/export market requires, critical volume is lost to opportunistic collectors and buyers who take product without regard to quality and gain competitive advantage through avoiding taxes and regulations.

4.6 STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS

Strengths

- Broad range of spices of good intrinsic quality present and cultivated
- Diverse range of suitable climatic niches to support production of the full spice range
- Extensive land resources
- Large smallholder production base

Weaknesses

- Lack of a commercial large-farm sector
- Lack of irrigated developments
- Low level of production and post harvest technology in smallholder sector
- Low productivity in the smallholder sector
- Restricted access to microfinance
- Weak, fragmented marketing chain; lack of integration of producers and buyers/exporters
- Fragmented export promotion function, lacking focus
- Absence of research and development results; weak extension service
- Understanding of markets and requirements outside of large exporters

Opportunities

- Large scale development of the annual crops (paprika and other chillies/capsicums, ginger, the spice seeds)
- Significant development of vanilla – to the 50 tons cured bean range
- Substantial development of pepper targeting the extraction market
- Development of the cardamom sector to double exports
- Development of Fair Trade Certification to capitalize on smallholder production base
- Development of supply to regional markets

Threats

- Withdrawal of the few leading domestic companies/buyers in the sector
- Rapid market response of other competitive origins satisfying international market opportunities
- Increased domestic production and development of diversification programs in key regional markets substantially reducing import demand in these countries

4.7 CONSTRAINTS TO INCREASED EXPORTS

The table below summarizes the main constraints to the development of increased exports. The table indicates whether the activities required to overcome the constraints are best led by the private or public sectors. The numbering indicates a tentative priority ordering.

Short term (1 to 3 years):

Private Sector	Public Sector
1. Farmer organization (Farmer Associations etc) 2. Farmer training and promotion of improved production practices and technology usage 3. Development of coordinated and targeted export promotion and market intelligence program 4. Producer-Exporter linkages 5. Development of an active Industry Association 6. Exporter market linkages	1. Access to credit/SACCO's for small farmer sector 2. Research program for supply of planting material and development of production and post harvest technology packages 3. Promotion and facilitation of large scale commercial investments in production sector 4. Reduction of business costs

Medium term (3 to 7 years):

1. Increased productivity in the smallholder sector through uptake of improved production and post harvest technology 2. Development of large scale commercial production units	1. Development and support of the regional market export channels 2. Irrigated developments 3. Rural transport and market infrastructure

4.8 PROSPECTS FOR EXPANSION OF EXPORTS

Export volumes are currently constrained by production. No clear evidence was found of significant unsold excess production. Exporters reported that their business was limited by the availability of product. Given the fragmented nature of the supply chain, and the opportunistic nature of some of the export trade, it is likely however that there is some scope to increase export volumes in the traditional spice crops (that is, excluding paprika and vanilla) in the short term both through more systematic sourcing activities started before the harvest season, and through encouraging growers to improve the management and harvesting practices of their existing crop stands.

Significant development of export volumes requires an expansion of the crop area in addition to improved management practices. In consequence, only the annual crops (paprika/chillies/capsicums, ginger, turmeric, the spice seeds) can deliver significantly increased export volumes in the short term (1 to 3 years). All other crops are short or long term perennials with lead times to commercial bearing of at least 3 years. Initial activities must focus on the annual crops. The only limitation to increasing paprika exports to 2,000 tons in 2005 is the ability of the smallholder production sector to deliver this volume. Production of 2,000 tons of black pepper (for which markets could also be found) could not be achieved until 2008 at the earliest given the requirements to multiply planting material and bring the plants into bearing.

Detailed statistics for the major relevant export markets (volumes, values, prices) are given for the major crops of interest in Caiger (2004). The market opportunities identified for spice crops with major potential are summarized below.

Vanilla

Summary. In the medium to long term there is an opportunity to increase production and export to around 50 tons per year cured beans, with a value of around US$2.5 million. The current crop is small, almost certainly under 5 tons per year cured beans. It is quite realistic to target a 50% increase in crop volumes year-on-year.

*Identification of opportunity***.** Prior to the last 2 to 3 years, market demand for vanilla in the major western markets was around 2,200 tons per year with steady growth in the range of 3 percent. Cured bean prices had recovered from the collapse in the Univanille cartel in the mid-1990's and were in the US$50 to US$70/kg range. Exceptionally high prices trigged by cyclone damage in Madagascar with prices peaking at over US$400/kg in early 2004 have badly destabilized the market and curtailed demand, with the markets replacing the use of natural vanilla with substantially lower cost synthetic vanillin. In the short term therefore, with global vanilla production back over 2,000 tons, supply is far in excess of demand, and prices, which have already fallen into the US$50 to US$75/kg range, may weaken to US$20/kg over the next 2 years. Manufacturers who have changed to using synthetic vanillin will not all immediately move back to using natural vanilla – they will want to be sure of stable supply and reasonable pricing, and in the interim the market will remain oversupplied and prices low.

In the medium term however, the market can be expected to re-establish overall demand of around 2,200 tons with prices in the range US$40 to US$70/kg. Vanilla is highly profitable at these prices, and in a market of 2,200 tons there is always an opportunity for a small quality supplier of up to 50 tons.

Tanzania can offer 3 characteristics which are, and will continue to be, of interest to the market, and which will support its achievement of market development: (a) production of a high quality product (the bulk of the world's vanilla production can be characterized as medium and low quality); (b) a well organized production sector so that buyers in the markets can see clear linkages back to the growers; (c) an environmental niche around Bukoba offering excellent growing conditions.

Constraints. Key constraints are the slow speed for field development of the crop, the lack of market linkages to overseas buyers, and absence of a dynamic private sector company to drive the development forward.

Cardamom

Summary. In the medium to long term there is an opportunity to at least double the base level of production and export volumes to around 250 tons with a value of around US$1 million. The current crop is under 100 tons per year. It should be possible to increase the crop by 20 percent per year to reach 150 tons in 3 years, and 250 tons in a further 3 years based on new plantings.

Identification of the opportunity. The cardamom world export market is large – probably around 20,000 tons, with 60 to 70 percent of this in the Middle East, with Saudi Arabia and Kuwait as the major individual markets. European (1,500 tons) and US (700 tons) markets are substantially smaller by comparison, although the US market is showing strong growth. Within the EU,

demand is concentrated in the Scandinavian countries, UK, Germany and Netherlands. Singapore is a major entrepot for supplies to the Asian markets.

Supply to the markets is dominated by Guatemala – a large domestic crop, around 17,000 tons almost wholly for export, with a well-organized industry with low cost structures producing the 'green' capsule quality particularly preferred by the Middle East markets. Neighboring countries, notably Honduras, produce an additional 1,000 to 2,000 tons. India is a substantial producer (8,000 to 9,000 tons), but domestic demand within India takes almost all this crop and it is quite possible that the country will become a net importer.

Cardamom prices are volatile, resulting from changes in crop volumes in Guatemala and the large and fixed inelastic demand in the Middle East. Against a base price in the range US$3 to US$5 per kg, prices rose into the range US$10 to US$15 per kg in 2000/2001.

The European markets do not have a dominant requirement for green grades – much of the demand is based on the bakery and processed food markets – and the trade would welcome a reliable supplier to bring some balance to the dominant Guatemalan supply. Well-presented sun dried cardamoms, as produced by Tanzania, would find markets, and volumes in the range 250 to 300 tons would be a realistic prospect. Niche markets for green cardamoms could be found in the Middle East and Asia, but direct competition with Guatemala should be avoided as the product would be sold at a discount to Guatemalan supply.

Constraints. Key constraints are: the need to increase the scale of plantings; the improvement of the production system, changing to cultivation under shade; and the improvement of production and post harvest practices to improve the quality of the product.

Paprika

Summary. There is immediate demand from the existing buyer for 2,000 tons per year, and there is a market opportunity for up to 5,000 tons, with an export value of around US$5 million. When the initial 2,000 ton target is achieved is solely dependent on the rate of output development in the production sector.

Identification of the opportunity. Paprika is a large-scale commodity crop. Customs codings for the capsicums (including paprika) do not allow a clear separation of the different types, but the EU and US market for crushed and ground paprika is around 50,000 tons per year, with Spain playing a central role in the trade. There has been a significant shift in production away from the markets (Spain, US) to Africa, Asia and Central and South America. This is still continuing, and there is also overall growth in market demand. Opportunities are illustrated by the development of up to 20,000 tons of paprika production in Southern Africa (primarily South Africa and Zimbabwe) over the past 15 years, and the recent developments in Brazil and Chile.

The market opportunity for Tanzania has got 2 principal drivers: (a) in a market of this scale there is always the opportunity for a new supplier of a few thousand tons if quality and price are attractive; (b) the disturbance to producers and buyers in Zimbabwe raises a short term opportunity to replace part of this sector.

There is a wide range of suppliers to the market – including South America (Brazil, Chile) and Asia (China, India) – all with the potential to rapidly increase production, so the market is not waiting for Tanzania. Participation of the South American countries shows that the primary

driver to competitive position is unit costs of production, not simple low labor costs – high input/high output systems can deliver low cost product.

Constraints. The key constraint is the productivity of the smallholder producer sector.

Black pepper

Summary. In the short term the opportunity is limited to the regional markets – the small volumes available would not be of serious interest to the main international markets. Regional market opportunities are estimated at up to 500 tons per year (US$0.5m.). In the medium to long term there is potential to supply 3,000 to 5,000 tons to the major western markets and potentially the extraction market in India, with an export value of around US$5m.

Identification of the opportunity. International markets for pepper are large – annual trade is around 150,000 tons. In a market of this scale there is always the opportunity for small new suppliers of competitively priced high quality product. The pungency of the Tanzanian pepper sampled indicates high piperine levels (this requires analytical confirmation), and therefore a type of particular interest to the extraction industry. In addition to the major western markets of the EU (particularly UK and Germany) and US, the Indian extraction market could also be targeted – increasing domestic consumption in India is reducing the surplus available for export, and the parallel development of a major global extraction centre is substantially increasing demand for the major spices. Provided product quality is high, markets could be secured for export volumes in the range 3,000 to 5,000 tons.

There are no firm estimates of current supply to the regional markets, but all product is currently imported. It is likely that the Kenyan and South African markets account for more than 1,000 tons, and the other countries of East, Central and Southern Africa will have additional demand. Madagascar will be a highly competitive origin, but Tanzania will have a very substantial competitive advantage for supply to the Kenyan and other East African markets (proximity, communication), and these markets should offer Tanzania higher than world prices as sea freight transport is not required.

Constraints. Key constraints are: low crop productivity; crop management skills; planting material to increase planted areas; production and post harvest technology.

Ginger

Summary. It is reported that substantial exports are already made to Kenya, and some potential may exist to increase the levels of regional trade with supply of both fresh and dry ginger to Kenya, and dry ginger to South Africa. There is an opportunity to supply 1,000 to 2,000 tons per year of dry ginger to the ground ginger and extraction markets, targeting the US, UK and India, with an export value in the range US$1-2m.

Identification of the opportunity. Ginger is primarily traded as fresh and dry, with smaller volumes as the ground spice. Dry and ground ginger are supplied to the retail markets, and the food processing and extraction industries. The target market selection generally depends on the characteristics of the type/variety grown. The fresh market demands large fleshy hands with low fiber content. The dry market is increasingly focused on aroma profile, with the degree of fiber content less important. The extraction industry is looking for a high level of extractives. The characteristics of the Tanzanian ginger(s) are not specified, but from samples seen it is likely that it is close to the typical 'African' type – small hands, high fiber (although is partly defined by

production conditions and practices) and high extract ratio – and therefore is likely to be well suited to the extraction industry, and, depending on aroma profile, the dry ground market.

Customs codings for fresh and dry ginger are the same. Supply volumes are dominated by fresh ginger and with many origins supplying both markets, market volumes for dry ginger are based on industry estimates. The key features of the markets in recent years have been the domination of all markets and sectors by low priced Chinese supply; the decline of the West African dry ginger industry (centered on Nigeria) with export levels erratic and under 1,000 tons per year; and the restriction of Indian dry ginger exports due to increasing domestic demand (domestic prices higher than export prices) and the extraction sector starting to import product.

A competitively priced dry ginger with high extract levels and acceptable aroma profile would find markets in the west (US, UK, Germany) and India (for extraction) for up to 2,000 tons with an export value in the range US$2-3m.

Constraints. Key constraints are: production technology and production systems; post harvest processes of washing and drying; domestic transport costs from Kigoma area.

Other spices

A range of other spices are present in Tanzania that have a role in the domestic sector and regional trade. Although no major potential is seen for them in the development of international exports, individual businesses may find specific export opportunities and some attention should be given to them in any spice development program to ensure that they can maintain and possibly develop their position in regional markets and any changes in international market demand can be addressed. They include chillies/capsicum, turmeric, cinnamon, cloves and coriander.[101]

4.9 SUMMARY OF PROTECTED SPICE CROP EXPORTS

Table 4.1 below summarizes projected exports for the spice crops with major potential.

Table 4-1: Summary of projected spice crop exports

Crop	**Time Period**		
	1-3 years	**3-6 years**	**7+ years**
Volume (tonnes)			
Paprika	2,000	5,000	5,000
Vanilla	10	30	50
Cardamom	150	250	250
Pepper	500	2,000	5,000
Ginger	1,000	2,000	2,000
Total	**3,660**	**9,280**	**12,300**
Value (US$ millions)			
Paprika	2.0	5.0	5.0
Vanilla	0.5	1.5	2.5
Cardamom	0.5	0.9	0.9
Pepper	0.5	2.0	5.0
Ginger	1.0	2.0	2.0
Total	**4.5**	**11.4**	**15.4**

[101] See Caiger (2004).

4.10 REGIONAL EXPERIENCE IN SPICE CROP EXPORT DEVELOPMENT

The experiences of the developments of the vanilla industry in Uganda and the paprika industry in Southern Africa provide relevant lessons for the development of the spices sector in Tanzania.[102] These are, specifically:

i. The importance of strong, specialized private sector companies leading the export development (rather than general trading companies) and developing long term relationships with overseas buyers.
ii. Strong, rapid long term (that is, sustainable) development needs buyers/exporters to be directly involved with producers, actively promoting cultivation of the crop and providing simple low-cost extension services providing advice and demonstration on crop management at each stage of the production season. These activities have to continue all-year-round, not just at harvest.
iii. A focus on quality.
iv. Clear pricing and grading policy, strongly enforced.
v. A short marketing chain. This maximizes prices to growers but, more importantly, intermediaries in the chain not controlled by the exporter result in a loss of product quality, loss of crop discipline (when and how to harvest) and a breaking of the linkage between quality and price.
vi. The advantage of large commercial farms and irrigated developments to deliver rapid expansion of production levels to achieve critical mass (both for exporter viability and market viability) – *but not relevant for vanilla*.
vii. Farmer organization is important for delivering information and services to growers effectively and efficiently – but these organizations are not able to command farmer loyalty over selling of the crop.
viii. Donor-funded programs can give critical support to crop development and exporter/enterprise development during the start-up phase, but any support components focused on encouraging participation of additional buyers/exporters to promote competition for farmers crops should not be initiated until it is clear that there are adequate existing crop levels and rate of growth to support additional viable exporter operations.
ix. Industry Associations – primarily groupings for processors and exporters – have a narrow but important role to play – primarily (a) in lobbying Government on any particular issues that arise and where Government has a role to play (export procedures, standards etc); and (b) in providing a forum for agreeing a common stance on issues that affect all operators (these are usually crop specific, and for vanilla, for example, would involve agreeing a common start date for the harvest).
x. Professional businesses have benefited from the activities of business development organizations – notably the Africa Project Development Facility (APDF) of the International Finance Corporation (IFC) – and access to long term loans and equity finance from Development Finance Organizations.

In neither the Ugandan vanilla case nor the South African paprika case has government played a notably proactive or leading role. The key attributes have been an absence of government control or involvement in crop production and the sale/purchase of the crop; and the absence of taxes levied on the sale and movement of the harvested crop. The private sector has been free to stimulate crop development, the returns to the growers have been maximized, and crop sales have been on a cash-on-delivery basis. The business environment (which is set by

[102] See Appendix 9 for a discussion of the Ugandan and the Southern African cases.

government) – both the internal regulatory environment and the regime on exporting and dealing with foreign currency revenues – has been sufficiently straight forward and reasonable not to dissuade companies from entering the sector in a formal and professional way.

4.11 SKILLS IN THE SECTOR

Skills are weak at all levels of the sector.

Grower level

The situation at the grower level is compounded by the shortage of funds for the use of inputs, the fragmented marketing chain weakening/removing quality factors in the pricing of crops, and the lack of strong buying relationships with specific exporters. It is therefore not possible to say to what extent the poor crop productivity and product quality in the samples seen are the result of the growers not having the knowledge the manage the crop properly, and to what extent this is the result of these other factors.

Based on the vanilla and paprika sectors, it is clear that growers can take up the necessary practices to product good quality product. The key weakness at this level is productivity – the uptake of improved production systems and practices – and the improvement of post harvest technology and practices.

Senior and Middle Management

There are very few professional exporting companies with a strong and long track record in spice exports to the international trade (the situation for regional trade is not known). Records show a greater number of small companies that have been set up more or less recently (many of them linked in some way to the rise in popularity of the organic sector in the markets), but as the contacts given for almost all of these companies (from the BET and TCCIA Databases) no longer functioned it may well be that most of these companies have failed to establish themselves. Generally, small companies, with limited working capital, are unlikely to have the management experience or financial capabilities to deal with major companies in the markets, nor to invest in the crop promotion and development with growers, nor to properly utilize the technical and export support functions available from BET and TCCIA.

Technical skills in spice production and processing

There is clearly an issue in lack of knowledge and experience in the crops and their processing in the research and extension system – of which the relevant institutions are well aware. Short training attachments have been arranged in Zanzibar to address urgent needs. To support the priority activities identified for the Research Program it will be necessary to bring in some technical expertise to provide the practical crop-specific experience necessary.

4.12 STRATEGY FOR SPICE DEVELOPMENT

The current export value of the spices sector – excluding Zanzibar cloves – is small, probably less than US$3 million. The actual scale of the informal regional trade might be substantially bigger than declared customs data show, but will not change total export values by an order of magnitude. This study identifies the potential for exports in the range US$15 to US$20 million. This figure must still be considered small, and resources allocated specifically to the spice sector

(as opposed to more general cross-cutting activities) need to be considered and appraised in this light.

The key elements of a spice development strategy necessary to achieve the results targeted are:

Specific to the spices sector

i. Concentration on paprika, vanilla, cardamom, pepper and ginger, with production activities focused on the restricted areas where the environmental conditions are optimal for production of each crop.

These are the crops where substantial export potential can be identified. Tanzania has a diversity of production environments, and it is important to maximize the base level of productivity and quality through concentrating production on those areas that are best suited for the crop cultivation. Encouraging crop uptake outside these areas will not benefit producers (lower returns) or buyers/exporters (lower and variable quality and volumes). Prospecting new areas (involving the initial appraisal of crop performance) is an extended process and will not yield production benefits in the short or medium term – hence the focus must be on existing crop areas.

ii. Interventions in the production sector

The focus should be on:

- Improving the productivity of existing plantings and production systems
- Improvement of post harvest practices, with particular attention to drying systems
- The promotion of commercial farms and the (re)involvement of the plantation sector in spice production, and the development of irrigated production.

With the possible exception of vanilla, productivity of plantings is low. Whilst there is a strategic objective to involve large numbers of growers to maximize impact on rural incomes, low productivity restricts returns to growers, restricts the rate of growth of output, and spreads restricted extension and training resources too thinly. With the exception of the annual crops (ginger, paprika), increases in output over the next 3 to 4 years can only come from increased productivity of existing plantings. Key interventions must be driven by the private sector – the development of linkages between buyers and Farmer Associations; and the development and management by buyers of extension services for producers to promote uptake of improved technology and practices by producers; the development of SACCO's to enable producers to access credit for productive investments – but donor programs to support these activities (such as the existing USAID/DAIPesa project which can work at all levels of the production and export chain) will be required to provide early operational support (technical and financial).

Unmanaged sun drying is usually the major source of quality and yield losses – and these losses can be substantial. Improved packages are required – suitable for both on-farm (individual growers), and for groups of growers. Technologies are well established. There should be a strong focus on the promotion and uptake of necessary investments.

Commercial farms can bring rapid development of core crop volumes, as well as development of the formal employment sector in rural areas. For most spice crops[103], large commercial farms/plantations offer the ability to rapidly deliver large crop volumes, achieving minimum critical mass at an early stage of industry development. The benefits to the current paprika

[103] Vanilla is an exception in this regard – it is only suitable for smallholder production in mixed gardens.

development of having a commercial sector delivering 1,000 tons of crop are obvious. Commercial farming and smallholder sectors can be effectively integrated and provide a workable model for delivery of services and control of production to meet market requirements.

Previously, the large commercial farming sector was effectively represented by part of the cooperative sector. The demise of that sector, however, has not been followed by widespread development of large, professionally managed private sector farms (owned by either individuals or companies) despite a legal and administrative framework that *in principle* allows long term secure access to land and offers a reasonable business environment. The sector should be attractive to both local individuals and companies, and outside investors. Given the land resources of the country the development potential of this sector (production and exports, employment) should be realized.

Tanzania should encourage and facilitate the development of this sector by domestic and outside investors. The Investment Promotion Board (or other suitable Government Agency) should consider a pro-active strategy of identifying parcels of land in particular areas suited to particular crop/farming activities, and offering facilitation services to investors seeking to establish large commercial farms. This service could also be promoted through activities overseas to attract inward investment.

iii. Promotion of linkages between growers and buyers/exporters

There are already strong interventions in this area, led by donor programs, based around the formation and support of Farmer Associations and linked SACCO developments. These activities remain critical. Development of commercial farm/plantation operations linked to outgrower schemes offer an additional model for development. Without the grouping/organization of smallholder growers and the development of these linkages, the structure of the sector will remain largely based on crop 'collection', and the ability to stimulate crop development will be limited.

iv. Develop a research program focused on multiplication of planting material and the finalization of relevant production and post harvest technology packages.

These are the key interventions that can make an impact on sector development in the short and medium term. Technical assistance program will be required to provide the crop and product expertise required.

v. Development of an active Industry Association.

Development of the sector requires a forum representing the key elements (exporters, processors, commercial farmers and Farmer Associations). The current Association (based in the BET) is not functional, and industry participants have no real ownership. As a first step an Association should be established under the umbrella of the TCCIA – effectively as a committee. The TCCIA is well established and functional and capable of providing the administrative and management services necessary to link members and support the implementation of a practical agenda. Limited financial support would be required to cover TCCIA costs.

Cross cutting elements

In addition to the above, some elements of the strategy derive from cross-cutting actions:

vi Encourage the development of professional specialist companies with investments in post harvest processing and handling facilities

The ability of Tanzania to develop supply on a long term basis for particular market requires companies that can make the necessary investments in business and market development. The existence of the paprika opportunity is directly linked to the capability of the Spanish parent company of Tanzania Spices Ltd. The limitations in the development of vanilla are directly linked to the absence of a private sector company leading the development. Technical assistance programs providing specialist consultancy services to support and enable investors to identify and address the specialist requirements (production, processing, equipments, markets etc) of businesses in this sector – such as the services provided by IFC's African Project Development Facility (APDF) – should be maintained.

vii. Develop coherent trade promotion activities

It is essential for Tanzania to promote its production, and to identify and understand the relevant market niches.

Regional markets. Focused studies are required on the markets and trade routes to identify the market potential and competitive sources of supply, and the requirements to move the trade fully into the formal sector. A practical program is required to actively promote trade, delivering assistance and services to producers/manufacturers to develop trade opportunities identified in the studies and to establish the basis for further trade growth. The program should include in-market commercial services (buyer identification, trade and regulatory affairs information), in-market promotion of Tanzanian produce (attendance at trade fairs, market tours for sector groups, promotion of Tanzania in the trade press) and technical assistance to producers/manufacturers to meet product and regulatory requirements of the market.

International markets. The initial requirement is to characterize product quality in relation to established standards so that it is understood where product should be positioned in the market. With this information, normal trade promotion and development activities can proceed to the extent that production volumes allow.

Institutional framework for trade promotion. Both BET and TCCIA are active in this area. Any spices development will be driven by the private sector, and all major companies are or would be members of TCCIA. Trade promotion activities require donor support. There is a logic that technical assistance routed through the TCCIA would be held more accountable to the industry (members) and deliver a better take-up of results.

viii. Improvement of the business environment

The objective is to promote the establishment and development of professional, formal businesses. A complex business environment discourages investment and gives a competitive advantage to informal businesses that operate outside the regulations and have no interest in promoting the long term development of the sector. Poor implementation of existing policies –

such as refund on VAT on exports – penalize the businesses on which strategic development of the sector depends.

Specific to Zanzibar

Development of irrigated agriculture could further exploit Zanzibar's spice export potential. Reflecting the Government's commitment to irrigated agriculture is the comprehensive study to identify potential irrigable lands for agriculture, the establishment of the Zanzibar Master Plan, and the creation of the Department of Irrigation. While water resources and rainfall are adequate, there is a need to emphasize water harvesting techniques and the establishment of irrigation infrastructure. 57 schemes have been inventoried with an irrigated potential area of 8,500 hectares; the 9 existing schemes in operation are expected to be extended to about 2,100 hectares through rehabilitation or improvements of such irrigation facilities as diversion weir, pump, and irrigation canal. Zanzibar requires technical and financial assistance to enable it to achieve the objectives of better utilization of water resources and improved irrigated agriculture.

4.13 IMPACT ON POVERTY ALLEVIATION

Table 4.2 shows that the key social economic indicators of the target spice regions in Mainland Tanzania are generally the same as, and in some instances superior to, the national averages. The expansion of spice crop cultivation would have a significant impact on rural poverty through increasing household incomes and increasing the level of wage labor in the rural areas. However, unless smallholder productivity levels are raised, post harvest losses are reduced, and quality levels secured through the uptake of improved technologies and practices, gross revenues to households from cultivation and returns to labor/labor rates will remain low. The increase in returns from use of inputs in paprika production have already been referred to – gross margins were doubled and 65 man-days of paid labor were used per acre. The differences in productivity between smallholders and commercial farms/plantations are substantial. In the tea sector[104], over the decade 1990/1999, estate yields have varied in the range 7 to 9 tons per hectare. Smallholder yields have declined from 2 to 0.75 tons per hectare. Even if the decline in smallholder yields is mostly attributed to abandonment of the crop due to poor relative pricing, the multiple of 4 between commercial farming and low input smallholder production can be taken as typical for a wide range of crops, and indicates the scale of benefits that agricultural can deliver to rural households if attention is focused on productivity rather than simply gross output from the sector.

Estimates of the impact of proposed spice development on rural poverty depend in large part on assumptions made for crop yields, cultivated area per household, cost of inputs used and labor requirements per crop. The estimates provided in Table 4.3 should be taken as indicative of the benefits that could accrue.

[104] World Bank (2001a).

Table 4-2: Summary of Key Indicators for Regions Associated with Spices

Indicators	Tanga	Morogoro	Iringa	Kigoma	Kagera	Total Mainland
% all adults without education	31	26	16	28	25	25
Primary net enrolment ratio	50	61	76	48	59	59
% adults in agriculture	67	63	67	76	81	62
% children working (5-14)	80	55	60	60	68	62
Mean land owned by households (acres)	3.9	4.3	2.9	3.7	4.0	5.3
% pop below food poverty line	11	14	10	21	18	19
% pop below basic needs poverty line	36	29	29	38	29	36
% consumption expenditure on food	70	68	65	65	63	65

Estimates of potential impact of the spices

Table 4-3: Summary of crop development impact

Crop	**Total output (Tons)**	**Price (US$/kg)**	**Yield (kg/ha)**	**Hectares cultivated**	**Hectare/ Household**	**Number of Households**	**Net revenue (US$/ Household[105])**
Páprika	5,000	1	1,000	5,000	0.33	15,000	233
Vanilla	50	50	50	1,000		8,000	156[106]
Cardamom	250	3.50	100	2,500	0.33	7,500	81
Pepper	5,000	1	750	6,600	0.33	20,000	175
Ginger (dry)	2,000	1	3,000	660	0.25	2,700	520
TOTALS				**15,760**		**53,200**	

Crop labor requirements vary, but a figure of 250 mandays/hectare/year for all activities associated with land preparation, crop establishment and management, harvesting and post harvest activities can be taken as a reasonable average. 15,760 hectares would therefore create around 20,000 full time job equivalents (on the basis of 200 working days/year).

As no significant development of downstream processing activities are projected, indirect employment generation through forward and backward linkages are unlikely to be more than 10 percent of direct employment – around 2,000 full time job equivalents, primarily in the trade, transport, and agricultural services sectors.

[105] Calculated as 70% of gross revenues received for crop sales.
[106] Net revenue for vanilla only calculated as 50% of cured bean sales price.

5. FISH

5.1 BACKGROUND

Fish and fish products are an important export for Tanzania. Between 1990 and 2003, fish exports rose 20 times, from US$8.1m. in 1990, to US$154m. in 2003. In 2003, fish exports made up 15 percent of the country's total merchandise exports, and ranking it the second largest export after gold (see Volume 1, Table 1.5).

The comparative advantage of Tanzania in fish comes from its very rich fish resources which include salt water resources along its extended 800 kilometers coastline, and fresh water resources in three of the African Great Lakes (totaling approximately 54,000 sq. km. of fishing domain). The latter includes the world's second largest lake, Lake Victoria, which is the source of 70 percent of the country's total fish production. On the demand side, there is strong international market demand for white flaky fish. In the face of a secular decline in white ocean fish such as cod, haddock and halibut, Tanzania offers an attractive and tasty alternative—the Nile Perch—which enjoys widespread and growing international acceptance.

The potential for Tanzania to substantially increase its fish production comes from the fact that Tanzania has just begun to exploit its offshore Exclusive Economic Zone, where significant potential exists for increased landings of saltwater fin fish such as tuna, grouper, red snapper and similar species caught on the country's continental shelf and, importantly, for investing in fish farms in the shallow waters surrounding the country's many offshore islands. In 2004 the Fisheries Department for the first time allowed export licenses for the export of salt water fin fish.

At the same time, however, there are increasing concerns about the maximum sustainable yield (MSY) for Nile Perch in Lake Victoria. The MSY for the Lake has been estimated to range between 200 KT and 290KT. The current estimated catch of Nile Perch at 235 KT falls within this range. No matter precisely where the MSY is, the industry is rapidly approaching its "tipping point" with respect to the Nile Perch resource base on which it heavily depends. The decline in perch landings has led the fish industry to consider undertaking strategic investments in value-added manufacturing in the form of ready-to-serve meals, fresh fish product packs and microwavable food products.

The fisheries industry plays an important role in poverty alleviation in the country. Small-scale artisan fishers using traditional methods account for around 99 percent of the nation's total fish catch,[107] and existing legislation is designed to preserve the keystone role of artisan fishermen. Approximately 150,000 artisan fishermen make their living through fish capture in Tanzania.

Zanzibar has vast potential for the development of the fishing industry which has hitherto been under-exploited, including the rich marine fishery resources of tuna, snappers, groupers, rays, sharks, kingfish, barracuda, calamari/squids, octopus, and so on. Zanzibar also has a mari-culture activity mainly in seaweed farming. Current production of the seaweed *Euchuma cottonii* in Zanzibar is too low to meet the high world demand for it. The seaweed is cultivated by coastal communities (mainly women) all over the Islands of Unguja and Pemba, mainly in shallow, stagnant and dense waters with high temperatures, and unstable salinity.

[107] System Science Consultants (2002).

5.2 WORLD FISH MARKET AND TANZANIA'S POTENTIAL

Over the past two decades several trends can be discerned in the development of the global fishing industry.[108] First, at the low value end of the market, large-scale fish meal manufacturing plants have emerged which convert small, surface species of fish into animal feed. These facilities typically rely on fish caught in shallow, territorial waters. Second, at the high end of the market, technologically sophisticated fishing systems have developed which track and catch high value species (for example tuna, salmon and shrimp) in both territorial and in international waters. Third, aquaculture has emerged as a basis for providing reliable sources of medium to high value products to fishing processing plants, and has proved to be sustainable for shrimp, crustaceans, salmon, sea bass, tilapia, amongst others. Fourth, new sources of white table fish have been developed, including new species and new fishing ground locations, which initially served to replace cod, halibut, and haddock.

The global market for table fish is quite large—2.4 million tons of exports annually[109]. The quest for new sources to supply this market has involved the serial development of a number of fishery resources and their consequent depletion. The increasing global shortage of white fish in the last ten years or so has resulted in a rapid development of the industry as well rising prices.

The world market share of Tanzania's fish exports, though low, has been experiencing significant increases, rising from 0.02 percent in 1990 to 0.25 percent in 2003, an increase of over 10 times (Table 5.1). In this respect, it has performed substantially better than Kenya, whose world market share of fish exports has risen only modestly from 0.09 percent to 0.15 percent, and surpassed that of Uganda's whose world market share has risen from 0 to 0.14 percent. Amongst developing countries, China is emerging as the dominant player, with its fish exports nearly doubling from 4.7 percent in 1990 to 8.8 percent in 2003 of the world market, and ranking it as the largest fish exporter in the world.

There is particularly strong world market demand for the two main Tanzanian fish exports—Nile Perch and shrimps—for which world demand continues to exceed world supply. The Nile perch, which is the largest Tanzanian fish export, has been developed as a "table fish" substitute for cod in the northern hemisphere market in the second half of the 1990s, and is today a highly-valued premium priced table fish in Europe, the Former Soviet Union, North America and Japan. Since its initial market acceptance, its price has continued to rise. Shrimp prices have also remained strong because global demand continues to outstrip new sources of supply, although Tanzania enjoys less of a competitive advantage in shrimps vis-à-vis other producers such as Egypt, Madagascar, Mozambique than it does in the Nile Perch market. There is also strong demand for the rest of Tanzania's fish exports—lobsters, crabs, octopuses—which generally fall into the highest end of the international fish market, and which markets are supply-constrained.

5.3 EVOLUTION OF THE TANZANIAN FISH EXPORT INDUSTRY

The Tanzanian fish export industry has developed very rapidly since the early 1990s when several Kenyan export-oriented industrial plants for fish filleting and freezing relocated to Tanzania. Many of the pioneers in the Tanzanian fish industry, in fact, came from Kenya.

[108] See "Of Saviors and Punks: The Political Economy of the Nile Perch Marketing Chain in Tanzania," Peter Gibbon, CDR Working Paper 97.3, June 7,1997, Danish Academy of International Studies.
[109] See: pp-3-4 International Market for Fishery Products, Fatima Ferdouse, INFOFISH, Malaysia.

The re-location of these Kenyan plants was spurred by several developments: (i) the prohibition of the Kenyan government of unprocessed and semi-processed fish for re-exports; (ii) the lowering of costs in Tanzania brought about by the devaluation of the Tanzanian currency that was an integral element of its structural adjustment program; (iii) the treaties that clarified national fishing rights and reserved larger take-out rates for Tanzanian based fishermen; [110] and (iv) the provision of several forms of investment incentives in Tanzania to the industry to build plants and facilities within the country—tax holidays, remission of import duties and sales taxes on capital equipment, 100 percent foreign exchange retention, and automatic access to leases on land for intended investment sites. Consequently, much of Tanzania's production capacity is quite modern.

Table 5-1: Fish Exporters' Shares of World Market

	1990		1995		1999		2003	
	Value (US$m.)	**Market Share (%)**	**Value (US$m.)**	**Market Share (%)**	**Value (US$m.)**	**Market Share (%)**	**Value (US$m.)**	**Market Share (%)**
China	1,729,319	4.7	3,071,665	5.9	3,719,151	6.8	5,553,722	8.8
Thailand	2,280,987	6.2	4,429,158	8.5	4,064,299	7.4	3,872,138	6.2
Norway	2,044,940	5.6	3,080,328	5.9	3,633,639	6.6	3,480,949	5.5
Canada	2,421,081	6.6	2,522,987	4.8	2,911,998	5.3	3,326,514	5.3
United States	3,267,195	8.9	3,775,833	7.2	3,093,846	5.7	3,062,786	4.9
Russian Federation	..	..	2,483,423	4.8	2,851,286	5.2	3,022,627	4.8
Spain	723,670	2.0	1,134,458	2.2	1,441,041	2.6	2,065,710	3.3
Chile	558,148	1.5	1,116,390	2.1	1,493,171	2.7	2,046,641	3.3
Denmark	1,963,787	5.3	2,041,887	3.9	1,946,618	3.6	2,012,097	3.2
Indonesia	946,272	2.6	1,817,709	3.5	1,763,940	3.2	1,955,924	3.1
Vietnam	277,530	0.8	593,169	1.1	836,344	1.5	1,935,693	3.1
Netherlands	1,250,142	3.4	1,506,879	2.9	1,581,060	2.9	1,834,533	2.9
United Kingdom	945,243	2.6	1,254,514	2.4	1,404,338	2.6	1,621,042	2.6
India	557,842	1.5	1,200,139	2.3	1,159,647	2.1	1,399,608	2.2
Taiwan, China	1,597,680	4.3	1,613,259	3.1	1,311,386	2.4	1,394,100	2.2
Tanzania	8,111	0.02	49,907	0.10	66,731	0.12	154,456	0.25
Kenya	33,752	0.09	76,404	0.15	75,209	0.14	94,244	0.15
Uganda	1,354	0.00	28,564	0.05	37,426	0.07	86,342	0.14

Source: Based on world import data from UN COMTRADE Statistics.

The investment incentives, together with consistently improving prices for Tanzania's primary fish export product, the Nile Perch, have resulted in a rapid expansion of the industry since 1990. One consequence is the upgrading of the fishing fleet of artisan fishermen, which since 1995 have been designated by law as the only source of fresh water fish for factory operators. The number of landing sites in Tanzania rose to its current level of 596 and the number of commercial fishermen increased to 56,000 (Table 5.2).[111] Essential support facilities required by the fishing industry increased apace. Tanzania eventually took over most of the Nile Perch catch and its

[110] Kenya controls 8% of Lake Victoria, Uganda controls 43%, while Tanzania controls the largest share of 51%.

[111] This figure does not include salt water fishermen of whom there are estimated to be an additional 20-30,000.

processing. Expansion of the Nile Perch fish industry has led, however, to over-fishing and to the threat of irreversible depletion. This situation has been mitigated to some extent by regulatory measures, controls over fishing methods, types of gear, and so on. However, the debate about the adequacy of these measures and capacity of Lake Victoria fisheries to support additional export-oriented factories continues.[112]

Table 5-2: Great Lakes Fishermen and Fishing Facilities, 2003

		KENYA	TANZANIA	UGANDA
LANDINGS	Number of Landing Sites	297	596	597
FACILITIES	Bandas	79	30	56
	Cold Rooms	13	24	7
	Pontoon/Jetty	10	32	34
	Fish Stores	15	14	78
	All Weather Roads	60	137	138
	Boat Repair Facilities	52	224	221
	Net Repair Facilities	50	248	181
	Electricity Supply	29	20	16
FISHERIES STAFF	Fisheries Staff (To be verified)	58	65	70
COMMERCIAL FISHERMEN	Number of fishermen	33,037	56,060	34,889

The joint industry/government response to the EU embargo of Lake Victoria fish in 1999 had also provided a further stimulus to the industry. During that crisis period, the private sector through its two trade associations worked effectively with the Tanzanian Bureau of Standards (the designated certificating agency with respect to food safety) and the Department of Fisheries to comply fully and quickly with EU food security certification requirements. Tanzania's response to this crisis resulted in a growth spurt which has continued, and which has given the Tanzanian-based industry a lead over both its Ugandan and Kenyan counterparts which has continued to date (see later in this chapter for a detailed discussion of the crisis and Tanzania's response).

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

5.4 CURRENT STATUS OF THE TANZANIAN FISH EXPORT INDUSTRY

Composition of fish exports

Nile perch is by far the dominant fish export from Tanzania. Nile perch fillet exports amounted to $81m. in 2003, when they constituted over 80 percent of all fish exports. The other fish exports are much smaller in comparison, and include shrimps, octopus, lobster, squid and crab, which together accounted for 13 percent of fish exports in 2003 (Table 5.3).

[112] The World Bank is currently undertaking a study on "Sustainable fish export from Lake Victoria" that addresses these issues.

Most of the domestically produced Nile Perch are exported, as are ninety percent of the prawns, the remaining ten percent of which are supplied to the tourist industry which means they are indirectly exported also. Nile Perch is exported almost exclusively by industrial scale fish processing industries, while prawns, octopus and squid are also processed in factories.

Export markets and mode of exports

Europe has traditionally been, and continues to be, Tanzania's main fish export market, taking 80 percent of Tanzanian fish exports in 2003 which also represented a major recovery from the EU embargo in 1999 when Tanzanian fish exports to that market fell by one-third (in dollar terms). The second fish export destination is East Asia (Hong Kong, Japan and Singapore) which took 10 percent of Tanzanian fish exports in 2003. Other export destinations include the U.S. and Mexico, Israel and Australia (Table 5.4). In the past year, Tanzania's primary competitor in the fresh and frozen freshwater segments—Vietnam—has itself been embargoed by the EU when traces of antibiotics were found and continue to persist in Vietnamese farmed fish. Tanzania fish exporters expect that this development should help spur their exports.

Table 5-3: Main Fish Export Categories

	2000	2001	2002	2003
Total Fish Exports (in m. US$)	60.4	94.9	91.1	126.9
Shares of Total				
Nile Perch Fillet	76.0%	81.4%	83.8%	80.7%
Prawns	9.3%	6.2%	7.3%	4.7%
Octopus	2.0%	0.7%	1.1%	4.0%
Lobster	0.9%	0.8%	2.2%	2.8%
Squid	0.1%	0.3%	0.2%	1.0%
Crabs	0.5%	0.3%	1.1%	0.8%
SubTotal	88.8%	89.7%	95.7%	93.9%

Source: Fisheries Department, from Economic Survey 2003, Government of Tanzania.
Note: Total fish exports from Tanzania based on partner import data are higher.

50-60 percent of total factory output of processed fish are sold chilled primarily on a fob basis at Mwanza International Airport, and air-freighted to the Netherlands, Ukraine and Belgium, as well as to Israel and Japan. An average of 5 heavy lift cargo planes per week land at the airport in Mwanza from the Netherlands, Belgium and Ukraine. The remaining 40-50 percent are sold frozen on both fob and cif bases at Dar or Mombassa, and exported generally by sea freight to the USA, Australia, South Africa, Malaysia, Hong Kong and the EU.

Fish processing operations

There are currently 20 fish processing factories and 23 trawlers registered in Tanzania. They are engaged either in Nile Perch or in prawn trawling, fishing, processing and exporting. Of the total, 7 factories process and export Nile Perch and are located on Lake Victoria. The remainder are located on Tanzania's Indian Ocean coast. All of these are also licensed to export their fish to the EU as well as to other export markets. Most Tanzania export factories can process both marine and fresh water products, although inbound logistics costs associated with moving fresh fish products from landings and harbors to plants typically dictate the kinds of fish (fresh or salt water) which are processed.

Two new fish processing plants were licensed on Lake Victoria in 2004. Products from these plants—only one of which is currently in operation while the second is still under constructed—will be dedicated to new customers in the US. These new US customers are national seafood fast food chains which have begun to feature Nile Perch on their menus. A significant increase in export activity can be expected once these new customers begin to offer Nile Perch as a staple on their menus through hundreds of retail outlets

Table 5-4: Tanzania's Fish Export Destinations (US$m)

	1990	**1995**	**1999**	**2000**	**2001**	**2002**	**2003**
Europe							
Netherlands	20	9311	4726	29374	18051	32087	38265
Belgium-Luxembourg	365	441	4970	65776	62056	38961	27552
Spain	1696	6407	7362	8824	10301	8157	12914
France	1029	1026	1726	7358	10444	11005	12014
Germany	169	681	1312	1587	3354	5142	10711
Greece	72	2618	1408	4230	4706	5688	8195
Italy	163	322	1340	2137	3070	8889	7305
Portugal	2151	6934	4138	8255	4933	4492	6474
East Asia							
Hong Kong, China	823	2420	3478	6170	6828	7353	8590
Japan	0	7880	15304	7761	7869	9045	4210
Singapore	630	1335	1638	861	1197	1522	2183
United States	40	1904	8109	3356	5213	5462	4730
Israel	0	2060	1172	160	2539	4794	3050
Australia	0	1280	2533	1533	3592	3051	1751
Mexico	0	0	9	76	56	322	1392
World	8111	49907	66731	154185	150545	148963	154456

Sources: Based on partner imports from UN COMTRADE Statistics.

21 vessels are approved in their anti-septic design and certified handling methods for exporting fish to the EU. Most of these are run by the major fish companies. Alpha Ltd, for example, operates with 6 vessels, BAHARI FOODS LTD operates 4 and FRUITS DE LAMER operates with 4 vessels. Alpha, Bahari and Fruit de Lamer process both fresh and salt fish. Other major companies including TAN PERCH LTD, NILE PERCH LTD, and VICTORIA FISHERIES LTD specialize in Nile Perch and are located in Mwanza.

Currently, most fish products are either fast-frozen or fresh-processed. Key members of the industry are on the brink of investing in new value-adding food preparation processes and in new fish farming technologies, both of which promise to expand the industry further by strengthening forward and backward linkages. In particular, the industry is beginning to move in the direction of producing frozen fish dinners, fish sticks or cakes, or table ready preparations. According to several knowledgeable industry participants, the first producer of value-added food products in Tanzania is most likely to be a South African food processor who will begin soon to produce table and oven ready products for one of the large South African-based supermarket chains from Tanzanian fish resources. This South African processor is building a new " value added" factory which has already been licensed.

Several of Tanzania's larger processors have developed their own brands in the countries to which they export. Recently, several have invested in high value color printed plastic packaging. At least three of the largest producers are using sophisticated packaging material with both their frozen and fresh product lines. Several producers have also commissioned market feasibility studies on the best ways to leverage their existing brand equity by rolling out a more extensive ensemble of fish-based food products under brands names in which they have already invested.
As the industry matures, individual companies are testing and diversifying their marketing strategies and their business models. Thus, for example, exporters have elected different strategic choices with regard to market segments which they prefer to serve, including ones which are differentiated in terms of geography, products, channel controls and price/value propositions.

Structure of industry

All of the major fish processors engage "agents" under contract who serve as intermediaries, supplying groups of fishermen with ice, fuel, fishing equipment and sometimes boats in return for their catch. While fishermen associations are very weakly organized in Tanzania, agents have developed rapidly in recent years both in negotiating strength within the fish supply chain and in management sophistication. Increasingly, agents deal with fish processors as principals and not as intermediaries. Increasingly, it is agents and not factories who furnish ice, fuel and fishing equipment to fishermen groups. Increasingly also, it is agents who set prices for fresh fish and not the factory operators.

The distribution of profits between agents and fishermen and the economic bases under which primary fish inputs vary from agent to agent and from fish landing to fish landing. These arrangements are more informal than formal and are enforced through the selective extension or removal of supplies, support and preference on the part of individual agents. Thus, a strong symbiotic relationship exists between artisan fishermen and processing factories such as ALPHA LTD. Risk and reward pass through these preferred supplier relationships.

Finally, the industry has gradually begun to take on the characteristics of an industrial cluster. The need for industry cooperation and the constant need to sharpen competitiveness vis-a-vis other low-cost providers of fish products in global markets have fused industry participants together. To this end, the two associations which operate within the Industry have been particularly effective: the Tanzanian Fish Processors Association (TFPA) which represents processors of marine products based mainly around Dar Es Salaam, and the Lake Victoria Fish Processors Association of Tanzania (LVFPAT) which represents processors of Nile Perch. These two associations have proved notably successful in influencing public policy including those pertaining to SPS (see discussion later), improving the industry's business climate and assuring that the services provided by third parties were responsive to industry needs.

5.5 THE FISH EXPORT SUPPLY CHAIN

The export supply chain for fish is much more developed than the domestic one. The supply chains through which Nile Perch and shrimps (most of which are exported) are purchased are much better managed than the chains through which fish for domestic consumption move through. The export chains are integrated by the large export processing companies: inventory flows are transparent; prices are set based primarily on guidelines set collectively by the industrial processors which normally entail a significant premium above local market prices; quality control standards are rigorously enforced and trade credits and preferential leasing terms are extended to quality vendors who have established themselves with the large processors. These companies are also well

prepared to develop further sources of competitive advantage in aqua culture and in value-added food processing.

Several supply chain issues need to be addressed to ensure the sustaining and enhancement of Tanzania‘s existing competitive advantage in fish exports in the world market. These are the following.

Taxation

Taxation is a major factor with respect to plans to extend the fish supply chain into new value-adding areas. Most of the burden of existing taxes in the fish sector fall on licensed exporters who must pay royalties and fees primarily based on the weight of fish shipped. Different rates apply to different categories of fish. Significantly, the levels of taxes imposed within Tanzania on exporters are much higher than those imposed on exporters of the same categories of fish products from Uganda and Kenya. A key issue which the industry would need to have resolved before it proceeds to make additional investments in value-adding production is simply this: what level of royalties will be imposed on fish sticks and table-ready fish meals. It is essential for potential investors to know this so they can calculate their returns on investment in new factories and fish farms before they approach their bankers with plans for expansion.

According to the TFPA, the industry's tax bill has been increasing over time, as the industry has become subject to cesses, fees and taxes imposed by several levels of government. TFPA claims that the escalating taxes have eroded the competitive advantage of Tanzania's fish processors vis-a-vis the Kenyan ones, which compete for the same raw fish resources. The various taxes, fees and levies (Box 5.1) that Tanzania fish processors pay add an additional Tsh 120 to Tsh 200 per kilogram to the cost of raw fish inputs. The TFPA argues that the net effect of these various taxes, levies and fees which are higher than those in Kenya cannot be passed on in a competitive global market, the result of which is to disadvantage them with respect to Kenyan processors.

Two of the largest processors made it quite clear that unless a clear agreement could be reached with the government not only about tax levels but also about the value basis on which taxes were imposed, they would be reluctant to invest in additional value-adding processing in Tanzania. It is not only the current levels of taxation that potential investors are concerned about, but more importantly: (i) the basis for future taxation – they would prefer a basis which does not penalize labor value-addition (for example when the basis for royalties and fees is export value, a disincentive is created for more job creation and more value addition in Tanzania); (ii) the progressive escalation over time of multiple taxes, fees and cesses; and (iii) taxes and fees can be independently imposed by multiple agencies, levels and jurisdictions of government without effective recourse or appeal.

This is a complex set of issues which call for additional, in-depth study that analyzes the fiscal, investment and employment effects of alternative taxation regimes other than the existing royalty based one. The analysis should include estimates of the effects of alternative modes of revenue sharing among different federal levels of government. There should also be a clear and operationally useable definition of "value-added content" for manufactured fish products which may be exempted from royalty payments if the existing royalty regime is retained with only marginal changes. In addition, the Tanzanian Revenue Authority, the Fisheries Department, and the two industry association should work together to develop a mechanism for collecting, reporting and auditing accounts for the purpose of duty drawback, royalty payment, and other operational issues involving efficient tax administration.

Box 5.1: Taxes for Tanzania Fish Processors

- Royalties—USD.15 per kg or the equivalent of 150 Tshs per kg of finished product
- Levies vary in different districts from 7/- to 10/-per kg. In addition the Mwanza City Council imposes an additional, fish levy of 7/-. The total fish levy exceeds 14/- for most processors.
- Mwanza Service Levy—Based on .3% of the value of the finished product or equivalent to Tshs 7/- per kg of finished product. This "service levy"is in addition to the "fish levy" noted above
- Withholding Tax—Based on 2% of purchased price from the agent or fisherman
- Stamp Tax—Based on 1.2% of the purchased price from the agent or fisherman
- Multiple Licenses and Registration Fees—These include annual boat license fees of Tsh 40,000 ; Annual " boat fitness " certificate of Tshs. 109,000 per boat; Water rights for boats of Tshs 150,000 per filing plus Tshs 10,000 per boat; Boat parking fees of Tshs 150,000 per boat per month is some districts; and fish container placement fees of Tshs 50,000 per month in various districts.
- Multiple Processing Fees and Establishment Licenses—These include a fish processing fee of Tshs 750,000; Import License Fee of Tshs 500,000; Export License Fee of Tshs 125,000 all paid to the Ministry of Industry and Trade. In addition, a Food License Fee of Tshs 50,000 paid to the Ministry of Health and an export license of Tshs. 200,000 paid to the Ministry of Natural Resources. Additional levies and fees include a waste disposal license, a dumping levy, a TBS annual subscription, a radio call license, and a water usage license from the Ministry of Water and Livestock.
- Export related Fees and Charges—This include documentation charges; Certificate of Origin Charges; Movement Certificate Charges; Bank Charges for the Payment of Royalties (the Government does not accept company cheques)
- Business Taxes—These include corporate tax, payroll levy, NSSF contribution, land rent.

In general, however, some level of harmonization and rationalization of the basis for taxing and charging the industry appear to be in order and negotiations over the next generation of investment in the industry appears to be an appropriate window of opportunity for resolving multi-level federal taxation and value-for-money issues with government.

Weak bargaining power of fishermen

Most of the settlements between fishermen on the one hand, and agents and factory operators on the other, are in the form of debits against credits advances provided by the latter for inputs and boat use. Agents provide ice blocks, freezer cases, fishing nets, sometimes the boat itself, as well as fuel, oil, food and maintenance fees on credit to the fishermen. Sometimes a separate boat owner provides the boat and gear. When the fishermen sell their fish to industrial plants or the auction market—also with the assistance of the agent or boat owner—they receive debits against the credits they had earlier received for these supplies.

In this way, the system provides its own internal credit based on the superior credit standing and access of chain participants who own the most substantial fixed assets. Total sale proceeds are shared among the parties after first deducting expenses owed to the boat operator. The remaining net income from total sales is split normally at a rate of 50-50%. The fishing crew will share among themselves the earned 50% and the boat operator will retain the remaining 50% as profit.

This kind of arrangement puts the boat operators in a very strong bargaining position with respect to the fishermen. It allows the former to realize extremely high profits at the expense of the latter. It is estimated that the boat operator makes an annual profit of about Tsh 50m. (US$50,000) on a capital base of only Tsh 6.6m. This is an above market return on investments in fishing boats, notwithstanding the risks of poor fishing conditions, bad weather, boat capsizing or running aground. Over the long-term, the imbalance in negotiating positions of the boat operators versus

the fishermen may diminish the competitiveness of the entire sector. Indeed, in recent years agents and boat owners have become much stronger economically, and in some cases have actually displaced factory owners as the providers of equipment and gear. In addition, they have become much more aggressive in their pricing to factory owners, particularly when they know that large orders are pending, and that charter aircraft are waiting for supplies.

Strengthening the bargaining power of fishermen would be useful not only for the long-term competitiveness of the sector, but obviously also for raising their incomes and reducing poverty. To this end, the existing fishing communities need to be strengthened so they can enter into collective bargaining agreements directly with processors. If fish production organizations were formed which could commit their members to contractual terms involving the supply of quality product, and invest in technology upgrading and recapitalization of both fish catching and fish processing activities, several of the major problems facing the industry such as over-fishing, fishermen level quality controls, 100 percent transparency within the chain and equities among chain participants could be addressed.

The initial development of local fishermen groups could be done on a demonstration project basis. Processors could assist with these experiments by voluntarily entering into collective bargaining agreements with producer organizations.

5.6 SPS STANDARDS FOR FISH

Towards the end of the 1990s, Tanzanian fish and fishery product exports (as well as those of Kenya and Uganda) were subject to a series of restrictions by the EU that impacted, in particular, on the Nile perch supply chain (see Box 5.2 on EU legislation on fish standards). These restrictions related to concerns over food safety controls. In response, both the Tanzanian government and the fish processing sector were required to implement wide-ranging reforms and investments, which they appear to have done quite successfully.

Although Tanzania had already been confronted with the challenge of complying with EU hygiene requirements, it was not until restrictions were applied to fish and fishery product exports from Tanzania, Kenya and Uganda that specific actions were taken to implement the necessary reforms (Table 5.5)[113]. While there is little evidence that the Fisheries Department or the industrial fish processors were proactive in taking the actions required to comply with EU requirements, and indeed the weakness of prevailing standards probably explains to a large part the restrictions imposed by the Commission, once access to EU markets was threatened action was immediately taken. Further, when the restrictions were imposed, Tanzania was able to make the reforms and investments required to achieve compliance with EU requirements more rapidly than either Kenya or Uganda.

[113] See Jaffee et al (2005) for a detailed discussion of these events.

Box 5.2: EU Legislation on Fish Standards

EU legislation lays down detailed requirements regarding the landing of fish, structure of wholesale and auction markets and processing facilities (for example construction of walls and floors, lighting, refrigeration, ventilation, staff hygiene and so on), processing operations, transportation, storage, packaging, checks on finished products, laboratories and water quality (Henson and Mitullah, 2004). More generally, it requires that fish processing facilities undertake 'own checks', broadly based on the principle of HACCP ('own checks' refers to all actions aimed at ensuring and demonstrating compliance with standards laid down by EU legislation).

Processing plants are inspected and approved on an individual basis by a specified 'Competent Authority' in the country of origin, whether an EU Member State or a Third Country, to ensure they comply with these requirements. The European Commission (EC) undertakes checks to ensure that the Competent Authority undertakes this task in a satisfactory manner and to ensure provisions of the Directive are complied with. Imports from Third Countries are required to comply with requirements that are at least equivalent to those of the EU. Further, specific import conditions are established according to the particular health situation of that country. In most cases, the Commission undertakes periodic inspections for the purposes of determining local health conditions and establishing specific import conditions for the country concerned. Only establishments approved by the Competent Authority are permitted to export to the EU. The Competent Authority provides the EC with a list of approved establishments and this is subsequently published in the Official Journal of the European Communities. Countries for which the EC has approved local requirements as being at least equivalent to those in the EU and for which specific import requirements have been established are subject to reduced physical inspection at the border.

Table 5-5: Food Safety Restrictions on Tanzanian Fish Exports to the EU

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

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

The strengthening of safety and quality capacity is an integral element of the Master Plan on Fisheries Development[114] which aims to strengthen the capabilities of artisanal fisheries in

[114] System Science Consultants, 2002.

Tanzania. As part of efforts towards the sustainable development of fishery exports, the Plan includes the enhancement of export product competitiveness through improvements in quality control capabilities, including upgrading of laboratory infrastructure. Further, efforts to enhance infrastructure at landing beaches on Lake Victoria include the construction of landing sites for Nile perch destined for export.

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

The Fisheries Division has invested in a significant increase in its inspection capacity through the hiring of additional inspectors and programs of training. Over the period 1997 to 2004, the number of inspectors in the Lake Victoria zone increased from six to 21, with an associated increase in salary costs from US$11,500/annum to US$32,700/annum. Training of fisheries inspectors has been provided by UNIDO, FAO and the TBS, the latter with funding from the DANIDA-funded project. This has encompassed HACCP, GMP, and auditing. Despite this considerable investment, however, the current inspection capacity remains inadequate.

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

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

One of the major challenges faced by the Fisheries Department in responding to the restrictions on fish exports due to concerns about pesticide residues was the implementation and maintenance of a program of monitoring of fish, water and sediment samples. Although a program was implemented in December 1998 when the issue first arose, this was suspended in mid-1999 because no positive results had been achieved. Thus, when the EU undertook inspections in August 1999, no monitoring program was in place. Following this inspection, the Fisheries Department responded by implementing a multi-phase monitoring program. Given the lack of capacity to undertake analysis of pesticide residues at the Nyegezi laboratory, the Fisheries

Department initially contracted an internationally accredited laboratory in the Netherlands. In December 1999, a laboratory was contracted in South Africa at lower cost. To date, over US$330,000 has been spent on the analysis of fish, water and sediment for pesticides residues at these laboratories. The current annual cost is around US$35,000 to US$40,000. This cost will be defrayed when the new laboratory at Nyegezi is up and running.

Alongside the implementation of more effective inspection and monitoring regimes, the Competent Authority has made efforts to be proactive in identifying potential problems and working with the industrial processing sector as and when problems arise. Further, interviews with processors highlighted how the Competent Authority has become proactive in coming forward with suggestions for ways in which hygiene controls can be enhanced in processing operations. At the same time, however, it is evident that the Fisheries Department is under-resourced, despite the fact that significant amounts of revenue are raised through the Loyalty Fee on fish and fishery product exports. For example, the new laboratory at Nyegezi has taken much longer than originally envisaged to be constructed and funds have yet to be allocated for equipment. Further, some analyses are not undertaken routinely (for example heavy metals) even though these are required for full compliance with EU requirements.

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

The non-recurring costs of compliance with the EU's hygiene standards for fish and fishery products has imposed a considerable burden on certain of the industrial fish processors, in particular those that entered the sector relatively late and have struggled to secure a reliable supply of fish to maintain their operations at a certain minimum level of capacity. Thus, although these non-recurring costs only account for between 2 and 9.5 percent of aggregate turnover for the period 2000 to 2003, one facility has stopped operating recently, and two others are operating at very low levels of capacity and might be expected to close in the near future.

In addition, Nile perch processors have also incurred recurring costs of compliance that have increased their production costs. These include the additional staff required to maintain effective hygiene controls, record-keeping, laboratory analysis, on-going staff training etc. It is estimated that these costs have added about 10-15 percent to production costs. Given that Kenyan and Ugandan processors have incurred similar additional costs of production,[115] this is unlikely to have had a major impact on export competitiveness. Further, a number of processors highlight the benefits they have achieved from the enhancement of hygiene standards, including improved product quality related to the enhanced diligence of processing staff, lower risks of rejection, and so on. Further, they highlight the value placed on approval for export to the EU among their customers even in non-EU countries, enabling them to maintain access to other markets.

[115] See, for example, Henson and Mitullah (2004).

Until restrictions were applied to exports of fish and fishery products to the EU, there was little, if any, cooperation within the processing sector. As mentioned earlier, the recognition of the need for industry cooperation has already led to the establishment of the two industry organizations, TFPA and LVFPAT towards the end of the 1990s. Both these organizations have played an important role in establishing codes of practice that aid in the implementation of enhanced hygiene controls and promoting best practice, providing updates on legislative changes etc. LVFAP also has close ties with sister organizations in Kenya and Uganda, aiming to address issues that are of common interest to Nile perch processors across the three countries.[116]

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

Currently, basic infrastructure at landing sites remains rudimentary, with only five percent having a banda, cold store, or electricity, and less than one-fourth of the sites featuring an all-weather road. As part of efforts to upgrade hygiene standards at landing beaches, the Fisheries Department has designated 54 sites for the landing of fish for export. To date, it has made rudimentary improvements, including a floating barge at which fish is landed, to ten of these sites at a cost of US$777,000 (Table 5.6). This suggests an overall cost of upgrading the 52 designated beaches of US$4 million. Other estimates are considerably higher.[117] Immediate access to finance remains a key constraint and, as a result, progress in the upgrading of landing sites remains slow.

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

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

[117] Estimates in the Master Plan for Fisheries Development include more comprehensive upgrades at three strategic landing sites including ice plants, road improvements and fish handling areas. At certain sites this would involve a cost of US$1.6 million.

Table 5-6: Cost of Landing Beach Upgrades

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

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

5.7 CONCLUSIONS

While good progress has been made in the Nile perch sector in addressing the challenges posed by the evolution of stricter food safety requirements, the associated costs have exacerbated existing problems and constraints in the sector. Currently, the sector is undergoing a process of rationalization, with processing facilities closing or operating at very low levels of capacity in an attempt to recoup at least some of the considerable investment made to upgrade hygiene controls. Within five years it is likely that the entire sector will be controlled by five or so companies, each of which will have one or two processing facilities.

In particular, the sector is facing declines in Nile perch landings while having a high level of structural over-capacity. Although the Fisheries Department has implemented more rigorous controls on fishing methods and attempted to restrict cross-border movements of fish, there is no data on fish landings through which the efficacy of such measures can be assessed, and through which the processors can judge the likely supply of fish. Indeed, the Fisheries Department has approved the construction of two or three new processing facilities. It is evident that more effective and coherent planning is required in order to safeguard the future of the sector in a climate of reduced fish availability.

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

Box 5.3 : Impact of EU Restrictions on Tanzania's Fish Trade

The impact of stricter hygiene standards on fish and fishery exports to the EU and the restrictions imposed during the period 1997 to 2000 has two distinct elements. First is the immediate impact related to the costs of compliance with EU requirements and the specific restrictions imposed on exports from Tanzania, Kenya and Uganda. Second is the longer term impact on export competitiveness.

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

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

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

Finally, an emerging threat facing the Nile perch sector from across East Africa is competition from Basa, a low price variety of catfish, predominantly from Vietnam. This has created particular challenges for Nile perch exporters in EU markets during 2003. Thus, while the average unit value for Nile perch fillets in EU Markets grew strongly between 1997 and 2002, reaching Euro 5.00/kg in 2002, in 2003 they collapsed to Euro 3.80/kg.[118]

[118] Eurofish, 2004.

With respect to Zanzibar, potential investment opportunities (such as fish processing, canning, freezing and packaging) have not been exploited although they are opened to foreign investment. The main obstacle to investment is the lack of EU market export code in Zanzibar. There is also a need to strengthen the inspection capacity of the Zanzibar Department of Fisheries and Marine Resources. Increasing production of the seaweed that is currently in high demand in the world *Euchuma cottonii* requires shifting to new areas for cultivation. This requires research to identify potential new areas (offshore and deepwater), the development of a program to establish seaweed farming in these new areas, and training for seaweed farmers.

APPENDICES

Appendix 1: FOB Value of Horticultural and Floricultural Exports from Tanzania, 2003 (in thousand US$)

Product	Customs number	Desitination						
		Europe	Middle East	Asia	Regional	USA	Other	Total
Bulbs tubers	6011000	4	2	0				6
Unrooted cuttings	6021000	3,755	10	3	5	2		3,773
Trees shrubs	6022000		1					1
Roses	6024000	2,248			13			2,261
Other live plants	6029000	37	0	1				38
Sub-total floriculture		***6,043***	***12***	***4***	***17***	***2***	***0***	***6,079***
Seed potatoes	7011000				3			3
Other potatoes	7019000	58			142			200
Tomatoes fresh	7020000	1			139			141
Onions & shallots	7031000	15		1	137			153
Garlic	7032000				2			2
Leeks	7039000	16			4		21	41
Cauliflower	7041000				10			10
Cabbage	7049000				5			5
Cabbage lettuce	7051000	35			1			36
Lettuce	7051900				0			0
Carrots & turnips	7061000	23			4			27
Beetroot radish	7069000	4			1			5
Cucumbers	7070000				61			61
Peas	7081000	4,064	1	136	176			4,377
Beans	7082000	64	2		8			74
Other legume	7089000	31		91	52			174
Aritchokes, globe	7091000	38						38
Aubergines	7093000				7			7
Celery	7094000	5		0	0			5
Capiscum	7096000	9	0		1			10
Other vegetables	7099000				2			2
Sweet potatoes	7142000				7			7
Sub-total vegetables		***4,363***	***3***	***228***	***762***	***0***	***21***	***5,377***
Bananas	8030000		0		18			18
Dates	8041000	217			92			309
Pineapples	8043000	3			6			9
Guava, mangoes	8045000		0		0			0
Oranges	8051000				136		3	139
Mandarins	8052000				3			3
Lemons	8053000				0			0
Grapefruit	8054000				1			1
Other citrus	8059000		6		5			10
Watermelons	8071100				2			2
Melons	8071900	7						7
Apples	8081000	1	4		16			21
Pears	8082000				45			45
Cherries	8092000				3			3
Plums	8094000				7			7
Other fruit	8090000	3	6					9
Sub-total fruit		***231***	***15***	***0***	***333***	***0***	***3***	***582***
GRAND TOTAL		**10,637**	**31**	**232**	**1,113**	**2**	**24**	**12,039**

Source: Consultant's calculations based on Tanzania Customs data.

Appendix 2: Lessons for horticulture and floriculture from other countries

A number of other countries have been successful in developing horticultural and floricultural exports to Europe. The consultant has experience in the development of high-value exports in Kenya, Uganda, Zimbabwe, Zambia and Ghana[119] – these countries have been chosen either because of their proximity to Tanzania or because specific lessons can be learnt. This appendix summarizes the main comparative advantages of these countries, the most important issues they had to address and identifies the key drivers and success factors. It is recognized that the selection of the success factors is subjective, but it does give the opportunity to see what lessons could be implemented in Tanzania.

Kenya

Of all the countries in sub-Saharan Africa, Kenya has probably the most natural comparative advantages (that is, climate) and when coupled with cheap air freight rates[120] during the early days of establishing the sector and a dynamic private sector, it allowed Kenya to develop an horticultural and floricultural export industry that is regarded as being the "world's leader". Now that some of the comparative advantages have been eroded (for example freight[121] and labor rates[122]), it has developed sufficient competitive advantages to still retain its pre-eminent status as the continent's leading vegetable and floricultural exporting country.

Vegetable exports started in the mid 1950s – with Asian vegetables being exported to the UK. Much of this trade was organized by Kenyan-based exporters selling to family relatives in the main London wholesale markets. This business expanded through the 1960s and 1970s and the range of produce increased to include green beans, mangetout and, in the early 1990s, runner beans. In the 1990s, the exporters started to increasingly add-value by creating pre-packs, mixed packs and topping and tailing the beans and the mangetout specifically targeting sales through the major supermarkets. Over the last five years the development of vegetable exports has focused on the preparation of "prepared packs" produced in high-care facilities. Since 1999, there has been a rapid increase in the exports of high-value mixed vegetables and shelled peas – products that are targeted at the "cash rich, time poor" European consumer. The industry that was once characterized by many exporters – many who were simply "briefcase traders" – is now concentrated in the hands of a limited number of highly professional companies who contract production and implement the latest quality, hygiene, social and environmental standards demanded by the European supermarkets and retailers.

Kenya's first significant flower export operation was a large carnation farm at Naivasha. In the early 1980s, a range of other cutflowers was introduced – and this led to very significant investments, especially in cut-rose production. Throughout the late 1980s and early 1990s, the cutflower industry became established and many of these initial investors enjoyed good returns. The investment in cutflower production is still increasing dramatically as energy and labor costs rise in Europe and as the Kenyan industry strives to continue improving its yields and quality. Even though the industry has grown rapidly and is generally regarded as being very profitable,

[119] The consultant managed what was at the time the biggest export farm in Zambia, he was involved with establishment of what has become one of the biggest perishable exporting companies in Kenya, he worked on Aid projects in Ghana, Uganda, Zimbabwe as well Zambia

[120] Initially due to utilizing spare cargo capacity on passenger aircraft and then backloads

[121] As the volume of North-bound freight became greater than in-bound cargo from Europe

[122] As the workforce negotiated better rates as their skills improved and as the industry expanded, new entrants had to pay more to attract at least part of their work force that had appropriate experience

some farms have had financial problems. In the late 1990s and early 2000s, some flower farms were regarded as "non-performing"; however, recent changes in the USD to Euro exchange rate have helped some of the less well-managed farms to generate profits[123]. This does, however, demonstrate that even with the significant natural comparative advantages of Kenya, good management is still needed to exploit the opportunities.

Kenya's success factors include:

- **Climate** – Kenya has relatively constant temperatures through the year giving opportunities for all-year-round production – combined with a range of altitudes within a relatively short journey time of the international airport at Nairobi, so a wide range of crops can be grown, so it is relatively easy to prepare mixed packs of vegetables. The climate is also suitable for a wide range of floricultural crops.
- **Freight** – The early years of the Kenyan horticultural exports were assisted by utilizing the surplus freight capacity on passenger aircraft that flew into Kenya on the back of a thriving tourist industry. When exports expanded beyond the capacity that could be carried on passenger aircraft, the industry was able to backload on aircraft delivering freight to Nigeria, South Africa as well as aid to various distressed countries in the region. Now the perishable freight exports from Kenya are much greater than south-bound volumes – which mean that the freighter aircraft routes are now driven by north-bound cargo[124].
- **External retention of foreign exchange** – From the 1950s to the early 1980s, a key driver to the success of horticultural exports was the desire to retain foreign exchange outside of the country, an act that was against foreign exchange regulations at the time). During this time, the Government established export prices for the main export products that exporters had to return to the country. However, Government set a price that was slightly below the average selling price, enabling exporters to retain a small amount of money out of the country. This driver has now fallen away, but it was an important incentive for originally establishing the sector.
- **Private sector** – Since Independence, Kenya has had a large and competitive private sector – in both the farming and in the service communities. Consequently, there were many farmers who could respond to market opportunities and a service industry that could supply competitively priced inputs. Also, the success of many of the initial investors gave the banks confidence to continue lending to the sector. Because of its effective private sector, the high level of management and business skills has allowed the industry to develop competitive advantage as some of the initial comparative advantages (i.e. cheap air freight and labor) have been eroded.
- **Government support** – Government played an active yet subtle role in encouraging exports. First, it helped provide an incentive by allowing small externalization of foreign exchange; it helped with infra-structure (such as roads, rural electrification and the building of a cold store at the airport). Perhaps more importantly, it has allowed the industry to develop unhindered by excessive regulation and taxes. Some Government bodies, such as the Horticultural Crops Development Authority (HCDA) and Flower Producers and Exporters Association of Kenya (FPEAK) have helped support the

[123] As the USD has weakened against the Euro and sterling, this has benefited exporters in a number of ways. As the Kenyan currency is linked to the USD and most of the revenues from Kenya's cutflower and vegetables are denominated in Euro and sterling respectively, the revenue in local currency has increased significantly. Also, the most important direct cost is air freight, which is also denominated in USD, has become a smaller percentage of the revenues

[124] Some freighters regularly fly from Europe to Kenya empty to collect perishable cargo

industry by reacting to the industry's needs, in other words they have not attempted to lead the industry. These associations now funded by exporters and are driven by the industry for the benefit of the exporters. The Government did not provide direct financial support to the industry, but allowed it to develop without constraints.

- **Donor support** – The Kenyan industry was established with very little donor support. Since the industry has been recognized as being "a success story", some efforts have been made to encourage small-farmers become part of the supply chain and help has been given to some exporters to meet the minimum pesticide residue levels. The USAID-funded Kenya Export Development Services (KEDS) project helped support some of the smaller companies remain competitive, which contributed to the critical mass of the industry. Examples of the KEDS support included the provision of market information, establishing some initial training program to facilitate social, environmental and hygiene standards, provide grants for innovative research and supported the establishment of FPEAK. But generally, the Kenyan industry has reached its current level with very little donor support. However recently, even the larger exporters are benefiting from the EU-funded Pesticide Initiative Program (PIP), which is designed to enable small-farmers who are supplying the large exporters to meet the traceability and safety standards demanded by the European buyers. Much of the PIP support is in the form of providing support for training and establishing systems[125].
- **Economies of scale and considerable experience** – Kenya's long and successful history means that it can benefit from economies of scale, which is especially important for freight and input costs and the availability of other services for the farmers.

In summary, Kenya was endowed with very significant comparative advantages of good climate, available and affordable freight capacity and a large private sector-base of agriculturalists and service providers to give the necessary management and business skills to turn the comparative advantages into a thriving business. However, the mistake is often made in assuming that other countries can follow the same model as Kenya, this is impossible. The Kenyan industry was established at a time when profit margins were much higher and it has become the industry leader. Other countries that want to become significant players in the horticulture and floriculture export industry have to develop strategies that are relevant to today's issues and opportunities and not to compete "head on" with Kenya.

Uganda

Uganda has had a much more troubled political and financial history than Kenya; and therefore it was much later in trying to follow its neighbor's success in the development of export horticulture and floriculture. Some investments were made in the late 1980s and early 1990s, but many of these first attempts were not successful; however, Uganda has now established a niche for certain products. Its success has been based on the following factors:

- **Climate** – The climate around Lake Victoria is different from the main horticultural and floricultural areas of Kenya. This meant that the initial attempts to establish temperate vegetable exports failed. Similarly, the flower farms that tried to follow the Kenya rose model producing "intermediate" varieties also failed. However, once the climate was better understood and the flower farmers invested in sweetheart roses, which were profitable and led to the recent expansion of the industry. The Ugandan climate is also

[125] Support through PIP is available to other African countries that are exporting horticultural crops to the EU

exceptionally good for the production of chrysanthemum cuttings – and a successful cuttings industry has been established. The vegetable exporters then started successfully growing sub-tropical vegetables.

- **Donor support –** The non-traditional high-value export industry received 12 years support from two USAID-funded projects[126] – from 1992 to 2004. These projects provided considerable technical and business help for exporters, eg the IDEA project established trials to identify the most appropriate sweetheart rose varieties; it also financed the first chrysanthemum cuttings trials and developed the technology for producing export-quality peppers and chillies. The project also provided valuable market information and training for middle management, helped finance the building of a cold store at Entebbe Airport and provided staff to coordinate the logistics for export. Through this project, the growers received considerable assistance to improve their product quality and the implementation of certificates required by European buyers. The flower industry also receives donor support to fund an internationally recruited Chief Executive Officer (CEO) of the Uganda Flower Exporters Association (UFEA) as well as PSOM grants from the Dutch Government.
- **Cooperation amongst growers** – The growers have successfully formed UFEA. This has been vital to improve the freight situation – as in many countries, there is a very large step to move from exporting produce in passenger aircraft to chartering dedicated freight aircraft regularly. Most of the industry recognized that it needed to cooperate to achieve this and, through UFEA, and with help from the IDEA project, the industry now has regular freighter services landing at Entebbe. By cooperation and forming an active association, the industry has accessed funds to pay for its CEO, collectively lobby Government for measures to facilitate exports, for example allowing exporting farms to be classified as Export Processing Zones, the quick repayment of VAT and the implementation of duty-free imports of inputs. UFEA is currently trying to raise finance to establish a Research and Training Institute.
- **Freight** – There are a number of reasons why Uganda was able to establish good freight links with Europe. These included the cooperation by the exporters noted above and the significant fresh fish exports (26,000 tones in 2003[127]) that were exported from Entebbe to Europe made it much more attractive for freight aircraft to land.
- **Government support** – The Ugandan Government has given some incentives to attract foreign investment into the floricultural industry, which have been successful in attracting investments by most of the major breeders of chrysanthemums. These have included tax holidays through the Uganda Investment Authority, and duty-free status on inputs.

In summary, Uganda has an attractive climate for a narrow range of floricultural and horticultural produce, which it eventually started to exploit successfully. The realization of the most profitable crops to grow was a relatively slow and financially painful process for the private sector – but undoubtedly this was speeded-up by donor support.

Zimbabwe

Zimbabwe's development of horticultural and floricultural exports to Europe started in the early 1980s. The key driver was that the tobacco industry was making exceptionally good profits but the growers were not allowed to access foreign exchange because the crop was sold in the

[126] These USAID projects were the Export Promotion and Analysis Development Unit (EPADU) and the Investment in Developing Export Agriculture (IDEA)
[127] The fish are Nile Perch caught in Lake Victoria

Zimbabwe for local currency. Some tobacco growers therefore started to grow summer flowers for the European market and then retain some of the revenues off-shore – when it was illegal to hold money off-shore action. Fairly quickly a few farmers realized that export floriculture and then horticulture could be very profitable and they started to develop cut-roses and labor-intensive crops such as mangetout (snow peas) and runner beans. The recent political troubles have significantly reduced the level of exports to Europe. However, the key factors that contributed to Zimbabwe's initial success include the:

- **Climate** – The climate in Zimbabwe is good for contra-season production of flowers and some vegetables for the European market. Its warm summer rains make it difficult for temperate vegetables that require cooler and dry conditions – but its dry winter is good for mangetout and runner bean production. The rose industry does not suffer from the rains as they are grown in plastic green-houses.
- **Cheap labor** – Even though the timing of the Zimbabwean runner beans crop clashes with European production, the low labor costs give Zimbabwe a competitive edge. Similarly, the low labor cost gives it a distinct comparative advantage over the North African producers such as Morocco in the production of mangetout.
- **Good management** – Zimbabwe traditionally had a thriving and profitable agricultural industry based mainly on large commercial farms. These had the management and business skills to develop the export opportunities in horticulture and floriculture.
- **External retention of foreign exchange** – A key driver was the desire for farmers to retain foreign exchange outside of the country, which was against the country's foreign exchange regulations at the time.
- **Utilize retained earnings** – Many of the farms established horticultural and floricultural exports using retained profits made from other crops and were therefore not constrained by significant debt repayments.
- **Freight** – As with other countries, freight was a very important issue. However, the growers recognized that if the industry was going to expand and have access to sufficient freight, then they had to cooperate to charter freighters – often making use of backloads from South Africa. This cooperation happened because the exporters were sufficiently aware of its importance established regular weekly meetings specifically to review and develop the industry's freight strategy.
- **Market linkages** – A number of Dutch companies recognized the potential for Zimbabwean flower exports and established offices in Harare to provide both technical and marketing support for the farmers in the late 1980s and early 1990s.
- **Government support** – The Government provided some support, for example Affreightair, the Government-controlled freight company, gave priority to ensuring that there was sufficient capacity available for Zimbabwean perishable exports, and facilities at Harare airport were built to facilitate perishable exports.

In summary, Zimbabwe has an attractive climate for producing off-season products for the European market, it had a very good base of commercial agriculture to provide management and services needed to diversify into higher-value exports. The commercial agricultural base also generated the money to allow investment in floriculture and horticulture without incurring significant debt. When some Dutch companies recognized that it was a profitable place for floriculture, they offered marketing and technical support. The issue of freight was resolved through cooperation amongst the industry.

Zambia

Zambia's exports of horticulture started in the early 1980s, encouraged by an incentive of being allowed to retain 50% of the foreign exchange earnings to buy inputs for other farming activities. Exports were initially helped by very cheap, subsidized air freight, as low as USD 0.07/kg[128], at a time when commercial companies were charging about USD 1.30 to 1.50/kg. This low freight rate encouraged the growing of low-value vegetables. As soon as the freight rates were raised to commercial levels, the low-value vegetable exports became non-viable. During the mid-1980s when air freight rates were low, the Zambia Export Growers Association Ltd (ZEGA Ltd) borrowed money from the European Investment Bank (EIB) to build a cold store at Lusaka airport. When the levels of vegetable exports declined, the repayment of the EIB debt became impossible, so further EIB loans were organized for establishing cut-rose production units whose output would then use the airport cold store. These rose farms became the basis of the high-value export industry. A number of factors have contributed to the success of Zambia's horticultural and floricultural industry, including:

- **Climate** – a good climate for contra-season production of some flowers and vegetables for the European market.
- **Cheap labor** – when mangetout was introduced in Zambia, its cheap labor gave it a significant edge over Moroccan production and prevented any serious competition developing in Southern Europe.
- **Donor support** – EIB loans to farmers helped establish the cut-rose industry and the EU-funded Export Development Project (EDP) gave considerable technical and financial support to the whole industry in the 1990s. The EDP support included a revolving fund that could be used to pre-finance inputs[129] and the project provided technical support to improve product quality.
- **Cooperation amongst exporters** – the formation of ZEGA by the exporters was important in establishing regular freight services. Initially ZEGA was established by a small group of farmers who were exporting or who wanted to enter the export market and who also recognized that they needed critical mass to purchase inputs from South Africa and negotiate duty-free incentives with Government. It was established without any donor support but as it evolved, it became an important vehicle to access donor support.
- **Freight** - Perhaps the main benefit of the cooperation amongst the growers was to secure air freight. The tonnage of Zambia's air freight exports were always less than Kenya and Zimbabwe, so achieving critical mass to secure competitive rates and capacity was difficult. However, through ZEGA, the exporters cooperated, sometimes putting the long-term future of the industry ahead of the short-term benefits of the members. For example, when the industry reached the stage of needing regular freight aircraft, the exporters agreed to fill the freighters before any cargo went on the passenger airlines, despite rates on the passenger airlines being cheaper[130]. This ensured that freighters continued to land regularly at Lusaka allowing the industry to take a major step forward.

[128] This cheap freight rate was provided by Zambia Airways, the national airline that became insolvent and was closed in the late 1980s

[129] The pre-financing of inputs meant that the goods (including freight, packaging, plants, agrochemicals) were paid for before they were used, which guaranteed that the goods were available – the farmers paid the revolving fund the monies when they utilized the inputs. In other words, it significantly helped the exporters cash-flow

[130] Airline companies have much more latitude in their pricing policies than dedicated freight companies. This is because revenue from cargo is a "by-product" of the passenger service, most of the costs of the

- **Good management** – Zambia did not have such a large commercial farmer base as Zimbabwe, but it did have sufficient commercial farmers to provide adequate management and business skills needed to establish a new and innovative industry.
- **Research and Training** - The Zambian industry realized that despite having a core of good managers, there was a shortage of competent middle management and supervisors. In addition, it also recognized that some central research could benefit the whole industry. Therefore, when the EDP finished, the revolving fund, along with other donor and industry finance, were used to establish a Research and Training Farm on one of the Agricultural Colleges outside Lusaka. This Research and Training Farm was established by the industry and was managed by the industry for the benefit of the industry.

In summary, Zambia has a reasonable climate for producing off-season products for the European market. However, much of its success can be put down to the cooperation in the industry (with the formation of ZEGA) and by the support given through the EU-funded project and through the EIB. The cooperation within ZEGA for ensuring a regular freight service was clearly vital and the establishment of the Research and Training Farm was particularly innovative.

Ghana

Ghana has a different climate to the above countries – it is considerably warmer and produces and exports sub-tropical crops, such as pineapples, papaya and is also a significant exporter of Asian vegetables. In the 1980s and 1990s, making use of cheap air freight (using "backloads" on aircraft that delivered freight into Nigeria), it became the main supplier of air freighted pineapples to Europe. The European pineapple market was dominated by sea freighted fruit from the Ivory Coast and Costa Rica, but there was a much smaller market for high quality air freighted fruit, which Ghana became the dominant supplier. However, by about 1993 it had saturated this air freight pineapple market and it had to move into the sea freighted pineapple market. Therefore, the growers had to change from competing against each other to cooperating on the key issue of freight[131]. The factors for the success of the Ghanaian perishable export industry included:

- **Freight** – Ghanaian exporters were, and indeed still are, able to get very cheap freight to Europe making use of backloads from Nigeria (rates have been about USD 0.70 to 0.80/kg for many years).
- **Climate** – Ghana has an excellent climate for all-year-round production of some fruits and Asian vegetables.
- **Cooperation** – Sea freight pineapple exports would not have taken off without the cooperation of the farmers, first to gain competitive freight rates for exporting in refrigerated containers and then to hire space on boats that were also exporting bananas from Cameroon. The initial realization of the need for cooperation originated during a consultancy assignment when the growers were invited to a meeting to discuss the future of their industry.

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aircraft are covered by the passenger load and the revenue from any freight carried is a bonus. However, with dedicated freight aircraft all the costs have to be covered by freight. In reality, the freight rates charged by passenger airlines is similar to that charged by dedicated freight companies. In the case of Zambia, the passenger companies were trying to undercut the freighters to get business.

[131] Because when supplying the air freight pineapple market, Ghana accounted for about 75% of the supply, therefore the main competition for a Ghanaian exporter was another Ghanaian farmer. Then when they started exporting by sea, they were a minor player and could not afford to continue competing with each other

- **Donor support** – USAID had a project specifically supporting non-traditional agricultural exports. This project established and helped fund an organization called Sea freight Pineapple Exporters of Ghana (SPEG), which became the vehicle for organizing sea freight space, negotiating rates and then assisting with loading the boats. The USAID project also helped with the establishment of dedicated pineapple handling and storage facilities at Tema port.

In summary, Ghana's success can be put down to initially having cheap air freight and then utilizing donor support to accelerate the development into sea freight and create cooperation amongst the exporters.

Ethiopia

Ethiopia has long been recognized as having an excellent climate for producing export quality floricultural and horticultural products. Despite the climate advantages, by 2003 vegetable exports to the EU were only just under 3,000 tones (Table 2.2) and it was an even more insignificant exporter of cutflowers. The Ethiopian Government has recently made considerable efforts to stimulate Foreign Direct Investment (FDI) in horticulture and floriculture. It is reported that there have been significant investments in roses and that over 70 ha of green-houses have been built. In addition, there have also been investments in outdoor flowers and some Kenyan vegetable exporters are diversifying into Ethiopia. The consultant does not have first hand experience of Ethiopia, but a number of investors were interviewed. They gave their reasons for investing in Ethiopia as follows:

- **Climate** – The climate in Ethiopia is regarded as being as good as Kenya for many products – and better for others. In particular, it has constant temperatures throughout the year and it has a very distinct and short rainy season that coincides with the low prices in Europe – but the dry season coincides with the high prices[132]. It has wide variations in diurnal temperatures that are very important for some crops. Also, it does not have the increases in temperatures noted in Northern Tanzania for the January to March period.
- **Incentives that are implemented very quickly** – The private sector gets good incentives for investing in horticulture and floriculture[133] and these incentives are easy to obtain – and if there is a problem, then it is quickly solved. In other words there is a very distinct culture amongst the senior civil servants to support FDI.
- **Diversification of political risk** – One of the main reasons given by the Kenyan export companies for investing in Ethiopia is that it is important to "diversify political risk" – and the reasons they chose Ethiopia over other East African countries are that the climate is better for horticultural and floricultural production and, importantly, the Government makes considerable efforts to ensure that the incentives provided are implemented quickly and efficiently. In contrast, in other countries such as Tanzania take much longer to sort out problems associated with incentives.

[132] All horticultural and floricultural production that is air freighted exports to EU is grown under irrigation. Unlike roses, which are grown under plastic green-houses, summer flowers are generally grown out doors, and are therefore more vulnerable to any rainfall. As rain tends to damage flowers and reduce quality, it is best when the rains coincide with the less attractive market and then production is timed for the higher priced markets in the dry season when quality and yields are best

[133] Most of these incentives are very similar to those being offered for investors in Tanzania. The only difference reported was that it is reportedly easier to get work permits in Ethiopia

- **Cheap freight** – Currently, an important incentive for exporters is cheap freight (reportedly USD 1.09/kg compared with USD 1.75 to 1.95/kg from East African countries). This cheap freight is on Government owned Ethiopian Airlines who have invested in new freight aircraft and are reportedly flying to Europe at a loss, therefore effectively the Government is subsidizing the cost of air freight. If the export targets Ethiopia has set for the industry are reached, it will have to start using commercial freight companies and the cost will rise to Kenyan and Tanzanian rates. But the cheap freight is certainly an attractive incentive during the development phase of the industry. The transport situation has also been encouraged by the building of a good airport with modern perishable cargo handling facilities.
- **Other input costs** – Investors claim that the Ethiopian Government is making stringent efforts to reduce taxes on services and is trying to keep other input costs as low as possible. One Kenyan-based investor in Ethiopia notes that electricity and fuel are cheaper in Kenya, whilst other imported inputs are similarly priced.
- **Good security** – Some investors regard the security situation as being attractive – both personnel security and petty theft from farms.

Appendix 3: The Zambian Research and Training Farm[134]

Horticulture in Zambia

Zambia has been exporting fresh horticultural produce — cut flowers and vegetables — since the early 1980s. The industry has expanded dramatically since the mid 1990s both in terms of quantities and value of exports and in the number of exporting companies.

This expansion has created thousands of jobs including many new opportunities for women. The increased export earnings have also helped reduce the country's reliance on copper exports to generate foreign exchange.

In 1984, a group of exporters formed the Zambian Export Growers Association (ZEGA). This association continues to play a central role in the promotion and coordination of the industry.

Horticultural production is not limited to large and medium sized companies. Small holder farmers also have opportunities to grow export crops under outgrower schemes. This not only promotes the development of entrepreneurs, but also assists in domestic food security.

History of the NRDC/ZEGA Training Trust

Staff with a high level of competency are needed by an industry that demands high product standards. Expansion of the industry has therefore resulted in the need for large numbers of employees at all levels to have knowledge and practical skills specific to the production and export of vegetables and flowers.

There are also excellent career opportunities for Zambian managers who have a good academic grounding coupled with a commercial attitude, attention to detail and good people management.

Initially, staff employed by exporting companies were given basic, on-the-job training by the various farm owners and managers as the existing agricultural training institutions had neither the resources nor expertise to provide specialized training in practical, 'hands on' horticulture.
In 1995, ZEGA commissioned a training needs analysis for the horticulture industry which identified the following priorities:

- **Diploma and certificate courses (full time)** - aimed at training new entrants into the industry who have the potential to become supervisors and managers or small scale outgrowers

- **Diploma and certificate courses (part time)** - aimed at bringing existing supervisors and managers to a higher level of skill and understanding

- **On Farm Training** - short courses in essential practical skills for supervisors and workers

From 1996-98, ZEGA employed a consultant and training staff to design and pilot on-farm training program for the employees of its members and plan for the implementation of the diploma and certificate courses. During this period more than one hundred employees were trained in supervision skills and two hundred in the safe and effective use of pesticides. The

[134] Provided by Robert Bush, Executive Director of NZTT (NRDC/ZEGA Training Trust).

training courses were extremely successful and it was also established that ZEGA members are willing to contribute to the costs of high quality training.

The NRDC/ZEGA Training Trust was formed in November 1998 to provide and expand this horticultural training in Zambia. It is an independent organization directed by a Board of Trustees representing both the Government and the Private Sector.

The central location and availability of land and infrastructure at the Natural Resources Development College (NRDC), a Government institution, coupled with the ability of ZEGA to mobilize initial funding and expertise, created an organization that is financially independent and accountable and will be instrumental in satisfying the industry's requirements for training.

The Trust utilizes resources made available by the two institutions to create a centre of excellence for training in horticulture. It is believed that this joint venture in education is the first of its kind in Zambia and an example for other sectors and countries.

This new approach enabled the Trust to attract additional support from international donors to fund its initial development stage and the human resources necessary to design and manage course delivery. The continued development of Zambian staff in course delivery is a major priority for the Trust as is the need for financial sustainability.

The Training Trust is regulated by the Technical Education, Vocational and Entrepreneurship Training Authority, TEVETA, and has been awarded the status of a Grade 1 training organization. Links are also maintained with horticultural training institutions overseas.

Diploma in Export Horticulture

The 3 year diploma is aimed at school leavers who achieved good passes at 'O' level in English, maths and sciences and applicants undergo a two day interview process at the Trust to select the best candidates for the course. The Trust provides equal opportunities for male and female students.

Students are required to make a contribution to the cost of their education but this is kept to a level so that those from disadvantaged backgrounds are not excluded. The Trust is responsible for sourcing the funds to subsidize the Diploma program.

After selection, the first six months are spent working in the industry. The Trust organizes placements and ensures a variety of experiences for the students. Regular reports on performance are requested from the employer and students submit materials on the activities that they have undertaken. The close cooperation that the Trust has developed with the industry is vital for the success of these placements.

The first academic year (3 terms) concentrates on the principles of crop production although all teaching examples are taken from horticulture. Delivery of materials is by NRDC and Trust staff augmented by local and visiting experts. The Trust also requires that its students attend training in HIV/Aids.

Approximately 50% of the students' time is spent in practical training either on the Trust farm or with cooperating companies. All students are resident as they are often called to undertake activities outside normal working hours or at weekends.

After the first residential year, students undertake a second six month industrial placement. Wherever possible, students spend one placement on a rose production unit and the other in

vegetable production. In this second placement, students are expected to take on more responsibility.

The second residential year (3 terms) concentrates on advanced rose and vegetable production and also introduces the students to management orientated subjects: resource management, finance, quality assurance and control, post-harvest management, due diligence, planning and organization.

Assessment of students is continuous although there are also end of year examinations. It is a requirement that students pass the practical component of the course to graduate.

The graduates enter the industry as supervisors / junior managers and many are offered jobs by the companies who they worked for during their training.

Training Farm

An essential part of the students training is the practical work that they carry out on the Trust's training farm and the knowledge that they acquire in Good Agricultural Practice (GAP).

The Government allocated 50 hectares of NRDC's land to the Training Trust as part of their commitment to the joint venture. The initial set up consists of a 5,000 m^2 greenhouse for the production of export roses, a packshed for the export processing of roses and 20 Ha of drip irrigation for vegetable production. Requisite machinery for production and teaching has been purchased.

A further area of 3 ha. has been utilized for the creation of small-scale irrigation plots. These plots are used to demonstrate methods that could be utilized by small farmers and also play a role in the training of the diploma students.

Groups of first and final year students are given one or more plots to supervise and are responsible for all activities and record keeping for production. For the third year students, this includes an exercise in organic vegetable production. The easy accessibility of the Trust means that the small-scale irrigation unit can be used for training small-scale vegetable growers and the extension staff who provide support services to these farmers.

Final year students are involved in the day to day management of the Trust's farm and spend the first part of each morning planning, supervising and monitoring activities

The farm is run commercially and produce is exported either directly or through a pre-packer. In this way, the farm is self funding and makes a small contribution to the running costs of the Trust. Future plans include the expansion of rose production and the inclusion of additional crops grown by the export sector.

Codes of Practice

Exporters of fresh produce have to meet very high product quality standards if they are to compete in the market place. In addition, it is becoming increasingly important to assure consumers that production in developing countries is ethical and responsible.

In 2000, ZEGA instigated its own Code of Practice to cover the areas of GAP and protection of the environment, human resource management and welfare of employees, vegetable and flower quality assurance and relationships with outgrowers. Adherence to the Code is a requirement for

membership and helps to ensure that good business practices are implemented. This contributes to the promotion and protection of the reputation of Zambia in the international market place.

The Training Trust has played a central part in the development of the ZEGA Code and is responsible for auditing compliance by the ZEGA membership.

The Trust has also participated in the preparation of other regionally based Codes including a Code for Small Farmer Service Providers and the COLEACP Harmonized Framework for Codes of Practice in Southern and Eastern Africa and has provided training for auditors from the region.

Short Courses

The On Farm Training program consists of courses designed to improve productivity, increase safety and meet the requirements of the Code of Practice. The Training Trust delivers these courses on the client's site and, where necessary, materials are presented in local languages. Participants are required to demonstrate competence and understanding of the materials and certificates are only awarded to those who pass the assessment. Examples of courses available are: Supervision Skills, The Safe Use of Pesticides and Crop Scouting for Pests and Diseases in Flowers and Vegetables.

A charge is made for the provision of this service and in the first 3 years of operation, The Training Trust provided training to over 2,500 individuals in over 25 companies.

In the future, Diploma course modules will be made available to the industry on a part-time or distance learning format so that staff can continue to study whilst in full-time employment.

In addition to providing training to employees of exporting companies, the Training Trust has also provided training to small-scale farmers and the extension staff who work with them. Although developed with export horticulture in mind, many of the materials are applicable to the agricultural industry as a whole and this represents an opportunity for the expansion of the training program.

Training materials have been shared with other organizations in neighboring countries and the Training Trust is in the forefront of the harmonization of training standards in the region. It is proposed to make the Training Trust a regional centre for the training of trainers and auditors.

Appendix 4: List of Agrochemicals needed by Tanzanian Exporters that are available in Kenya but not in Tanzania[135]

New chemicals that need to be registered			TPRI		KENYA
	TRADE NAME	active ingradient	REG. No.	Class	PCPB Reg.
Mites	Tedion V-18 EC	Tetradifon		III	R 193
	Floramite	Bifenazate		III	T 133
	Secure 36 SC	Chlorfenapyr	EXP/686	II	T 0003
	Oscar	Tebufenpyrad		III	T 0098
	Apollo	Clofentezine		III	R 0162
	Oberon	Spiromesifen 240/L		III	R 0335
	Magister	Fenazaquin		II	T 0269
	Rufast	Acrnathin		III	T 0253
	Nissuron	hexythiazox		IV	T 0027
	Phytotech (Biological)	Phytoseilus persimilis			R 0299
	Amblytech (Biological)	Amblyseius californicus			R 0300
Nematode	Rugby 10 G	Cadusafos	EXP/276	I	T 0097
	Nemacur	Fenamiphos		I	P 0235
	Metham Sodium	sodium methyl dithiocarbamate		I	T 0053
	Vydate	Oxamyl		I	R 0136
Caterpillars	Runner 240 G/L	Methoxyfenozide		IV	T 0211
	Bestox	alpha-cypermethrin		II	P 0457
	Methomex 90 SP	Methomyl	EXP/886	I	P 0486
	Xentari (biological)	Bacillus thurengesis		IV	R 0262
	Tracer	Spinosad		III	T 0188
	Dimilin	diflubenzuron	EXP/776	III	P 0476

[135] Prepared by Avinash Mokate, General manager of Kiliflora, and other members of TAHA

Powdery	Meltatox	dodemorph acetate	EXP/763	II	P 0452
Mildew	Impulse	spiroxamine		II	R 0292
	Score	difenconazole		III	T 0021
	Banko	Chlorothalonil		III	R 0005
	Belkutte	iminoctadine tris (Albisilate)		II	R 0274
Downy	Equation Pro	famaxote/cympxamil		III	R 0344
Mildew	Previcur N	propamocarb		IV	R 0250
	Aliette	Fosetyl Al	EXP/562	III	R 0125
Botrytis	Switch 62.5 WG	cyprodinil/fluxinyl		III	R 0283
	Polar 50WSG	polyoxin complex	EXP/931	IV	T 0017
	Flint WG 50	Trifloxytrobin		III	R 0271
	Scala	pyrimethanil		IV	T 0020
	Sporekill	QAC		II	R 0336
	Teldor	Fenhexamid		II	R 0275
	Ortiva	Azoxystrobin		IV	R 0317
White fly	Applaud 40SC	buprofentezin		III	R 0276
	Attakan	Imadacloprid			
	Actara 25 WG	thiomethoxam		III	R 0320
	Encartech	Encarsia formosa			R 0302
Thrips	Evisect	thiocyclam hydrooxy		II	R 0202
	Malathion	Dimethyl		III	P 0602
	Mesurol	Methiocarb		1b	P 0518
	Rimon10 EC	Novaluron		IV	T 0250
	Rufast	acrinathrin		III	T 0253
Leaf Miner	Trigard	cyromazine		III	R 0256
	Diglyrech (Biological)	Diglyhus isaea (parasitic wasp)			R 0301
	Evisect	thiocyclam hydrooxy		III	R 0202

Note: All Nematicides are Class I chemicals but application is always via drip so there is no exposure to humans in any way. These have to be registered as this is the biggest threat to the industry.

There is ignorance on part of TPRI regd biological method of disease.
There are many products that are available to control many diseses and pest using benefical fungus or insects.

Appendix 5: Support to Improve Efficiencies Within the Marketing Chain for Fresh Horticultural Produce[136]

Background

All too often there is little effort to help improve the efficiency and effectiveness of the marketing chain from the farm-gate onwards. The benefit of an improved post-farm-gate marketing chain is that it should ensure a higher proportion of the final selling price being returned to the farmer – and it should also increase the marketing options available to the farmer. There are other benefits to an improved marketing chain, for example it improves information flow.

It has been noted that the marketing costs are sometimes high because the charges (i.e., direct costs) the participants in the marketing chain had to incur to provide the service they were offering. Examples were the high cost of road transport, storage and aggregation. It is, therefore, more important to investigate the causes of the high direct marketing costs that market intermediaries incur, since they form a much greater part of the transaction costs relative to the marketing margins retained by the traders. If such direct marketing charges could be reduced, it will result in a greater share of the market price being returned to the farmer. Alternatively, it could lead to a lower market price, but this should result in a larger market opportunity because the product would be more competitive - either way, the farmer benefits.

The main issues/problems facing the various actors in the marketing chain include the following and expanded on are:

- Lack of appropriate market information;
- Inefficiencies within the marketing chain;
- Poor business skills;
- Narrow selection of potential market linkages;
- Poor understanding of the businesses that provide services to the market intermediaries;

It is crucially important that no marketing interventions should create unfair competition among the existing players in the marketing chain. Rather the aim is for interventions to stimulate increased and fair competition in order to improve services to small-scale farmers.

Lack of Appropriate Market Information

There are a number of facets to market information, most notably including current prices; data on current and future supply and demand levels; quality and knowledge about the competition. Market information has two distinct uses for farmers – it is used for immediate marketing decisions; and making investment decisions, because it is vital to determine whether the investment is likely to be profitable. Most donor-funded Market Information Systems (MISs) generally attempt to provide information to facilitate immediate marketing decisions.

There have been many attempts by donors to support the production and dissemination of public sector MISs. Originally, most of such schemes were predicated on the assumption that small-farmers were poorly informed about market information and that providing the information would improve their ability to negotiate and reduce the chance of being exploited. Only recently in

[136] This Appendix is based on a working paper appended to a rural Marketing Diagnostic Study prepared for the International Fund for Agricultural Development written by the author

some countries have traders have been the target for MISs.[137] However, the main problem is that once donor funding stops, the accuracy and timeliness of the data collection declines such that the published information is no longer useful the intended audience.[138] The dissemination of inaccurate market data is totally undesirable.

The majority of MISs are too focused on delivering price information, rather than a wider range of market information. Effective traders and farmers have a range of sources where they can obtain and cross-check market information – with an efficient public sector MIS being one of them. The most important data for the larger-scale traders is to have a good understanding of the likely deficits and surpluses in different areas/countries that represent either a potential market, or competition. It is assumed that this supply/deficit information would also be of importance for the small-scale traders.

Before international markets can be accessed by traders, it is important that there is good and accurate market information. The information needs to be well researched and must include a proper analysis of the competitors already supplying the market and what would be the comparative advantage for a new entrant. Undertaking such research and disseminating the information to traders could be a valuable intervention assisted by government or paid for by a donor.

Improve the Efficiencies within the Marketing Chain

Most basic marketing chains in many African countries are characterized by the "us-versus-them" culture. There is little effort to understand the issues and problems of the other actors in the marketing chain. In some of the best and most profitable chains, there is a culture of openness and transparency – coupled with the understanding that all participants need to make a profit. As there is generally a reasonable amount of competition in the marketing chain, any increases in efficiency (especially cost savings and improvements in quality) should result in either a higher proportion of the market price being returned to the farm-gate prices or a larger market opportunity for the farmer. One of the keys to improving the efficiency and effectiveness of marketing chains is to create a better climate of mutual cooperation between all the players essentially by improving the understanding of the roles and issues of all the other actors.

The first step to improve the efficiencies and effectiveness of the marketing chain is to organize meetings where participants in the chain come together and openly discuss their issues[139]. This is constructive for four reasons.

a) If actors in the marketing chain understand each others' problems, then there is an opportunity for them to help solve, or minimize them. By getting more people with different experiences together, imaginative solutions could be found to problems.
b) Within the marketing chain, there is a very poor understanding of each other's issues and problems – and too little effort is made to understand these problems. For example, the market intermediaries often complain about the quality produced by the farmer – if farmers have a better understanding of the problems this causes, they

[137] For example, Uganda, Zambia

[138] This was noted at a meeting of 15 African National MIS managers in Nairobi in October 2002 – where it was also confirmed that there had not been any studies that proved that a MIS was beneficial for farmers and traders

[139] Many multinational companies hold regular meetings with participants in their supply chain (for example, McDonald's) where each participant's costs are made available for detailed discussion. This "open discussion" often results in significant reduction in costs

could make more of an effort to improve quality and also ask for better quality to be recognized in terms of higher prices!

c) If there is a greater understanding of the costs/risks that the market intermediaries have to bear, then it will help reduce the "us-versus-them" culture.
d) Organized meetings for a range of actors in the marketing chain will facilitate the flow of information – in both directions. This information can be technical as well as market related. If regular fora are established, then guest speakers can be organized who can, for example, pass on the results of market research, information about the supply or deficit situation in a range of markets. Also, service providers to the marketing chain, for example, hauliers can be invited to discuss transport costs.

Need to Improve Business Skills

An important issue that constrains the development of many market intermediaries is their lack of business skills. Constraints could range from poor record-keeping, unable to work out the true contribution that each transaction makes to overall profit, as well as poor use of financial resources. Each group of actors would probably have different business problems that need to be addressed. Before any intervention is designed to improve the business skills of the market intermediaries, it would be necessary to gain a better understanding of the nature and range problems. Virtually all entrepreneurs can improve some aspect of their business expertise.

Improved Market Contacts

All businesses can benefit by having more and better contacts with buyers. Even though good traders establish a close working relationship with a limited number of buyers, it is always sensible to talk to other buyers in the market to verify prices offered by the current buyer. It is also important to have contacts with buyers in other markets; this is useful to compare potential margins from alternative outlets and as part of "information gathering" about the competition[140]. Interventions to help improve the efficiency and effectiveness of market intermediaries would also include the identification of new contacts in a range of different markets.

Future interventions to establish new market contacts would necessarily involve organized visits to potential new buyers in their markets (out-ward buyer missions). Alternatively, buyers could be organized to meet the sellers in their areas of production (in-ward buyer missions). The advantages of in-ward buyer missions are that there are fewer people to transport and the buyers often impart more knowledge to the sellers if they see their working environment. It is also good for sellers to visit new markets to observe the levels of quality and service their competition is offering – as well as potential new products.

Improving Working Relations with Service Providers

Service providers are defined to include transporters (ranging from lorry to bicycle owners), ice providers for fish, packaging suppliers etc.

It is noted that much of the increase in the price of produce after it leaves the farm-gate is due to the costs that the market intermediaries have to pay to "service providers". If these charges could be reduced – or if the service providers could make efficiencies – then it would reduce marketing

[140] Information gathering would include aspects such as prices, competition and any new market entrants, levels of services, new product development and costs of transport.

costs. Such gains can be passed down the chain to the farmers as either better prices or larger market shares.

It is also important to involve service providers in the fora along with the various participants in the marketing chain described above. At these meetings, the main issues and costs incurred by the service providers can be raised and possible solutions discussed.

Benefits of Improving the Output Marketing Chain

The benefits of recognizing the importance of the existing output marketing chain and helping it become more efficient and effective are potentially very significant. The links in the chain already exist and these represent a good foundation to improve marketing.

Experience has shown that getting different members of the marketing chain to discuss issues and problems is a very powerful way of solving them. Trying to understand the needs and requirements of market intermediaries will generate information that will allow training to be given to improve their performance. It is expected that much of this training will focus on improving their business and management skills – it will also be an important opportunity to promote the benefits of open and transparent dealings, which are essential to long-term trading relationships.

Helping address some of the problems confronting actors in the marketing chain will help reduce marketing costs – so that ultimately the farmer will either get a higher share of the market price returned to the farm-gate or it will expand the size of the market opportunity. Either way it benefits the farmer.

Bringing market intermediaries and farmers together to discuss each others' issues should help lead to a greater understanding. It would break down the "us-versus-them" culture and lead to much greater co-operation.

Providing appropriate and accurate trade intelligence to the market intermediaries will help them identify new opportunities. It can also help with recognizing short-term opportunities to move produce from areas of surplus to deficit regions. Accurate trade intelligence data should encourage market intermediaries to invest in storing grain crops. This can further be encouraged by providing training to ensure that the stores are managed properly.

Support given to market intermediaries who want to work with a group of farmers will help secure a consistent supply or raw material of good quality produce at a reasonable price for agro-processors. This should help boost the investment in adding-value to agricultural output.

Appendix 6: GROWN Locally Cooperative[141] **:** *case study of farmer/grower cooperative in Iowa, USA*

The cooperative

GROWN locally is an eleven member cooperative located in a predominantly rural area in northeastern Iowa. It mission is to "foster the diversification and success of farms by supplying fresh, local, naturally-grown food products to the food service industry." The purpose is to create and expand institutional markets for local foods, educating its members and local food buyers, and becoming a model that can be replicated in other places. The Co-op takes pride in the fact that it has become successful with minimal help from outside funds and expertise, in a predominantly rural area. This cooperative grew out of the motivation to provide healthy, fresh, and nutritious food to people eating through local food service institutions. Producers asked an essential question: what would be needed to market their produce to local institutions. They eventually decided to incorporate the cooperative with an initial investment of $100.

Operations planning and pricing

Initially the coop worked with a small group of institutions. From the beginning all member growers have actively participated in ensuring high quality of products and sharing the responsibility of customer satisfaction. The organization has a central area for cleaning, washing, and packing. Members have different responsibilities. One member is responsible for communicating available products to potential buyers and ensuring orders will be met through planned supplies. Buyers have an input in the range and types of products that are growing in the coop. While currently the coop wide range of vegetables and some fruits, in the future they envision including meats and dairy products. The organization realizes that they cannot compete their pricing with the big suppliers. Though their prices are higher than conventional pricing, they emphasize on the quality and freshness of the product. Operating expenses of the organization are generated in part by the customers and part by the producers. The prices include a 10 percent margin for operating costs. When revenues are received, the organization retains the 10 percent and an additional 10 percent from the producers. This implies that the operating expenses are funded through a 50 percent contribution by the customers and of the same amount by the producers. Members also coordinate orders in advance so that growers can plan their produce. Orders are received in advance and processed to ensure timely deliveries. Slowly the organization is moving to a web based ordering and inventory system. The produce is washed and packed into vegetable boxes or as requested by the customers. Deliveries are made using refrigerated trucks. In the future, the organization plans to add a certified processing facility. This will allow them to freeze products and extend their off-season sales. It will also help them add value to products that have surface blemishes. Some other future initiatives that the organization plans include building a green house, increasing geographic coverage of their sales, and getting organic certification. All these components will allow them to increase sales and number of customers.

[141] Practical farmers of Iowa (2002): GROWN Locally Cooperative, http://www.grownlocally.com

Appendix 7: Purchase List of Products for Hotels and Restaurants

PURCHASE LIST	
Item Group	**Varieties**
Premium Whiskies	6
Regular Whiskies	9
Bourbon Whiskies	2
Brandy/Cognac	15
Gins	8
Local Spirits	2
Vodka	6
Rum	9
Sherry	1
Vermouth/Aperitifs	9
Port Wine	2
Liquors	20
Red Wine	72
White Wine	75
Rose Wine	8
Champagne/Sparkling	16
Local Wine	1
Beer	17
Mini Bottle Beer	1
Local Beer	17
Imported Beer	15
Mineral Water	4
Soft Drinks	35
China/Crockery	
Serving dishes	17
Bolon	9
Bowls	27
Coffee/Tea Dispenser/Pot	11
Cups	12
Desert Plate	1
Fondue Set/Forks	2
Gourmet Set	1
Hexagon	3
Measuring Pourer	1
Milk Jug	2
Milk Pot	2
Plates	15
Oil/Vinegar Stand	1
Ovalon	6
Petri Dish	2
Salt/Pepper Shakers	6
Poron	3
Sauce	2
Saucer	3

PURCHASE LIST	
Item Group	**Varieties**
Spoons	1
Stopper In Cork	1
Dukes	2
Wine Pitcher	5
Glass	
Inserts	1
Ashtray	3
Glasses	46
Mugs	9
Candle Glass/Holder	6
Carafe/Jugs/Tumbler	8
Cheese Set	1
Salt/Pepper Cellar/Mills	4
Plungers	1
Plates	1
Bowls	3
Linen	
Table Cloth	21
Mats	1
Sheets	3
Towels	5
Robe	2
Cloths	2
Curtains	4
Fabric Material	1
Laundry Bags	1
Kitenge	1
Napkins	2
Mattress Protector	1
Pillows/Cases Cushions	3
Skirting	5
Shirts	1
Silver	
Coffee Culture	1
Decorating Zester	1
Knife	23
Spoons	15
Fork	5
Cake Server	1
Egg Slicer	2
Candle Holder	1
Scooper	2
Tongs	2
Lobster Cracker/Hook	3
Peeler	2
Tray	1

PURCHASE LIST	
Item Group	**Varieties**
Whisk Wire/Wire Skimmer	2
Utensils	
Soup Station	1
Dishes	4
Baking Tin/Tray/Pan/Sheets	8
Blender	1
Strainer	2
Lids	4
Pots/Pans	11
Butchery Hook	1
Fondue Pot	1
Baskets	1
Juicer	1
Trays	4
Cutter/Scraper/Brushes	11
Flask/Jug	2
Bin/Containers	4
Inserts/Moulds	2
Kettle	1
Ladles/Spatula/Scoops/Pourer	9
Molla Per Spaghetti/Pasta Machine	2
Mug/Cups	2
Oven Mitts	1
Wipes	1
Boards	1
Salt Shakers	1
Sauce Boat/Tureen	2
Flambes/Funnel/Piping Nozll	9
Table Number Stand	1
Spoons	1
Stationery	
Papers	12
Diary/Note Pads/ Books	32
Stickers/Slips/Dividers/Tags	33
Accounting/Administrative Docs	98
Pen/Pencils	6
Bin Cards/Coupons/Envelopes	23
Blue Tack	1
Board Room Buddy	1
Files/Folders/Binders	18
Cards/ Card Holders	21
Calculator	6
Cartridge/Toner/Refills/Ink/Filters	51
CD's	1
Cellotapes/Tapes	3
Chalks	1

PURCHASE LIST	
Item Group	**Varieties**
Clip Board	1
Printer	2
Correcting Fluid/Erasers/Thinner/Dusters	7
Desk Set/Tray	2
Fax Rolls	2
Charts	1
Gate Pass	1
Pins	7
Staplers/Staple Remover	3
Glue Stick	2
Highlighters/Markers	5
In House Entertainment	1
In Room Bar	1
Checks	1
Films/Transparencies	4
Sharpeners	1
Punching Machine	1
Rubber Bands	1
Rulers	1
Scissors	1
Menu	
Inserts	1
Bill Folders	2
Menu Covers/Order Covers	3
Menu Cards	1
Menu-Pizza/Room Service/Serengeti	3
Uniforms	
Aprons	2
Suits	1
Jackets	1
Epaulettes	1
Towels/Clogs	3
Boots/Shoes	2
Operating Supplies	
Plates/Platter	4
Labels/Wrappers/Folds/Paper/Decorations/Cards/Measures	10
Grill	1
Container/Box/Baskets/Cylinders/Buckets/Tubes	16
Foil/Films/Filters/Fabric/Paper Rolls	6
Lids/Covers	9
Trays/Holders	12
Aprons/Hats/Gloves/Caps	9
Ashtray	4
Skewers/Chopsticks/Stirrer/Cork Screws/Clip/Sticks/Openers	10
Vases/Mirrors/Molded Nest/Oasis	7
Dustbin	2

PURCHASE LIST	
Item Group	**Varieties**
Mats/Coasters	4
Stands/Boards/Base	12
Buttons/Sparklers/Sieve/Plastic Numbers	5
Coffee Maker/Toaster/Kettle/Blender/Flute/Juice Extractor	8
Crackers	1
Cutlery Rack/Blades/Spatula	4
Deodorant	1
Dispenser/Bags/Seals	6
Cups/Bottles	3
Pots/Flasks	6
Salt/Pepper Mill	2
Cleaning Supplies	
Powder	6
Cleaner/Bell wash/Wax/Polish/Paste/Spray	26
Pads/Liner/Cotton -Steel Wool/Cloth/Sponge/Brush	13
Broom/ Handle/Brush/Rags/Mat/Mops/Moth Balls	23
Chemicals/Solutions/Washing Liquids/Detergent/Gel	62
Bags/Bucket/Bottles	10
Dustbins	2
Masks/Gloves/Rubber Squeezer	6
Bags	5
Cutter/Strip/Scrapers	3
Paper Roll/Sheets	3
Lint Roller	2
Laundry Cards	1
Pins/Clips	4
Soap Dispenser	3
Guest Supplies	
Towels/Napkins/Mats	8
Clothes/Hats/Socks	17
Air Freshener/Candles/Match Box	5
Dispenser	2
Trays/Decanter	5
Toiletries	46
Blotter	2
Shoe Polish/Polishes/Shoe Accessories	10
Folders/Binders/Directory/Pads/Stickers/Post Cards	24
Food Accessories	28
Pen/Pencils	2
Cocktail Accessories	4
Stationary	10
Cotton Wool	1
Dental Kit	1
Cutlery	8
Sports	2
Bags/Baskets/Boxes	21

PURCHASE LIST	
Item Group	**Varieties**
Hangers/Sewing Kit	8
Frill	2
Internet	1
Holders/Covers/Clips	4
Key Chains/Umbrellas	3
Cups	3
Doylies	12
Beef	20
Lamb/Mutton/Goat	6
Veal	1
Pork	22
Poultry	16
Game Meat	5
Fish and Sea Food	20
Fruits	10
Vegetables	49
Cereals	18
Tinned Foods	23
Fruit Juices	28
Chocolates	20
Oils/Vinegar	16
Hot Bev/Tea/Coffee	71
SaucesandPickles	63
Bakery/Pastry	
Flakes	1
Powder	14
Flour/Mixes	21
Soda	1
Margarine/Oils	5
Misc.Ingredients-Essence etc	19
Fruits	5
Cookies	5
Marmite	1
Jam/Syrup	7
Nuts	2
Icing Sugar	1
Pastry	1
Spices/Seasoning/Oil	61
Pasta/Noodles	30
Jam/Jelly	23
Sugar	7
Dry Nuts/Fruits	23
Soup and Stocks	2
Dairy Products	72

Appendix 8: Expenditure on locally sourced items of typical internationally and locally owned hotels in Tanzania

	Expenditure (in US$) per US$ of revenues		Expenditure (in US$) per room sold	
Expense items	**Internationally owned hotel**	**Locally owned hotel**	**Internationally owned hotel**	**Locally owned hotel**
Furniture	$0.003	$0.000	$0.303	$0.000
Fixtures & fittings	$0.001	$0.000	$0.140	$0.000
Equipment (refrigerators, cooking ranges, etc.)	$0.000	$0.001	$0.000	$0.000
Furnishings (drapes etc.)	$0.006	$0.003	$0.587	$0.294
Garments (uniforms etc.)	$0.003	$0.002	$0.285	$0.142
Fruits	$0.004	$0.055	$0.376	$5.186
Vegetables	$0.003	$0.022	$0.317	$2.074
Chicken	$0.003	$0.018	$0.318	$1.659
Fish	$0.005	$0.018	$0.493	$1.659
Prawn / Shrimp	$0.004	$0.078	$0.387	$7.260
Beef	$0.000	$0.018	$0.000	$1.659
Lamb	$0.000	$0.002	$0.000	$0.166
Pork	$0.002	$0.000	$0.205	$0.037
Floor	$0.004	$0.022	$0.443	$2.074
Rice	$0.006	$0.022	$0.647	$2.074
Sugar	$0.008	$0.017	$0.849	$1.556
Other dry foods	$0.000	$0.006	$0.000	$0.519
Beer	$0.002	$0.024	$0.221	$2.216
Wine	$0.000	$0.026	$0.018	$2.387
Soft drinks	$0.001	$0.016	$0.140	$1.478
Water	$0.001	$0.016	$0.105	$1.478
Milk	$0.000	$0.016	$0.035	$1.478
Stationary	$0.003	$0.003	$0.334	$0.273
Insurance service	$0.018	$0.000	$1.871	$0.000
Security Contract service	$0.012	$0.000	$1.299	$0.000
Telecommunications	$0.024	$0.009	$2.509	$0.852
Coal / gas fuel	$0.000	$0.011	$0.000	$1.023
Electricity and water	$0.053	$0.011	$5.554	$1.023
Vehicles	$0.000	$0.000	$0.000	$0.000
Petrol	$0.002	$0.000	$0.169	$0.000
Maintenance	$0.001	$0.033	$0.065	$3.111
Total	**$0.169**	**$0.446**	**$17.671**	**$41.758**

This appendix shows the expenditure of a typical internationally and locally owned hotel in Tanzania on items that have the potential of increasing backward linkages of tourism to the local economy. A typical internationally owned hotel spends approximately $0.17 per dollar of revenues on locally purchased items. For every room this hotel sells, it spends approximately $18 into the local economy. Considering an average selling price of such a hotel's room at about $120, its contribution to the local economy is still less than 10 percent. This is compared to the data from a typical locally owned hotel which contributes approximately $0.45 per dollar of revenue to locally purchased items. Allowing for an average room price of $80 for this locally owned property, it could contribute $42 or over 50 percent to purchases from the local economy. While the local hotels have a much larger potential to contribute into backward supply chain

linkages in Tanzania, in both cases there is a significant margin of improvement. If we compare these numbers to Table 3.2 in this volume, it also shows that there is a considerable opportunity for locally produced and purchased items to be sold to hotels, restaurants, and tour operators. In other words, there are significant opportunities to further strengthen the backward supply chain linkages of tourism industries with Tanzania's local economy. This will undoubtedly have a positive impact on reducing poverty.

Appendix 9: Case studies of Uganda and South Africa Spice Crop Development

The development of the production and export of cured vanilla in Uganda, and the development of paprika production and export in Southern Africa are briefly reviewed.

Development of Vanilla in Uganda

Vanilla had first been developed as an export crop in Uganda in the 1950's and 1960's, with exports rising to around 10 tones before the political instability of the late 1960's resulted in the collapse of the industry. In 1989, technical assistance provided by the African Project Development Facility (APDF) to a Ugandan client identified vanilla as a potential export crop. In 1990, APDF started working with a new client in Uganda who wanted to invest in and develop a vanilla production, processing and export enterprise. APDF provided technical assistance for the preparation of the business plan, and the implementation phase of the business, to support the Sponsor's investment. The business model was based on:

- Active promotion of the crop to smallholder farmers in the areas where it had previously been cultivated (primarily Mukono District where there was a niche area with high rainfall close to the lake shore), and encouragement of farmers to rehabilitate abandoned plantings and replanting of new areas. A critical factor was to be seen frequently enough in the area so that farmers were assured that their crop would be purchased at harvest time.
- Establishment of simple extension services, using a 'training and visit' system to provide advice and support to farmers. Local farmers who had good vanilla plots and who were respected in the community were hired at local rates (US$1/day) for one days work per week, and were given a bicycle. These extension workers were given training once every 2 to 3 months, were given new (but very simple) extension messages to pass on each month, and had to visit all farmers in their village area once each month. Their vanilla plots were used as demonstration plots for any training done in their area. They also had to make crop surveys in their area, and their farm was the buying centre during the harvest season. This gave an intensive, low cost extension system, and maximize pressure (peer pressure) on farmers to sell their crop to the company at harvest time.
- Production of high and consistent quality of cured vanilla through investment in a 'rapid curing' facility (the traditional curing process is complex, and partly dependent on weather conditions during the first stage of the curing process). The process also reduced curing costs, shortened the curing time, and provided a product particularly well suited to the vanilla extraction industry – the target market.
- Establishment of a long term marketing deal with a major multinational buyer (McCormicks, USA), based on agreeing product prices and volumes prior to the beginning of each harvest season so that the company knew what prices could be offered to farmers before the season began. The arrangement was also attractive for McCormicks as they were able to lock in a supply of high quality vanilla from a supplier who dealt direct with growers. The core condition for long term security of the marketing arrangement were (a) that volumes would increase significantly and systematically to commercial levels – i.e. 20 to 50 tones at a minimum – to justify the overhead of dealing with a supplier, and (b) that McCormicks would be kept informed on a regular basis about crop progress, problems etc so that they could adjust their requirements (if necessary) from elsewhere.

The company, Uvan, drove the business forward aggressively, building and maintaining a very strong field presence in the growing area. This generated farmer confidence to make new

plantings. From a production of 1 tone cured vanilla in 1990, output rose to around 10 tones in 1994/1995 with around 6,000 growers involved. APDF sourced additional technical assistance (from the Norwegian Fund for Women's Development) to support a field extension program specifically targeted at women. A USAID Non-Traditional Export Promotion program also gave assistance.

From around 1994/1995 the sector started to expand under its own momentum – farmer numbers grew as it was clear that it was a profitable crop. This also led to expansion of the cropped area into areas of marginal suitability. The involvement of Donors with a 'sector level' approach to development and a strong development focus on supporting farmers (as opposed to APDF who have a remit to work with individual private companies and focus on company viability) led to part of the 'support program' to the sector being to encourage other domestic companies to start buying and processing vanilla. The justification given for this was that competition would ensure that the farmers received the maximum price for their crop – the Donor's focus being on the farmer, not the business. In reality the real reason has more to do with the fact that Donors did not want to be seen to be implementing programs that would benefit a single company. The result was that a large number of buyers suddenly entered the sector, competition for farmers production was intense, no company was able to buy real commercial quantities (the total volume available was too small), and efforts to at least buy something – to maintain credibility with the markets – drove bean prices to un-commercial levels. Many of the new buyers lost money and departed, but significant damage was done to the sector – contracted volumes could not be fulfilled and the fresh bean price fall the following year (from uneconomically high levels) discouraged and disturbed farmers. If private sector companies are encouraged and supported to invest in developing small farmer crop production, there must be commercial awareness on the supporting agency side of what minimum commercial volumes are and therefore when it is productive to encourage other buyers to enter the market.

At no time during the development period did the Government of Uganda give any particular support to the crop development. At the beginning, the Ministry of Agriculture's focus was on food crops and the traditional export crop, and they discouraged the Extension and Research services from giving any support to vanilla. Later this attitude changed, but the real development and success of the sector is wholly attributable to private sector actions. Three or four processing and export companies now dominate the sector. Each has a long term presence in the market, has a professional understanding of the crop and market and quality parameters, and has made significant investments in facilities specifically for vanilla.

An Industry Association was formed around 1994/1995 as part of USAID's assistance program. It's key practical benefit has been to provide a forum where the processor/exports (who are competitors) can agree on crop specific issues of common interest – primarily a date for the start of harvesting (very important in determining crop quality) based on common agreement not to purchase beans before this date, and lobbying Government on particular export issues.

Uganda now produces around 70 to 100 tones/yr of vanilla (annual crop levels vary due to a number of factors not specific to Uganda – the same is found in all origins). It ranks as one of the largest 'second rank' producing origins, producing around 5% of world production (the 2 dominant origins, Madagascar and Indonesia together producing in excess of 60% of world production).

Development of Paprika in South Africa

The development of paprika (*Capsicum* annul) production in Southern Africa started in the late 1980's/early 1990's. Production was centered on South Africa, and Zimbabwe. The opportunity to establish production came from the movement to replace existing production in the major markets (EU, USA) with lower cost sources. Spain plays a major entrepot role in the worldwide paprika industry, and Spanish companies were closely involved with the developments in South Africa and Zimbabwe, both in buying the crop, but also in providing advice on crop development.

Production grew rapidly as it was taken up by commercial farmers as well as smallholder producers. In Zimbabwe, the participation of tobacco farmers was a key factor in achieving very rapid growth in crop volumes produced. Large areas of the crop were produced under irrigated production – irrigation water was a limited resource, and paprika was found to give a very competitive return per unit of water used. By the mid to late 1990's, the total production from South Africa and Zimbabwe was around 15,000 tones.

In parallel with these developments, attempts were also made to develop the crop in Zambia and Malawi by companies based in these countries. Almost all these developments were based on smallholder production. Despite considerable efforts, whilst some individual companies have become well established (notably Cheetah in Zambia for example), neither county has succeeded in developing significant volume production. Total output has remained small.

Once large volume paprika production had been established in the mid-1990's, a number of extraction facilities were established in South Africa (2), Zimbabwe (2) and Zambia (1). Most facilities are around the 100 to 150 ton output size (requiring 1,000 to 1,500 tones of paprika feedstock). The plant in Zambia was 250 ton, but was also to extract marigold. The development of oleoresin exports has been very slow, total exports are still only a fraction (less than 50%) of installed capacity in the region, the plant in Zambia has never really operated, it is unlikely that any of the operations have met project investment returns, and many will probably be showing losses.

The surface logic for development of extraction capacity at origin is that value can be added and competitive advantage is established as the feedstock can be purchased more competitively than units based in the markets (saving of shipping costs), and operating costs (labor, management etc) are lower. However, a number of other factors have to be considered before the real competitive position can be assessed. These include:

- Crop storage/working capital requirements: plants need to run for 10 months/yr to minimize unit overhead costs. With a short harvest season, the full annual requirements has to be purchased and stored. Operations elsewhere can either source from different origins throughout the year (N and S Hemisphere), or process a range of crops (part of India's important advantage). Plants in S Africa and Zimbabwe were tied to a single crop.
- Requirement for technical skills: production of oleoresins is a highly technical process, with the higher value end markets demanding increasing technical sophistication from their suppliers. A large pool of skilled technical expertise and management is required. This is not present to any great extent in Southern Africa, and many of the operations required expensive expatriate assistance in this area. Lack of expertise inevitably results in product problems and variability, and market position (demand, price) is lost or cannot be created. A key element in the successful development of extraction in India and China had been the extensive pool of low cost technicians and technical expertise.

- High cost of utilities: in many situations, the cost of utilities and solvents are higher than in the competitor countries.
- Price discounting: in a market where there is an excess of extraction capacity, new origins that cannot offer something particular required by the markets in terms of quality have to discount prices to the established sources. This has happened in paprika, and S African material is still priced at a 20% discount to equivalent color content Spanish extract.
- The potential for market innovation: the strategy for the Southern Africa operations was to produce a standard oleoresin. The small industry there does not have the capacity to manipulate the product or to innovate. A major innovation in the industry occurred through India developing a paprika oleoresin ex-capsicum (extraction of the local very low cost capsicums and fractionating the extract into color and pungent portions, and selling the color portion as oleoresin paprika ex-capsicum), and marketing this at a substantially lower price than true paprika oleoresin. This product has taken a significant market share, and thereby reduced demand and prices for lower quality true paprika oleoresins.

The result of the above is that overall competitive advantage is neither strong nor robust, the value addition to the processed product is reduced, and business investment return is poor. By contrast, the basic crop production and paprika export sector remains highly competitive. Unless crop production is restricted to a very few origins and cannot easily be taken to other countries (as was true for pyrethrum and *Prunus Africana*), successful development of downstream processing of spices (extraction and grinding) has largely been restricted to countries where a wide range of products are available, there is a strong base of technical expertise, and sufficient domestic investment resources and commitment to develop the full capabilities required by the markets – notably India and China.

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