High-Value Vegetables in Tanzania – The Seeds of a Competitive Cluster

HBS Microeconomics of Competitiveness 2010

Professor Michael Porter

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Disclosures

One member of our team, Flavian Marwa, is a native Tanzanian. A second member of our team, Michael Bernstein, has lived in Tanzania and spent last summer working with ACDI/VOCA, an NGO working to improve smallholder competitiveness in export vegetables. He did his second-year policy analysis (SYPA) at the Harvard Kennedy School on constraints to growth in export vegetables in Tanzania. Many of the interviews he conducted for that research were also used for this report.

List of Acronyms

CAGR	Compound Annual Growth Rate
CSR	Context for Firm and Strategic Rivalry
DAI	Development Alternatives Inc.
EAC	East African Community
EPZ	Export Processing Zone
EU	European Union
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FPEAK	Fresh Produce Exporters Association of Kenya
GDP	Gross Domestic Product
GCI	Global Competitiveness Indicators
GCR	Global Competitiveness Report
HIPC	Heavily Indebted Poor Countries Initiative
HODECT	Horticulture Development Council of Tanzania
HORTI	Horticulture Research Training Institute
HVV	High Value Vegetables
IFC	International Finance Corporation
IMF	International Monetary Fund
Kwh	Kilowatt Hours
MDRI	Multilateral Debt Relief Initiative
MKUKUTA	National Strategy for Growth and Reduction of Poverty
MOC	Microeconomics of Competitiveness
NACSAP	National Anticorruption Strategy
NGOs	Nongovernmental Organizations
PPP	Purchasing Power Parity
PSCP	Private Sector Competitiveness Program
R&D	Research and Development
RSI	Related and Supporting Industries
SARI	Selian Agriculture Research Training Institute
TAHA	Tanzania Horticulture Association
TCCA	Tanzania Civil Aviation Authority
TCCP	Tanzania Cluster Competitiveness Project
TIC	Tanzania Investment Centre
TPSF	Tanzania Private Sector Foundation
TZ	Tanzania
UK	United Kingdom
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WDI	World Development Indicators
WEF	World Economic Forum
WHO	World Health Organization
WVC	World Vegetable Center

A. EXECUTIVE SUMMARY

Despite rich natural endowments, Tanzania remains a very poor country nearly 50 years after independence. Independence hero, Julius Nyerere led the country from 1961-1985 adhering to a socialist philosophy. Twenty-five years of reform have brought macroeconomic stability and, more recently, high rates of growth, but the vestiges of socialism remain - the business environment is still weak and little progress has been made to distinguish Tanzania within its neighborhood or the world. Weak infrastructure and education are also constraints. We propose six key steps for Tanzania to improve its competitiveness: 1) Improve the business environment; 2) Create institutional support for clusters; 3) Articulate a unique value proposition; 4) Upgrade infrastructure; 5) Improve post-primary education; and 6) Train public officials on private sector development.

The high value export vegetable (HVV) cluster offers Tanzania an opportunity to improve competitiveness. Neighboring Kenya has created more than 100,000 jobs and generates more than $1 billion in export earnings annually from HVV. Kenyan-based exporters are looking to expand into Tanzania, but have been hesitant to invest because of critical challenges in the business environment. Tanzania already has outstanding growing conditions, affordable labor, energetic institutions for collaboration, and a growing seed industry. But, competitiveness is constrained by limited airfreight, lack of market linkages, a dearth of skilled labor, and an unfavorable investment climate. The first three constraints could be alleviated by linking to the Kenyan cluster but the unfavorable investment climate requires greater commitment to the sector from the government.

If the cluster is to grow, the President must commit to supporting HVV, by appointing a special ambassador to coordinate government action and work with the private sector on a strategy. The cluster strategy should contain three phases: 1) Link to the Kenyan cluster, 2) Upgrade the Arusha cluster, and 3) Expand beyond Arusha. Detailed actions for each phase are listed in the report.

B. TANZANIA COUNTRY ANALYSIS

Tanzania is East Africa's largest democracy, with 36 million inhabitants and a land area twice the size of California. The country is very poor, with a per capita GDP of $1,167 (PPP, 2008), placing it in the lowest global income decile. It is situated in an extremely poor neighborhood, sharing borders with Congo, Uganda, Kenya, Rwanda, Burundi, Malawi, Zambia, and Mozambique.

1. National Endowments

Tanzania is rich with natural endowments. It has over 1,400 kilometers of coastline along the Indian Ocean and more than 10 million acres of arable farmland across diverse agro climatic zones. Tourists are drawn to its exotic coral islands, collectively called Zanzibar, majestic Mount Kilimanjaro, and ten national game parks, including the world renowned Serengeti. Tanzania is the third largest gold producer in Africa, exporting more than $500 million annually, and possesses precious stones like diamonds and the rare gem tanzanite (TZ Gold, 2010). Other natural resources include tin, phosphates, iron ore, coal, natural gas, and nickel. Further, energy experts believe Tanzania is likely to possess oil, and there are dozens of exploration projects underway (TPSF, 2009).

2. Economic Performance

2.1 Development of Economy. Tanzania's economy evolved out of its rich natural resource base and strategic location along the Indian Ocean, making it a centuries-old trading hub linking Africa and the Indian sub-continent. Agriculture has always been the mainstay of the economy. More recently, growth in tourism and industry has helped diversify the economy. Independence hero, Julius Nyerere, led the country from 1961-1985 adhering to an overarching "African socialism" philosophy. Starting in the 1960s, he encouraged agricultural trade to be channeled through

voluntary cooperatives and cooperative "ujamaa villages."[1] He later forced nearly all of Tanzania's rural residents into state managed villages.

While Nyerere succeeded in building a strong national identity that would nurture political stability, the economy was in shambles when he retired in 1985. Per capita income in Tanzania was about half that of Kenya and 70% of that in Uganda (World Bank 2002). Per capita GDP had contracted 4.7% annually between 1976 and 1980 and 1.6% from 1981-1983, but begun to rebound in 1985 when Ali Hassan Mwinyi succeeded Nyerere and oversaw a period of liberalization under IMF structural adjustment (Putterman, 1995). New policies dismantled state price controls, leading to increases between 30-80% in commodity producer prices (Putterman, 1995). Railways, roads, and ports were rehabilitated. Government began to divest many state-owned enterprises. While Tanzania continues to take important steps towards liberalization under the current President, Jakaya Kikwete, Nyerere's influence persists. His brand of African socialism, including a mistrust of the private sector, guided the economy for decades. To this day, he is considered a hero and many Tanzanians remain hesitant to embrace a private-sector led approach to economic development.

2.2 Development, competitiveness and cluster policies: Tanzania's current economic development program is guided by the National Strategy for Growth and Reduction of Poverty (MKUKUTA in Kiswahili), which forms one part of the broader Vision 2025 development framework. Currently in its third phase, 2005-2010, the MKUKUTA is orientated and organized around three clusters: growth and poverty reduction, social well-being, and governance and accountability.

The Private Sector Competitiveness Program (PSCP) was initiated in 2003, with over $91 million in loans and grants from development donors. PSCP has three components: 1) Improving the business environment (coordinated through the Prime Minister's office); 2) Improving enterprise

[1] Ujamaa villages were meant to be socialist units of self-formed, self-governing cooperative structures, aggregating production and facilitating efficient outreach of government services.

competitiveness through cluster strategies and strengthening of business schools (implemented by the Tanzania Private Sector Foundation (TPSF)); and 3) Increasing access to finance for micro to medium enterprises. The PSCP has generated valuable research and public-private dialogue, but government commitment to tackle business environment challenges has not materialized.

Earlier this year, the PSF with support from the World Bank and the UK launched the Tanzania Cluster Competitiveness Program (TCCP), a 3-year project to boost the competitiveness of six high-potential clusters. Work is now underway in 3 clusters: horticulture, food processing and tourism.

2.3 Recent Economic Performance. Continued economic liberalization has led to sustained economic growth (7.4% growth in GDP in 2008), albeit from a very low base. In 2008, Tanzania reached per capita GDP of $1,167 (PPP), which was 8% above Uganda, but 20% below Kenya.

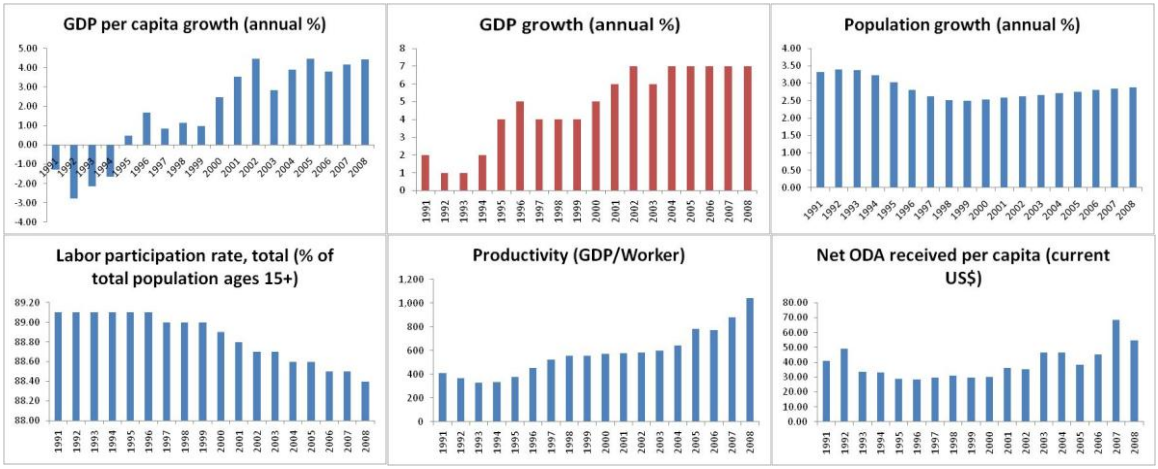


Figure 1: Economic performance 1991-2008. (World Development Indicators, WDI, Online)

As depicted above, growth in GDP per capita has been driven by population growth, and promisingly, by increases in productivity.[2] However, somewhat troubling, labor participation is falling, from 89.1-88.4 between 1991 and 2008. Another major boost has been favorable mineral (especially gold) prices, which boosted mining exports from 11% in 2005 to 17% in 2006. International aid, in both grants and loans, still plays a major role in the economy. Tanzania has

[2] Productivity growth is likely driven by changes in the composition of the economy, with growing shares of GDP coming from industry, mining, and tourism, rather than agriculture focused on staple commodities.

more than $5 billion in external debt (about 35% GDP)[3], though annual debt service payments have been reduced from $90 million in 2006 to $42 million in 2007 through the Heavily Indebted Poor Countries program (HIPC) and Multilateral Debt Relief Initiative (MDRI) (US State Department). Macroeconomic conditions have been improving in both Tanzania and the region since the 1990s. Inflation fell from 30% in 2005 to just 6.6% by 2000. The exchange rate and prices are stable.

In The country has seen foreign direct investment (FDI) grow. The World Bank has called Tanzania "one of the top destinations for FDI in Africa (World Bank, 2007)." In 2007, FDI was $647 million, having grown at a 20.4% CAGR since 2003. While impressive, this is lower than in regional competitors, like Rwanda and Kenya (see **Figure 2**) (TCCP, 2009). FDI figures from 2003 indicate that FDI was 39% mining, 22% manufacturing, 13% tourism, and 7% agriculture (World Bank, 2007).

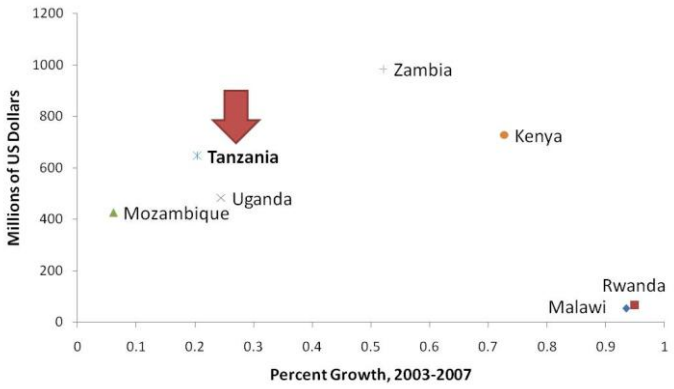
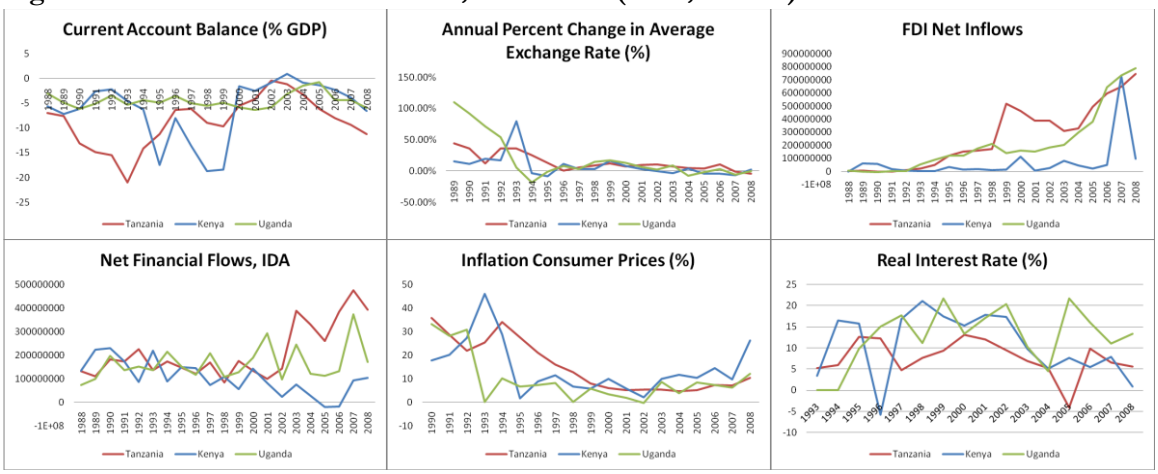


Figure 2: FDI is increasing in Tanzania but not as fast as in neighboring countries. (TCCP 2009).

Figure 3: Macroeconomic conditions, 1988-2008. (WDI, Online)



2.4 Human Development. There is still plenty of room for Tanzania to improve in education and health care. While there have been significant achievements in primary school coverage—gross

[3] This is under the 50% cap set in the national development strategy, MKUKUTA.

enrollment is above 100%—only 40% progress to secondary school, and only 2% of the population has any tertiary education (WDI Online, 2004). Overall, the average 45-year old male and female have just 6 and 3 years of schooling respectively)(WDI Online, 2004). Educational deficiencies appear to be caused by a lack of supply, not demand, because the returns to education are high (Marzo et al, 2009).[4]

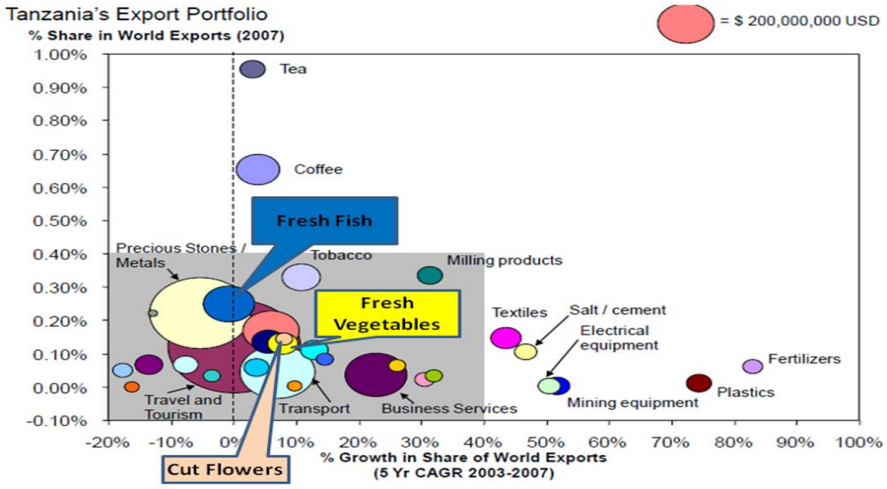
Tanzania's health indicators are worrisome from a global perspective. At $19 per capita, Tanzania spends less on health per capita than Kenya or Uganda. Life expectancy is 54 years (WDI Online). Tanzania's HIV prevalence of 8.8%, places it among the most affected countries in the world (WHO 2006). It is also severely affected by malaria, though new programs have achieved near eradication in Zanzibar (Mjasiri, 2010). Malnutrition is another major problem; 29% of children are malnourished (WHO 2006).

3. Composition of Economy

Tanzania's economy historically has been dominated by agriculture, but in the 1980s, industry started growing. Now, services—particularly tourism and business services—are a major part of the economy, accounting for half of GDP, while agriculture and industry split the remaining half. In 2008, Tanzania had 750,000 tourists, with receipts reaching 26% of exports (versus 17% in Kenya) (WDI Online). Exports in 2006 were 22% of GDP, well below the average of 33% for sub-Saharan Africa. Tea and coffee are the Tanzanian clusters with the largest global market shares (**Figure 4**), but both represent less than 1% of the global market. Fertilizers are growing fast, but from a very low base. Mining (diamonds, gold, tin, iron ore) is also an important source of growth in the Tanzanian economy. Fresh vegetables are a small but growing component of Tanzania's export portfolio.

[4] Graduating secondary school increases your mean monthly income by 2.5 times and completing tertiary education increases monthly income 2.8 times.

Figure 4: Tanzania export portfolio, 2007. (Tanzania Cluster Competiveness Program, 2009)



4. Quality of Business Environment – The Country Diamond[5]

Overall, Tanzania has a weak business environment that has not allowed it to capitalize on its strong natural endowments (see **Figure 5**). It has a few positives in factor conditions, such as natural resources, abundant fertile land, decent access to finance, and a large pool of low-cost labor, and has been improving its context for strategic and firm rivalry through continued political stability and liberalization efforts in recent years. However, Tanzania still has a long way to consolidate these gains and develop a network of local suppliers and improve domestic demand.

4.1 Factor conditions

Land. Tanzania has abundant land resources, capable of supporting vibrant agriculture, mining, and tourism industries. Currently, land can be leased for 99 years, and since 1998 foreign investors have been legally allowed to lease land, though acquisition for foreigners is cumbersome.

Finance. Finance is a bright spot for Tanzania. Since the banking reforms of the late 1990s, including privatization of the main state owned bank, access to capital has been steadily improving. Stock of domestic credit, currently 0.2% of GDP, has been growing over 30% per year (Marzo et al, 2009). Domestic savings is healthy and average lending rates, at 15.4%, are comparable to the

[5] Business environment analysis uses Professor Michael Porter's "Diamond Approach," as documented in *On Competition* (1998).

region, although higher than Kenya's 13.8% (Marzo et al, 2009). Tanzania is one of just four African countries with deposit insurance.[6]

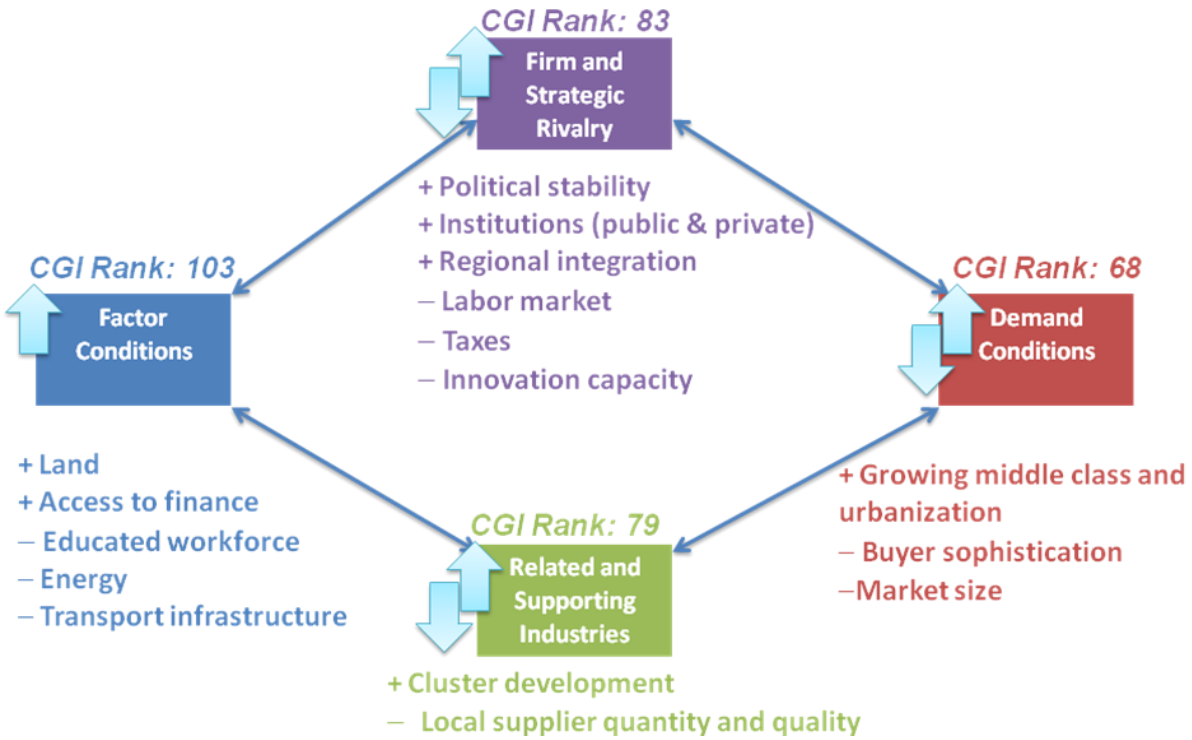


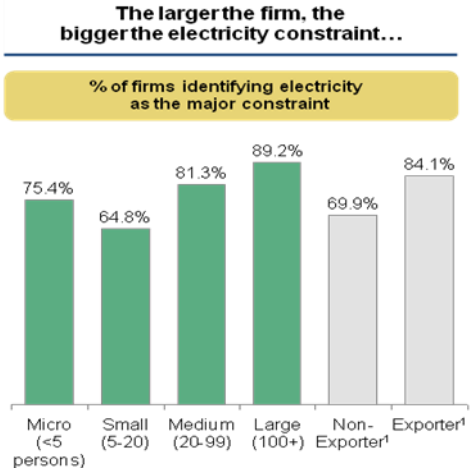
Figure 5: Tanzania's Country Diamond – improving but still many weaknesses.

Infrastructure. Physical infrastructure is a major constraint, especially electricity. Tanzania, which gets most of its power from hydroelectric sources, has very low production, approximately 100 kWh per capita.[7] While electricity costs are low, Tanzania has an average of 13 power outages per month (World Bank, 2009). Consequently, more than half of firms own a generator, which they rely on for over 10% of their energy needs. This vastly raises energy costs since generator power is more than three times as expensive as that from the grid. Not surprisingly, electricity is cited by 75% of firms as the main constraint to doing business (see **Figure 6**).[8]

[6] One weakness, though, is the Dar es Salaam Stock Exchange. Established in 1998, it has only 15 registered companies and very limited trading.
[7] Part of the problem is that it loses almost 30% of its production in transmission and distribution losses. See WDI 2004 and Marzo 2009.
[8] This rises to 84% for exporting firms. World Bank 2009.

Transport infrastructure is inefficient, particularly at the main port in Dar es Salaam. It takes 20 days for containers to clear customs, more than twice the time at the second worst port in East Africa (Beira, Mozambique) (Marzo et al, 2009). Dar es Salaam is also the only port without a direct rail link. Further, rail infrastructure is extremely old and lacks connections to any neighboring countries. Tanzania also has few paved roads - only 0.0022 km per capita - similar to neighbors like Kenya (Marzo et al, 2009). Overall, poor transport infrastructure is a lost opportunity for Tanzania to be a regional transport hub for its multiple landlocked neighbors.

Figure 6: Electricity is a major constraint to doing business in Tanzania. (Marzo et al, 2009)



Human capital. Skilled labor is a perennial challenge in Tanzania, a consequence of a weak educational system. The lack of skilled labor is a major complaint of firms in Dar-es-Salaam; over 20% cite an inadequately educated workforce as a major constraint to business (Marzo et al, 2009).

4.2 Context for Firm and Strategic Rivalry

Governance. Since the 1990s Tanzania has undertaken significant public sector and legal reforms. A 2004 World Bank review of governance in Africa highlighted Tanzania as the only country to show strong progress in all three areas of governance; voice and accountability, government effectiveness and control of corruption (UNDP, 2007). As part of its efforts to improve government effectiveness, 96% of state-owned enterprises have been privatized over the past ten years (Marzo et al, 2009). In 1995 the national anticorruption strategy (NACSAP) was instituted, moving Tanzania from being among the poorest performers in the "control of corruption" close to the international average (UNDP, 2007).

In the past three years, however, Tanzania has experienced significant governance setbacks. Between 2007 and 2009, Tanzania dropped an average of 30 places in the Global Competitiveness Index (GCI) on indicators such as diversion of public funds, favoritism in government decisions, judicial independence and transparency of government (WEF, 2009; TCCP, 2009). A number of major corruption scandals involving senior members of President Kikwete's cabinet is one factor for the decline (Wafula, 2008).

Institutions for Doing Business. In 2009 Tanzania ranked 127 out of 181 countries in the World Bank's Doing Business indicators, up from 142 in 2007. While entrepreneurs report that start up procedures are time consuming, business start-up costs were just 42% of GDP per capita, compared to 100% in Uganda and 108% in Rwanda. Tanzania does relatively well in its region on costs and delays associated with exporting (ranked 109 out of 180 with similar outcomes to Kenya). However, it fares miserably on costs and delays with licensing (ranked 172 out of 180). Overall, Tanzania is doing reasonably well regionally but is far from global best practice (WEF, 2009).

Taxation. Taxation is quite high in Tanzania although comparable to neighbors, at an average 45%. Its tax system is also burdensome, requiring 48 different tax payments annually, much higher than most African countries (Marzo et al, 2009). Firms, however, do not cite taxation as a major constraint to business.[9]

Labor markets. Labor market challenges are a serious concern with both hiring and firing being extremely difficult. Among African countries, only Niger scores as low as Tanzania in the World Bank's difficulty of hiring index (World Bank, 2009). Ranking 100 out of 133 countries, Tanzania also scores poorly on the GCI's index of labor-employer relations. Positive features of Tanzania's labor market are its high female labor participation rate and low non-wage labor costs (TCCP, 2009).

[9] Only 4% of firms cited taxes as a major constraint, versus 10.6% on average in African countries. Marzo et al 2009.

Trade. The East African Community (EAC), of which Tanzania is a member, enacted a full customs union in January 2010. Tanzania also enjoys most-favored nation access to most developed countries. Yet, there are still major constraints to exports – mostly internal challenges, like customs procedures and physical infrastructure. Tanzania has tried to address these constraints through export processing zones (EPZ), but only 10 companies are active in these zones.[10] In terms of imports, Tanzania is harmonizing its policies with other EAC states and reducing its tariffs. EAC countries have reduced the maximum common external tariff to 20%, and over 50% of goods enter under zero tariff.[11] Nonetheless, trade barriers remain. Tanzania's GCI scores on trade barriers and trade-weighted tariff rates have dropped by 15 and 4 spots respectively in the past 3 years (TCCP, 2009).

Innovation. A key CSR weakness is Tanzania's lack of innovation. Tanzania scores 101 out of 144 countries in the GCI; Tanzania's innovation capacity, quality of scientific and research institutions, availability of scientists and engineers, and company spending on R&D all score quite low. Further, incentives to innovate are limited by Tanzania's weak intellectual property protection (TCCP, 2009).

4.3 Related and Supporting Industries

Tanzania's supplier base is weak. Local supplier quantity and quality both rank low on the GCI, especially compared to Kenya (see **Table 1**) (WEF, 2009). It also ranks poorly in availability of process machinery and adoption of latest technologies. However, a strong focus on clusters is reflected in its good GCI rankings in areas like state of cluster

Table 1: Business Sophistication-GCR Rank	**TZ**	**KE**
Local Supplier Quality	123	66
Local Supplier Quantity	116	34
Value Chain Breadth	118	69
Production Process Sophistication	124	101

[10] See http://invest-in.tanzania.ru/export.htm
[11] See http://allafrica.com/stories/201004200932.html

development (44), cluster policies (62), and collaboration among entities within clusters (57) (WEF, 2009).

4.4 Domestic Demand

Tanzania's domestic demand is not particularly impressive though it does quite well when considering its level of development. Overall, it ranks 68th on demand conditions in the GCI and fairs well on demanding regulatory and environmental standards. Domestic demand is also strengthened by strong government procurement of advanced technology. However, buyer sophistication is quite low, although there is reason to believe it may improve in the coming years with a growing middle class, predicted increases in tourism, and the EAC customs union.[12]

5. Country Recommendations

Tanzania has made steady progress in reforming the economy and generating economic growth. But to consolidate these gains and develop a vibrant private sector, much more must be done especially in improving the business environment. Given the many challenges faced by such a poor country, we focus here on only the most important priorities for spurring growth:

1) Improve the business environment (Government and private sector). The government has built positive momentum around private sector competitiveness, but rhetoric is outpacing performance. Government should act to improve the business environment by convening a high-level private sector advisory council. President Kikwete should send a strong signal about his government's commitment by chairing the council. The first order of business should be to identify the five most important weaknesses in the business environment, with likely candidates to include improving labor laws and streamlining the tax system. The President should set a goal for creating a

[12] One sign of this promise is the emergence of western style malls in Dar es Salaam in the past three years.

clear action plan to tackle these challenges within 100 days of forming the council. The council would then continue to meet each quarter to identify further priorities and to monitor progress.[13]

2) Create institutional support for cluster development (Government). The government should create an entity that can provide ongoing support to clusters beyond the initial strategy formation stage. This entity should be led by a director with strong private sector experience. Among the key tasks of this entity would be to assist clusters in doing research, monitor progress against cluster goals, and provide matching grants for cluster upgrading initiatives beyond the current 3-year TCCP and beyond the 3 initial TCCP focus clusters.

3) Articulate a unique value proposition and brand for Tanzania (Government and PSF). Government in collaboration with PSF should work to identify a unique value proposition for Tanzania, drawing on Tanzania's existing strengths of stability and natural endowments. It should also incorporate into its competitiveness program a strategy to outpace regional competitors in some key policy area, such as anti-corruption or ease of export processes, in order to attract greater FDI.

4) Upgrade critical transport and energy infrastructure (Government). Government should strengthen the Energy Regulatory Authority to set the stage for greater investment—both public and private—in generation and distribution networks. Generation must be diversified away from heavy reliance on hydro power, which is extremely vulnerable to fluctuations in annual rainfall. Simultaneous upgrading of both the Dar es Salaam port and railways to the interior should also be planned. As part of this upgrading, the government should try to attract private sector companies to construct and maintain rail links between Dar es Salaam and Tanzania's landlocked neighbors.

5) Improve post-primary education (Government, Universities and the Private Sector). The government should improve access to secondary schools, including making it easier to start privately

[13] This recommendation is based on our study of cases during our MOC course on similar efforts in places like Connecticut and Singapore.

run secondary schools. Universities must also be improved. The government should offer economic incentives (e.g. favorable land deals and tax breaks) for new private universities. Existing universities should also be more creative about raising funds from alumni and corporate donors. The PSF should open dialogue with national universities to foster closer research collaboration and improve alignment between curricula and cluster priorities.

6) Train public officials on private sector development management practices (Government). Nyerere's socialist vision was never truly purged from the mindset of public officials who remain in office today. But their support is critical to Tanzania's efforts to improve competitiveness. A portion of the Private Sector Competitiveness Project funding should be used to institute a training program for mid to high level public officials on competitiveness thinking and performance based management. Training may also include study tours to highly successful initiatives in places like Singapore, Rwanda, and Connecticut.

C. HIGH-VALUE EXPORT VEGETABLE CLUSTER

1. Overview of Agricultural Sector

Agriculture is a major driver of the Tanzanian economy, accounting for 45% of GDP, 80% of employment, and 70-80% of foreign exchange earnings (Putter et al, 2007). Historically, growth in the agricultural sector has tracked with GDP growth, but agriculture is no longer growing as quickly as the overall economy (WDI Online). Tanzania's agriculture sector has been dominated by subsistence crops and a few major commodities: bananas, cassava, maize, and rice. Productivity on these low

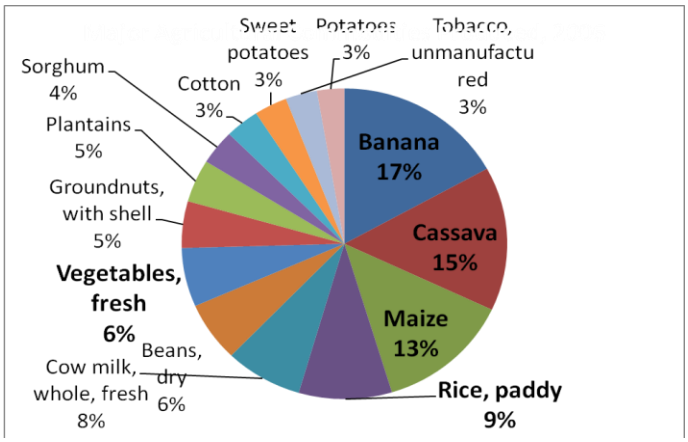


Figure 7: Agricultural production, 2008. (FAO Stat)

value crops has stymied, which experts blame on poor management, low use of fertilizer, and low use of improved seed (Wolter, 2008).

Traditional agricultural exports include coffee, cotton, tea, cashews, and tobacco. But the share of exports represented by these commodities has fallen from 50% in 1996 to 20% in 2006 (Wolter, 2008). While Tanzania has long produced lower end vegetables (cabbage, onion, tomato) for domestic consumption, it has now begun to enter into high-value export vegetable (HVV) production, though HVV is still quite small, representing 1% ($18.2 million) of merchandise exports in 2006 (Wolter 2008).

In 2008/2009, agricultural expenditures accounted for only 4% of the national budget. Further, the Ministry of Agriculture has focused on low value staple commodities, devoting the bulk of their resources to subsistence rather than export crops. Riding a wave of renewed international interest[14] in reviving agriculture in Africa, the President of Tanzania Jakaya Kikwete announced the "Kilimo Kwanza" (Agriculture First) campaign in 2009 to renew government focus on agriculture. Government committed to increasing the Ministry of Agriculture budget by 30% in 2009/10, with new funding targeting subsidized inputs, road repairs, and irrigation. There is no indication that government will increase its focus on cash and export crops. It is also unclear whether Kilimo Kwanza will move beyond rhetoric, defining a competitive advantage for the agriculture sector (Jaffer, 2009; Kamndaya, 2009).[15]

2. Overview of the High-Value Vegetable Cluster

2.1 Definition. The Tanzanian high-value vegetable (HVV) cluster consists of vegetables that are grown for export using global best practices to meet international standards for traceability, safety

[14] New interest was marked by the 2008 World Development Report and the creation by the Gates and Rockefeller Foundations of the Alliance for a Green Revolution in Africa, a new grantmaking body exclusively on agriculture.
[15] Some Tanzanian agronomists question whether the campaign will be any different from the empty campaigns of the past: "Kilimo ni Uti wa Mgongo wa Uchumi" (Agriculture is the backbone of the economy), "Kilimo ni uhai" (Agriculture is life) and "Kilimo cha kufa na kupona" (Life or death agriculture) (Kamndaya 2009).

and quality.[16] This paper focuses on the production of green beans and peas, which account for the biggest share of Tanzanian HVV production. Currently, HVV production is very small compared to competitor countries in Africa (see **Figure 8**), but there is strong potential for the cluster to grow, as illustrated further below.

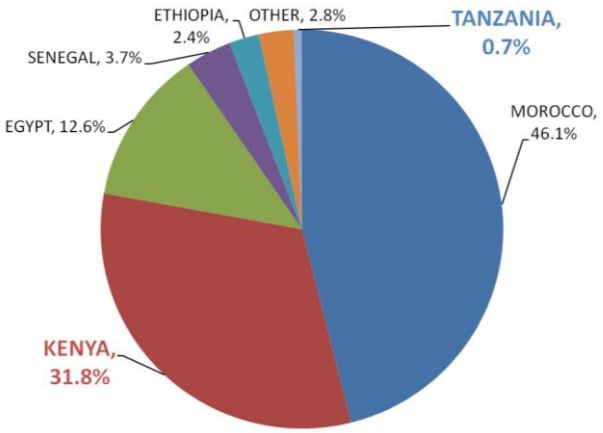


Figure 8: Non-European imports of green beans.

2.2 History. The development of the HVV cluster is Tanzania is a recent phenomenon. In contrast, neighboring Kenya has successfully developed a large HVV cluster which, for market reasons, has carved out a niche at the high-end of the European trade selling to supermarket chains (see **Box 1**). Kenya's success has spurred interest in developing Tanzania's cluster using the same approach of selling to large European supermarkets.

In the last ten years there have been a number of encouraging signs suggesting that the Tanzanian cluster is now ripe for growth. Between 2000 and 2002, two foreign investors acquired land and began producing HVV for export. In 2005, the Tanzanian Horticulture Association (TAHA) was established. By 2006, Kenyan exporters of HVV began expressing interest in Tanzania as they were looking for ways to diversify the weather and political risk inherent in focusing solely on Kenya.

Kenyan interest, combined with growing global demand, piqued the interest of international donors, who are now investing in cluster advancement. Among other initiatives, the donor funded Tanzania Cluster Competitiveness Program recently selected horticulture as one three initial focus clusters.[17]

[16] This contrasts with traditional vegetable production, in which production for the local market is unregulated.
[17] The other two are food processing and tourism, both of which are linked to horticulture. See http://ccp-tpsf.org/

Box 1: Kenya's Vegetable Cluster and Lessons for Tanzania

Kenya's vegetable industry started in the 1970s when Kenyans of Asian descent and their relatives in the UK discovered a market opportunity to market Asian vegetables, like baby corn and chilies, from Kenya to a growing Asian population in the UK. In the early years, this was a simple commodity trading business. Kenyan traders collected vegetables in spot transactions from thousands of farmers. They sent the beans loosely packed via passenger airlines – taking advantage of the increasing number of flights to Europe created by a growing tourist industry – where they were then sold into wholesale markets.

In the 1990s, the Kenyan industry underwent major upgrading as trader-aggregators became sophisticated food processors. The change was precipitated by two major competitive threats. First, major competitors, Morocco and Egypt, entered the market. This was a significant threat because these countries had lower airfreight costs, which accounts for more than half of the total cost of getting the product to Europe. Second, governments and retailers began imposing increasingly stringent safety, quality and traceability standards in the European fresh vegetable trade.

In response, Kenyan exporters made major investments in the supply chain to carve out a niche at the high-end of the market. They entered into long-term contracts with large supermarket chains for convenience and ready-to-eat packs of vegetables. These offerings provided high enough returns to compensate for high air freight costs. Kenya was able to establish relationships with supermarkets because, unlike its competitors, it could offer the year-round supply demanded by supermarkets. These relationships have flourished over time and Kenya's top exporters now serve as "category captains" for UK retailers, helping the retailers manage their relationships with all suppliers within relevant produce categories like leafy greens.

Kenya's experience shows that if Tanzania is to develop a successful vegetable cluster it will need to follow Kenya's lead in producing high-value vegetable exports within tightly integrated supply chains that meet stringent supermarket requirements. It will also need to find a way to secure relationships with European supermarkets that are highly coveted by many global suppliers.

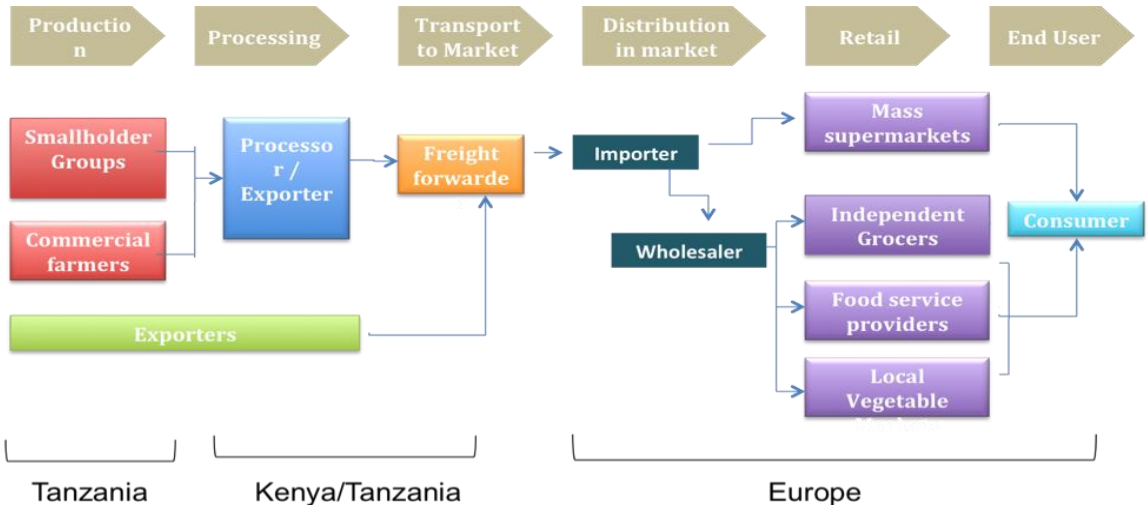
2.3 Value Chain. Vegetables from East Africa – both Kenya and Tanzania – compete at the high-end of the European vegetable retail market. Tanzania and Kenya have higher air freight costs than competitors like Morocco and Egypt, so they cannot compete in producing commodity vegetables sold in European wholesale markets.[18] Instead, they must sell high-end vegetables in convenience and ready-to-eat packs to European supermarkets, which are imported at double or more the average value of Egypt and Moroccan vegetables (Eurostat, 2009). Supermarkets pay higher prices,

[18] For example, airfreight costs to Europe from Morocco are just 11.5% of those in Tanzania.

and they demand year-round supply, something Kenya and Tanzania can provide but Morocco and Egypt cannot.

HVV such as green beans and peas travel from Tanzania to European supermarkets, often via Kenya, through a value chain that is tightly integrated to avoid spoilage and ensure traceability and safety (see **Figure 9**). Exporter-processors (hereafter "exporters") play a central role in the value chain. They reach back to the farm level, coordinating production from their own and outgrower farms. They then transport vegetables to packhouses where they undergo processing – cutting, peeling, washing and testing – and are then placed in sophisticated packages (see pictures on cover page). From packhouses, vegetables travel to Europe, where they are purchased by a European importer – often the same company or a close partner of the exporter – and are then typically delivered to supermarket chains, primarily in the UK.[19]

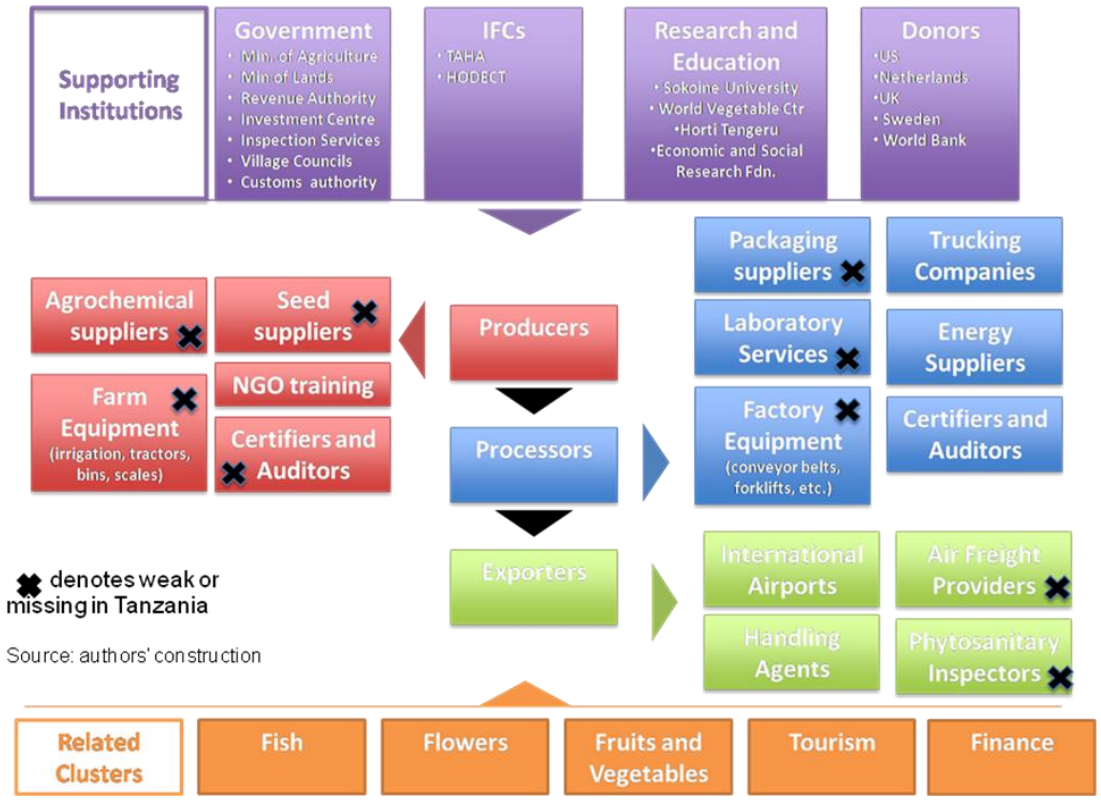
Figure 9: The Value Chain for Tanzanian Export Vegetables



[19] Only a very small share of vegetables go to wholesale markets because Tanzanian (and Kenyan) vegetables have a hard time competing in a commodity market against lower cost producers like Morocco and Egypt.

2.4 Cluster Map**.** A successful HVV cluster requires many entities up and down the value chain (see **Figure 10**). Since a significant number of these entities are missing or weak in Tanzania, the country relies heavily on links to goods and services from Kenya. In production, for example, Tanzania does not yet have registered sellers of high quality bean or pea seed and has limited availability of specialized farm equipment, like drip irrigation systems. These inputs, as well as some agrochemicals, are imported from Nairobi.

Figure 10: Cluster map.



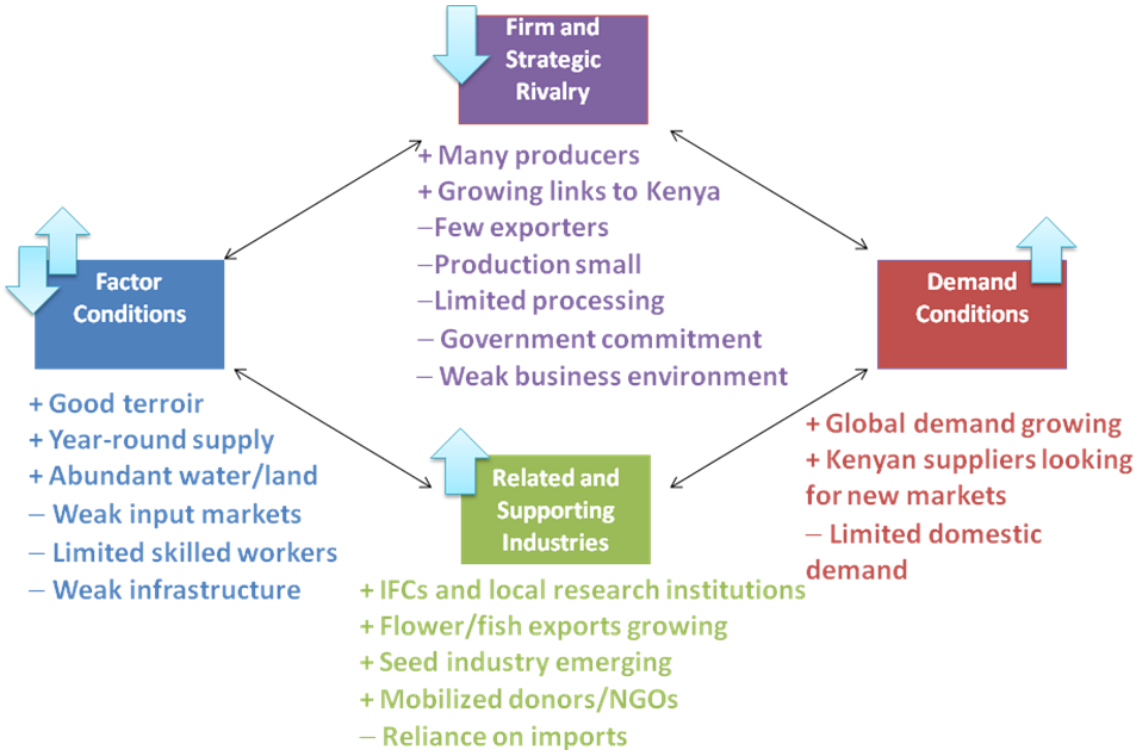
In terms of processing, an important weakness is that there are no internationally accredited laboratories to do food safety testing. This is among the reasons that an estimated 70% of all HVV produced in Tanzania are processed in Kenyan packhouses (Bernstein, 2010).

In exporting, a major concern is the lack of international air cargo. Tanzania has no regular air cargo freighter. HVV shipped from Tanzania are currently packed in the cargo cabin of passenger jets, but the cargo capacity of these jets is very limited and not a sustainable option for a growing industry.

On a positive note, Tanzania has good supporting institutions, including an effective industry association and an emerging forum for private-public dialogue. There is support for the sector from international donors. In addition, Tanzania is developing several important related industries. Of particular note are the flower and fish clusters and the tourism industry (see RSI section for details).

3. High-Value Vegetable Cluster Diamond

Figure 11: Cluster diamond.



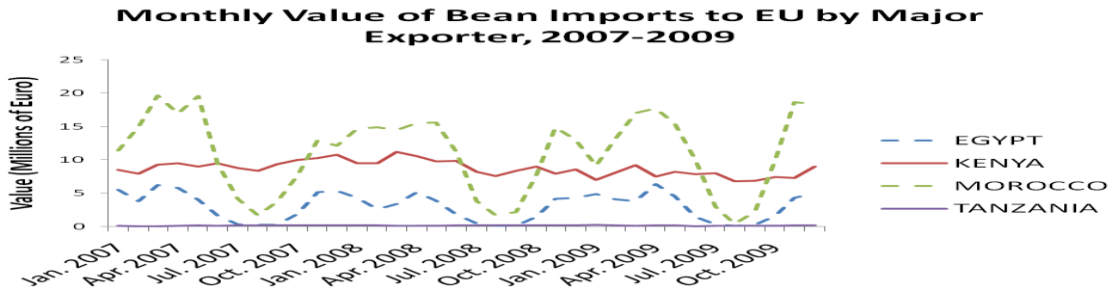
The Tanzanian high-value vegetable cluster is currently quite small. But given strong global demand for year-round suppliers, there is an opportunity for the cluster to grow. Tanzania has outstanding growing conditions, affordable labor, energetic institutions for collaboration, and a growing seed industry. But competitiveness is constrained by an unfavorable investment climate, weak input markets, limited land rights, low availability of skilled labor, and costly and limited airfreight.

3.1 Factor Conditions

Enabling Factors	Constraining Factors
Year round supply	Weak input markets
Excellent terroir and abundant water and land	Limited access to skilled workers
Low-cost production labor	Weak infrastructure

Terroir. Tanzania, like Kenya, has ideal growing conditions—including a temperate climate, variety of elevations, water resources, and two rainy seasons. One study identified more than 85,000 square kilometers of the country with ideal growing conditions (Putter et al, 2007). Tanzania's growing conditions are a source of competitive advantage over the large green bean and pea exporters in North Africa because, unlike these producers, Tanzania (and Kenya) can produce steadily year-round. **Figure 12** illustrates this by showing exports of beans to the EU for select suppliers. While Tanzania's production is still low, neighboring Kenya shows that bean production remains steady throughout the year whereas Egypt and Morocco have major drops in supply during the European summer.

Figure 12: Quantities of green bean exported to Europe by month for selected countries. (Eurostat)



Agricultural inputs and technology. Exporters provide farmers inputs needed for production. Fertilizer is somewhat easy to obtain domestically from two local producers. Agrochemicals are more difficult due to long delays for import approvals and no domestic production. While there is sophisticated production of vegetable seed in the country, these seeds are not yet integrated into the cluster, which still imports its high-value vegetable seed from Kenya (Nyambo et al, 2005). Overall, land productivity is regionally competitive, but lower than Egypt and Morocco, which make greater use of irrigation and chemical fertilizers and have a larger share of large, commercial farms instead of smallholder outgrowers (FAO Stat).

Human capital. Advancement of the cluster is also constrained by a dearth of technical experts and skilled management staff. Current exporters rely on expatriates (often from Kenya) to manage operations (Bernstein 2010, Sergeant 2004, and Nyambo 2010). But, Tanzania does have a large agricultural labor workforce with productivity levels and wages that are regionally competitive (Bernstein, 2010).

Land access. To be a major exporter of HVV, it is important to own commercial farms, even if you buy some products from outgrowers, because certain vegetables are better suited to large-scale production and require stringent management to meet supermarket requirements. Yet, securing access to land for such farms is a challenge in Tanzania. All land is property of the state, though leases can be obtained for up to 99 years. Land allocation responsibilities are divided between villages and the central government, but distinctions are ambiguous and the procedures for acquiring land, especially for foreigners, can be confusing and cumbersome (Fischer 2003; Bernstein 2010). Unlike neighboring countries, there is no land bank for foreign investors and making land requests through the Tanzanian Investment Center can take years.[20]

Finance. Access to finance is not a binding constraint for the cluster, because credit is extended among actors within the value chain. Generally, exporters provide credit (obtained in international markets), largely in-kind, to outgrowers to ensure access to necessary inputs and equipment.

3.2 Demand Conditions

Enabling Factors	**Constraining Factors**
Rising international demand	Low local demand
Rising demand from Kenyan exporters	

Global demand. While some vegetables are produced for the local market, the high-value vegetable cluster is distinctive. Demand for HVV is growing quickly; in the UK, for example, the market is growing at about 4% per year (Bloom 2008). The growing demand in Europe has prompted

[20] A Tanzania Investment Centre (TIC) official interviewed for this report suggested that the TIC is developing a land bank though it is unclear when or if it will be completed. A fast track option is available, but generally only for investments greater than $10 million, which is typically larger than initial vegetable exporter investment.

Kenyan suppliers to search for new sources of supply because of declining water tables in Kenya and to diversify the risk from depending on just one location.[21]

Supermarkets. Supermarket chains are very demanding customers which require exporters to have world class logistic systems to ensure 99% successful delivery and compliance with strict safety, quality and traceability standards. Such contracts with supermarkets are highly coveted and hard to obtain. Supermarkets are unlikely to add new suppliers unless it would be risk-neutral and cost or quality positive. A number of supermarkets have also outsourced the responsibility for managing product categories to lead suppliers known as "category captains," which manage all other suppliers, including decisions to accept new suppliers. Kenyan exporters often serve as category captains.[22]

Eastern Europe and the Middle East are an alternative market, where demand is starting to emerge. While this may be a promising route in the future, demand is still small and serving the market would require special air freight arrangements (Bernstein, 2010; DAI, 2007).

Local demand. In Kenya, vegetables just below the high standards set for export quality are often channeled to the local market. Tanzania's domestic demand is very small and unsophisticated, but, there is growth potential as the middle class grows and the tourist industry expands.

3.3 Related and Supporting Industries

Enabling Factors	**Constraining factors**
Strong IFCs and research institutions	Reliance on imports for production inputs
Potential for coordination of airfreight and cold storage with flower and fish industries	Lack of airfreight
Growing seed industry	
Donor support for value chain upgrading	

Supporting Institutions. The Tanzania Horticulture Association (TAHA) is a fairly active institution for collaboration (IFC) and has been instrumental in improving training, market linkages, and lobbying

[21] The violence following the last Kenyan election and drought in recent years served as prime motivating factors for Kenyan exporters to begin looking to diversify their supply base.

[22] Category management means that decisions are made based on how it will affect a whole category of products, such as leafy greens, rather than how it will affect only one particular product.

for necessary support from government agencies. The Horticulture Development Council of Tanzania (HODECT) offers a forum for the industry to interface with government.

Development Donors. Donors, recognizing the potential of the cluster to expand, are supporting cluster advancement. USAID has invested in projects to train and equip smallholders as viable outgrowers and to develop an air cargo freight program. The Dutch government has supported studies and staffing at TAHA. The World Bank and UK are funding the TCCP, discussed above.

Supporting industries. The high value vegetable cluster faces a lack of supporting industries for production or processing, including a dearth of irrigation equipment, factory equipment or packaging. For example, packaging materials required for HVV are sophisticated, breathable plastics that maximize shelf life and help the products stay fresh during shipping. Kenya has begun producing its own packaging materials, but these are not available in Tanzania. Seed supplies are also imported, despite the presence of multiple seed exporting businesses.[23]

Transport and related industries. A major constraint to the cluster is the lack of airfreight to Europe. There are no direct cargo flights to Europe from either Kilimanjaro or Dar-es-Salaam. One passenger flight goes directly from Kilimanjaro to Europe, but has limited cargo space. Consequently, most of Tanzania's HVV are transported via truck to Nairobi where there are seven daily cargo flights and many passenger airlines traveling to various European destinations.[24] TAHA, via TAHA Fresh Inc., coordinates this ground transport for vegetable and flower exporters.

There is strong potential to improve air freight availability through closer links between the vegetable, flower and fish industries. All three clusters require air transport to Europe and both flower and fish exports are growing. Once volumes reach sufficient levels, there is potential to attract cargo freighters, a possibility discussed further in the recommendations section. In addition, the tourist industry is growing with tourist visits expected to reach 1.5 million by 2012. Increasing

[23] Interview with exporter for this study.
[24] Some vegetables are also trucked to Dar-es-Salaam.

tourism will enhance frequency of flights to Europe and provide a larger local market for HVV (TATO, 2008; *Arusha Times*, 2008).

Research institutes. Arusha is home to three research institutions with potential to benefit the vegetable cluster: the Selian Agriculture Research Training Institute (SARI), Horticulture Research and Training Institute (HORTI), and the World Vegetable Center (WVC).

3.4 Context for Firm and Strategic Rivalry (CSR):

Enabling Factors	**Constraining factors**
Co-location in Arusha	Lack of government support
Growing links to Kenya	Production and processing small

Key actors and size of operations. The Tanzanian cluster consists of a small number of actors all operating out of the Arusha region. Tanzania exports about 75 tons of HVV through four exporters, compared to 1600 tons in Kenya (Bell et al 2007). There are two small Tanzanian exporters and two larger Kenyan exporters operating in Tanzania. Most exporters purchase produce from both large and small outgrower farmers, though one exporter also has its own large farm. Three exporters have packhouses in Tanzania that can process a combined 15 tons per day (large Kenyan packhouses process 30 tons daily). An estimated 70% of produce is processed and shipped via Nairobi.

The co-location of all these farms and packhouses around Arusha provides a nice opportunity to strengthen the cluster, especially given other related entities in the area. Arusha is home to several important agriculture research institutes, most of the country's flower exporters, and an international airport. Arusha is also the hub of tourist activity in Tanzania. Further, it is just six hours drive to Nairobi, the hub of the Kenyan vegetable cluster.

Government's role. A major constraint to cluster development is the lack of commitment by the government to support the sector, including coordinating the many ministries that affect the vegetable cluster. Government's lack of action inhibits all parts of the value chain (see **Figure 13**).

In production, parliament has failed to enact reforms to the Plant Protection Act which would streamline the cumbersome process of registering agrochemicals. In processing, the Ministry of Trade has not qualified vegetable packhouses as eligible for EPZ incentives. The Tanzania Revenue Authority recently began charging 18% VAT on air freight of horticulture products. And even when the government commits to make changes, it can take years before reforms are enacted.

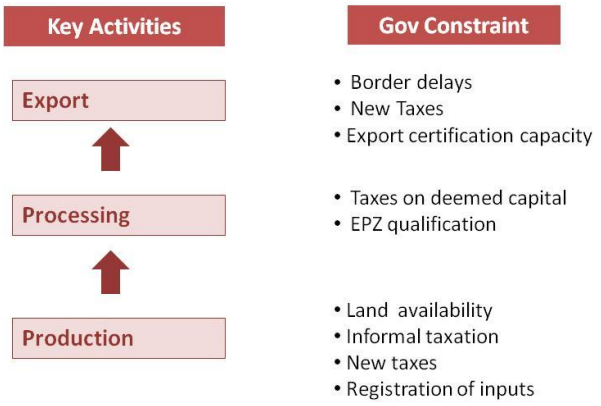


Figure 13: Government imposes constraints all along the value chain.

4. Cluster Challenges

Based on the above analysis, we believe there are four key constraints facing the vegetable cluster:

1. *Limited airfreight capacity*: Tanzania has no air cargo to Europe and only one regular passenger flight from Kilimanjaro. There is a chicken and egg problem as the small volume of vegetables and flowers in Arusha are insufficient to attract air cargo companies, but the lack of air cargo limits investments that would expand production volumes.
2. *Lack of market linkages*: Exporting profitably into Europe requires contracts with large supermarket chains. But Tanzanian exporters do not yet have the experience to secure a supermarket contract in a highly competitive market.
3. *Dearth of skilled labor*: Tanzania lacks the skilled workers needed for HVV, such as field technicians to oversee production and packhouse supervisors to manage processing.
4. *Weak business environment*: Tanzania's general business environment is weak, but the environment specific to horticulture is rife with its own challenges, including difficult land access rules, lengthy agrochemical registration procedures, and horticulture export taxes. Most challenges can be traced back to a lack of government commitment to support the vegetable cluster.

A promising way to overcome the first three challenges would be for the Tanzanian cluster to plug into the Kenya cluster, essentially becoming an outgrower for Kenyan exporters. This would solve the airfreight challenge by shipping from Nairobi, ensure market access through Kenyan exporters' ties to European supermarkets, and provide skilled managers via Kenyan companies. Furthermore, Kenyan exporters would benefit by diversifying the risks of relying solely on Kenyan production.

The major obstacle to proceeding in this way is the weak business environment, which deters Kenyan investment in Tanzania. Kenyan exporters interviewed for this paper cited concerns about specific business environment challenges such as those outlined above. But they were even more vocal about the government's attitude, which they described as an overall hesitance to promote private sector activity. Despite the government's recent rhetoric, the exporters did not believe that the Tanzanian government was truly committed to supporting the vegetable cluster.

5. Recommendations

The key starting point for improving the cluster will be for the government to truly commit to supporting the vegetable cluster. We recommend that the private sector, through TAHA, and the development donors pursue a concerted advocacy campaign to convince the President to act in support of vegetables and the broader horticulture industry. These actors must show the President and his cabinet that supporting horticulture would create tens of thousands of new jobs and bring in tens of millions of dollars in government revenue (Bernstein, 2010).

The President and cabinet ministers should join the private sector and other relevant actors[25] in developing a cluster strategy would have three key phases to grow the vegetable cluster:[26] In phase one, Tanzania would link to the Kenyan cluster by focusing on becoming an outgrower to Kenyan exporters. In phase two, Tanzania would strengthen the Arusha cluster by building processing and

[25] In our recommendations, we focus largely on TAHA and Kenyan exporters and less on farmers because we believe exporters, if incentivized to expand, will be able to help farmers overcome their knowledge or finance gaps.
[26] Strategy development can occur through the TCCP process that has already begun for the broader horticulture sector.

exporting capabilities. In phase three, Tanzania would expand beyond Arusha to other high potential areas like the Southern highlands. The specific actions needed in each phase are (see **Figure 14**):

1) Phase 1: Link to Kenyan cluster

1a) Improve the business environment (government - various). Kenyan firms will need to make investments in outgrower scheme infrastructure and the Tanzanian government must take steps to improve the business environment so these firms will be incentivized to act. There are at least four important steps the government should take (listed in order of priority): 1) remove horticulture export taxes, 2) declare horticulture packhouses eligible for EPZ status, 3) create a land bank for agriculture, and 4) reform the Plant Protection Act of 1997 to streamline chemical registration.[27,28]

1b) Appoint a special ambassador for horticulture (President). The steps that the government must take to improve the business environment will need the buy-in of senior figures in a range of agencies. To ensure these officials are implementing needed reforms, the President should appoint a special ambassador for horticulture who would report directly to him.[29] This ambassador should be a senior figure with experience in the government and business who can command the respect of leaders in both sectors. Such an ambassador would send a strong signal to investors that the government is genuinely committed to horticulture and it would provide a focal point within the government to coordinate the actions of various ministries affecting the vegetable cluster.

1c) Develop formal links between TAHA and Kenyan exporters (TAHA). TAHA should develop formal links with Kenyan exporters, either by inviting them to join TAHA or through a

[27] The first-best policy would be to recognize Kenyan registration of chemicals as sufficient for them to be registered in Tanzania, but a streamlined process would be a sufficient second-best and may be more practical. In the meantime, Tanzania should actively pursue the harmonization of regional standards through the EAC, which has already agreed to harmonize seed registration procedures. See Jaffee 2005.

[28] This is last priority because it will become more important in phase 2 when Tanzania moves up the value chain.

[29] An alternative, and equally desirable, approach is for the President to appoint a special ambassador for cluster development so that equal effort can be given to other promising, and related, clusters such as tourism and food processing (all of which are being strengthened through the new Cluster Competitiveness Program).

formal relationship with the Kenyan trade association, the Fresh Produce Exporters Association of Kenya (FPEAK). This will help the Kenyan exporters learn about the Tanzanian cluster and provide input into the reform process to improve the business environment. For TAHA, this might also provide an opportunity to learn from FPEAK's success advocating for a conducive business environment.

1d) Address constraints to an airfreight partnership with Mwanza's fish exporters (Tanzania Civil Aviation Authority, TCCA).[30] Since the horticulture sector in the Arusha area does not have enough volume to attract a cargo freighter, it should partner with the fish industry in nearby Mwanza. [31] Jointly, the industries will have enough volume to attract a small cargo plane at least three times per week.[32] TAHA Fresh Inc., a company established by TAHA, has already been working on this plan, but the Tanzania Civil Aviation Authority (TCAA) must help by upgrading the runway in Mwanza and waiving double landing fees for freighters stopping in Mwanza and Arusha.

2) Phase 2: Upgrade Arusha cluster

2a) Facilitate access to farm land (TIC). If Tanzania is to expand beyond being an outgrower for Kenya, it needs to make land more accessible to foreign (and domestic) investors so that commercial farms can be established. The Tanzania Investment Centre is in the process of establishing a land bank for the northern zone, including Arusha, but it should go beyond this by identifying specific plots that are suitable for particular horticulture crops based on altitude, water access, roads and other factors.[33] It should also enter into negotiations with village councils and

[30] This idea came from a discussion with a key informant for this paper.
[31] Fish is Tanzania's second largest earner of foreign exchange. In 2003, it was already a $154 million industry with 20 exporters and 80% of their exports going to Europe, mainly Holland and Belgium. A significant share of that industry is based near Mwanza, 431 km (one hour by air) from Arusha. For details, see World Bank 2005b.
[32] Horticulture exports already amount to 15 tons per day and are expected to exceed 20 tons in the near future. If 20 tons of fresh fish exports could be loaded in Mwanza then a DC-8, which has a cargo capacity of 40 tons, could logically be contracted to carry both products to Western Europe.
[33] Different pieces of land will be suitable for different types of horticulture crops based on factors like altitude.

district governments in areas with high potential to ensure that there is buy-in from the local population.[34]

2b) Commit to Tanzanian air freight (Exporters). As part of the land contract, the Tanzanian government should gain guarantees from investors that they will use Kilimanjaro International Airport to export their crops, as long as the costs are competitive with air freight from Nairobi.[35]

2c) Promote training programs for vegetable cluster staff (TAHA). TAHA should work with the research and training centers located around Arusha, including SARI, HORTI and the WVC to design and fund[36] programs to train farm technicians, packhouse managers and other needed staff.

2d) Raise awareness of Tanzanian vegetables in Europe (TAHA and TIC). TAHA should work closely with TIC to promote the Tanzanian brand in Europe among potential customers. In particular, it should invite European importers and supermarket chains on study tours of Arusha as such tours have proved effective for other countries.[37]

3) Phase 3: Expand to other regions starting with Southern Highlands

3a) Incorporate horticulture needs in modernization plan for Songwe airport (Government including TCCA). The Southern highlands near Mbeya-Iringa has good terroir and significantly more available land than in Arusha. The major bottleneck to production in Mbeya-Iringa is the lack of an international airport. But this bottleneck is now being addressed with the upgrading of the Songwe airport into an international airport. The government should include appropriate storage

[34] Providing land to foreigners is controversial in Tanzania. The government is clearly willing to offer land under certain conditions - there have been a number of major land deals in the last five years - but they have been criticized for doing so. Most of these land deals have been for thousands of acres and have been negotiated without clear, transparent procedures. The process for giving land to horticulture investors must follow clear and transparent procedures. The land should be sold to investors at market prices with most of the revenue provided to the local community.

[35] This will be difficult to enforce but should not need enforcing as long as the air freight program discussed elsewhere in this report is successful. If Kilimanjaro is an attractive place to export from, exporters will naturally choose to do so.

[36] Matching grants for such training are available through the Private Sector Competitiveness Project. http://ccp-tpsf.org/images/Downlink/CCP%20Cluster%20Grants_8Feb10.pdf

[37] For example, Mali and Guatemala both arranged study tours for European supermarkets that led to contracts with these retailers. Source: author interview with European supermarket staff member.

and handling facilities for horticulture and other perishable goods in these plans. Space permitting, it should also designate a portion of the airport campus as an EPZ zone. .

3b) Attract cargo flights to Songwe airport (TAHA). During the initial development of the southern highlands section of the cluster, TAHA should coordinate investments by its own members and explore partnerships with other exporters of perishable goods in the region to ensure there will be adequate volumes of freight to merit at least one cargo freighter every other day to Europe.

Figure 14: Recommendations for Developing the Tanzanian Vegetable Cluster by Actor

Actor	Link to Kenyan Cluster	Consolidate Arusha Cluster	Expand Beyond Arusha
Government	• Improve business environment (taxes, EPZ access, land, etc.) • Appoint a special ambassador for horticulture • Address constraints to air freight	• Provide land to foreign investors	• Improve Songwe international airport including modern storage/handling facilities
TAHA	• Develop formal links with Kenyan exporters	• Initiate airfreight program • Promote training programs	• Coordinate airfreight in Southern highlands
Exporters		• Commit to using Tanzanian airfreight	

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Interviews:

Cartwright, James. Managing Director, Vegpro. January 25, 2010. Vegpro is Kenya's largest exporter of vegetables.
Chambers, Mike. Former director of Wimbo and Gomba Estates. July 15, 2009 and January 6, 2010. Both Gomba Estates and Wimbo were Tanzanian exporters of fresh vegetables.
Grewal, Harjote. Former operations director at East African Growers (Kenya). March 4, 2010.
Hickok Smith, Kimberly. Chief of Party, Tanzania Airfreight Program. August 3, 2009 and March 2, 2010. Kimberly has extensive experience in horticulture in Tanzania and Kenya.
Homer, Steve. Managing partner, Bios partners. January 4, 2010. Steve is a former head of corporate social responsibility at Homegrown and now consults on food exports to the EU..
Kirenga, Geoffrey. Director of crop development, Ministry of Agriculture. February 24, 2010. Geoffrey is the point person in the Ministry of Agriculture for horticulture issues.
Maru, Paresh. General Manager, TAHA Fresh Handling Inc. February 27, 2010.
Matheka, Judy. Technical Manager, VegPro. February 4, 2010.
Midawe Vegetable Growers. July 19, 2009. Farmers Cooperative growing vegetables in northern Tanzania.
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Mtindi, Jacqueline. Executive Director, Tanzania Horticulture Association (TAHA). March 6, 2010.
Mvungi, Musa. Managing partner for Homeveg. July 24, 2009. Homeveg is a new exporting company in northern Tanzania.
Ngarenanyuki Vegetable Growers. July 20, 2009. Farmers cooperative growing vegetables in northern Tanzania.
Simeoni, Jon. Director of outgrower programs, Homegrown. August 4, 2009 and January 7, 2010. Jon oversees Homegrown's work with outgrowers in both Kenya and Tanzania.