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UNITED STATES OF AMERICA



# Tanzania Growth Diagnostic

Partnership for Growth  
(2011)

**A Joint Analysis for the Governments of the United  
Republic of Tanzania and the United States of America**



*We have a long and difficult way to go before achieving the kind of development that we desire. It is important that we give due attention to the question of promoting economic growth in our countries and bringing about development to our people.*

- **President Jakaya Mrisho Kikwete, Address to the African Union, February 3, 2009**

*To unleash transformational change, we're putting a new emphasis on the most powerful force the world has ever known for eradicating poverty and creating opportunity...The force I'm speaking about is broad-based economic growth.*

- **President Barack Obama, September 22, 2010**

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## Acronyms

AADT	Annual Average Daily Traffic
AgCLIR	Agricultural Commercial, Legal, and Institutional Reform
AICD	Africa Infrastructure Country Diagnostic
ARIPO	African Regional Intellectual Property Organization
ASF	African Swine Fever
BCF	Billion Cubic Feet
BEMP	Basic Education Master Plan
BEST	Business Environment Strengthening for Tanzania
BFI	Business Freedom Index
BOT	Bank of Tanzania
BRELA	Business Registrations and Licensing Agency
BSE	Mad Cow Disease
CBPP	Contagious Bovine Pleuropneumonia
CCPP	Contagious Caprine Pleuropneumonia
CCRO	Certificate of Customary Occupancy
COMESA	Common Market for Eastern and Southern Africa
CRDB	Cooperative Rural Development Bank
EAC	East African Community
EPZ	Export Processing Zone
EPZA	Export Processing Zone Authority
EU	European Union
EWURA	Energy and Water Regulatory Authority
EXPY	Index of export sophistication relative to national income
EXZ	Export Processing Zones
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FMD	Foot and Mouth Disease
GCS	Global Competitiveness Survey
GDP	Gross Domestic Product
IEA	International Energy Agency
GFCF	Gross Fixed Capital Formation
GOT	Government of the United Republic of Tanzania
HBS	Household Budget Survey
HIPC	Heavily Indebted Poor Countries
HPAI	Highly Pathogenic Avian Influenza
HRV	Hausmann, Rodrik, Velasco (see References)
ICF	Investment Climate Facility
ICT	Information and Communications Technology
IFEM	Inter-Bank Foreign Exchange Market
IFMS	Integrated Financial Management System
ILD	Institute for Liberty and Democracy
ILFS	Integrated Labour Force Survey

IPP	Independent Power Producers
IPR	Intellectual Property Rights
IPTL	Independent Power Tanzania Ltd
ITN	Insecticide Treated Net
LA	Land Act
LIC	Low Income Country
LMIC	Low Middle Income Countries
LSD	Lumpy Skins Disease
LTD	Large Taxpayers Department
MAFSC	Ministry of Agriculture, Food Security, and Cooperative
MCC	Millennium Challenge Corporation
MDRI	Multilateral Debt Relief Initiative
MEM	Ministry of Energy and Minerals
MFI	Microfinance Institution
MOW	Ministry of Works
MOWI	Ministry of Water and Irrigation
MTEF	Medium Term Expenditure Framework
NBC	National Bank of Commerce
NBS	National Bureau of Statistics
ND	Newcastle Disease
NHC	National Housing Corporation
NIC	National Insurance Corporation
NIMP	National Irrigation Master Plan
NMB	National Micro Finance Bank
NPF	National Provident Fund
NTB	Non-Tariff Barriers
OLS	Ordinary Least Squares
PER	Public Expenditure Review
PPF	Parastatal Provident Fund
PFG	Partnership for Growth
PMO	Prime Minister's Office
RER	Real Exchange Rate
REER	Real Effective Exchange Rate
RICA	Rural Investment Climate Assessment
RVF	Rift Valley Fever
SACMEQ	Southern and Eastern African Consortium for Monitoring Educational Quality
SADC	Southern African Development Community
SME	Small or Medium Enterprise
SSA	Sub-Saharan Africa
TANESCO	Tanzania Energy Supply Corporation
T-VET	Technical-vocational education and training
TAD	Trans-boundary Animal Diseases
THB	Tanzania Housing Bank
TIB	Trade Investment Bank
TPB	Tanzania Postal Bank
TRA	Tanzania Revenue Authority
TRC	Tanzania Railway Corporation
TRL	Tanzania Railways

TSH	Tanzanian Shilling
TSIP	Transport Sector Investment Program
TTCL	Tanzania Telecommunications Company
URT	United Republic of Tanzania
USAID	United States Agency for International Development
VAPW	Value Added Per Agricultural Worker
VLA	Village and Land Act
WBDB	World Bank Doing Business
WDI	World Development Indicators
WEF	World Economic Forum
WGI	World Governance Indicators
WNV	West Nile Virus

# 1. Introduction and Main Conclusions

In early 2011, the United States Government chose the United Republic of Tanzania as one of four countries to join its Partnership for Growth.<sup>1</sup> The Partnership for Growth (PFG) is based on the principles set forth by President Obama's Presidential Policy Directive on Global Development of September 2010 and represents an effort to transform the character of the United States' bilateral relationships with a select set of top-performing low-income countries. The goal of this effort is to assist those countries to accelerate and sustain broad-based economic growth, the most proven driver of poverty reduction. It also seeks to transform the bilateral relationships through an emphasis on partnership, country ownership, and joint prioritization. Finally, the PFG initiative was designed to leverage USG engagement for maximum impact and focus on catalytic policy change and institutional reform.

The first step in developing a Joint Country Action Plan (JCAP) for this Partnership is to conduct a "Growth Diagnostic" (also known as "Constraints Analysis"). To implement the Growth Diagnostic, in March 2011 the United Republic of Tanzania (GOT) and the United States Government (USG) established a joint team of 20 Tanzanian technical experts and four USG economists to identify the two or three most binding constraints to broad-based economic growth in Tanzania.

The Growth Diagnostic methodology was proposed in a 2005 working paper by Ricardo Hausmann, Dani Rodrik, and Andrés Velasco (HRV) to identify those constraints to growth which, when loosened, would contribute the most to accelerating broad-based economic growth. Whereas a country like Tanzania faces many economic and development challenges, clearly not all such challenges are equally restrictive to growth. Reform and investment efforts are limited by capacity, commitment, and other resources. Moreover, it is not possible to quantify all of the dynamic and indirect effects of loosening a given constraint. Therefore, as HRV assert, a growth strategy focused on alleviating those constraints which are most binding would in principle have the greatest impact on private sector investment and productivity. The purpose of a growth diagnostic is not to identify all of the economic, social, and institutional problems that a country faces in achieving its development goals. Nonetheless, the policy implications are highly relevant to a development strategy that places economic growth at its core.

The HRV approach is to use indicators, data, and other contextual information and analysis to establish whether the 'market' for the factor in question is primarily supply constrained or demand constrained; and, if supply constrained, to assess the likely magnitude of that constraint given the economy's structure and trends.

Hausmann, Klinger, and Bailey (2008) suggest four tests for the presence of symptoms of a binding constraint. Whether or not these may be conducted would depend on the growth factor being assessed and the data available. Nonetheless, as a way of sifting through the evidence, one should judge the constraint in question more binding if:

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<sup>1</sup>The other three countries are Ghana, El Salvador, and The Philippines.

- (1) The shadow price of the constrained factor is high;<sup>2</sup>
- (2) The availability of a constrained factor is correlated with investment or growth;
- (3) Economic agents are incurring high costs to circumvent the constraint; and
- (4) Firms which would rely heavily on the factor are not observed in the economy.

To assess whether a factor is scarce often requires that a comparison or benchmarking exercise be done against other countries. To be informative, the comparison countries should be somewhat similar in geography and income levels and, in the case of Tanzania, should be either among the more market-oriented countries or those with successful recent growth histories. The USG-GOT team selected as a core set of comparison countries Ghana, Kenya, Mozambique, and Uganda, in addition to all developing Sub-Saharan African countries and Low Income countries, as available. Mauritius and various East Asian Tigers and, in some cases, low-middle income countries were also sometimes used as 'goal' benchmarks. Depending on the topic, other countries may have been deemed appropriate comparisons as well.

HRV present the framework for the growth diagnostic analysis as a 'tree,' as shown in slightly amended form from HRV (2005), in Figure 1.1. This framework allows for a sequential approach to analyzing which branches are major drivers of investment and growth and for the elimination of parts of the tree at higher nodes, before focusing on the details within a given box of issues. Problems and constraints at the individual firm level can be found in almost all areas on the tree and will differ by sector. However, these problems and constraints must be seen with a view of the broader forces impacting private sector investment and productivity growth.

The USG-GOT team divided the tree into the topics represented in the boxes shown, with groups of analysts first collecting and analyzing data to permit a sequential approach to the final diagnosis. Building on the data analysis performed, the USG-GOT team reached a broad consensus on the three most binding constraints to investment and growth in Tanzania.

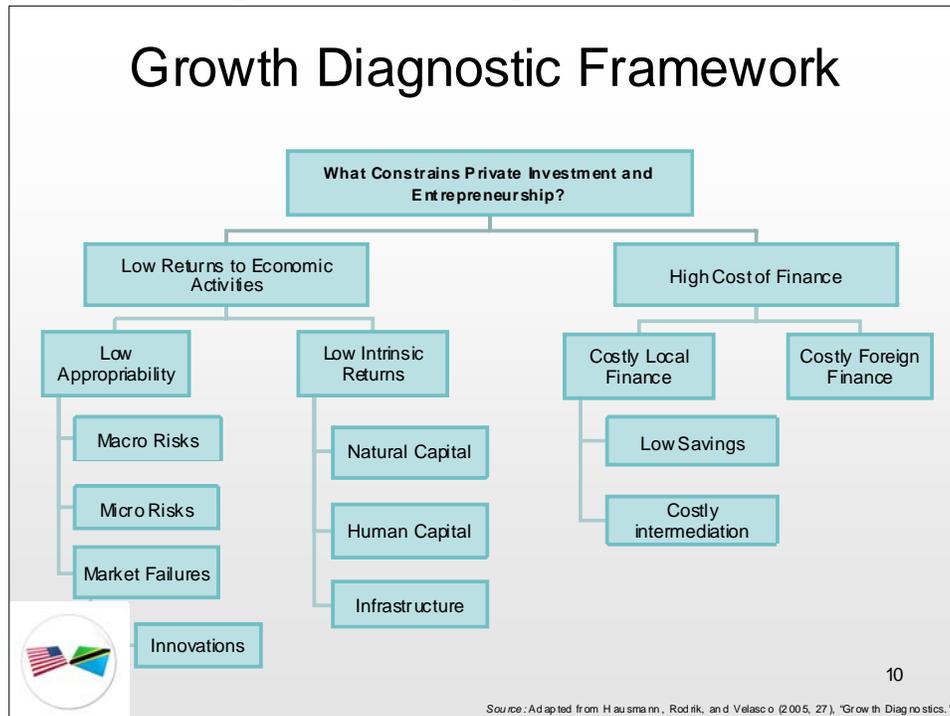
## 1. Lack of key infrastructure:

- In particular a reliable and adequate supply of **electrical power**. The evidence of this as a binding constraint to growth was overwhelming.
- In addition, an inadequate **rural road network** is a binding constraint, particularly for connecting high potential agricultural production areas to markets.

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<sup>2</sup>A shadow price is the marginal value to the entire economy of the opportunity cost of an additional unit of the factor.

Figure 1.1: Growth Diagnostic Framework



## 2. Lack of appropriability of returns:

- In particular, access to secure **land rights** on the part of investors seeking to invest outside the smallholder village-customary system. The ability of an investor to acquire sufficiently secure land use rights is severely constrained in Tanzania, given the high cost and low likelihood of success in entering into a secure land lease contract.

The USG-GOT analysis also identified additional constraints to investment and growth. These constraints are:

- **Lack of other key transport infrastructure**, in particular the poor quality and reliability of rail service and port capacity in Dar es Salaam, largely due to poor infrastructure and related institutional capacities.
- **Lack of vocational, technical, and professional skills** currently demanded in the labor market, largely due to a lack of financing for such training and incomplete implementation of the Government's technical-vocational training strategy.

- **Lack of access to finance**, in particular for micro, small, and medium enterprises and agriculture.
- Relatively **low quality regulation of business and trade**. A broad set of issues in this area appear to weaken access to markets by producers, in particular for exporters, and inhibit greater productivity growth in the economy.

There are some key cross-cutting considerations underlying the constraints, which are: (1) varying quality of regulation as it relates to the binding constraints; (2) incomplete and inconsistent implementation of the Government's reform strategies; and (3) weak institutional and financial arrangements for providing and maintaining the key factors that are lacking. Tackling these issues is more difficult than identifying them and, while the purpose of this report is not to provide detailed policy prescriptions, general policy recommendations will be made in each section of the report.

The rest of the report is structured as follows: Chapter Two begins with the recent historical context and current growth and investment trends in Tanzania as a way to frame the subsequent diagnosis of constraints; Chapters Three through Nine present the results under each topic shown on the analytical tree, with more detailed conclusions and general policy recommendations on many of the major issues identified; Chapter Ten concludes.

## 2. Recent Economic Trends

The United Republic of Tanzania (URT) has registered impressive economic growth over the past decade, averaging approximately 6.8 percent over the most recent five year period (2005-2010). At the same time, accelerating population growth has meant a lower rate of per capita GDP growth, at 3.8 percent per annum. Between 2001 and 2007, the latest year for which there are data, real per capita consumption is estimated to have grown by less than one percent per year. Similarly, the reduction in the measured headcount poverty rate has been a disappointing two percentage points, from approximately 37 percent to 35 percent.<sup>3</sup> Even if these estimates understate the real impact on poverty, as is likely, it is clear that an acceleration of broad based, private-sector driven growth is necessary to achieve more rapid and sustained poverty reduction.

### A. General Trends in and Components of GDP

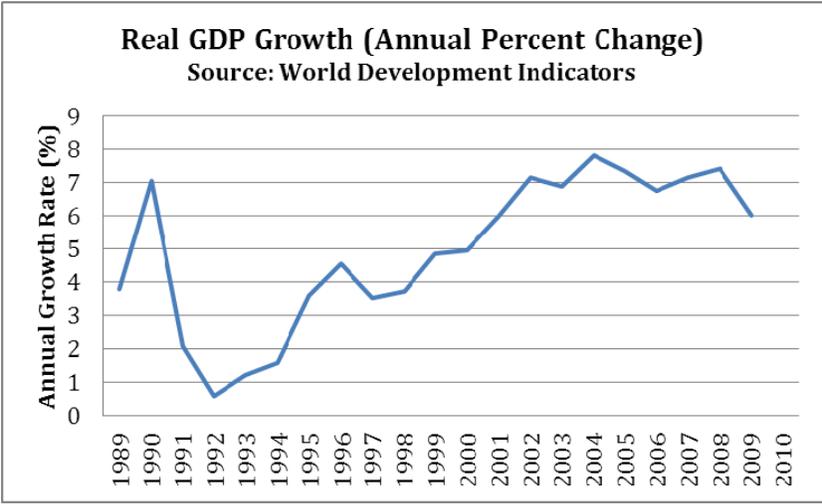
Since its formation in 1964, the URT has undergone roughly three distinct periods with respect to its economic policies and performance. Following the 1967 Arusha Declaration, Tanzania adopted a socialist model involving widespread state ownership and intervention. These policies are cited as the cause of the declines seen in agricultural production and exports, the inefficient management of public enterprises, large budget deficits, and foreign exchange and imports shortages over much of the period. At the same time, between 1970-1980, collapsing commodity prices, the oil price shocks of 1973 and 1979, and war with Uganda in 1979-1980 adversely impacted the economy.<sup>4</sup> From 1986 through 1995, state ownership and government intervention were reduced, and limited market allocation of resources was allowed. The success of these reforms at bringing about robust economic performance was at first modest. However, reforms have subsequently deepened and Tanzania has registered large increases in exports, as well as private and foreign investment and growth (Nord *et al.*, 2009). Tanzania's public finances have also improved, putting it on a more sustainable macroeconomic course. Nonetheless, sustaining high rates of investment and growth has proven a challenge. Growth in the early part of the last decade has been driven in substantial part by public investments, financed in part through donor assistance, and by private investment which has slowed over the past few years, and with it growth. As shown in Figure 2.1, economic growth accelerated from 1992 through 2004, but has decelerated over the past few years.

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<sup>3</sup>Calculated from Household Budget Surveys. It is a large research undertaking to resolve discrepancies in the national accounts and household survey data. This type of discrepancy is not unique to Tanzania, and has been noted and partially explained for many fast-growing developing countries, including India and Mozambique. Further discussion is found later in this chapter.

<sup>4</sup> Tanzania also devoted considerable resources to southern African liberation movements within this period. Despite these factors, Tanzania was able to achieve universal primary education and among the highest literacy rates in Africa at 85 percent.

**Figure 2.1: Real GDP Growth**



An understanding of the underlying structure of growth is important to inform the search for binding constraints. Figure 2.2 shows the trends in real GDP (measured in constant Tanzanian Shillings - Tzs) between 1999 and 2009, disaggregated by primary (agriculture, fishing and forestry), secondary (manufacturing, construction, and refining) and tertiary (services) sectors. Not being a

direct reflection of private sector activity, the government services activity has been separated out from the tertiary category and, with rapid expansion of the gold sector, mining and quarrying is separated from the secondary sector. Figure 2.3 shows that growth in the secondary sector has been well above the overall GDP growth rate. This is an important indicator of economic diversification, especially as it is occurring independently of the mining sector’s expansion. At the same time, there has been a continuous increase in primary sector GDP, *albeit* at a lower rate than that in other sectors. As shown in Figure 2.3, agriculture’s share of GDP has declined from approximately 23 percent to 19 percent, with the share of livestock, forestry, and fishing decreasing from 10 percent to 7.5 percent. While the tertiary sector as a whole has not exhibited particularly high growth rates relative to other sectors of the economy, as illustrated in Figure 2.4, the communications sub-sector has experienced unprecedented and continuously increasing rates of growth, reaching over 20% by 2009.

Also illustrated is the boom in construction over the decade, fueled by foreign assistance and urban development, and the very high real GDP growth rates in the mining and quarrying sector of between 14 percent and 16 percent from 2000 through 2006 (Figure 2.4), due to expansion of the gold sector.<sup>5</sup>

<sup>5</sup> A large inflow of foreign assistance is often associated with a boom in non-tradeables such as construction, which could lead to Dutch Disease effects that would adversely impact export producers and may harm overall growth. However, as of recently, the Tanzanian economy has not exhibited other hallmark symptoms of Dutch Disease, in particular an over-valued Real Effective Exchange Rate.

Figure 2.2: Evolution of GDP in Tanzania<sup>6</sup>

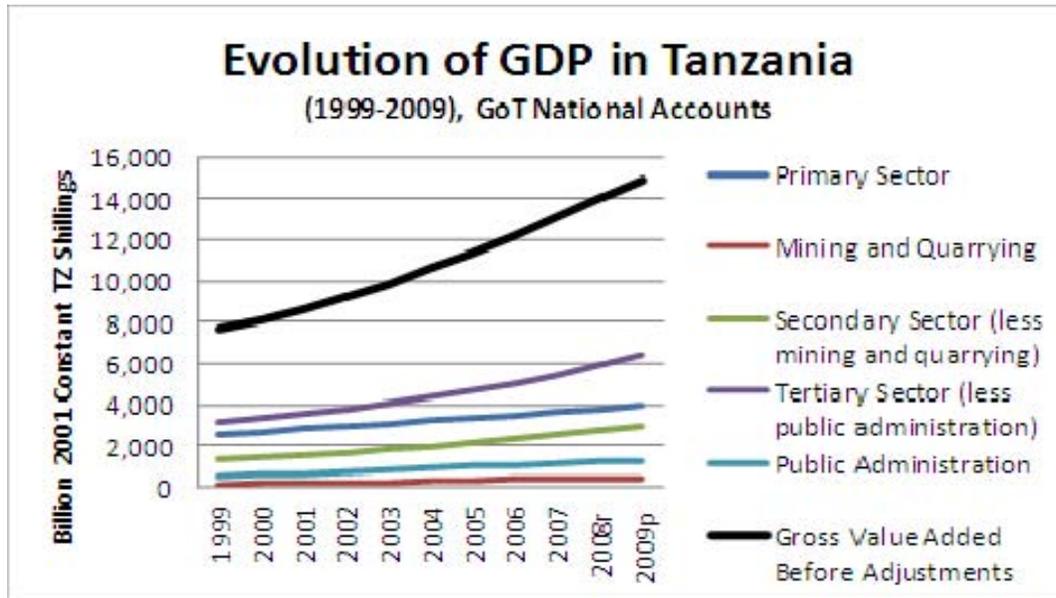
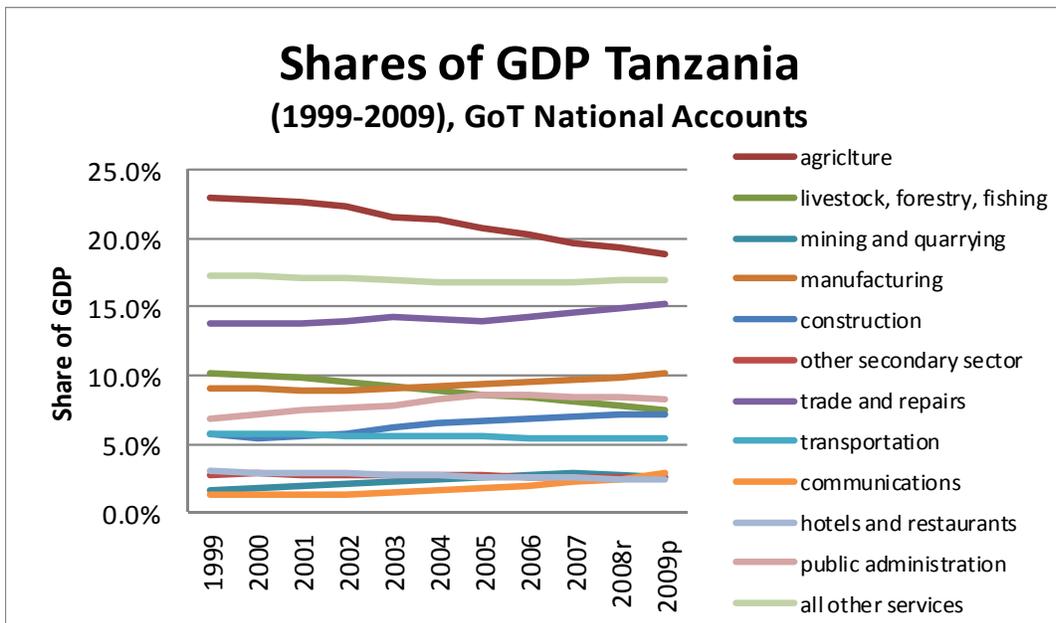
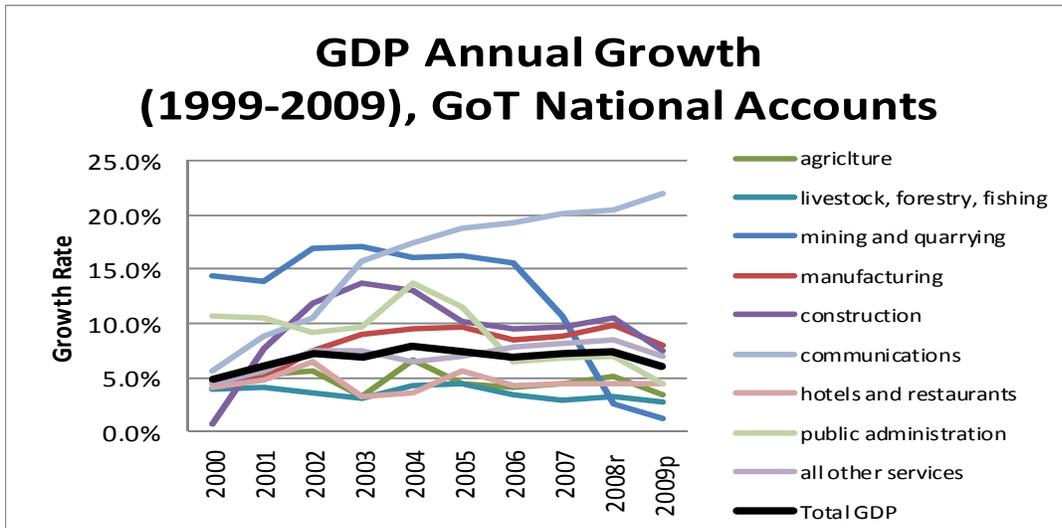


Figure 2.3: Shares of GDP by Sub-Sector



<sup>6</sup> “r” denotes “revised”, “p” denotes projected. All URT national accounts data comes from the most current national accounts publication.

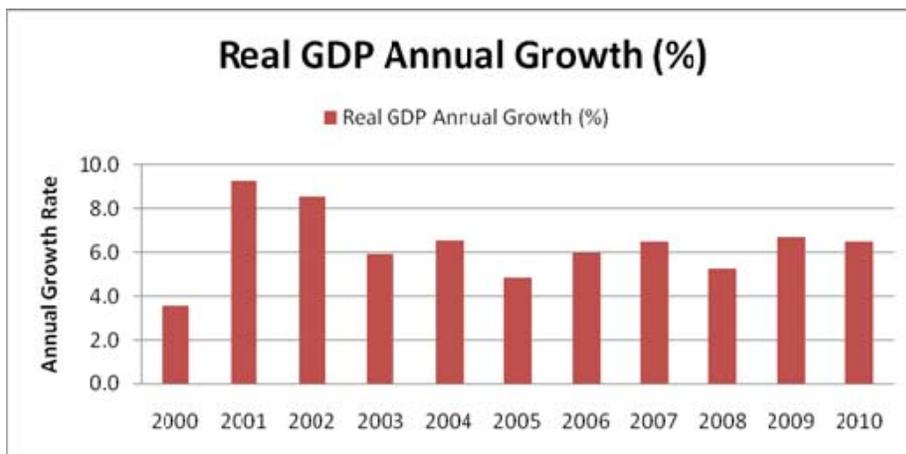
**Figure 2.4: Detailed Sub-Sector Growth Rates**



## B. Trends in GDP – Zanzibar

Zanzibar’s GDP growth rate since 2000 has been somewhat lower than the country’s as a whole. It rose sharply from 3.6 percent in 2000 to 9.3 percent in 2001, before returning to rates in the 5-6 percent range.

**Figure 2.5: Real GDP Growth, Zanzibar**

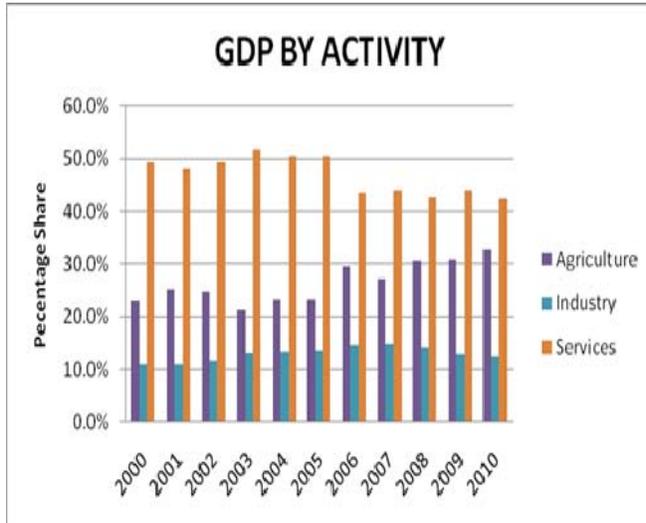


Source: Office of Government Statistician, Socio-Economic Survey 2010

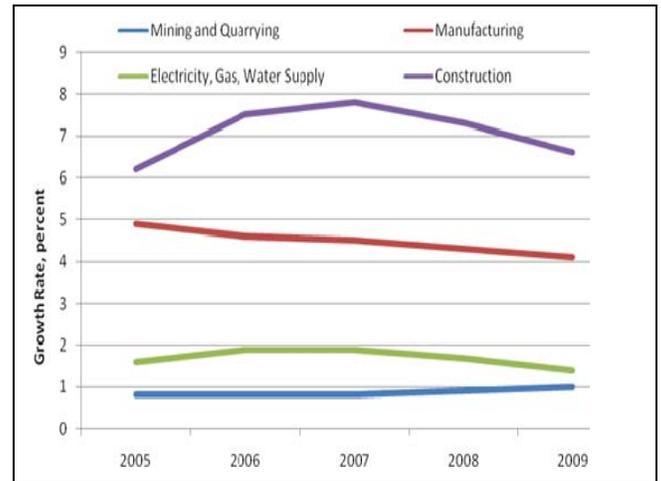
The services sector contributes the largest share to Zanzibar’s total GDP, averaging 44 percent between 2005 and 2009. Although based largely on tourism, between 2005-2009, the strongest growth within the service sector was in transport and communications. Industry’s share of GDP has been relatively low at about 14 percent, while agriculture has contributed 28 percent on

average but on a slight increasing trend. In recent years, construction and manufacturing have seen the most substantial growth within industry.<sup>7</sup>

**Figure 2.6: Zanzibar GDP, by Sector**

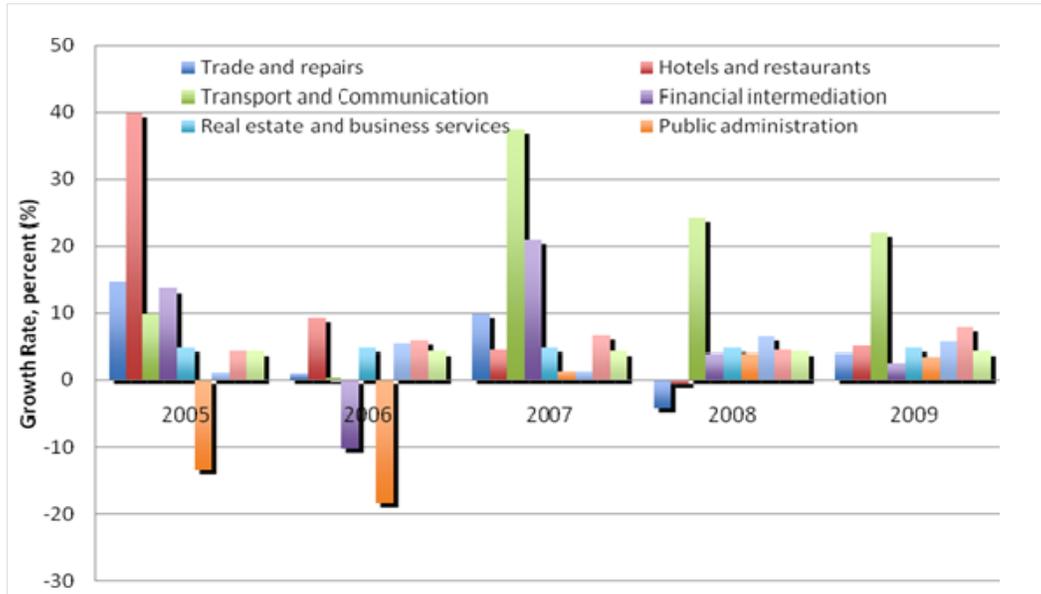


**Figure 2.7: Zanzibar’s Industrial Sub-Sector Growth**



Source: Office of Government Statistician, Socio-Economic Survey 2009

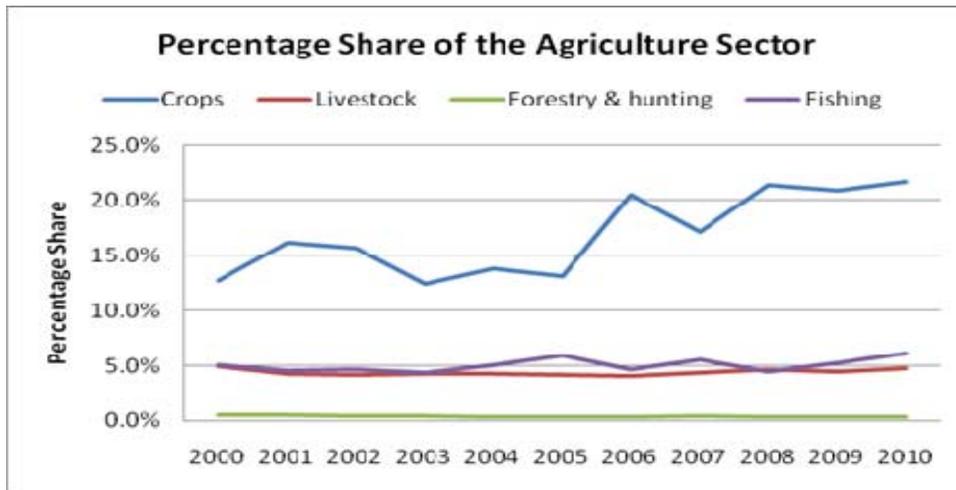
**Figure 2.8: Zanzibar’s Services Sub-Sector Growth**



Source: Office of Government Statistician, Socio-Economic Survey 2009

<sup>7</sup> Zanzibar’s industrial sector is dominated by manufacturing, construction, mining and quarrying, and supply of electricity, gas, and water.

**Figure 2.9: Percentage Share of the Agricultural Sector in Zanzibar's GDP**

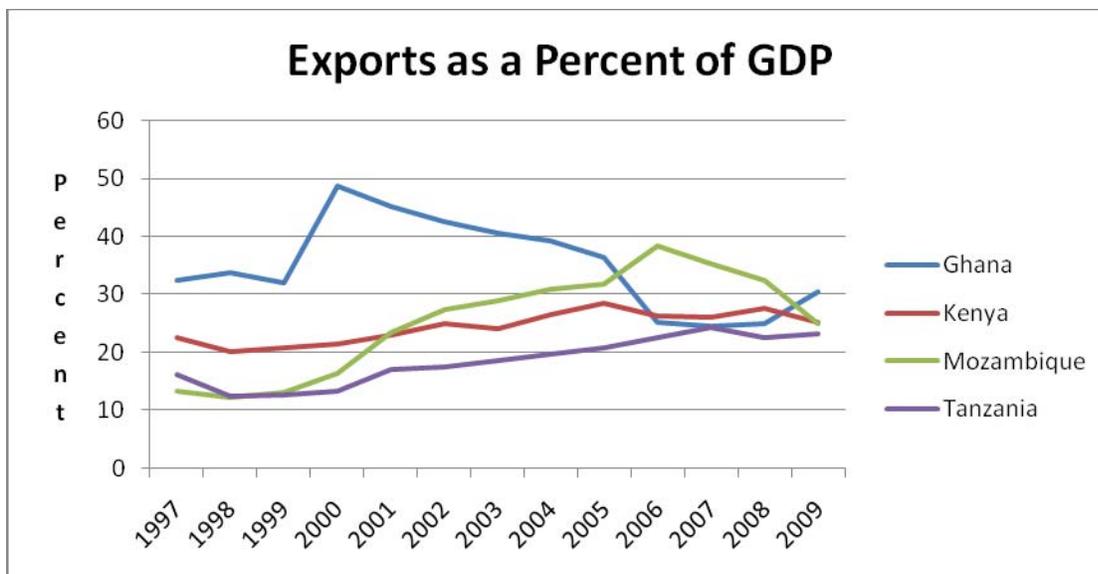


Source: Office of Government Statistician, Socio-Economic Survey 2009; World Development Indicators

### C. Exports and Trade Performance

Exports are a key driver of growth and export performance is an indicator of a country's ability to compete in world markets. After a decline following liberalization of the economy, Tanzania's export performance has grown dramatically, and the real value of goods exported has approximately tripled over the past decade. Nonetheless, exports as a share of GDP, recently at 23 percent, have not kept pace with those of Mozambique, another fast-growing economy in the region, and remains below those of all three comparator economies with access to the sea, as shown in Figure 2.10.

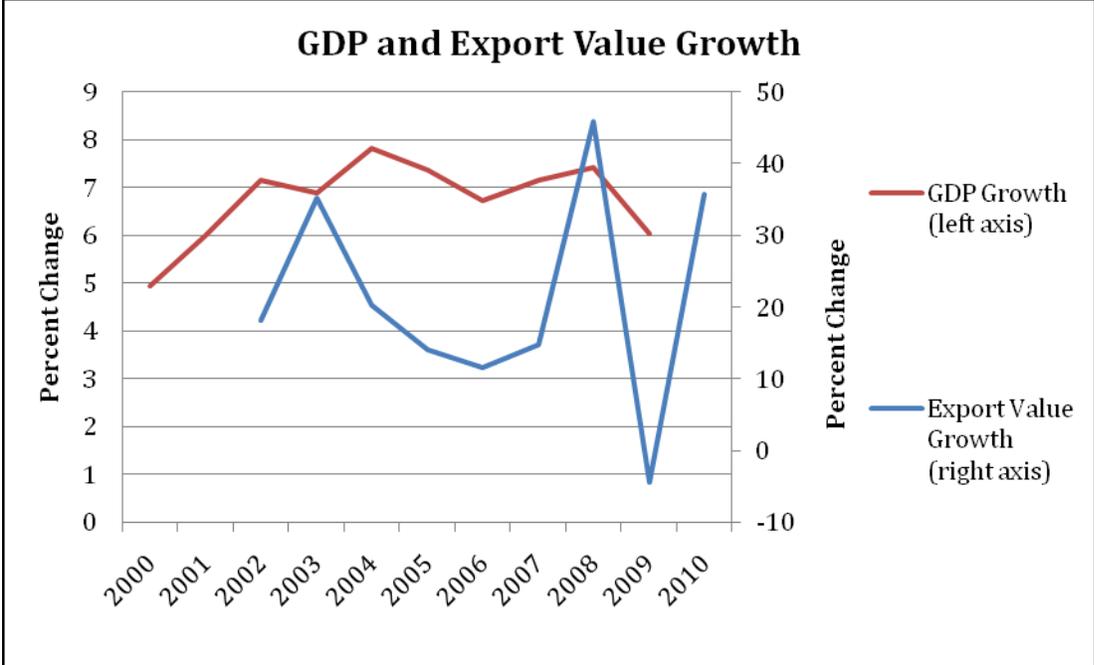
**Figure 2.10: Exports as a Percentage of GDP**



Source: World Development Indicators

Growth in export values are also broadly correlated with year on year GDP growth (Figure 2.11), suggesting that export performance is a key factor for the economy’s growth, whether determined by local factors such as weather, productivity, or by global demand.

**Figure 2.11: GDP and Export Value Growth, Tanzania, 2000-2010**

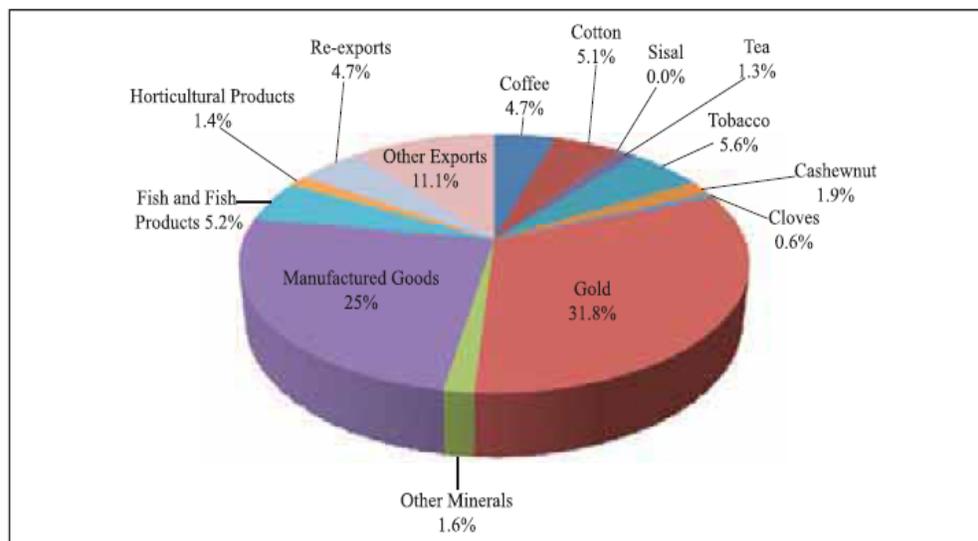


Source: International Trade Centre and World Development Indicators

Tanzania’s composition of exports by value, shown in Figure 2.12, is currently split between primary products at 37 percent of the total, followed by gold at 31.8 percent, and manufacturing at 25 percent. Although the rise of the minerals sector can explain some of the export growth in the early part of the last decade, aggregate growth in exports has been largely driven by growth in exports of manufactured goods, which has grown from 7 percent of total export value in 2004 to 25 percent in 2009. Meanwhile the share of total export value comprised of agriculture has fallen from 66 percent in 1989, of which ‘traditional’ exports have fallen from 20 percent in 2004 to 16 percent in 2008. In addition to Tanzania’s traditional export crops – coffee, tea, cashew, cotton, tobacco, cloves, and sisal, Tanzania’s most important agricultural exports include pyrethrum, maize, wheat, cassava, fruits, vegetables, and livestock.

**Figure 2.12: Contribution of Commodities to Total Exports Earnings (2008/09)**

Chart 4.3: Contribution of Commodities to Total Exports Earnings 2008/09



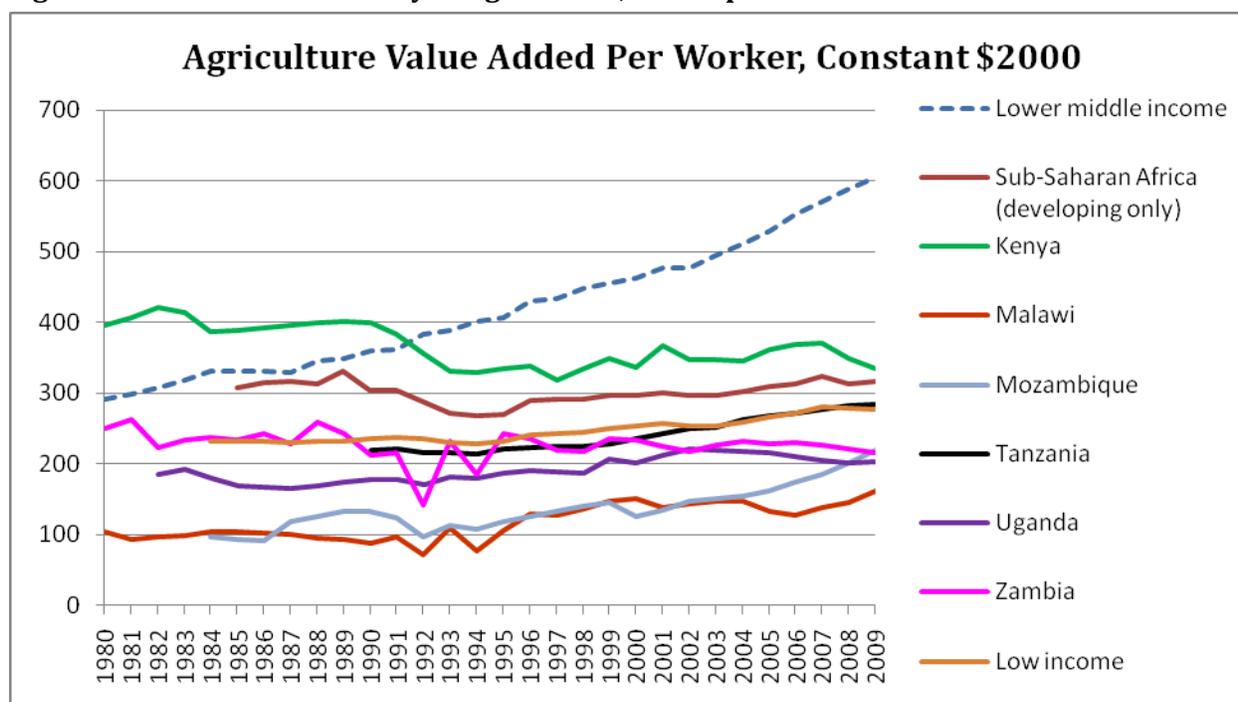
Source: Bank of Tanzania

## D. The Agricultural Sector

Growth of Tanzania's agriculture sector, at approximately four percent per annum, has not kept pace with aggregate growth trends. This is partly the outcome of the normal structural transformation which tends to accompany economic development. Labor has been shifting out of agriculture. A declining share of the working population – currently approximately 75 percent – earns a part of its income in the agricultural sector (USAID, 2010). At the same time, increasing numbers of rural households, most recently estimated at one third, also operate non-farm businesses (ILFS, 2006). Nonetheless, improved productivity of agriculture is an essential element of sustained growth. Improved productivity determines the ability to compete in export markets; the level of food prices for consumers, which is a primary component of inflation; and agricultural incomes, which impact demand for other domestically produced goods and services.

As shown in Figure 2.13, Labor Productivity Growth in Tanzanian Agriculture (Value Added per Agricultural Worker) has caught up with that of other low income countries since 1992, surpassing that of Malawi, Mozambique, Uganda, and Zambia. Nonetheless, it remains lower than that of Sub-Saharan Africa and has not kept pace with that of low-middle income countries.

**Figure 2.13: Labor Productivity of Agriculture, in Comparison**

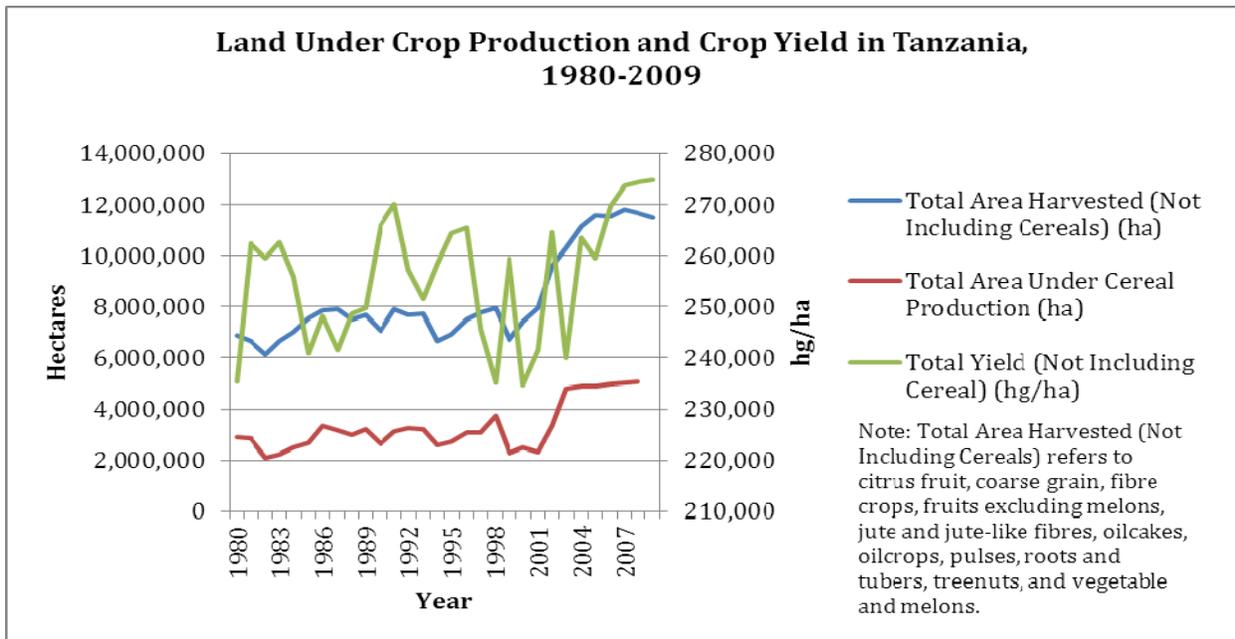


Source: World Development Indicators

Much of this productivity growth has been due to an increase in cultivated land per capita. As one would expect for a relatively land-abundant country, the area under cultivation of both cereals and non-cereals has expanded over the past ten years (see Figure 2.14). As discussed in Chapter Nine, there are limits to expansion into new lands. At the same time, whereas non-cereal yields have increased, cereals yields have largely not improved (see Figure 2.15). Average fertilizer use has remained low relative to Sub-Saharan Africa and low income countries, as shown in Figure 2.16. This suggests that the private return to input intensification for cereals is low relative to the risks and costs, thus discouraging further investment in Tanzanian agriculture. At the same time, there is growing evidence that returns in the region (*i.e.*, Kenya and Malawi) are high for fertilizer use, and that the reason for sub-optimal use may lie in the seasonality of cash flow and fertilizer delivery, and the fact that farmers make input use decisions which are largely determined by today's well-being, without sufficient consideration for next year's income (Duflo, Kremer, and Robinson, 2010).

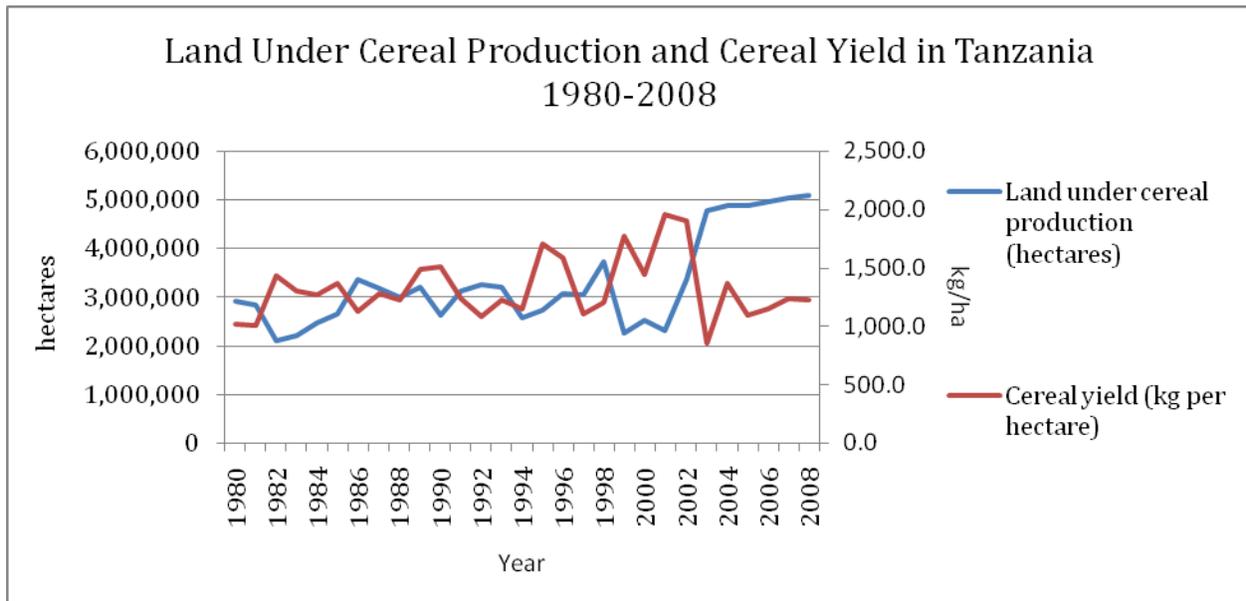
Export crops, including cotton, sugar cane, coffee, and tobacco, have also made up a significant part of agricultural production and have experienced fast growth (nearly ten percent annually) between 2000 and 2007 (Pauw and Thurlow, 2010) in part due to increased world prices for these commodities.

**Figure 2.14: Crop Production and Yield, Tanzania, 1980-2009**



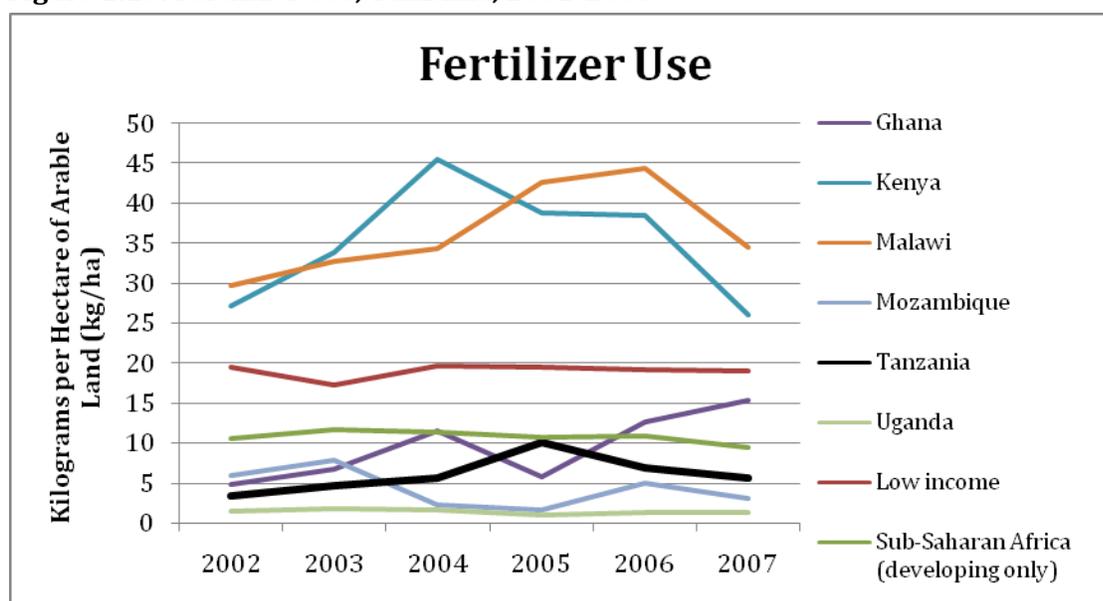
Source: FAO Statistics

**Figure 2.15: Land Under Cereal Production and Cereal Yield**



Source: World Development Indicators

**Figure 2.16: Fertilizer Use, Tanzania, 2002-2007**



Source: FAO Statistics

Tanzania is Sub-Saharan Africa’s third largest producer of livestock, accounting for between 15 and 18 percent of primary sector GDP between 1999 and 2009 (Tanzania National Accounts), and is currently estimated at four percent of GDP. This production is almost entirely by smallholders and semi-nomadic pastoralists, who produce 97-99 percent of Tanzania’s livestock output, 75 percent of which is cattle (USAID, 2010). Yet growth rates in livestock, forestry, and fishing have generally been the lowest of all sub-sectors (Figure 2.4).

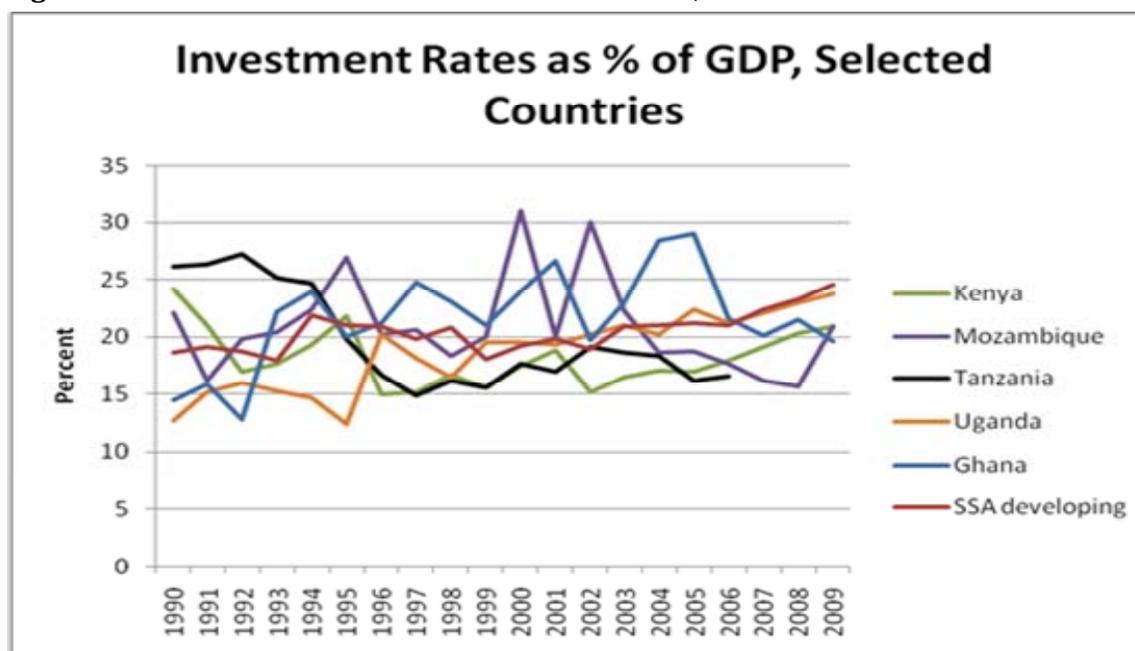
Similar trends prevail in Zanzibar, where crop production has grown in importance over the past decade, while livestock and fishing have held constant. Forestry and hunting have declined and contribute 0.3 percent on average to agricultural GDP.

## E. Investment Performance

Investment performance provides at least two important pieces of information about an economy. Higher private investment rates are a positive reflection of the underlying characteristics of the economy and a predictor of future growth.

As shown in Figure 2.17, since the reforms of the 1990s, investment as a fraction of GDP rose, but began to slow starting in 2003 and was below that of the comparator countries in 2006.

**Figure 2.17: Investment Rates of Selected Countries, 1990-2009**



Series: Gross capital formation (% of GDP)

Source: World Bank, World Development Indicators

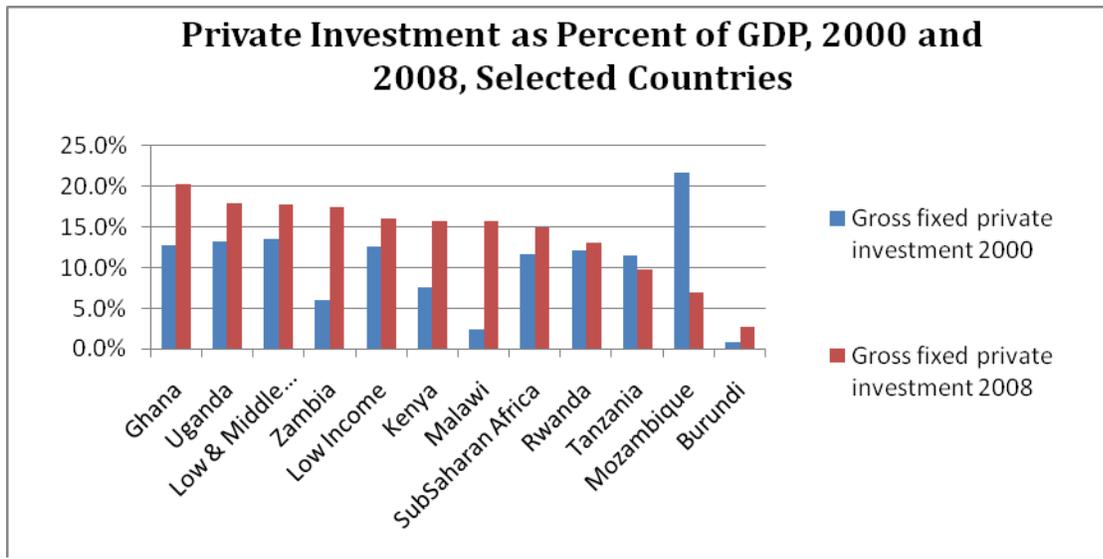
At the same time, the share of total gross fixed capital formation arising from the private sector has risen from 60 percent of the total to approximately 73 percent in recent years. Public investment, largely financed by foreign grants, has comprised at least 20 percent of the total, peaking at 33 percent in 2003 (2009 Statistical Abstract of Tanzania).

The net result of this, as shown in Figure 2.18, is that private investment in Tanzania has fallen as a percent of GDP from 11.4 percent in 2000 to 9.8 percent in 2008, while foreign direct investment (FDI) fell from 5.1 percent to 3.6 percent of GDP.<sup>8</sup> Yet for all comparison countries except Mozambique, as well as low income and Sub-Saharan African countries, private investment rose over this timeframe. In addition, FDI has been consistently low in the agricultural sector at approximately 2-3 percent of GDP, despite large tax incentives offered to agricultural investors.

, which shows the composition of investments over time, similarly shows a very low investment rate in agriculture, but also in real estate, finance, and business services, and a high and growing share of investment in construction.

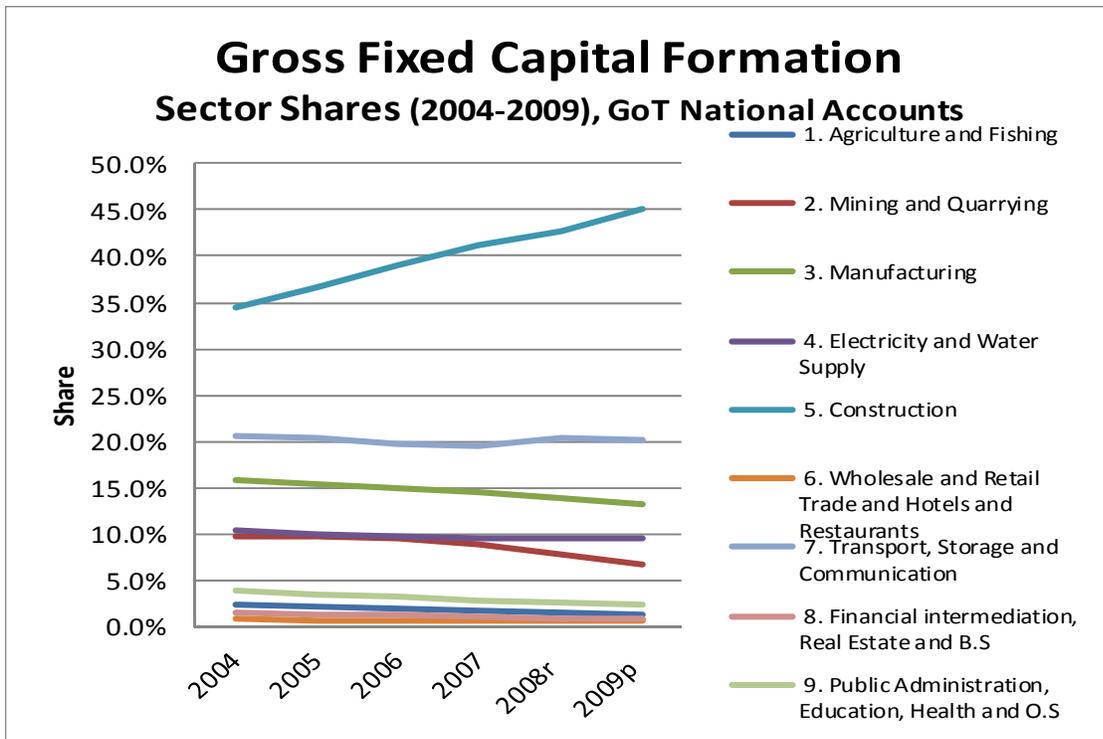
<sup>8</sup> This is not due to an investment spike in mining in 2000, as such spikes occurred in 1999 and again in 2002. The year 2005 represented a peak in FDI across the non-mining economy: All sectors other than mining, agriculture, and construction exhibited relatively high levels of FDI that year, which have since dropped (National Accounts (not shown)).

**Figure 2.18: Private Investment Rates, Selected Countries**



Source: Little Data Book on Private Sector Development (World Bank 2010).

**Figure 2.19: Investment Rates by Sector (Detailed), 2004-2009**



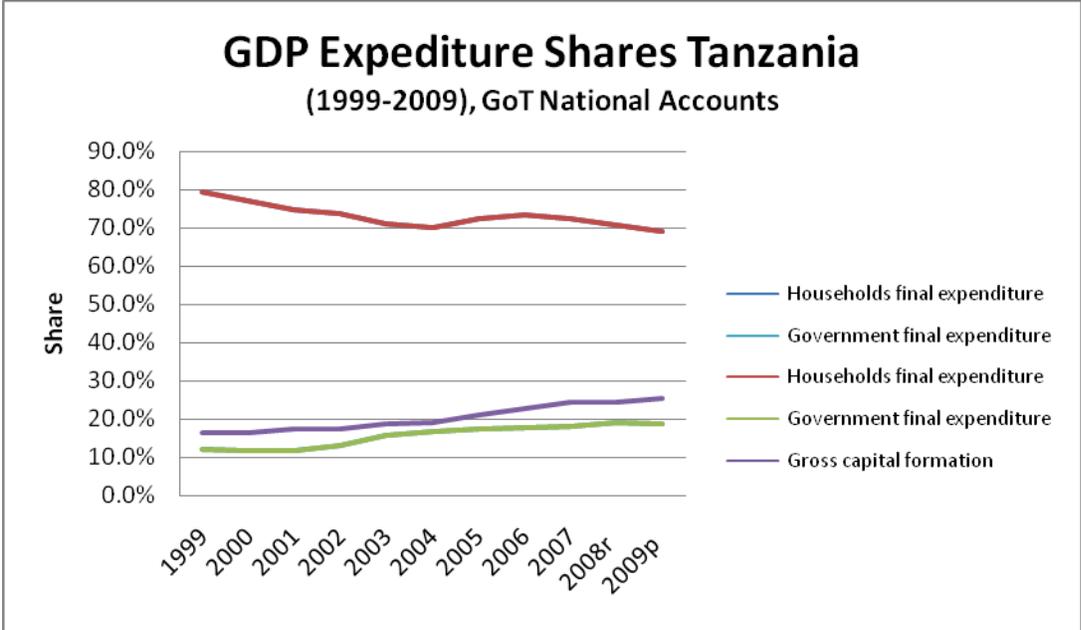
Source: 2009 Statistical Abstract of Tanzania

## F. Government Expenditure and Foreign Assistance

An examination of the expenditure shares of GDP, as shown in Figure 2.20, reveals a rising share of government expenditure over the past decade, to a substantial degree financed by inflows of

foreign assistance. Much of this has been directed at economic growth, and human development.<sup>9</sup> Overseas development assistance as a percentage of GDP peaked at 26 percent of GDP in 1992 and subsequently declined over the 1990s and begin rising again to reach 15 percent in 2008. This pattern of aid receipts is similar to that of other developing countries, although since 2005 Tanzania has received a relatively higher amount (see Nord et al. 2008).

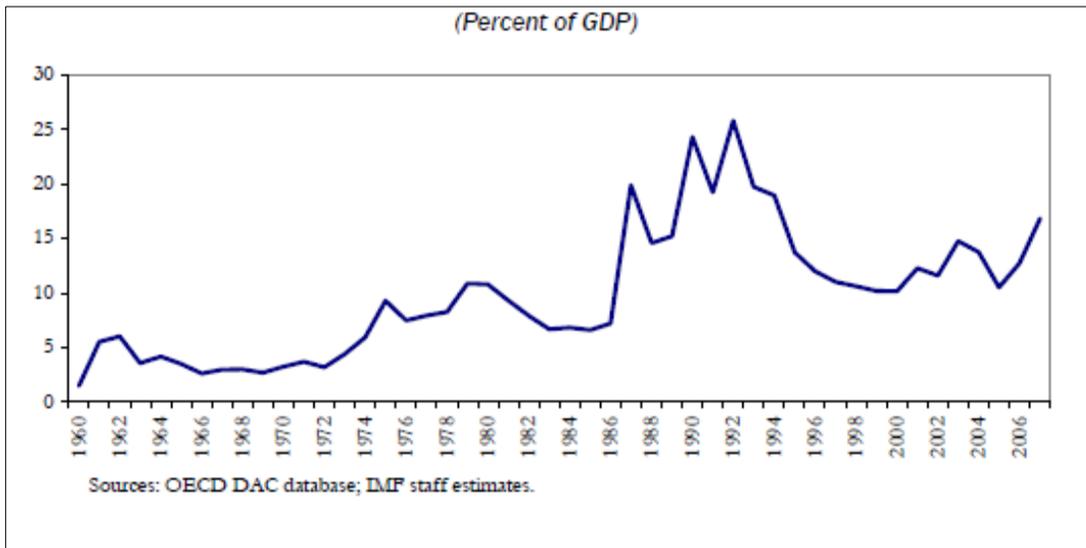
**Figure 2.20: GDP Expenditures Shares 1999-2009**



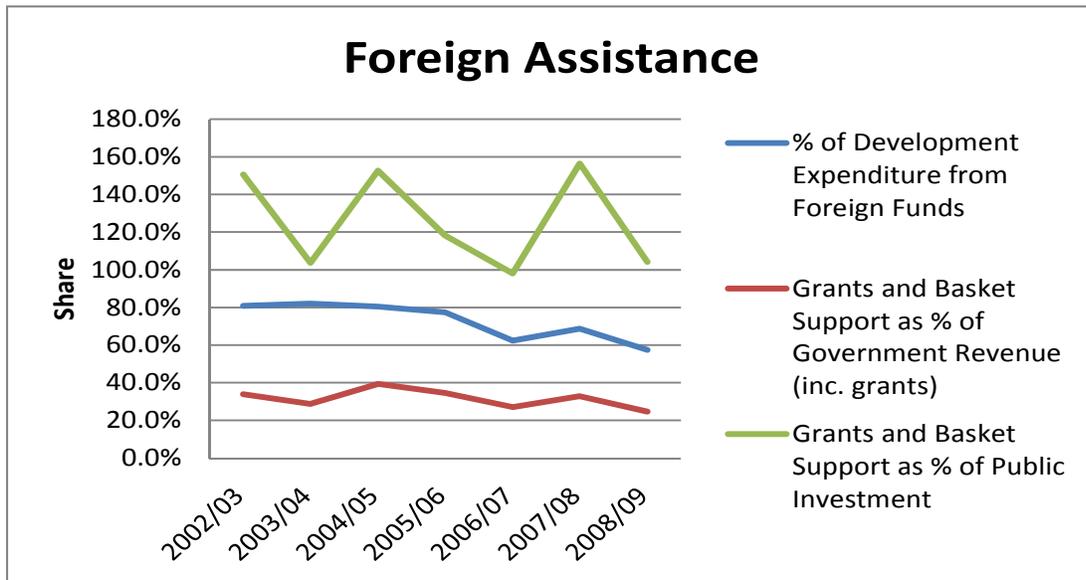
As shown in Figure 2.22, grants and basket support comprised as high as 40 percent of public revenue in 2004/2005, although the share of grant support has since declined to reach 25 percent by 2009, and have financed over 100 percent of public investment. The composition of foreign assistance has evolved from primarily project support towards an increasing share comprised of budget support. Since 2002 at least 50 percent of all foreign assistance has been in the form of general budget support, up from 30 percent in 1997. Debt service relief under the IMF Highly Indebted Poor Country (HIPC) debt initiative and the Multilateral Debt Relief Initiative (MDRI) has increased to between 5 and 11 percent in recent years.

<sup>9</sup>Major donors include the World Bank, the United States, the United Kingdom, the African Development Bank, the European Union, the International Monetary Fund, the Global Fund, Norway, Denmark, and Sweden. The World Bank currently operates more than \$2.6 billion of projects in Tanzania, with a focus on transport and urban development as well as a Poverty Reduction Support Credit which provides budget support. The United States Department of State and the United States Agency for International Development (USAID) have, in the past six years, delivered more than \$2.3 billion in foreign assistance. More than \$1.9 billion has been within the health sector including programs to target diseases like AIDS and malaria. A \$698 million Millennium Challenge Corporation compact with Tanzania is supporting investments in water, electricity, and rural roads systems on the mainland and in Zanzibar.

**Figure 2.21: Development Assistance as a Percent of GDP, 1970-2006**



**Figure 2.22: Foreign Assistance as Share of Government Budget and Public Investment**



## G. Growth in Household Incomes

According to recent estimates using household budget surveys, the relatively high rates of growth recorded over the past decade have not translated to similarly high increases in incomes for the Tanzanian population, in particular for the poor. Estimates of real GDP growth from the national accounts do not correspond with real consumption increases found in the 2007 Household Budget Survey (HBS), and many are concerned that growth has not been sufficiently broad-based. Hoogeveen and Ruhinduka (2009) argue that, other than the poorest and wealthiest income deciles,

Tanzanian households benefited minimally but equitably from aggregate growth, as shown in Table 2.1.<sup>10</sup>

Table 2.1: Changes in Per Capita Income by Income Quintile, 2001-2007

Table 2.1: Per capita consumption (2001 prices)			
Quintile	Consumption per capita		Percent change
	2001	2007	
Poorest	3,555	3,593	1%
2	5,835	6,005	3%
3	7,799	8,153	5%
4	10,808	11,354	5%
Richest	21,580	23,003	7%
Dar es Salaam	16,877	17,169	2%
Other urban	13,084	13,217	1%
Rural	8,873	9,094	2%
Tanzania Mainland	9,918	10,422	5%

Source: Hoogeveen and Ruhinduka

There are several potential explanations for this disappointing picture, but it is not yet clear which of these are the primary ones. Some growth in GDP represents foreign profits, which would not accrue to domestic households. More importantly, both sources of data probably mis-measure net household income to some extent. Household budget surveys measure current consumption as a proxy for income, without capturing and adjusting income estimates for savings and investment. As shown in Figure 2.20, an increased share of GDP has been devoted to government expenditure, investment and inventories, and the share of final household expenditure in total GDP has declined significantly from approximately 80 to 70 percent over the period. Investments by households, including the poor, in durables, small businesses, and education, for example, appear to have risen. Household surveys also tend to under-sample the richest segment of the economy, and therefore under-estimate mean incomes, as well as inequality. National accounts statistics can also be inaccurate for a variety of reasons, especially when growth accelerates (see, *e.g.*, Deaton and Kozel 2005, and Ravallion 2001). The price deflator used to calculate real consumption can be a misleading estimate of the price level for some segments of the population in either of the two years. Moreover, consumption captured in 2007 may not be representative of the broader trend. The survey year (2007) closely followed a drought year, and one might expect consumption to be lower after a temporary economic downturn. Finally, although some part of the story appears to lie with measurement issues, the growth may not have been sufficiently broad-based or high enough to lift more of the poor out of poverty. The majority of the rural working population earns at least part of its living through the agricultural sector (according to Hoogeveen and Ruhinduka, 70 percent of men in 2009), and in per capita terms agricultural growth has not kept pace with other sectors. Mkenda *et al.* (2010) estimate that the four sectors with the highest growth rates

<sup>10</sup> Since 2001, moreover, ownership of consumer durables, most notably televisions, mosquito nets, radios, and bicycles, has increased (Uwazi and Twaweza, 2010). This may be due to changes in relative prices, rather than a reflection of increased real incomes.

collectively employ less than 10 percent of the labor force.<sup>11</sup> However this question is resolved, the real incomes of many of the poor do appear to have improved, but more modestly than required to reduce poverty at the desired level. Based on the evidence on international growth and poverty reduction, the solution is to adopt policies and make the most critical investments required to accelerate and sustain broad-based growth.

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<sup>11</sup> They cite data from the Integrated Labor Force Survey of 2006 showing that the industry and construction sectors each employ roughly 2.2 percent of the work force while the services sector employs 16 percent. In addition, mining and quarrying employ roughly 1 percent of the work force. The communications sector, having experienced the most pronounced rate of growth in the economy as shown above, employs only 3 percent of the Tanzanian work force.

### 3. Is the Primary Constraint to Growth the Lack of Access to Finance?

#### A. Introduction and Reform History

As shown in the Hausmann, Rodrik and Velasco (2005) Growth Diagnostics ‘tree’ (Figure 1.1), a high cost of finance can present a binding constraint to growth if it prevents a large share of profitable investments from being undertaken. The diagnostic framework requires an answer to the question of whether inadequate investment and growth are due primarily to a high cost of finance or to the lack of private investment opportunities with attractive returns. The analysis presented in this chapter indicates that, while access remains limited for some sectors of the economy, access to finance is not among the most binding constraints to growth. As the rest of the report will demonstrate, low private returns dissuade private investment and reduce broad-based economic growth.

Financial sectors in all countries exhibit market failures and inefficiencies due largely to the inability of lenders to be assured of repayment. A lack of access to external finance will tend to slow firm growth; firms may be forced to make smaller investments and operate at a less efficient scale. Indeed, smaller rural enterprises in Tanzania generate less income per worker in most sectors (World Bank 2007). At the same time, the experience of a constraint at the individual firm level does not necessarily translate to less investment overall; while individual firms cannot expand faster, other firms may be able to do so, with little to no impact on total investment and production levels.<sup>12</sup>

After independence in 1961, the Government of Tanzania undertook efforts to integrate people into the financial system in order to redress the lack of access by the local population to bank credit from under the colonial system. At the time of independence much of bank credit, particularly through the National Bank of Commerce (NBC), was directed to the public sector agencies, including crop marketing and non-marketing parastatal enterprises. The private sector received the residual, and access by small-scale borrowers was minimal. Between 1967 and 1990 financial institutions were mostly state owned and limited in number. The scope for competition was restricted, as state owned banks specialized by sector and role in mobilizing savings. The NBC was the only commercial bank at the time and accounted for over 95 percent of the total domestic deposit base. The Cooperative Rural Development Bank (CRDB) was statutorily prohibited from taking deposits. Other financial institutions specialized in financing medium to long term

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<sup>12</sup>A variety of financial services provided to households and individuals can be important for their welfare – for facilitating payments, providing savings and investment vehicles, dealing with risks and fluctuations in income, and optimizing saving and consumption over the lifecycle. Indeed, according to Finscope (2009), more people save than wish to borrow in Tanzania. Since this report is concerned with the question of whether or not a high cost of finance is a key constraint to economic growth, it does not attempt to describe all features and shortcomings, nor assess all welfare losses, associated with all inefficiencies within the financial sector.

investments in housing, industry and agriculture. Loan advances were priced using regulated interest rates and often guaranteed by the government. In addition, the types of financing provided were mostly short-term, such as overdrafts and rediscounted commercial bills.

The economic liberalization begun in the early 1990s ushered in a new era in the financial sector's development. The Banking and Financial Institutions Act No. 12 of 1991 allowed private banks and other financial intermediaries to operate and compete with the largely state owned institutions and called for a restructuring of the state owned banks including the CRDB, NBC and Tanzania Housing Bank (THB), which were suffering from asset quality problems. Since then, Tanzania's banking system has been expanding steadily. There are now 41 commercial banks, 19 of which are foreign owned;<sup>13</sup> seven small domestic community banks whose operations are restricted to particular geographical areas; and three remaining government-owned financial institutions (Tanzania Postal Bank (TPB), Tanzania Investment Bank (TIB), and Twiga). A few entrants are expected to start operations soon, including EcoBank, a large regional player that has the potential to increase competition in the sector, which tends to enhance access to previously under-served markets.

## **B. Indicators of Supply and Demand for Investment Finance**

Given the achievements Tanzania has attained from reforms thus far, is the lack or cost of finance a binding constraint to growth? In order to assess this question, the next section examines the 'price' of finance, or the interest rate, quantity of supply, and access issues, disaggregating among rural, urban, and small, medium, and large firms.

### **a. Price Indicators**

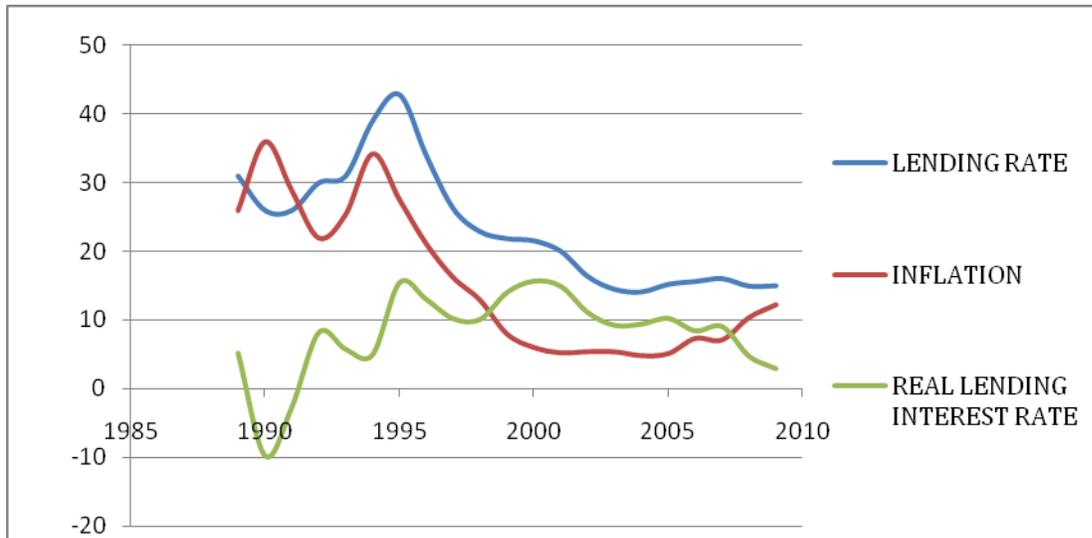
Apart from a few years of negative real interest rates during periods of high inflation, the real lending rate on average has been declining since the mid- 1990s. If one examines the relationship between real lending rates and gross fixed capital formation as a percentage of GDP, taking into account all years for which there are data, one sees a downward sloping curve, as shown in Figure 3.2.

This inverse relationship is consistent with a shifting supply side constraint. When supply increases, interest rates fall, and investment rises. However, this result is being driven by the relatively anomalous periods of negative real interest rates. Further analysis suggests that the degree to which the cost of finance has constrained investment has declined along with positive developments in the financial sector. When earlier years of negative interest rates are excluded, the relationship shifts to a positive sloping one, as shown in Figure 3.3. In most recent years, the market price and volume of lending have been determined primarily by demand-side shifts; supply is no longer the primary determinant of market outcomes. At the same time, as the sector has developed, banks have become more efficient and able to reduce lending margins, as shown in Figure 3.4.

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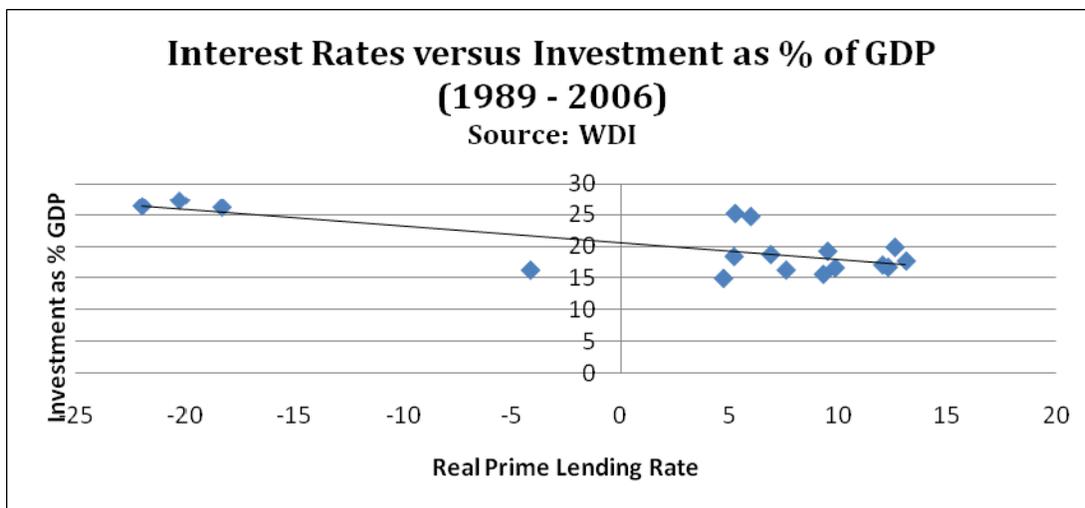
<sup>13</sup>Foreign banks have ownership stakes in two (NMB (Rabobank) and NBC (ABSA)).

**Figure 3.1: Lending and Inflation Rates, 1989 – 2009**



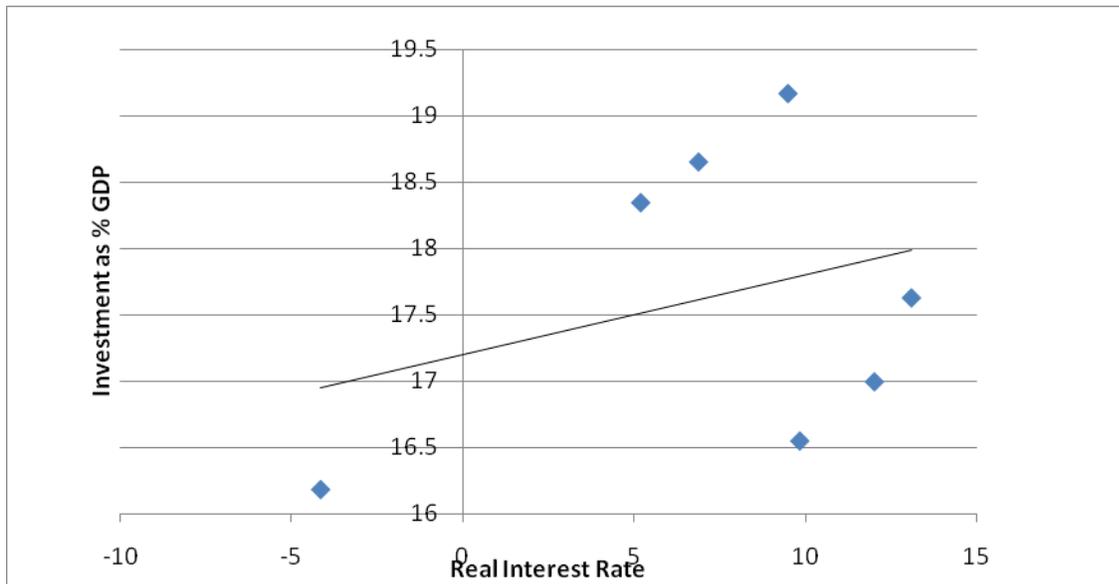
Source: World Development Indicators (WDI)

**Figure 3.2: Interest Rates versus Investment as a Percentage of GDP, 1989-2006**



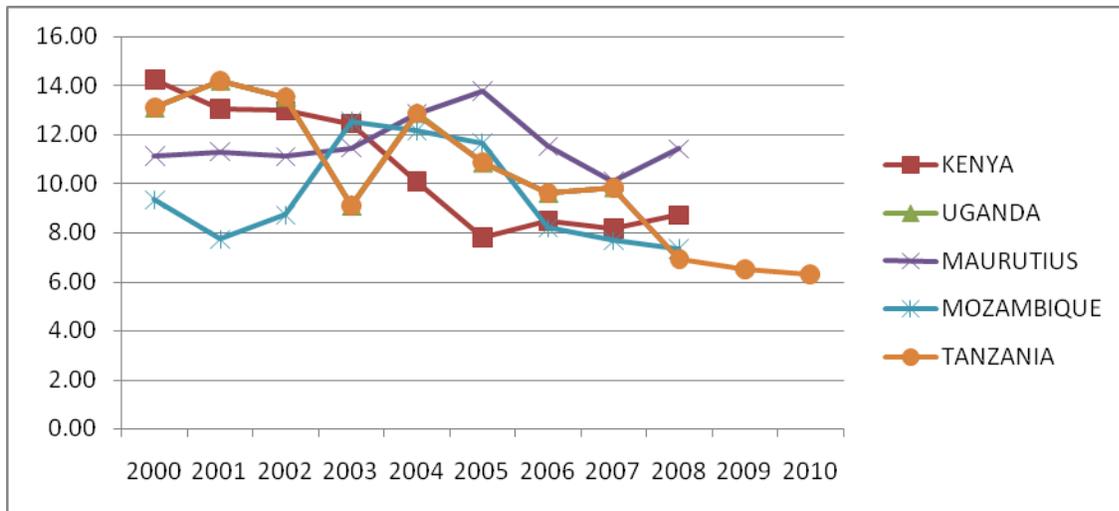
Bank margins (lending rate minus deposit rate) have narrowed significantly on an absolute basis, from 14.19 percent in 2000 to 6.3 percent in 2010, and relative to the benchmark countries used here -- Mauritius 11 percent, Uganda 9 percent, Kenya 8.5 percent, and Mozambique 7.3 percent. This margin remains wide by global banking standards, but higher risk spreads are typical for Sub-Saharan Africa.

**Figure 3.3: Correlation between Real Interest Rates and Investment Rate, 2000-2006**



Source: WDI

**Figure 3.4: Bank Margins (Percent), Tanzania and Selected Countries**



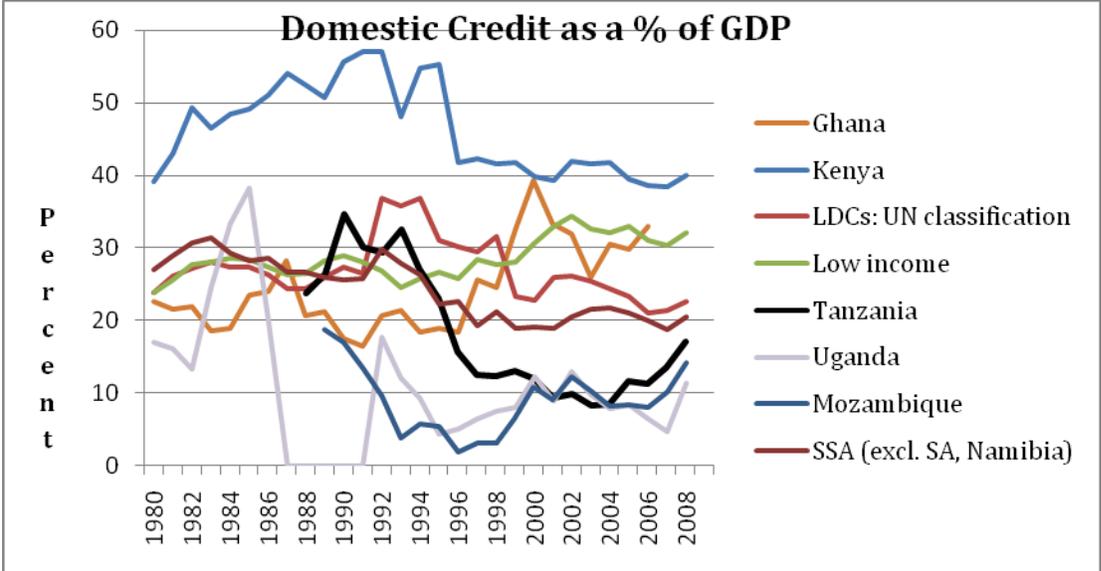
Sources: World Development Indicators and Bank of Tanzania

### b. Quantity/Access Indicators

Interest rates in the formal financial sector are only indicative of the price for those able to access bank loans. However, access to the formal financial sector may be severely limited. While semi-formal or informal sources of financing may be available, informal credit markets are segmented from the formal financial sector, and these sources of credit often entail a higher cost. Therefore, it is equally important to examine indicators of access to finance both within and outside the formal financial sector.

As shown in Figure 3.5, domestic credit contracted as a result of reforms in the 1990s, but began to expand as a percentage of GDP beginning in 2002. Despite this, as of 2008 Tanzania still ranked low relative to benchmark countries in terms of domestic credit as a percent of GDP. While showing a higher availability of credit in the economy than in Mozambique and Uganda, Tanzania’s financial sector lags behind that of Ghana, Kenya, Sub-Saharan Africa and low income countries as a whole.<sup>14</sup> Whereas the level of domestic credit as a fraction of GDP remains relatively low, Tanzania’s investment rate as a percentage of GDP has also been on average lower than in comparison countries, as previously illustrated in Chapter 2 (Figure 2.17). Similarly, as a percentage of GDP, lending to the private sector is on par with that of Mozambique and Uganda, but lower than that of Ghana, Kenya, and Sub-Saharan Africa (see Figure 3.7).

**Figure 3.5: Domestic Credit as a Percentage of GDP**



Source: World Bank/IMF

In 2006 relatively few Tanzanian firms reported using external financing for investment (World Bank Enterprise Surveys). Tanzania ranks at the bottom of comparison countries in this indicator, as shown in Figure 3.6. However, a substantially higher percentage used banks to finance their operations.

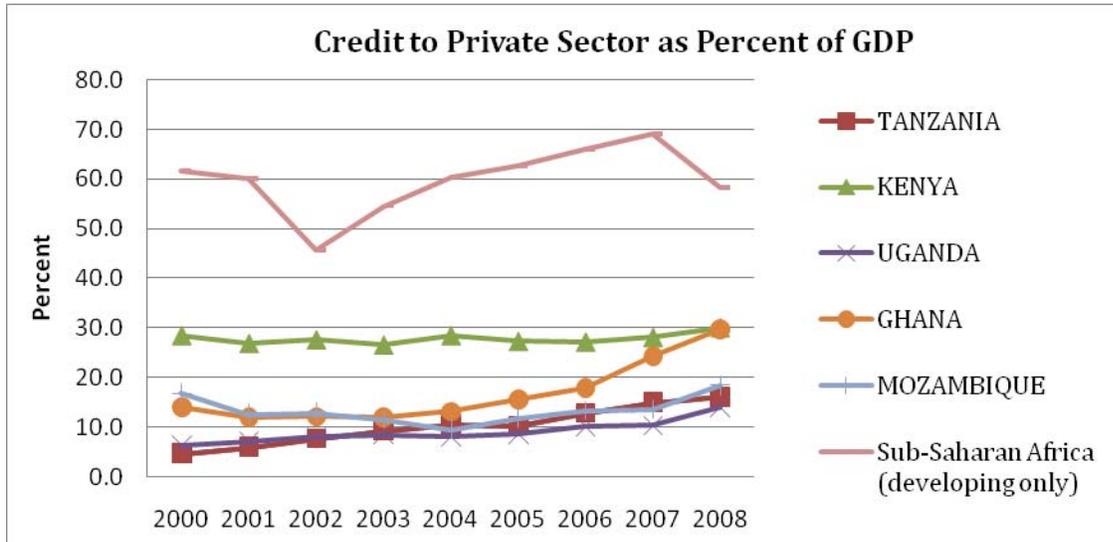
As in most developing countries, credit to agriculture in Tanzania is low relative to its share of the economy due to the greater risks involved, including weather, pests, and the difficulty of obtaining sufficient collateral. As shown in Figure 3.9, lending to agriculture as a percentage of total lending in Tanzania has nonetheless increased since 2000, although it has leveled out at an average of 9.9 percent (1990-2009) of total lending and 19 percent of lending to the private sector. As shown in Figure 3.9 personal finance represents a substantial share of total lending. Manufacturing receives substantial shares of bank lending, *albeit* – as with agriculture – less than its share of GDP.<sup>15</sup> At the

<sup>14</sup>In addition, given their relative lack of experience and small balance sheets, Tanzanian banks have not been able to compete with foreign institutions in some key sectors, such as mining. However, the opening of the sector to foreign institutions has greatly alleviated this constraint.

<sup>15</sup> The full shares by sector are shown in the Data Appendix for this chapter.

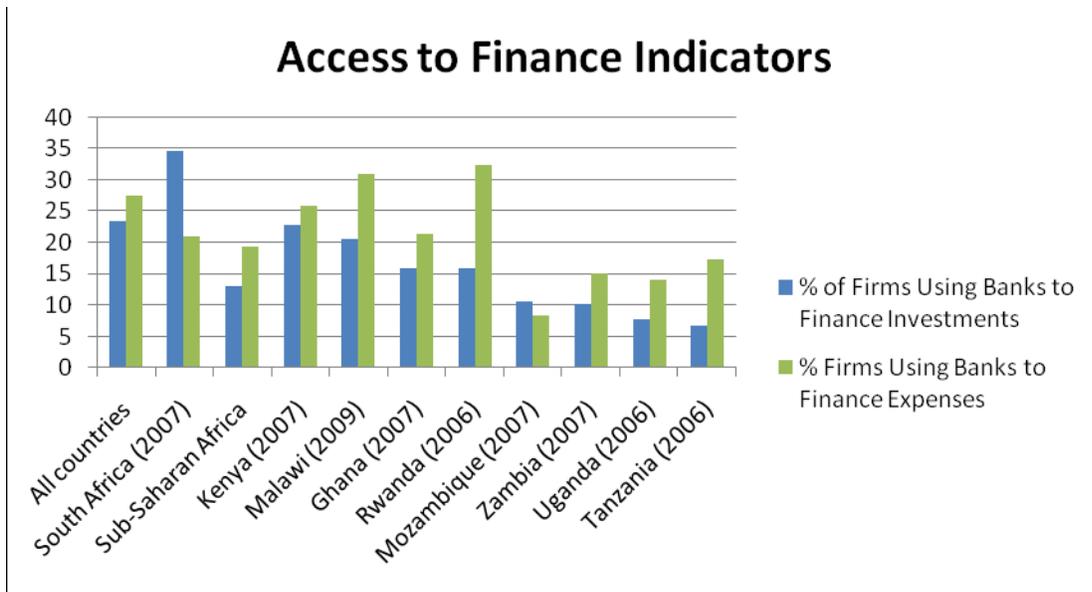
same time, given the slow growth of agriculture, total lending to agriculture as a percentage of agricultural GDP has risen with the expansion of the financial sector. In the most recent years for which there are data, lending to agriculture expanded from 54 million USD in 2006/2007 to 94 million USD in 2008/2009, an increase of 73 percent over a two year period (Bank of Tanzania).

**Figure 3.6: Private Sector Domestic Credit/GDP**



Source: World Bank/IMF

**Figure 3.7: Use of Banks by Registered Firms**

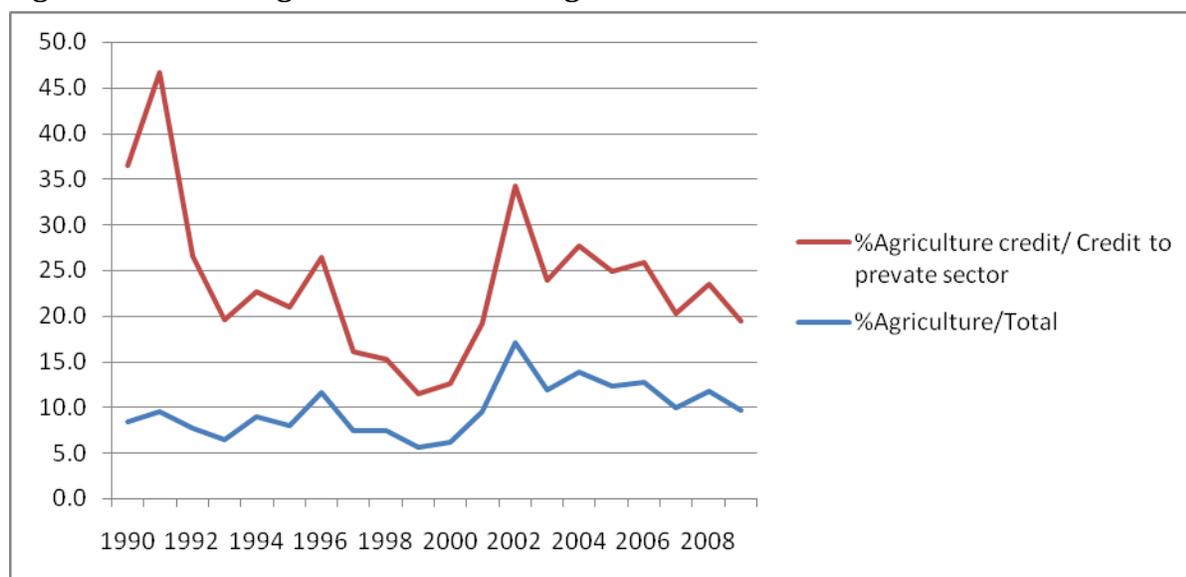


Source: World Bank Enterprise Survey (respective years in parentheses)

Rural access to financial services is generally limited in Tanzania. Banks operate 303 branches and 181 ATMs with a total of 2 million clients. Semi-formal sources of financing are also limited but expanding. As of 2009, there were over 3,577 savings and credit cooperatives (SACCOS) with

approximately 429,240 members (Finscope, 2009). Savings and credit associations (village savings and loan associations) numbered 146 with total membership of 4,197 (70 percent women), whereas micro-finance institutions were estimated to have only 220,000 active borrowers. Physical presence indicators (shown in the Data Appendix for this chapter) reveal that, in some areas of the country, the nearest branch can be very far. However, physical access did not rank among the top reasons for not accessing banking services (Finscope, 2009).

**Figure 3.8: Percentage of Bank Credit to Agriculture**



Source: Bank of Tanzania

Indicators of whether lack of finance is a severe or major constraint to doing business are available from the 2006 World Bank Enterprise Survey, in which a substantial 40 percent of firms in Tanzania ranked the high cost or lack of access to finance as a major constraint. However, this is a lower share than for other comparison countries, including developing Sub-Saharan Africa as a whole (Table 3.1). Moreover, with credit expansion since 2006, one would expect this situation to have improved.

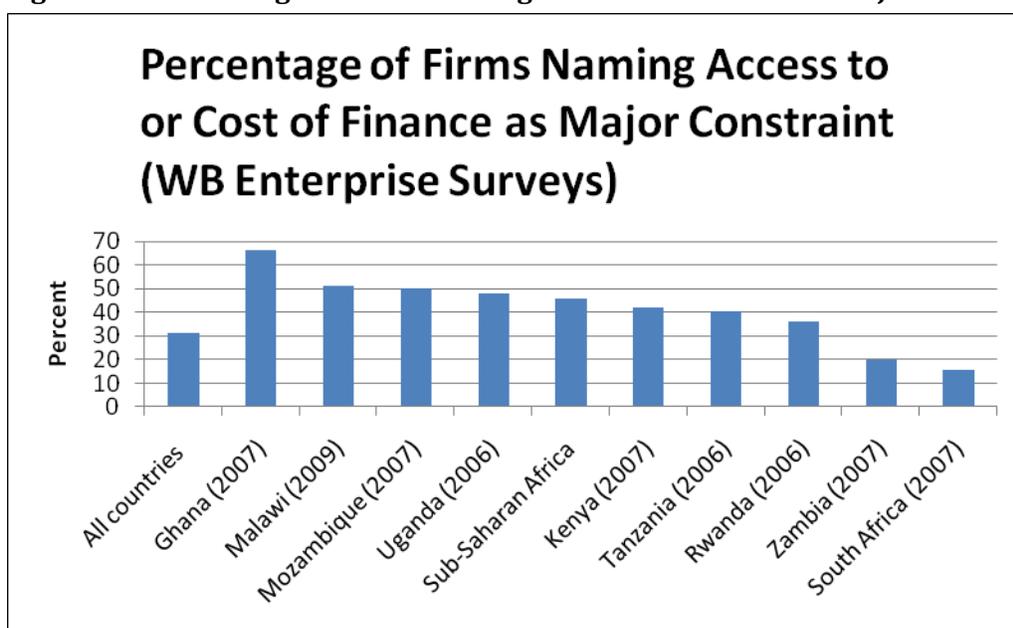
Constrained access appears to be a larger problem for micro and small firms. Table 3.2 below shows responses by size of firm and for domestic versus foreign ownership to questions on the severity of access to finance as a constraint to business. Firms' own assessment of the constraints they face shows that lack of access to finance is not among the top two constraints. Micro and small enterprises in particular reported that accessing finance was a major or severe obstacle, but this was still not one of the top two obstacles to their business. The vast majority of microenterprises did not apply for a loan and, of these, nearly half expressed difficult access as the reason (*i.e.*, 29 percent cited the reason for non-application to be complex approval procedures, and 20 percent said that collateral requirements were unattainable). Only 12 percent cited unfavorable interest

rates, which were higher at the time of the survey than today. Only eight percent reported they had no need for a loan.<sup>16</sup>

**Table 3.1: Sector Shares of Commercial Bank Lending**

Commercial Bank Lending by Sector, Percent of Total Domestic Loans					
	2006	2007	2008	2009	2010
Agriculture	11	10.8	9.6	10.4	10.7
Financial intermediaries	3.8	3.2	2.6	2.2	2.3
Mining and Quarrying	1.5	1.1	1	0.5	0.5
Manufacturing	20.4	18.6	15.1	12.7	13.8
Building and construction	4.2	4.1	3.6	3	3.1
Real estate	2.4	2	2	2.1	2.6
Transport and communication	8.2	8	8.3	8.1	9.4
Trade	22.8	22.2	20	17.2	18.1
Tourism	2.7	1.5	0.6	0.6	0.6
Hotels and Restaurant	3.5	4.1	3.9	4	4.2
Personal (Private)	12.7	15.8	19.9	21.2	21.6
Source: Bank of Tanzania					

**Figure 3.9: Percentage of Firms Naming Access to Finance as a Major Constraint**



<sup>16</sup> The fraction of firms making fixed asset purchases was not particularly high in 2005. Of microenterprises (with less than five employees) surveyed, 37 percent did so (compared to 58 percent for manufacturing enterprises and 46 percent for retail and information technology firms).

This result contrasts somewhat with the result of a 2005 Rural Investment Climate Assessment (RICA) survey, in which firms ranked lack of access to finance as the most severe constraint they faced, followed by access to utilities service and transportation (World Bank 2007). Access in rural areas appeared to be significantly more problematic, at least at that time, due to a lack of geographic penetration by financial institutions and knowledge and experience with banks. Nonetheless, the RICA report also points out that rural enterprise earnings are largely determined by demand – *i.e.*, agricultural earnings in the area – and seasonality. Thus, the degree to which the expansion of finance would enhance broad-based growth without raising agricultural productivity is unclear.

**Table 3.2: Fraction of Enterprises Responding Financial Constraints Are Severe**

<b>Fraction of Sub-Sample Responding as Follows to Severity of Financial Constraints by Size of Firm and Domestic versus Foreign owned (Number of Employees in Parentheses)</b>						
<i>(Source: 2006 World Bank Enterprise Survey)</i>						
	Micro Enterprise (< 5)	Small enterprise (5-19)	Medium Enterprise (20-99)	Large Enterprise (> 100)	Domestic Ownership 70 percent or above	> 30 percent Foreign Owned
Most Serious Obstacle	7.7%	10.0%	5%	2.7%	8.7%	2%
Second Most Serious Obstacle	6.2%	17%	10.7%	2.7%	16.3%	2%
Major or Very Severe Obstacle	50.4%	42.6%	37.3%	27%	32.5%	31.9%

The survey also shows that all classes of firms, from microenterprises to large firms, rely very little on formal bank lending to finance investment. The percentage of fixed asset purchases in 2005 financed by banks was only 4.2 percent for microenterprises, 1.6 percent for small enterprises, 14 percent for medium enterprises, and 27 percent by large enterprises, with the remaining amounts being financed almost entirely from internal resources. As Hausmann *et al.* (2008) point out, if a missing factor poses a binding constraint, one should observe firms going to some length and cost to circumvent this constraint. However, almost no firms in the 2006 survey, irrespective of size, reported using informal sources of finance – family or friends, or non-bank financial institutions – to finance the purchase of fixed assets, although these alternative sources were used to finance working capital.

Collateral requirements reported in the same survey are high, but not unusually so. Microenterprises with bank loans pledged on average 151 percent collateral to loan value, which is very similar to the value reported as required by manufacturing firms (148 percent), but significantly more than for retail and IT (108 percent on average). These collateralization requirements are fairly typical in developing countries.

Further insights on the demand for financing by household and micro enterprises are provided by the Finscope 2009 *Survey for the Demand for and Barriers to Accessing Financial Services in Tanzania*. This survey explores households' participation in, attitudes toward, and need for financial services. The rate of utilization of the formal financial sector expanded from 2006 to 2009 from 9.1 to 12.4 percent of the population. With informal and semi-formal access use comprising approximately 32 percent of the population, 56 percent of the population is estimated to have no access to any source of finance.<sup>17</sup> As a fraction of households, very few (1.2 percent) had ever taken bank loans, with the fraction similar in rural and urban areas. Thorough approval procedures and collateral requirements are necessary parts of prudential lending, and therefore it is unclear what fraction of these respondents would qualify for loans or be viable borrowers even if access were expanded. More informal or semi-formal arrangements are more likely to be effective for reaching such businesses than expansion of formal institutions.

The Finscope Survey also suggests that low access to the financial sector is not always amenable to simple supply-side solutions, such as branch network expansion. Only 5.7 percent of those reporting an interest in opening a bank account responded that a reason was to be able to access a loan for business purposes. For example, approximately 75 percent of households responded that the reason they did not have a bank account was that they did not have regular employment; another 20 percent cited the lack of any employment. These fractions were very similar for rural and urban households (74 and 19 for rural and 76 and 25 for urban populations, respectively). Only 23 percent of rural respondents cited physical access – the distance to a bank from their house – as a reason. In addition, some households said that in-kind lending was more advantageous in some circumstances, presumably because of reduced transaction costs and risks.

Many households also had access to other sources of external financing, which could be either more or less advantageous to them than traditional lending. However, based on the Finscope data, it does not appear that extreme efforts were being made to use these sources to circumvent a constraint to investment. Only 22 percent of households participated in group savings and loan arrangements, with a slightly lower fraction in rural areas (20 percent), and only a small fraction of these people claim to use them for business finance purposes. Only 25.8 percent of those who do not belong to such a group do not 'know about' them, indicating a small fraction of the other 74 percent are utilizing such means to access financing for business. In addition, a significant percentage of people had access to credit from family/friends, kiosks, and other formal and informal non-bank sources, as shown in Table 3.3. The level of previous experience ('used to have') is substantially higher than current participation for all loan sources, as would be expected if current demand for loans by the same individuals does not exceed historical usage.

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<sup>17</sup>The proportion of people without any access to financial services at all rose from 53.7 percent in 2006 to 56.0 percent in 2009 over the same period, although this difference may not be statistically significant.

**Table 3.3: Experience With and Access to Non-Bank Credit**

<b>Experience with Sources of Non-Bank Credit Finscope Survey 2009</b>			
	<b>Rural</b>	<b>Urban</b>	<b>Total</b>
<b>Personal loan from SACCO</b>			
Currently have	2.0%	1.9%	2.0%
Used to have	1.2%	2.7%	1.7%
Never had	96.8%	95.3%	96.4%
<b>Loan from a microfinance institution</b>			
Currently have	0.67%	2.25%	1.10%
Used to have	0.70%	3.70%	1.53%
Never had	98.63%	94.06%	97.37%
<b>Loan from an ASCA</b>			
Currently have	0.5%	0.5%	0.5%
Used to have	1.2%	1.2%	1.2%
Never had	98.3%	98.3%	98.3%
<b>Loan from family/friends without security</b>			
Currently have	4.9%	4.1%	4.7%
Used to have	29.1%	29.5%	29.2%
Never had	66.0%	66.4%	66.1%
<b>Loan from family/friends with security (<i>kuweka a kitu rehani</i>)</b>			
Currently have	1.0%	0.8%	0.9%
Used to have	7.8%	7.8%	7.8%
Never had	91.3%	91.4%	91.3%
<b>Loan from an informal money lender/(<i>watu binafsi wanaokopesha kwa riba</i>)</b>			
Currently have	0.6%	0.3%	0.5%
Used to have	1.8%	2.9%	2.1%
Never had	97.6%	96.9%	97.4%
<b>Credit from a kiosk</b>			
Currently have	10.4%	7.3%	9.6%
Used to have	34.9%	33.2%	34.5%
Never had	54.6%	59.5%	56.0%
<b>Non-monetary loans – e.g., livestock, bicycle, radio, agri-stock, share cropping</b>			
Currently have	3.1%	3.2%	3.1%
Used to have	9.6%	6.2%	8.6%
Never had	87.4%	90.7%	88.3%

*Note: Data on any loan source where 'never had' is close to 99 percent is not presented in this Table. This includes supplier and buyer credit.*

In addition, as shown in Table 3.5, of those households which have never applied for a loan, 73 percent in rural areas and 84 percent in urban areas report reasons which indicate a lack of demand – for example, a fear of inability to repay, lack of need, or opposition to paying interest. ‘Tough conditions’ deterred 15 percent of non-applicants, and lack of collateral another six percent.

Some of those respondents may not qualify for credit if available. For those respondents who had applied for a loan, in fact, only 23.3 percent were asked for collateral, presumably because applications were not made to banks. Of those asked for security, 25 percent were asked for a title to land or home.

**Table 3.4: Responses to Why Have You Never Applied For a Loan?**

<b>Responses to 'why have you never applied for a loan?'</b> (Multiple mentions possible)			
	Rural	Urban	Total
I fear that I may not have enough money to repay the loan	35.6%	35.6%	35.6%
I have never needed it	27.1%	34.0%	28.9%
I don't know where to get a loan	22.9%	11.3%	19.8%
I don't have enough money	17.4%	22.7%	18.8%
Tough Conditions	14.2%	16.4%	14.8%
There is no place nearby to go to get a loan	10.7%	2.6%	8.5%
I don't believe in paying interest	6.4%	8.3%	6.9%
I don't have any collateral	5.4%	8.4%	6.2%
I don't have a guarantor/referee	3.5%	4.1%	3.7%
They charge too much	3.2%	5.0%	3.7%
I am too young to qualify	3.0%	4.5%	3.4%
I don't have identification or the right documentation	1.4%	2.2%	1.6%
My spouse/partner won't allow it	1.0%	1.5%	1.2%
Others	0.9%	1.4%	1.0%

Source: Finscope 2009 Tanzania Survey.

Under perhaps the most costly source of alternative financing, money kiosks, lenders utilize repeated interactions to establish creditworthiness of borrowers on small loans at initially very high interest rates, which they reduce once the reliability of the borrower is better known.<sup>18</sup> Unfortunately, the survey did not ascertain whether funds accessed through this or other channels were used to serve short term consumption or business needs.

<sup>18</sup> Anecdotally, on a loan of Tsh 20,000 for one week, initially a borrower would have to repay Tsh 25,000, which is a tremendously high implied rate of interest, due presumably to the high risk of lending without guarantee or collateral.

**Table 3.5: What Type of Security Was Requested of Loan Applicants?**

<b>Responses to What Type of Security was Requested of Loan Applicants asked for Security</b> (Multiple mentions possible)			
	Rural	Urban	Total
Own land title/house title	23.3%	28.0%	24.9%
Letter of credit	25.3%	18.9%	23.0%
Own household goods	14.8%	31.2%	20.5%
Guarantee from employer	22.0%	14.5%	19.4%
Third party securities – guarantee or documents from someone else	17.9%	19.0%	18.3%
Guarantee from village executive/councilor	17.3%	18.3%	17.7%
Cash deposit (Dhamana mbadala)	16.9%	14.5%	16.0%
Group guarantee	14.1%	12.6%	13.6%
Own business Items	8.0%	18.1%	11.5%
Compulsory savings SACCOs	8.0%	13.8%	10.0%
Guarantee from spouse	8.3%	5.2%	7.2%
Other	6.8%	0.6%	4.6%
Own machinery, tools	1.0%	9.0%	3.8%
Own business stock	1.5%	0.7%	1.2%
Own car registration card	0.4%	1.5%	0.8%
Asset purchased using the loan	0.4%	1.4%	0.7%

Source: Finscope 2009 Tanzania Survey.

## C. Conclusion

Since 1991, the Government of Tanzania has made strides with its reforms to create a sound, market-oriented financial sector. Access to finance is relatively limited in Tanzania, but has been expanding rapidly.

Additional constraints to further expansion and reach of the sector are related to the current structure of the economy and development of other sectors. These constraints include a lack of basic infrastructure in rural areas including electricity and roads, although the recent expansion of mobile technologies have lowered such barriers to providing financial services; a lack of credit information and expertise; weak or costly access to markets in distant rural areas with low density of potential customers; a limited framework for using fixed and movable assets as collateral for lending; and a low level of formal financial literacy.

This chapter provides indications that a lack of access to finance constrains SMEs and agricultural investors in particular. Some micro- and household businesses utilize imperfect and costly informal financing, and such means are likely inadequate to undertake larger investments. Small and medium enterprises and agricultural investors appear to have the weakest access, although

access is expanding through private commercial and semi-formal channels. However, on an aggregate level a lack of financial supply is not the most constraining factor to investment. There is no sign of firms using costly means to circumvent the constraint: Buyer or supplier credit is not a significant phenomenon in Tanzania, as one would expect if businesses attempting to transact were primarily constrained by a lack of financial access by their customers and suppliers.<sup>19</sup> Informal sources of credit are only used by small household-based businesses and, although many microenterprises report that finance is a major constraint, they report other constraints to be more severe.

**As such, although access to finance is a constraint for important sectors of the economy, it cannot be ranked among the most binding constraints to economic growth.**

Based on the findings above, the Government's financial sector reforms have been successful and should be sustained and deepened.

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<sup>19</sup> Neither the Finscope Survey nor the Enterprise Survey found more than 1 percent of respondents to utilize such credit.

## 4. Macroeconomic Risks and Distortions

While macroeconomic stability is not sufficient to drive investment and economic growth, macroeconomic disorder is clearly detrimental to them. A government cannot provide needed public services if a high share of its resources must be directed to debt repayment. Persistent fiscal deficits limit the ability of a government to undertake counter-cyclical fiscal policy in the face of an economic downturn. Unstable or distorted exchange rates can reduce exports and growth. And inflation increases risks and deters economic activity by both businesses and lenders. Tanzania's recent economic reforms undertaken by the government with assistance from its development partners, including the International Monetary Fund (IMF), have paid off in terms of reducing inflation, increasing government revenue collection, improving resource availability for infrastructure development, and ultimately boosting private investment inflows.

### A. Inflation

Inflation distorts price signals between buyers and sellers, borrowers and savers, and reduces the wealth of savers held in monetary instruments. It redistributes income and wealth initially in favor of borrowers and, by harming creditors and savers, deters saving and thereby restricts access to finance. It also impacts a government's fiscal space by reducing the real value of any tax collected in fixed-currency terms, reducing the value of its local currency debt, and increasing the value of its foreign currency debt.

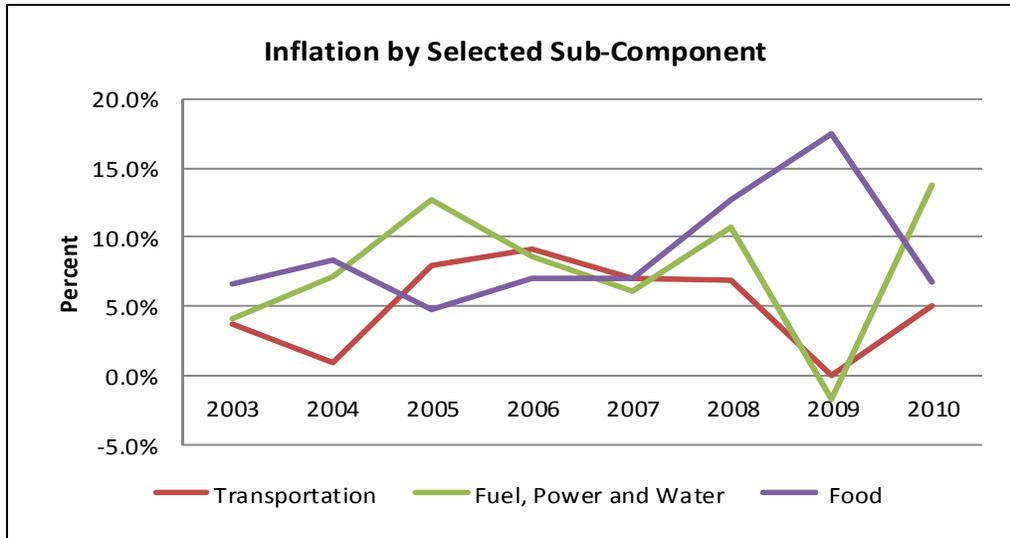
Since the early 1990s, when inflation reached over 30 percent, the GOT has successfully reduced and stabilized inflation through effective fiscal and monetary policies. Fiscal imbalances, the main driver of high inflation, were brought into line, and inflation slowed gradually and fell to single digit levels in the 2000s.

Inflation in Tanzania is now mainly driven by food and oil price shocks. Fluctuations in food prices tend to impact the overall inflation rate significantly, as food dominates the basket of commodities used to estimate inflation, with a weighting for food and non-alcoholic beverages of 47.8 percent for Tanzania (mainland) and 57.4 percent for Zanzibar. Inflation rises during the dry season and periods of drought, and falls when there is an abundant harvest.

The impact of food production on inflation is shown in Figure 4.1. Food price inflation exceeded non-food inflation until 2005, when the two converged due to a good harvest. Then food price inflation rose to 7.0 percent in 2006 due to prolonged drought in the 2006/07 agricultural seasons, global food shortages and local drought, the combined effect of which was to drive inflation back to double digit levels (10.2) in 2008/09. The average annual headline inflation rate rose to 12.1 percent in 2009, due to food price inflation, which increased to 17.5 percent from 12.7 percent in 2008. When the country experienced favorable weather conditions during the 2009/10 crop season, an abundant food supply led inflation to slow from 12.7 percent (October 2009) to 6.4 percent (January 2011).

Like the Tanzanian mainland, the Zanzibar economy experienced a dramatic increase in inflation levels in the late 2000s, with inflation rising from a ten-year average of 9.6 percent to 20.6 percent in 2008 before dropping back to 8.9 percent in 2009 and 6.1 percent in 2010.

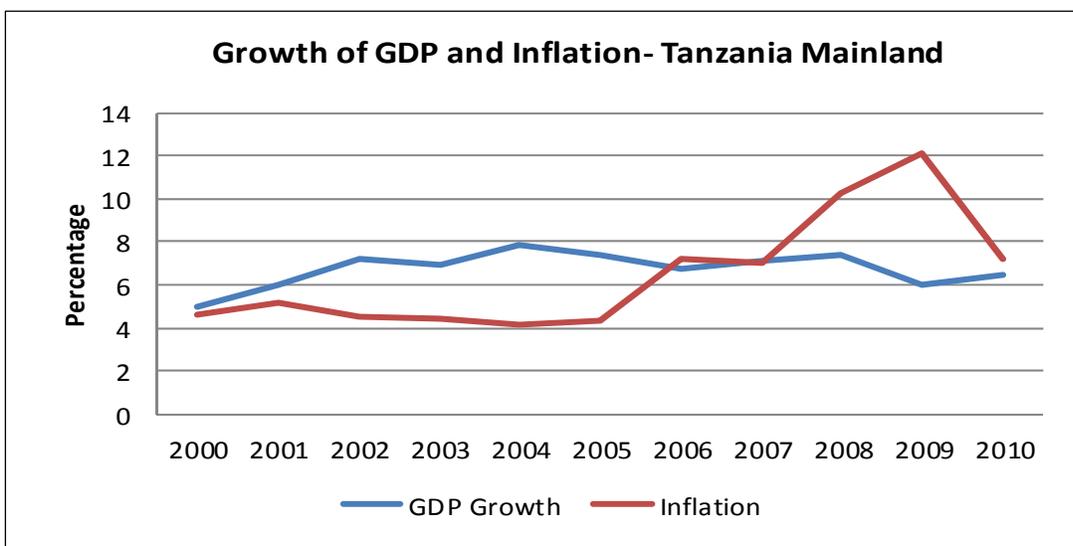
**Figure 4.1: Inflation by Selected Sub-Components**



Source: National Bureau of Statistics

One would expect that higher inflation would be associated with lower real GDP growth for the usual reasons listed above, as well as when inflation is driven by agricultural production there is an additional driver for a negative correlation. As shown in Figure 4.2, inflation and GDP move as expected, in opposite directions. The same is true for Zanzibar.<sup>20</sup>

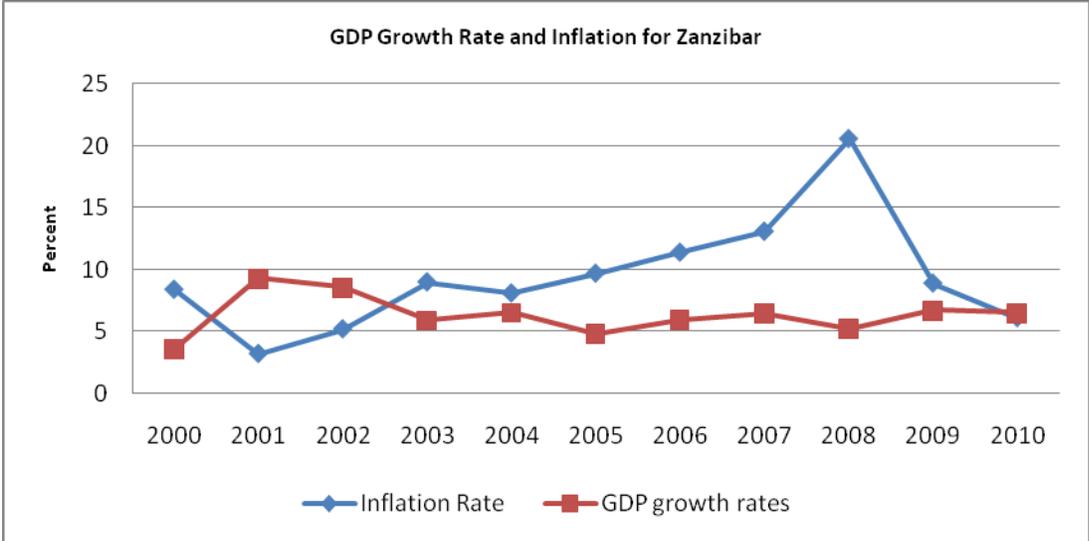
**Figure 4.2: Growth of GDP and Inflation, Tanzania Mainland**



Source: United Republic of Tanzania (URT), Economic Survey, 2009

<sup>20</sup> For a fuller discussion, see Annex: Macroeconomic Risks and Distortions.

**Figure 4.3: GDP Growth Rate and Inflation, Zanzibar**

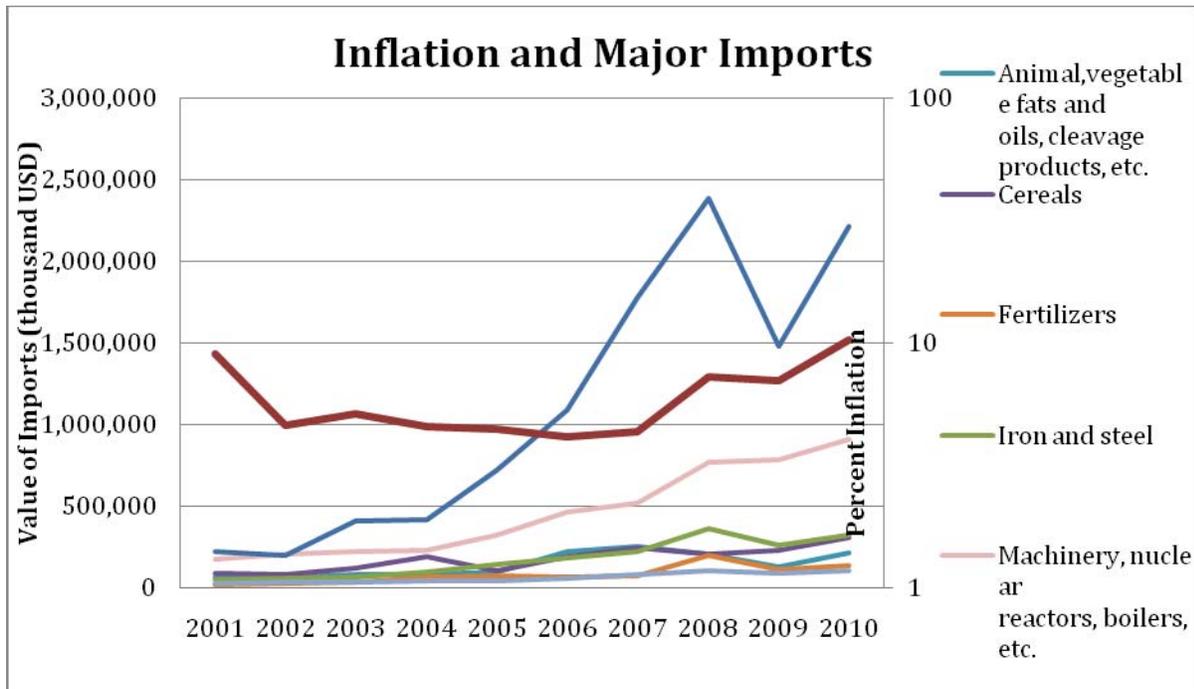


Source: Revolutionary Government of Zanzibar, Zanzibar Economic Survey 2009

Inflation rates in Tanzania are also influenced by the price of energy products. Figure 4.4 demonstrates the relationship between Tanzania’s recent inflation performance and the changes in imports of major food and oil-based products. Inflation, as read along the right-hand axis, appears to be considerably less volatile than imports until approximately 2007. In 2007, however, inflation began to increase considerably, driven by ongoing increases in imports of the largest import to the country – mineral fuels and oils. Inflation fell slightly from 2008 to 2009, while most major imports into the country fell in value, and began to increase again from 2009 as most major imports recovered.

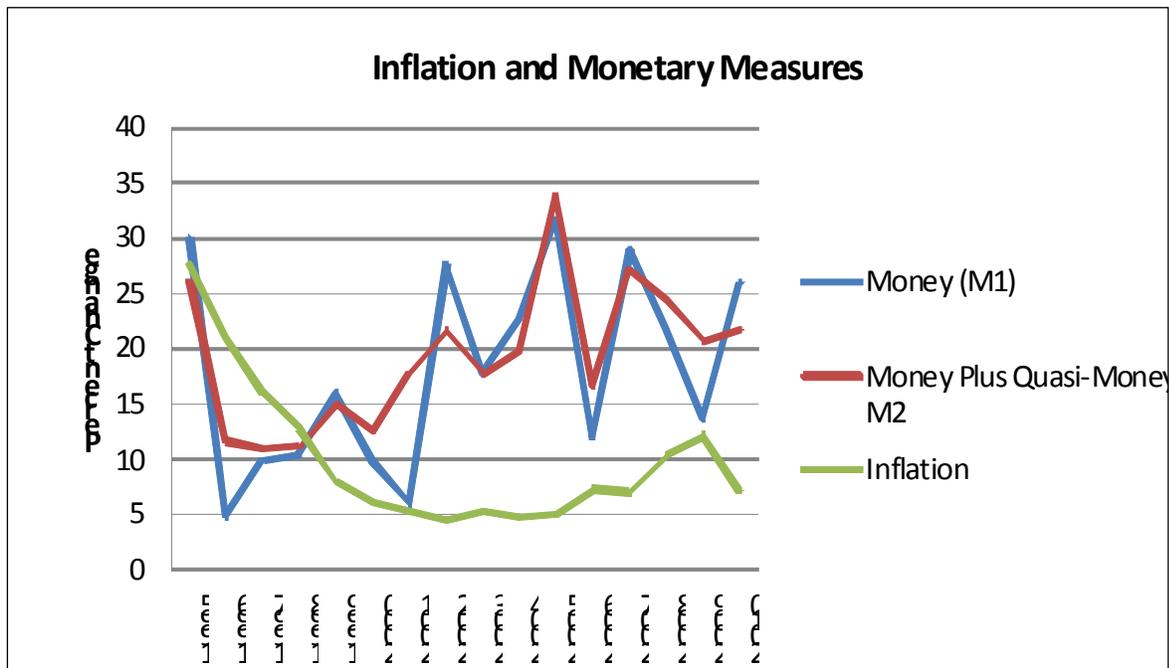
That inflation in Tanzania is no longer driven by monetary phenomena is evidenced by a simple correlation matrix between the growth in money supply (across the M1 and Broad Money – M2 aggregates) and inflation since 2000 to 2010. Though there seems to be a positive relationship between money supply and inflation, it is weak, as demonstrated by the low correlation coefficient of .17. In fact, the divergent trends from 2007 to 2009 depicted in Figure 4.5 suggest that the Bank of Tanzania maintained a constant growth in the money supply in order not to exacerbate imported inflation, but resumed money supply growth from 2009 as inflation fell back to more normal levels.

**Figure 4.4: Inflation and Major Imports**



Source: IMF, World Economic Outlook (October 2010) and International Trade Centre/Comtrade

**Figure 4.5: Inflation and Monetary Measures**



Source: Bank of Tanzania

## B. Fiscal Balance and Deficit

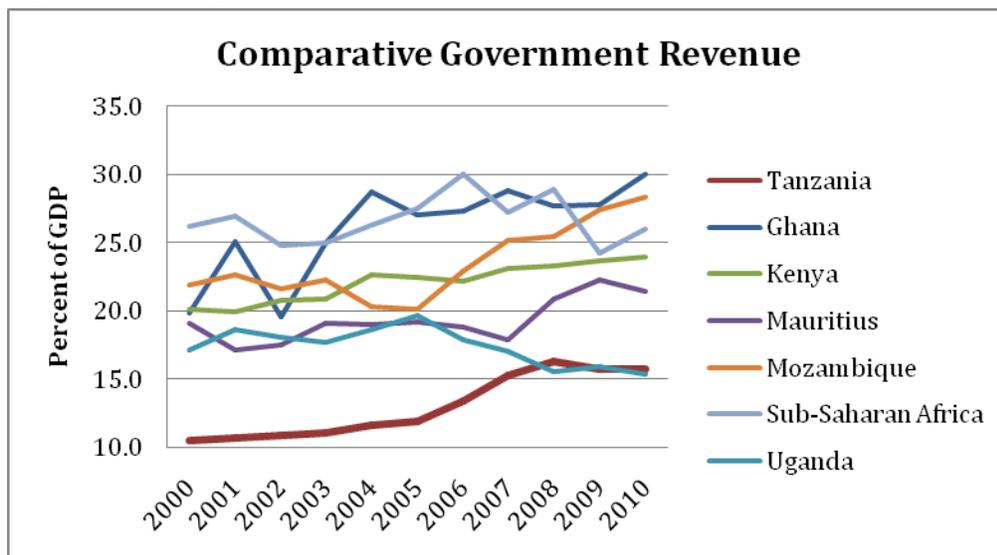
The fiscal balance can impact economic growth through a variety of channels. Large fiscal deficits can drive inflation higher, and may cause an increase in interest rates and lead to crowding out of productive private investment. While fiscal deficits may be financed by foreign donors, in some cases this can cause excessive currency appreciation at the expense of tradable goods sectors. At the same time, if deficits are not financed by outside lending, then public investments in areas such as infrastructure or health and education programs may be too low to stimulate productive investment and economic growth.

### a. Government Revenue

Over the past ten years, the Government of Tanzania undertook massive efforts to strengthen and broaden its domestic revenue collections by rationalizing tax administration and structures. However, in recent years estimated revenues started to fall short of targets. The slowing rate of improvement in revenue collections is partly explained by lagging implementation of reforms across different tax categories, such as petroleum products for mining companies, and by the global financial crisis. The broader growth of the economy seems to have had little impact on revenue collections.

Tanzania's recent performance in revenue collection is improving, although the ratio of revenue to GDP falls below the average for Sub-Saharan Africa and below the rates of comparator countries.<sup>21</sup> A relatively low level of revenue suggests that Tanzania has limited resources for public spending or financing of a budget deficit and limited fiscal space.

**Figure 4.6: Comparative Government Revenue**



Source: IMF World Economic Outlook and Ministry of Finance

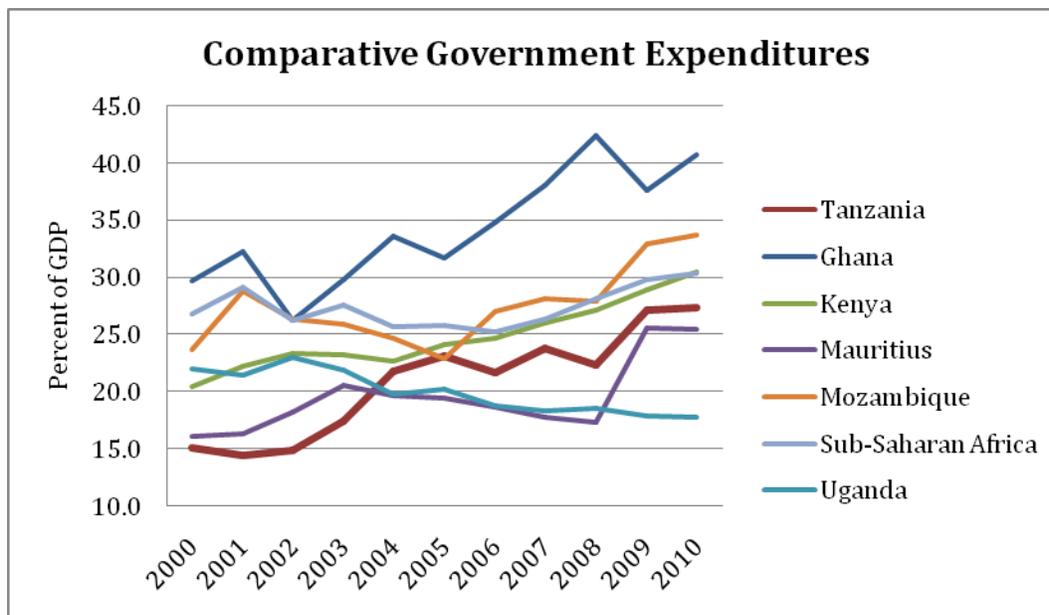
<sup>21</sup> Data for comparators are drawn from the IMF World Economic Outlook. Data for Tanzania are drawn from the Government of Tanzania, Ministry of Finance official statistics.

## b. Public Expenditure

During the past ten years, Tanzania's government expenditure policies focused on enhancing and sustaining sound financial management in order to achieve the national objectives of economic growth and poverty reduction. The Public Finance and Procurement Acts of 2001 and the Medium Term Expenditure Framework (MTEF) were implemented effectively, and the Public Expenditure Review (PER), Cash Budgeting, and Integrated Financial Management System (IFMS) were introduced to combat misuse of public funds and enhance efficient resource allocation and management. Generally, there has been a substantial improvement in expenditure absorption compared to the 1990s. Budget deficits have been low, signaling sound fiscal management. The overall deficit, inclusive of grant receipts, has been below 6.0 percent of GDP for the past ten years, averaging 3.1 percent annually.

Compared to other countries in the region, Tanzania performs relatively well on fiscal expenditure.<sup>22</sup> Its ratio of expenditure to GDP averaged 20.9 percent over the previous ten years, which is below the Sub-Saharan Africa average of 27.4 percent. That said, Tanzania has nearly doubled government expenditure as a percentage of GDP over the past decade, overtaking expenditure levels in Mauritius and Uganda. It is not clear if this increasing trend will continue or will stabilize, and thus what the implications may be for long-term fiscal sustainability of the government.

**Figure 4.7: Comparative Government Expenditures**

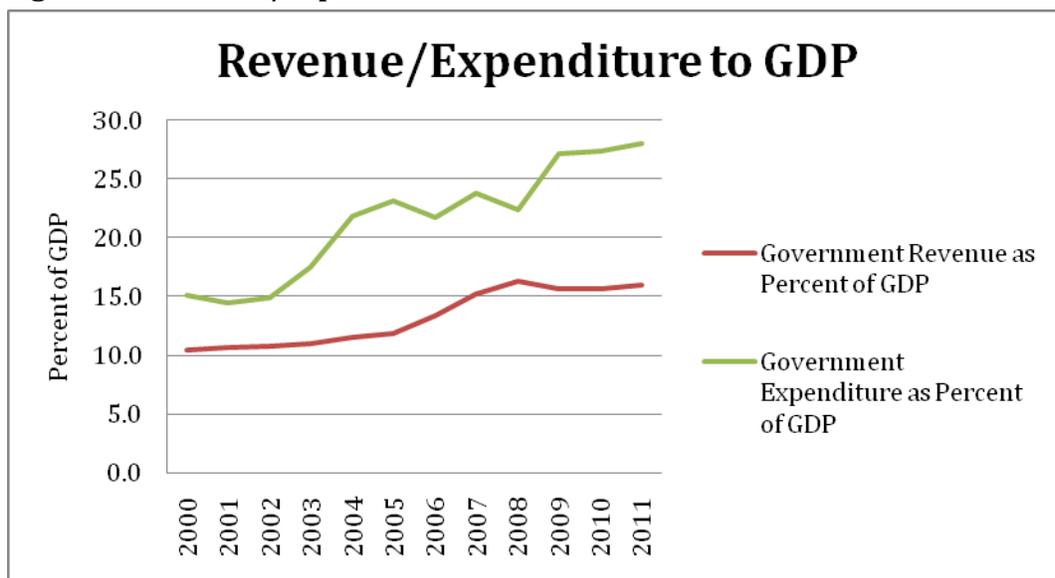


Source: IMF World Economic Outlook and Ministry of Finance

As seen in Figure 4.8, Tanzania is increasing both the ratio of revenue to GDP and expenditure to GDP. Expenditures are, however, rising more quickly than revenues.

<sup>22</sup> Data for comparators are drawn from the IMF World Economic Outlook. Data for Tanzania are drawn from the Government of Tanzania, Ministry of Finance official statistics.

**Figure 4.8: Revenue/Expenditure to GDP**



Source: United Republic of Tanzania, Economic Survey 2009

A widening gap between government revenues and public expenditures has implications for sustainability of government programs if financing sources are not reliable. In fact, the GOT relies heavily on external funding to finance its primary fiscal deficit, at an average of 99.9 percent over the past six fiscal years (90.7 percent if 2007/08 is excluded as an outlier). Donor grants and loans have been the largest components of total deficit funding, at an average of approximately 82.5 percent over the same period.<sup>23</sup>

Though progress has been achieved in recent years to reduce donor dependency, the trend depicted in Figure 4.9 suggests a risk of reversing this trend, as donor financing is used to offset widening fiscal deficits. Such reliance can place the economy in a precarious position, should foreign assistance fail to materialize during a period when fiscal stimulus is needed.

### C. External Position

A country's external position signals to the private sector the level of risk of future macro instability. A country must obtain funding to run an external deficit, whether to cover a current account deficit, fiscal deficits, or interest payments on debt, or it may face painful adjustments through the trade or capital accounts. An external deficit may be sustainable if offsetting foreign investment or donor assistance flows into the country, though with potential impacts on the exchange rate and the competitiveness of export- and import-oriented sectors. If foreign lending and assistance are insufficient, the government might borrow by sale of bonds, treasury bills, or other debt issuance. However, this borrowing may drive up interest rates, to the detriment of

<sup>23</sup>The recent move to allow Government borrowing from the market may reduce the need somewhat to finance the budget from donor grants and loans.

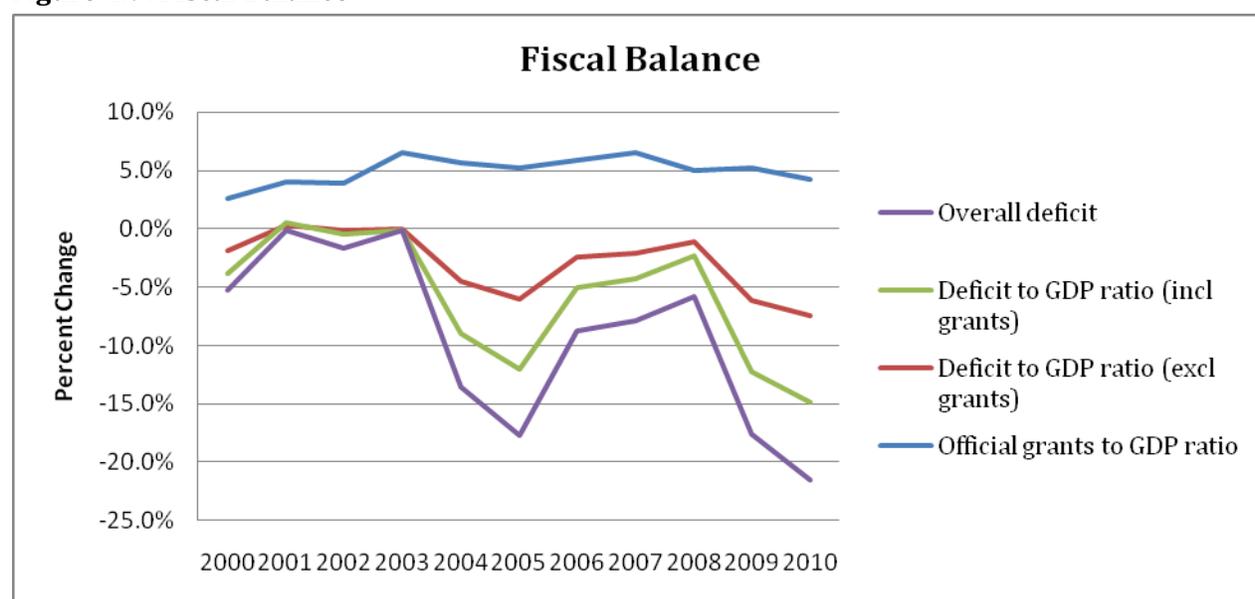
private firms seeking finance. A government that operates a large and growing external deficit may even deter foreign investors, who fear that the government will turn to printing money and inflation to service its debts.

**Table 4.1: Government of Tanzania Public Expenditure Financing**

	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009	2009/2010
	Actual	Actual	Actual	Actual	Actual	Budgeted
FINANCING	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
External Sources	96.1%	86.8%	97.3%	146.3%	87.4%	85.7%
Grants	67.3%	56.5%	56.0%	99.9%	49.9%	57.3%
Basket Support	10.6%	4.5%	2.7%	12.7%	7.5%	7.9%
Import Support / OGL Loans	4.4%	13.9%	15.4%	23.2%	13.2%	10.1%
Project Loans	20.9%	17.8%	25.0%	13.3%	19.4%	11.9%
Amortization (Foreign)	-7.3%	-5.8%	-1.7%	-2.9%	-1.1%	-1.5%
Internal Sources	3.9%	13.2%	2.7%	-46.3%	12.6%	14.3%
Non-Bank Borrowing	9.8%	11.9%	12.2%	-1.3%	0.0%	5.7%
Bank Borrowing	0.0%	7.0%	1.5%	-20.1%	8.4%	82.2%
Proceeds from Privatization	0.0%	1.8%	0.0%	0.0%	1.8%	0.4%
Payment of Arrears	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
NBC Bonds	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Recapitalization	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Adjustment to Cash	3.6%	2.0%	-3.5%	-5.0%	10.9%	0.0%
Amortization (Local)	0.0%	-1.0%	0.0%	-0.9%	0.0%	0.0%
Expenditure Float	-9.5%	-8.5%	-7.6%	-19.0%	-8.6%	0.0%

Source: Authors' calculations based on United Republic of Tanzania, Economic Survey 2009

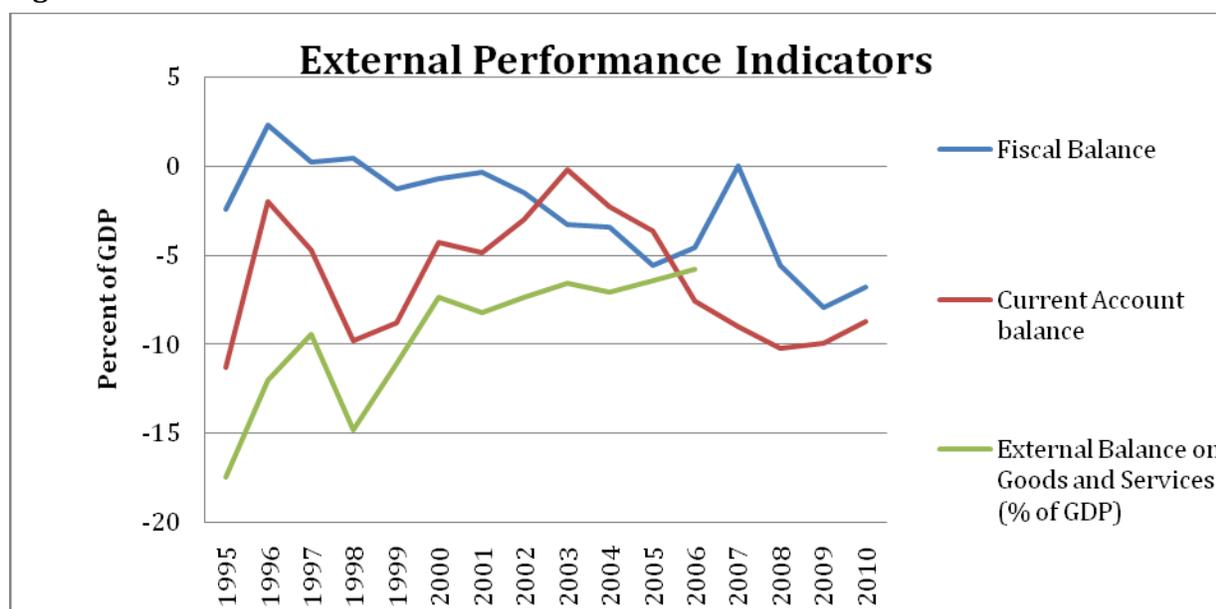
**Figure 4.9: Fiscal Balance**



Source: Bank of Tanzania

Figure 4.10 shows that Tanzania's external performance has fluctuated over the past 15 years, as measured by its fiscal balance, current account balance, and trade in goods and services balance.

**Figure 4.10: External Performance Indicators**



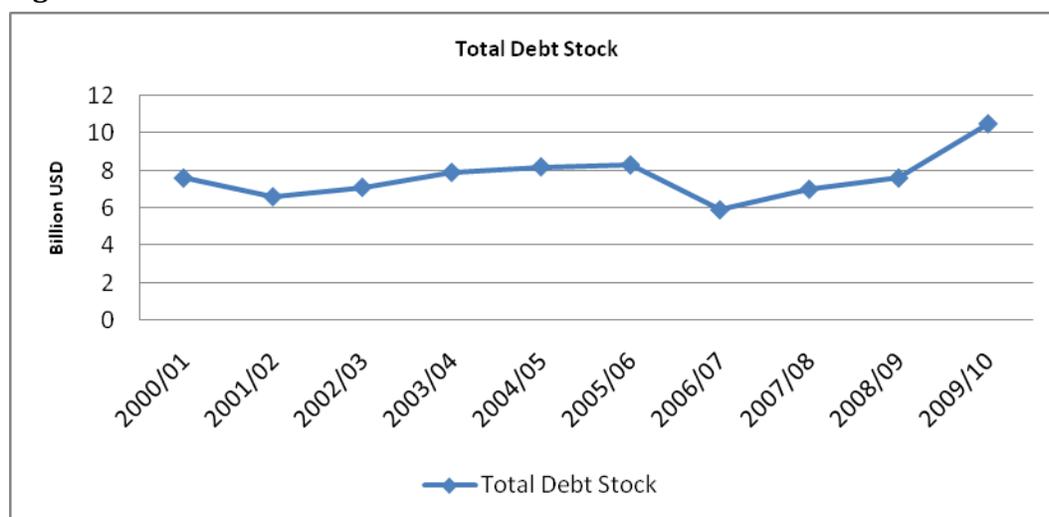
Source: IMF, World Economic Outlook (October 2010) and World Development Indicators

### a. Public External Debt

Tanzania's stock of public debt, comprised of external and domestic debt, stood at 10.5 billion USD as of end June 2010,<sup>24</sup> an increase of 2.9 billion USD (38.5 percent) from June 2001 and 3.5 billion USD (49.6 percent) from June 2008 (see Figure 4.11).

<sup>24</sup> This figure does not include interest arrears on external debt.

**Figure 4.11: Total Stock of Public Debt**



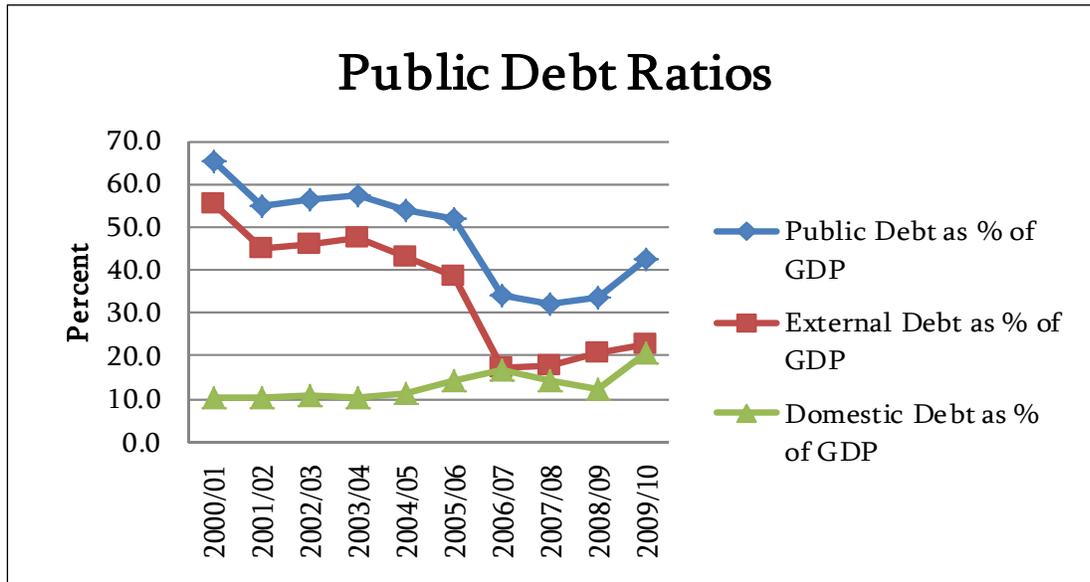
Source: Ministry of Finance and Economic Affairs and Bank of Tanzania

Whereas there has been an increase in total public debt since June 2001, debt as a percentage of GDP has declined at an aggregate level from 65.2 percent in 2000/01 to 34.0 percent in 2006/07, largely due to debt relief under the Heavily Indebted Poor Countries (HIPC) Initiative and Multilateral Debt Relief Initiative (MDRI). However, public debt rebounded slightly in the following years to reach 42.4 percent in 2009/10 due primarily to new loans for development projects, especially infrastructure, while domestic debt as a percentage of GDP increased from 10.3 percent in 2000/01 to 20.5 percent in 2009/10.

Over the same period, Tanzania's external debt performance improved significantly. The ratio of external debt – the larger share of public debt – to GDP declined from 55.6 percent in 2000/01 to 22.5 percent in 2009/10. Public external debt fell sharply from 38.5 percent in 2005/06 to 17.2 percent in year 2007/08, mainly due to MDRI. Concessional multilateral loans have been the major source of external financing over the last decade (85.9 percent), followed by bilateral debt (11.5 percent) and commercial and export credits (2.6 percent) as of end-June 2010.

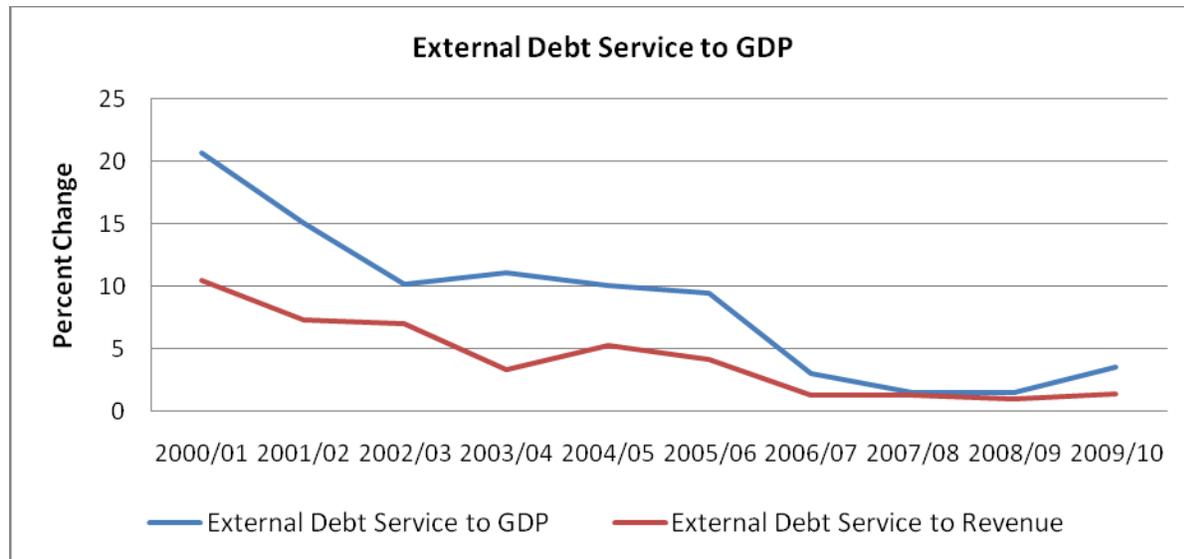
Tanzania has successfully reduced its external debt service, both as a percentage of GDP and as a percentage of domestic revenue. The debt service-to-revenue ratio fell from 20.7 percent in 2000/01 to 3.5 percent in 2009/10, while its debt-to-GDP ratio fell from a high of 118.1 percent in 1995 to 21.4 percent in 2009. This reduction in public external debt over the past 15 years broadly mirrors a trend seen across benchmark countries and aggregates. The dramatic improvement in public external debt ratios, seen across all comparators, reflects the role of HIPC and MDRI. Since those initiatives, however, Tanzania's debt ratio has risen above those of Sub-Saharan Africa, Ghana, Mauritius, and Uganda, as shown in Figure 4.15.

**Figure 4.12: Public Debt Ratios**



Source: Ministry of Finance and Bank of Tanzania

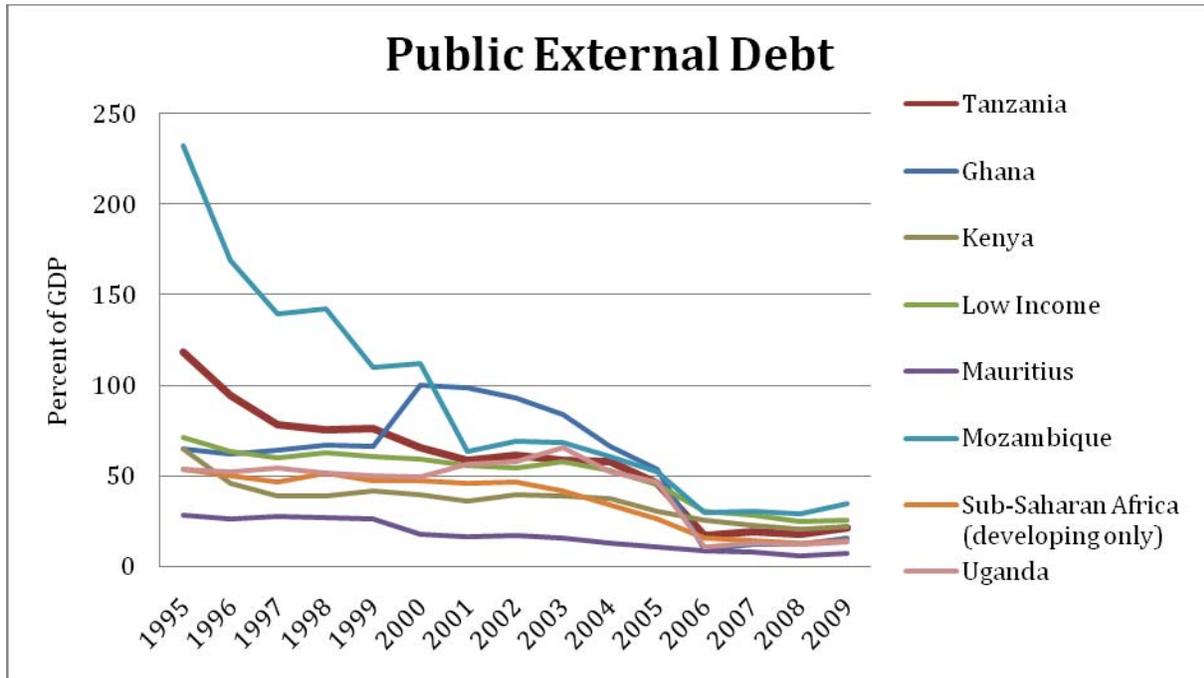
**Figure 4.13: External Debt Service to GDP**



Source: Ministry of Finance and Bank of Tanzania

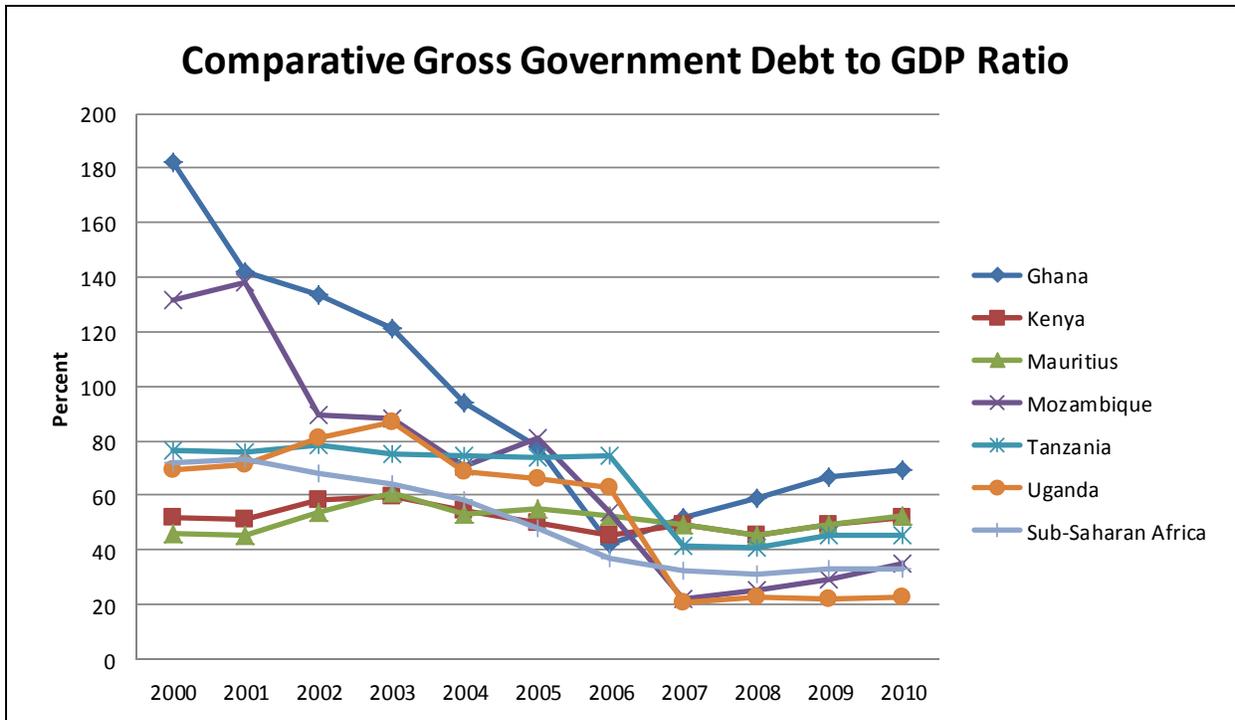
On the broader measure of total public debt – aggregating both domestic and external debt – Tanzania continues to perform largely in alignment with the benchmark countries (see Figure 4.14). Tanzania has steadily reduced its total public debt burden, from nearly 90 percent to slightly more than 40 percent over the past decade. The improving ratio signifies that the country is in a better position to service its total debt stock and, with a lower debt-to-GDP ratio, is at less risk of default.

**Figure 4.14: Public External Debt**



Source: World Development Indicators

**Figure 4.15: Comparative Gross Government Debt to GDP Ratio**



Source: IMF, World Economic Outlook (October 2010)

## b. Risk and Cost to Reach Financial Maturity

Given the concessional nature of most of its debt, Tanzania enjoys relatively long repayment periods for its public debt, as reflected in the Average Time to Maturity (ATM) of the overall portfolio of 15.7 years, nearly double the figure for comparator countries that report similar data. This suggests that financing risks are manageable.

**Table 4.2: Average Time to Re-Fixing<sup>25</sup> and Maturity for Selected African Countries**

	Ghana	Kenya	Tanzania	Zambia
Average Time to Refixing (ATR)	7.8	8.3	15.2	6.7
Average Time to Maturity (ATM)	8.0	8.3	15.7	6.9

*Source: Medium Term Debt Management Strategy for Tanzania Preliminary Draft*

Tanzania compares roughly on par with benchmark countries on the risk premium applied to Tanzanian loans, with some fluctuations both in absolute and relative terms (see Figure 4.17). Over the period 1995 to 2005, Tanzania moved from the lowest risk premium among comparators to the highest and back again. An increase in the risk premium from 2007-2009 is partly associated with an increase in debt stock from both concessional and non-concessional loans, as a result of high demand to meet infrastructure project obligations. Therefore, this increase is expected to be a short-term issue.

<b>Table 4.3: Comparative Sovereign Risk Ratings</b>	
	<b>Sovereign Risk</b>
<b>Tanzania</b>	B
<b>Ghana</b>	B
<b>Kenya</b>	B
<b>Mozambique</b>	B
<b>Uganda</b>	BB

*Source: Economist Intelligence Unit*

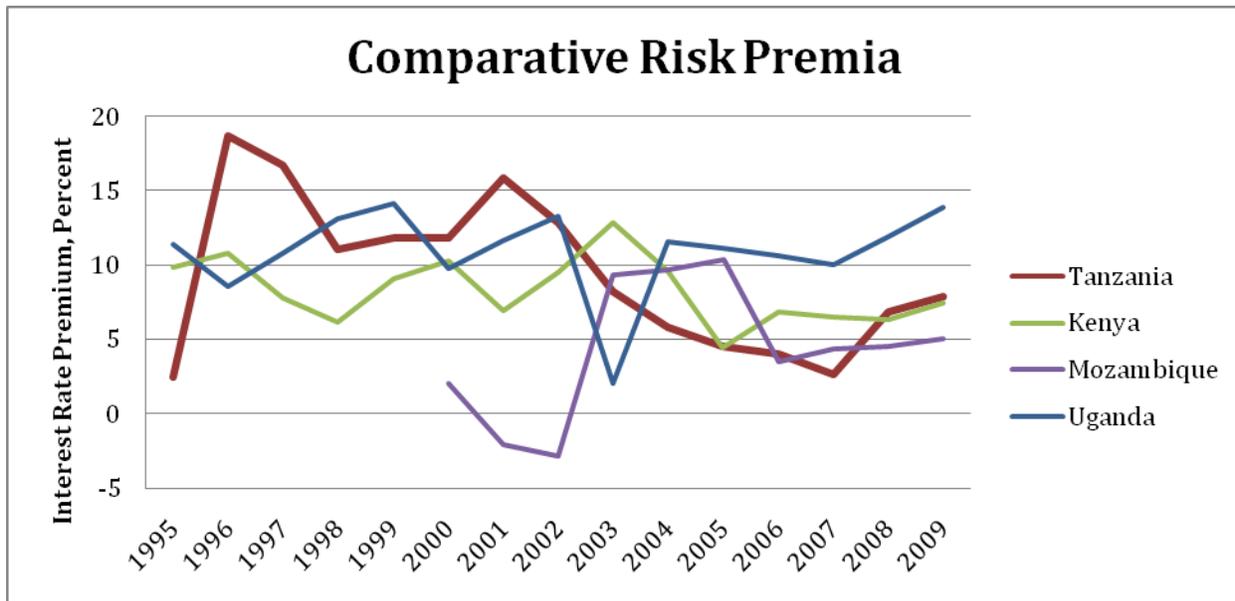
Tanzania performs on par with the benchmark countries on its sovereign risk measure as reported by the Economist Intelligence Unit. Tanzania's risk rating of "B" places it firmly in line with every national comparator, excepting Uganda with its superior "BB" rating.<sup>26</sup>

Based on the forgoing, Tanzania seems to have experienced low distress from debt risks over the past decade; however, an increasing trend in debt over next two years is an issue to be monitored.

<sup>25</sup>Average Time to Re-fixing (ATR) gives information on the exposure of the debt portfolio to changes in interest rates, i.e., the average time taken to re-fix.

<sup>26</sup> Risk ratings run in descending order from AAA to D. A risk rating of "BB" is defined as non-investment grade. A risk rating of "B" is defined as highly speculative.

**Figure 4.16: Comparative Risk Premia**



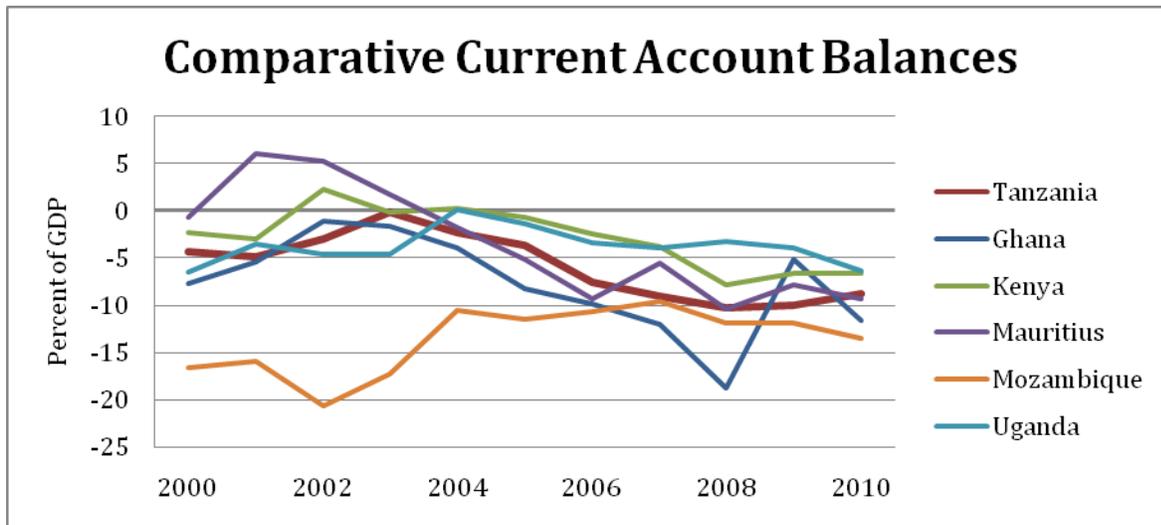
Source: World Development Indicators

### c. Current Account

The current account balance, measured as a share of GDP, can indicate whether a country is on an unsustainable external financing path which may ultimately create macroeconomic instability or require costly macroeconomic adjustments. While a trade deficit should not necessarily be seen as a negative outcome, trade deficits must be offset by net investment, remittances, or other inward transfers of capital, including official (aid) transfers, in order for the external accounts to be in balance.

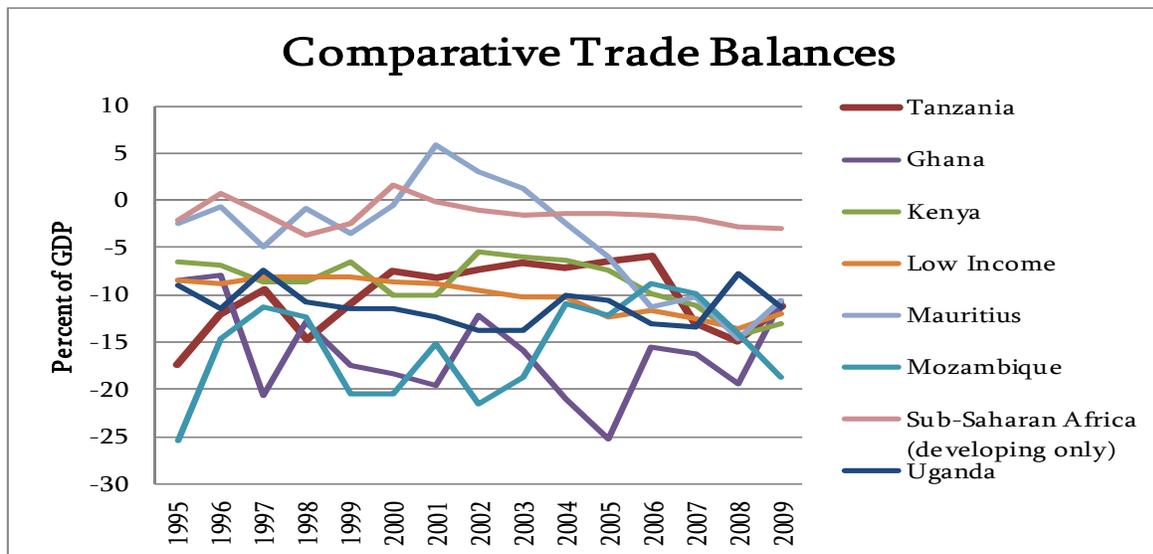
Tanzania’s current account balance as a percent of GDP has been in growing deficit over the past ten years mainly due to an increasing trade deficit (with net income transfers ranging from 1.0-3.6 percent of GDP). Whereas exports have continually expanded, as shown in Table 4.4, Tanzania’s trade balance showed a lower deficit than any of the individual benchmark countries by 2006, when it had reduced the deficit from 17 percent to less than six percent. Since then, Tanzania’s trade deficit has increased to a level more comparable to the benchmark countries, imports have expanded more rapidly as the economy has grown. Intermediate goods in particular have contributed to widen the current account deficit. Intermediate goods imports rose from 529.7 million USD in 2000 to 2.7 billion USD in 2010, representing an increase of over 300 percent – a healthy symptom of a growing economy.

**Figure 4.17: Comparative Current Account Balances**



Source: IMF, World Economic Outlook (October 2010)

**Figure 4.18: Comparative Trade Balance**



Source: World Development Indicators

Tanzania’s trade balance showed a lower deficit than any of the individual benchmark countries by 2006, when it had reduced the deficit from 17 percent to less than six percent. Since then, Tanzania’s trade deficit has increased to a level more comparable to the benchmark countries.

**Table 4.4: Trade Balance, 1995-2010**

Tanzania Trade Balance, 1995-2010																
Million USD																
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Exports	854.1	1,040.0	1,234.9	1,157.4	1,201.8	1,361.0	1,766.7	1,899.7	2,168.6	2,615.3	2,971.7	3,445.7	4,102.3	5,577.6	5,149.3	6,388.3
Goods	255.1	232.8	752.6	636.1	601.5	733.6	851.3	979.6	1,220.9	1,481.6	1,702.5	1,917.6	2,226.6	3,578.8	3,294.6	4,296.8
Services	599.0	807.2	482.4	521.3	600.3	627.3	915.4	920.1	947.8	1,133.6	1,269.2	1,528.1	1,875.7	1,998.8	1,854.6	2,091.5
Imports	-1,263.8	-1,202.1	-1,948.2	-2,337.5	-2,210.4	-2,050.0	-2,209.7	-2,143.9	-2,659.2	-3,457.6	-4,204.9	-5,113.4	-6,274.3	-8,661.2	-7,543.2	-8,974.7
Goods	-551.9	-493.9	-1,148.0	-1,382.1	-1,415.4	-1,367.6	-1,560.3	-1,511.3	-1,933.5	-2,482.8	-2,997.6	-3,864.1	-4,860.6	-7,012.3	-5,834.1	-7,125.1
Services	-711.9	-708.2	-800.2	-955.3	-795.0	-682.4	-649.3	-632.5	-725.7	-974.7	-1,207.3	-1,249.3	-1,413.7	-1,648.9	-1,709.1	-1,849.6
Trade Balance	-409.6	-162.1	-713.3	-1,180.1	-1,008.7	-689.0	-443.0	-244.2	-490.5	-842.3	-1,233.2	-1,667.8	-2,172.0	-3,083.6	-2,393.9	-2,586.4

Note: 2010 figures based on provisional data. Beginning 2006, exported goods are adjusted to include data for unrecorded cross-border trade.

Source: Bank of Tanzania.

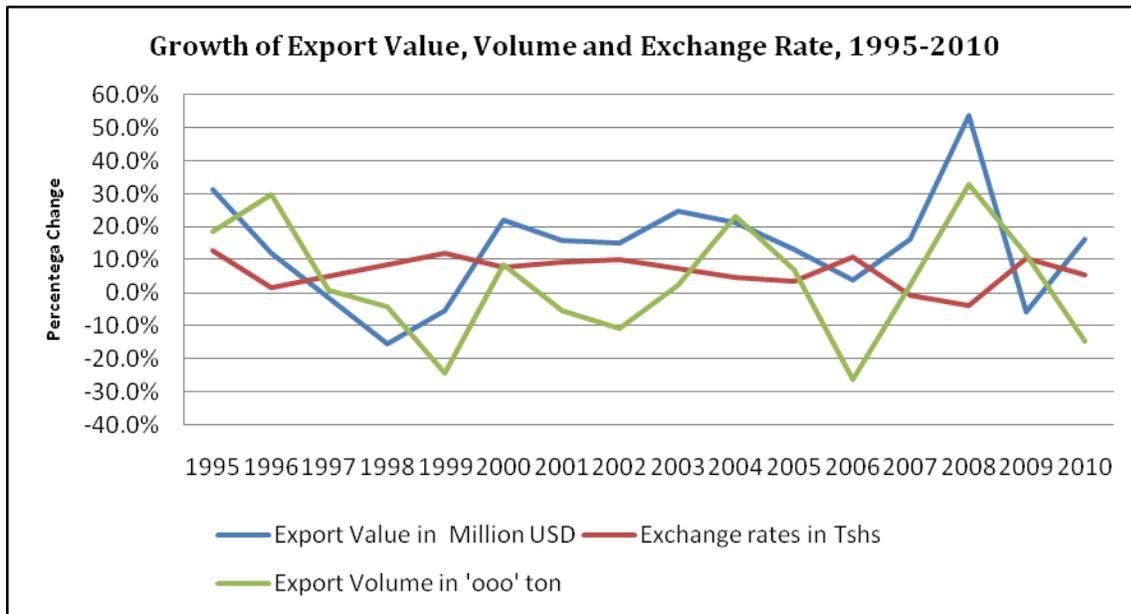
## D. Exchange Rate

The level and volatility of exchange rates are a primary determinant of the returns for export- and import-oriented businesses. An overvalued exchange rate makes exports relatively more expensive on the world market, decreasing the competitiveness of domestic firms vis-à-vis foreign competitors and reducing their incentives to invest or expand production. Import-oriented firms would conversely benefit from an overvalued exchange rate. A volatile exchange rate introduces greater risk into the investment decisions that firms must make, while a more stable exchange rate allows them to forecast returns on investment with more certainty.

The Tanzanian shilling exchange remains market determined. The Bank of Tanzania continues to participate in the Inter-Bank Foreign Exchange Market (IFEM), primarily to meet liquidity management objectives, while fostering orderly market developments. Over the past ten years, the Tanzanian shilling nominally depreciated against most other currencies in the world. The average shilling-U.S. dollar exchange rate rose from 744.9:1 in 1999 to 1392.9:1 in 2010, representing a nominal depreciation of more than 100 percent during that period. The general trend of depreciation is due to a substantial extent to differential inflation rates and slowing private capital inflows. The trade gap has been falling relative to GDP, and increasing official/aid transfers tend to push the exchange rate down (appreciate the currency).

There is no evidence that a misaligned exchange rate has depressed Tanzania's export performance. As shown below, over the past several years, the rate of export growth has been negatively correlated with changes in the nominal exchange rate:

**Figure 4.19: Growth of Export Value, Volume and Exchange Rate**

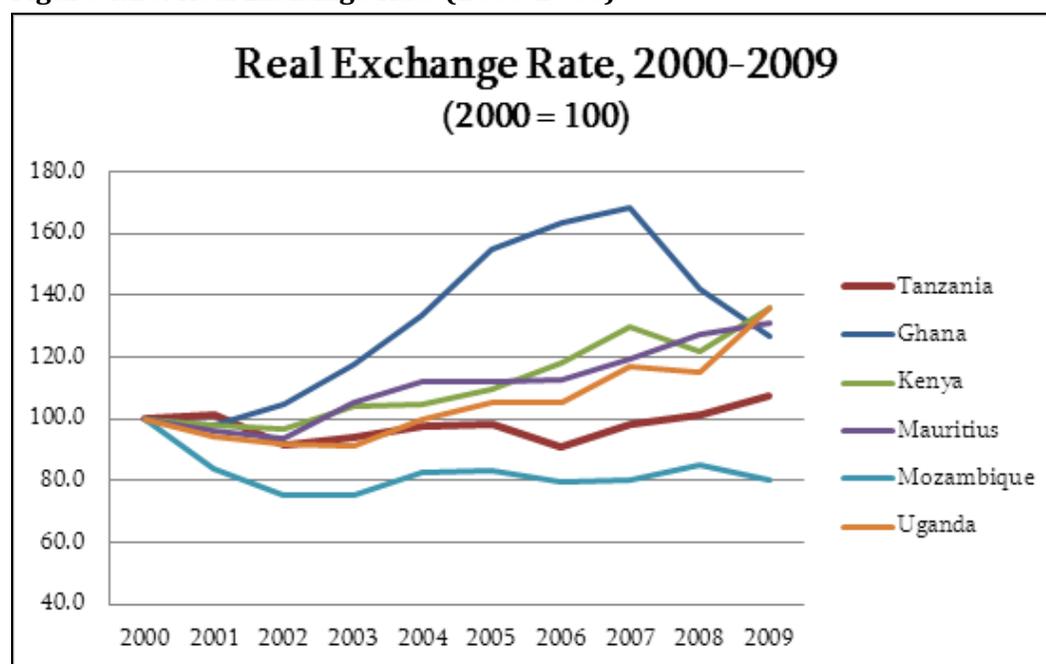


Source: Bank of Tanzania

Since increasing demand for exports should tend to reduce the exchange rate (appreciate the currency) and produce a negative correlation between exports and the exchange rate, the correlation seen in Figure 4.20 suggests that the exchange rate is driven by export demand. As demand for exports increases (upward movement in green and blue lines of the graph), the Tanzanian shilling becomes more valuable or appreciates (downward movement in red line of the graph). This is consistent with strong demand for export products that make up a large percentage of the export basket – for example, gold and other minerals.

Just as the nominal exchange rate impacts economic growth through trade and investment, the real exchange rate (RER, adjusted for inflation) and the real effective exchange rate (REER, adjusted for inflation and trade-weighted) also affect these drivers of growth. According to Hobdari (2008: 3-11), Tanzania’s REER significantly depreciated between end-2000 and mid-2006, though it did rise modestly between mid-2006 and mid-2007. Hobdari applies three methods to calculate over- and under-valuation of the Tanzanian shilling with respect to its equilibrium real exchange rate and finds that, as of mid-2007, the REER of the shilling was above its equilibrium level, or under-valued. Barring any significant, real appreciation of the Tanzanian shilling since mid-2007, it does not therefore appear that the exchange rate is dampening growth through the exports channel.

**Figure 4.20: Real Exchange Rate (2000-2009)**



Source: Authors' calculations based Penn World Tables

In addition, the value of the Tanzanian shilling over the past ten years has been stable compared to other countries in the region, when calculated based on a method used by Rodrik (2008).<sup>27</sup> The real exchange rate movement since 2000 was below the base year trend until 2007, when the trend rose above the baseline slightly. Ghana, Kenya, Mauritius, and Uganda all experienced considerably greater movement in the real exchange rate, as evidenced by larger movements above the 2000 baseline. Figure 4.20 suggests that the Tanzanian economy has enjoyed relative exchange rate stability, which should foster long-run investment in the Tanzanian economy.

## E. Conclusions

Based on the evidence presented above, it does not appear that any elements of the Tanzanian macro-economy currently pose a binding constraint to private investment and, thereby, broad economic growth. Relatively low rates of inflation, a reasonable fiscal deficit and manageable debt burden, and a real exchange rate at equilibrium currently impose a low burden on the private sector. None of the evidence provided suggests that the private sector is making costly efforts to avoid excessive macroeconomic risks. Any remaining macroeconomic risks and distortions are not sufficient to substantially impede appropriability of returns in Tanzania.

In fact, the macroeconomic reforms undertaken in Tanzania over the past two decades appear to have reduced the risks and distortions faced by the private sector.

<sup>27</sup> See Annex: Macroeconomic Risks and Distortions.

## 5. Weak Micro- Appropriability of Returns

As indicated in the HRV framework, returns to an economy as a whole from investing may be high, but the ability of private entrepreneurs to appropriate those returns may be limited by risks and distortions at the micro-economic level. Among the many issues that would increase the risk of insufficient appropriability or drive a wedge between social and private returns are excessive or costly regulatory obstacles; the structure, level, and administration of taxes; political risk, crime or insecurity; restrictions on or taxation of trade; and inadequate protection of all forms of property and contractual rights.

Given the vast space in which micro-economic appropriability issues can arise, the analysis began with an overview of the available international business and investment climate indicators, including the World Bank Doing Business Indicators (WBDB), World Bank Enterprise Surveys, Global Competitiveness Surveys, and Worldwide Governance Indicators.<sup>28</sup> While these indicators cannot on their own constitute definitive evidence of the existence and severity of a particular constraint to investment and growth, in the areas where Tanzania either ranked consistently low against comparator countries across a variety of indicator sources, or particularly low on a more specific indicator, the shadow value of the 'constraint' would tend to be high. In addition, if the constraint tends to impact a broad swath of the economy, it would have a more significant impact on growth. Thus, a survey of the available indicators was used, along with a 'size of potential impact' test as a guide for focusing analysis on areas which most warrant further investigation.

Four somewhat related issues emerged from this process as potentially acute problems in the country's investment environment. Those areas are: (1) the system for accessing and securing land use rights – Tanzania ranks particularly low on access to and security of land rights, a key factor of production almost economy-wide; (2) tax rates and administration – Tanzania's tax regime appears to be based on higher than average tax rates, and procedures are burdensome as indicated by the number of annual tax payments required; (3) the quality of regulation of private sector business and trade – Tanzania ranks below comparator countries on indicators of regulatory quality and this is an area which appears to impact all major sectors of the economy, especially exports; and given Tanzania's relatively weaker performance in export markets (Chapter 2) and the importance of exports to the larger economy; and (4) the country's system of tariff and non-tariff barriers to international trade may pose an obstacle to growth.

Although there undoubtedly remain issues and challenges in other areas affecting micro-appropriability, there was no compelling evidence that political instability, contract enforcement, corruption, or crime and insecurity present binding constraints to economic growth.<sup>29</sup>

**Based on the analysis presented, this chapter concludes that the lack of sufficient microeconomic appropriability of returns poses a key binding constraint to investment and growth in Tanzania. The primary and most binding constraint in this area is the lack of**

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<sup>28</sup>In the interests of brevity, not all indicators are presented in this chapter.

<sup>29</sup> This is based on the World Bank Doing Business Indicators, as well as responses to the World Bank Enterprise Surveys (2006) and Worldwide Governance Indicator rankings against comparator countries.

**efficient and timely access to secure land rights.** While current policy aims to fully recognize customary tenure systems and bring them into a larger national framework of property rights, Tanzania’s institutional capacity to implement the policy comprehensively remains weak. The incomplete application of current land policy has led to ambiguities on use rights, subsequently endangering the livelihoods of traditional land users, leading to land conflicts, and creating an environment characterized by uncertainty that impedes investment. The procedural costs that characterize the land delivery system are a particularly acute constraint to potential investors.

The analysis also shows that, although Tanzania has implemented important pro-market reforms for the regulatory environment and achieved greater openness to trade since the early 1990s, further progress in improving the quality of the policy and regulatory environment for facilitating business and commerce has been challenging. Regulatory quality constitutes a constraint to economic growth in Tanzania; though not of the same consequence today as the three binding constraints identified. Further research into the significant ongoing challenge posed by regulatory quality to assess the extent of its impact on economic growth would be beneficial.

The rest of the chapter presents the relevant analysis, background, and tests to identify binding constraints. It starts with the land regime, then proceeds with the tax regime, then the country’s regulatory quality for private sector business and trade, and finally barriers to international trade.

## A. Land Policy and Implementation

The level of security of rights to use, own, and transfer land is widely believed to play a determining role in the willingness of a local or foreign producer to invest in land-based capital and other assets.<sup>30</sup> In many developing countries, particularly in Sub-Saharan Africa, however, property rights are weak. Tanzania’s current system appears particularly problematic. As shown in Table 5.1, the WBDB indicator on time to register property ranks Tanzania at the bottom of the comparison group, although within the range of its southeast African neighbors.<sup>31</sup> On average it takes more than 70 days to register property in urban areas of Tanzania, currently the longest among the individual comparative countries, but shorter than the SSA or LIC averages. The complete process of sale and transfer of land, including rural land, however, takes much longer at more than 380 days on average (Mkurabita Diagnostic Report, ILD, 2005).

**Table 5.1: WBDB Registering Property Rank, 2010-2011**

Registering Property Rank			
Country	2010	2011	Country
Ghana	31	36	Ghana
Korea, S.	72	74	Korea, S.
Average SSA-SA	122.3478	122.5	Average SSA-SA
Kenya	130	129	Kenya
<b>Tanzania</b>	<b>148</b>	144	Mozambique
Uganda	150	150	Uganda
Mozambique	153	<b>151</b>	<b>Tanzania</b>
World Bank Doing Business Survey			

<sup>30</sup> Note that the emphasis is on “secure,” rather than on a particular type of land rights system. In addition to the contemporary concept of title-based private ownership, customary tenure systems (that include common ownership) can be secure as well as conducive to productive investment given an appropriate set of land use regulations.

<sup>31</sup> According to USAID (2011) Tanzania ranked 127 on the land registration WBDB indicator in 2009, along with Table, confirming a worsening trend.

Where property rights are incompletely defined, enforced, or transferable, the property system may act as a constraint on investment and hence economic growth through at least four channels:

(1) Low appropriability due to insecure property rights:

Where property rights are weak, those who hold rights to land or other property face the possibility that their claims will be challenged or extinguished. Investments that are fixed in land will also be lost if the claim to the underlying land or property is lost. By increasing the perceived risk and thus reducing the expected returns to potential investments, the lack of tenure security weakens investment incentives. This presumed causal relationship is appropriately described in Hornberger (2007) as an “investment demand effect.”

(2) Low appropriability due to constrained land markets:

Incomplete land markets also reduce the expected returns to investment. Where land can be freely bought and sold, investors know that they can potentially recoup the value of their investments by selling the improved property in the future, what Brasselle et al. (2002) call “realizability.” In the absence of land markets, investors do not have this assurance, as the associated benefit stream cannot be monetized and transferred.

Investment is further constrained when firms and individuals are restricted in their capacity to freely acquire land. In agricultural settings, the consequence is that producers are not able to optimize the size of their land holdings to produce at the most efficient scale possible. Inability to access land will hinder firms and individuals as they try to reach optimal production in any commercial sector that uses land as an input. The resulting decrease in expected returns serves to discourage investment.

A relatively free land market allows those who can use the land most productively to acquire it in the appropriate quantity. From an economy-wide perspective, significant constraints on the sale, purchase, and transfer of land result in inefficient allocation.

(3) High cost of finance:

The ability to collateralize assets is an important means by which investors access finance. Banks will not accept assets as collateral if the owner’s claims are insecure or cannot be transferred to the bank in the event of default. Hence, insecure or non-transferable property rights limit the willingness of banks to lend.

(4) Reduced value of natural capital:

Renewable natural resources may be vulnerable to over-exploitation or a ‘tragedy of the commons,’ if access to those resources is open and lacks a set of understood and enforceable rules that prevents such exploitation. For example, open access to pastureland can lead to overgrazing, compromising the value of the resource in the long run. Likewise, deforestation is a major concern, particularly for relatively open access resources.

## a. Historical Context

Tanzania's land tenure system in its current form is best described as unstable. One may even argue that instability has been the general state of Tanzanian land tenure policy since the country's independence in 1961. Instability, however, does not equate to a lack of official efforts to provide a secure form of land rights to users. The Tanzanian Government has made tangible efforts over the past two decades to introduce a system of clear use and ownership rights into policy, one that emphasizes equitable recognition of both customary and contemporary forms of tenure. The problem arises from the confusion that has been created as an expected aspect of institutional transition, but also from the difficulties of reconciling customary and contemporary tenure systems within one national framework.

Land policy in Tanzania over the past century begins with the Land Ordinance passed by Tanzania's colonial power, Great Britain, in 1923. Under the Ordinance, all lands were declared public lands under the protectorate of the Governor. It recognized two types of rights: granted rights of occupancy that were issued and registered by the Governor and almost exclusively issued to non-natives; and "deemed" rights of occupancy, corresponding to prevailing customary law. The latter category of rights was not registered.<sup>32</sup>

Although the precedence of customary land tenure systems initially returned with the post-Independence rise in 1961 of President Julius Nyerere, the socialist and nationalist political philosophies that later emerged as expressed through the 1967 Arusha Declaration shaped ensuing land policy quite differently. Customary land rights and chieftainships were abolished, replaced by a system of village and district governance (USAID, 2011).

One of the most dramatic and defining policies of the immediate post-colonial period began in 1973 when Operation Vijiji, a mass "villagization" plan, was implemented. An estimated 75 percent of the Tanzanian population was relocated from scattered homesteads into communal "Ujamaa" villages of 2,000-4,000 residents. Village councils were responsible for land allocation and investment. Stein and Askew (2009) argue that, "villagization fundamentally altered peoples' relations to the land and forcefully demonstrated the power of the state." Villagization was very poorly received across the country, with many Tanzanians refusing to abide by the relocation order (Lawi, 2007). It was also a likely factor in the economic crisis that began in the mid-to-late 1970s (Odgaard, 2006). The policy was abandoned in 1977, and many households returned to their original homestead, with the result that land conflict ensued between users of the same piece of land under the Vijiji and prior tenure systems.

Under Ali Hassan Mwinyi's presidency, beginning in 1985 the government gave attention to addressing the rise of land conflict and the general lack of tenure security throughout the country. A Land Commission (called the "Shivji Commission" after its director, Professor Issa Shivji) undertook a three-year study on land tenure, releasing its report in 1994. The report called for village assembly ownership of village land and national assembly ownership of state land (USAID,

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<sup>32</sup>Odgaard (2006) argues that the broad definition of customary rights and right holders made it easy for colonial authorities to use the Ordinance to alienate land held under native law and custom.

2010). The new Land Policy, spelled out between 1995 and 1997, set out some of the fundamental principles of what would become the prevailing policy today.

## **b. Contemporary Regime**

Tanzania's official land policy, as codified by the Land and Village Land Acts of 1999 (LA and VLA, respectively), attempts to preserve local customary land tenure systems while bringing them into a larger national framework that includes use regulations for non-village lands.<sup>33</sup> The Land Act defines three categories of land in Tanzania: Village Land, Reserved Land, and General Land. Village Land is defined as land within village boundaries which were agreed in the 1970s and 1980s. Reserved Land includes national parks, game reserves, forest reserves, and other natural reserves. General Land is all other land, including urban and some peri-urban land, and is therefore extremely important economically. Village Land, estimated to comprise 70 percent of total land in the country, is governed by locally prevailing customary law, subject to certain requirements and approvals by other levels of the Government. Village Councils, made up of elected officials, are largely given managerial control of Village Land and have wide latitude in defining, granting, withdrawing, administering, and controlling land rights, land use, and land transactions. They must follow local custom but are not required to answer to the Village Assembly, except in the case of a number of specific types of transactions, such as the proposed lease of five hectares or greater (Hoekema, 2010).<sup>34</sup>

Under the Village Land Act two types of rights are available. One can apply for a Certificate of Customary Right of Occupancy (CCRO), which may be held indefinitely. Holders of these certificates can then lease out their plots in the form of a derivative right of occupancy, but this requires approval of the Village Council. In addition, Village Councils may set aside land in the village for public use, preventing individuals from applying for occupancy rights. Villages have the right to define their boundaries and obtain certificates as proof of these rights. Yet relatively few villages have completed these steps. As USAID (2011) notes, as of 2009, 10,397 villages were registered, but only 753 of them had obtained certificates.

Land in the General and Reserved categories, comprising 2 and 28 percent of total land in Tanzania, respectively, is governed by the Ministry of Lands, Housing, and Human Settlements Development. Two types of individual use rights are available. One can apply for a Granted Right of Occupancy that may last to a maximum of 99 years and is subject to annual rent. Holders of this right may subsequently lease out the land. Written contracts, registration, and district level approvals are required for use rights arrangements for General Land. In contrast, the equivalent rights for Village Land, when allocated to village residents, may be written or oral and need not be registered. However, allocation of Village Land to outsiders of the village is subject to special residency and other requirements, and like other allocations must be approved by the Village Council. All land over 250 hectares to be acquired for investment by a non-village entity, or any size parcel acquired

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<sup>33</sup>These laws are considered relatively progressive for their attention to gender equity: Land transactions, even within Village Land as mandated in the VLA, are explicitly forbidden if they involve gender bias.

<sup>34</sup> Village assemblies are comprised of all adult citizens of a village.

by any foreign entity, must first be converted to General Land. In practice, enforcement of land contracts pertaining to both Village Land and General Land has been difficult and uncertain.

Ultimately, the Land Act confers all final land ownership to the nation, with the president acting as trustee for the Tanzanian people. Thus, final ownership of all land rests with the state rather than a current holder of occupancy rights. The government also has the right to convert Village land, even that held under a CCRO, to General Land when it is deemed in the urgent national interest, which is interpreted to include investment interests important to the national economy.

Although the Land Policy provides a favorable balance between respecting customary rights and fostering more market-based land transactions, implementation of the Land Acts has been slow and has failed to foster the development of land markets and the tenure security required for land-intensive investments. In addition, some reviews of the land laws have identified specific issues with the laws themselves which may inhibit efficient implementation and the development of a fully functioning land market (see USAID (2011), Odgaard (2006), Hoekema (2010)).<sup>35</sup> In 2008 only 30 percent of urban land was registered (USAID, 2011), with only 5-11 percent of total land registered (USAID 2011, ILD 2005). This compares unfavorably with 30 percent and 18 percent for Kenya and Uganda, respectively. The transaction costs of acquiring land are prohibitively high, as will be elaborated further below, and formalization does not ultimately result in fully enforceable use rights.

In addition, the attempt to integrate two types of tenure systems has created ambiguities for customary land users. Village Land users, including traditional local authorities, are not well informed about their rights under the Acts, and have not taken advantage of benefits granted to them. Few village residents have acquired the Certificate of Customary Rights to Occupancy (CCRO). Pederson (2010) reports that only 110,000 CCROs had been granted by 2010. Of these, 25 percent were in Mbozi District, a region that has been the focus of more than one pilot titling project to reduce and facilitate the issuance of these certificates. As a result, the livelihoods of small landholders, who lack knowledge of and/or access to the system, can be jeopardized. Moreover, this ambiguity has resulted in mounting land conflicts involving investors in land-based projects, with the result that investors seeking to access land ultimately face insecure and unenforceable use rights. Whereas some investors have attempted to maneuver through the system and others have used more informal means to access land, neither route promises effective security of tenure.

### **c. Tests of Land Regime as a Binding Constraint**

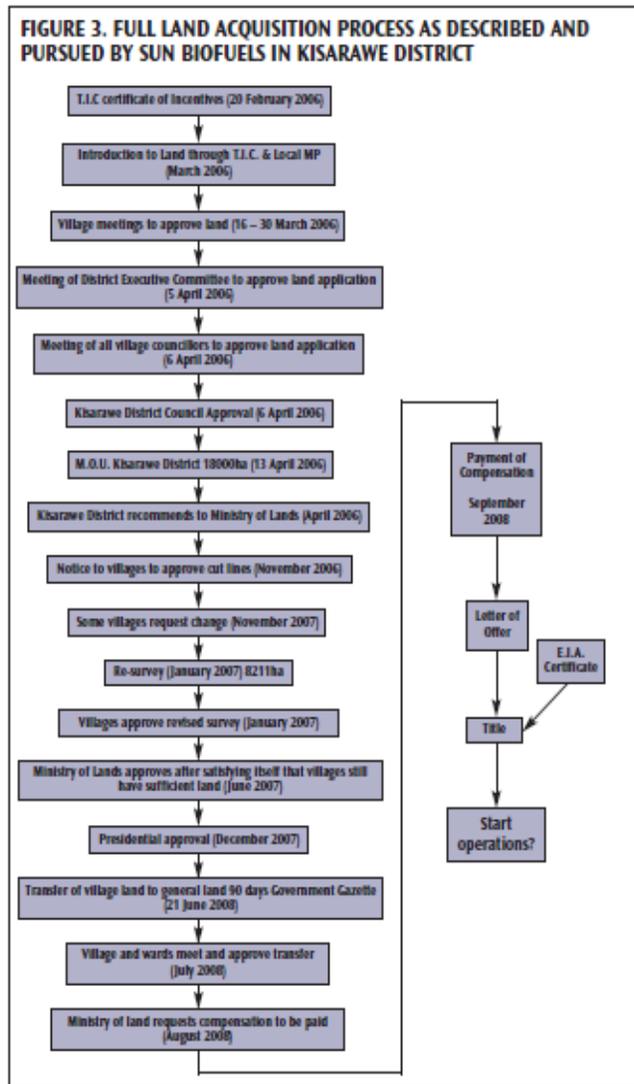
The first test of whether a constraint is binding is that it has a high shadow price, i.e., relaxing the constraint should have a high marginal value to the economy. The primary evidence of this is twofold – first is the high cost of acquiring land through the formal process, in combination with evident demand and the loss of significant potential investments in large segments of the economy; and second, the lack of security that results from either formal or informal means of access have led

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<sup>35</sup>Whereas in principle rights of occupancy can be bought, sold, leased and mortgaged, in practice, the land market is constrained by the need for approvals at several levels of government, the complexity involved dependent upon the land classification and size of parcel (see USAID 2011).

to increasing land conflicts which are costly to resolve and disincentivize investments requiring secure land rights.<sup>36</sup>

**Figure 5.1: Procedure to Acquire Investment Land from Village Holdings**



The high cost of acquiring land results from the complicated and costly multi-step process of searching for, transferring, and registering land, which for those who actually complete the process does not currently result in an enforceable use right. Numerous reports from investors regarding the process of searching, acquiring, and registering land show that the waiting time can be between one and three years or longer, with an average time for transferring and registration of 380 days (Institute for Liberty and Democracy (ILD), 2005). In urban areas, the process by which a business registers already purchased land takes 73 days and nine steps, on average. A 2007 World Bank study for the Tanzania Business Council demonstrated that, across the country, transferring land to a business and obtaining secure title is the most time-consuming process in starting a business (World Bank, 2007). With costs of starting a business ranging from 90-145 percent of GDP per capita, depending upon the region, this represents a significant barrier to entry (World Bank, 2007b). Utz (2008) reports that the total cost to register property represents 12.2 percent of property value, a significantly higher rate than the 4.7 percent for OECD countries.

Hoekema (2010) describes an “awesome series of bureaucratic steps which takes more than a year of full time work and a lot of money.” Similarly, a feasibility study for expansion of the Tanzania Investment Centre (TIC) Land Bank, conducted by the Investment Climate Facility of Africa (ICF) in 2008 claims that potential investors in General Lands are faced with 72 forms to complete a General Land transaction, and 50 forms for Village Lands. The ILD claims that titling and registration alone costs \$937 in administrative paperwork.

<sup>36</sup> Ideally, one could also obtain data on land prices for legally registered versus unregistered land, and control for characteristics of the land and location to test for the shadow value directly. Unfortunately, the data necessary to undertake such an analysis were not available at the time of this study.

Figure 5.1, from Sulle and Nelson (2009), illustrates a typical timeline for a foreign company (in this case, a producer of biofuels) to acquire a titled derivative right of occupancy.<sup>37</sup> The process for Sun Biofuels began in February 2006 with its application for and issuance of a Certificate of Incentives with the Tanzania Investment Center (TIC), as the law requires for all foreign investors. Three years later, in February 2009, after a long series of negotiations and administrative steps, the land was transferred from Village Land to General Land.

The TIC was established under the 1990 Investment Act to encourage and facilitate large domestic and foreign investment in the country. Foreign investors are required to pass all proposed projects through the TIC. Domestic investors are not required to do so, but they are usually drawn to initiating investment through the Centre by the substantial tax incentives that are offered. In 1997 a land bank was established within the TIC (USAID, 2011) whose goal was to acquire land itself, act as the primary holder of the certificate of granted right of occupancy, and thereby shorten the usually long time required for a larger investor to identify and negotiate acquisition of land on its own. For a variety of reasons, including lack of financing, the Bank has had difficulties becoming more than a pilot project. Today its role is confined to connecting potential investors with potentially available land; the investor is still required to maneuver through the web of procedures illustrated in Figure 5.1.

An additional indication of the high shadow price of the constraint posed by the current land delivery system is the apparently substantial unmet demand for land by potential investors, who appear initially willing to undertake the costly process. According to the ICF feasibility study, from 2004-2007 there were 440 applications for land with the TIC Land Bank requiring a total of 9.6 million hectares. Since 2007, according to a representative of the TIC, the Land Bank has made less than five direct transfers of land annually to investors. Similarly, according to USAID (2011), the Land Bank has transferred only 50,000 hectares of land to investors over the period 2004 to 2009. While the vision for the Land Bank was for it to be the primary supplier of land for foreign and other commercial investors, as of 2007 it has only been able to grant derivative rights of use to 13 of these applications totaling 6,920 hectares, or less than 1 percent of the requested land. The TIC estimates that only one fourth of serious investors would be able to eventually access land through the current land delivery system.

Table 5.2 shows the distribution of the type of TIC-registered projects registered through December 2006 (ICF). According to the ICF, 80 percent of these projects require large land parcels. While the sector representing the highest level of capital and number of projects is manufacturing, agricultural projects have required the most land at roughly eight million hectares. The potential investments represent both domestic and foreign investors. Among the potential foreign direct investments, 21 percent of total capital value is in the manufacturing sector, ten percent in commercial building, and nine percent in each of agriculture, construction, tourism, and transport (ICF, 2008). Although it is not possible to know the extent, it is likely that the lack of clarity and weak enforcement and implementation of the current land acts discourage a significant amount of

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<sup>37</sup> Currently a foreign investor is not permitted to hold a granted right of occupancy, the form of tenure closest to full permanent ownership. Rather the TIC holds the granted right of occupancy, leasing it to the foreign investor as a derivative right.

investors who never even register with the TIC. Further anecdotal evidence that access to land is a major impediment to larger investors is provided by the growing interest in Tanzania's biofuels development potential, largely blocked by the land regime. By 2009, only 640,000 hectares of the four million hectares of land being sought by biofuels companies had been granted.<sup>38</sup> The FELISA Company had obtained only 4,300 hectares out of 10,000 hectares needed to establish a palm oil industry. The same company ran into difficulties when, at the end of the process of securing 350 hectares of village land, one of the two villages attempted to retract the land, having allocated it to someone else (Sulle and Nelson, 2009).

**Table 5.2: TIC Registered Projects by Sector Through 2006**

<b>Sector</b>	<b>Number of Projects</b>	<b>Value TZS Million</b>	<b>Value USD Million</b>
Agriculture and Livestock Development	275	1,757,879	2,343.84
Natural Resources	163	465,586	620.78
Tourism	880	1,748,885	2,331.85
Manufacturing	1,582	4,227,466	5,636.62
Petroleum & Mining	115	525,752	701.00
Construction	179	1,793,900	2,391.87
Commercial Building	265	1,958,625	2,611.50
Transportation	325	1,755,613	2,340.82
Services	162	798,597	1,064.80
Computer	19	13,140	17.52
Financial Institutions	59	1,434,605	1,912.81
Telecommunication	56	1,577,628	2,103.50
Energy	11	302,525	403.37
Human Resources	88	171,423	228.56
Economic Infrastructure	21	1,206,723	1,608.96
Broadcasting	9	244,359	325.81
Geographical Development	1	535,056	713.408
<b>Total</b>	<b>4,210</b>	<b>20,517,762</b>	<b>27,357.02</b>

The difficulty for even government-sponsored Export Processing Zones (EPZs) to acquire sufficient land is further evidence that the current land delivery system deters investment. An EPZ Authority (EPZA) was established in 2006 to attract investors through the provision of generous tax incentives and infrastructure. Fifteen zones were initially identified representing roughly 35,000 hectares with the goal of establishing an EPZ in every region of the country; however, as of May 2011, only a small zone in Dar es Salaam was able to start operations due in part to difficulties obtaining land. The fourteen remaining EPZs, all located on privately occupied General Land rather than on Village Land (and thus theoretically easier than acquiring village land), are being held up in the land acquisition process. According to a source at the TIC, several investors have expressed interest in establishing a presence in the zones and are waiting for the completion of the land transfer process. The EPZA reports that the Dar es Salaam EPZ is already at full occupancy, and at least 14 potential investors have been turned away due to lack of land access in that EPZ.

The lack of a well-functioning land market poses a barrier for both urban and rural investments. From 1995-2002, 74 percent (314) of applications for land for investment purposes was for rural land, the remainder (110) for urban land (Lugoe 2008). Urban land investments are centered in coastal regions (Dar es Salaam, Coast, and Tanga), followed by Arusha, Morogoro, and Mtwara. The

<sup>38</sup>The focus here is on the difficulty of land access rather than the merits of the biofuels industry.

situation is detrimental to small enterprises as well as large: small enterprises have greater difficulty paying the high costs of seeking formal rights to their own premises.

Similarly, provision of lots for residential purposes has been slow. Between 1999 and 2001, Dar es Salaam authorities received over 240,000 applications for land plots. The “20,000 Plots” program, initiated in 2002, aimed at providing 20,000 new residential plots of land annually in urban areas. On average, the program has only been able to provide 6,000 plots annually (Lugoe, 2008).

There is less evidence that the lack of a functioning title-based land tenure policy is a most binding constraint for smallholder investment. In Tanzania there appear to be more binding constraints to investments by smallholders, including the lack of access to input and output markets and a lack of basic infrastructure. Fenske (2009), in a paper that examines the strength of the linkage between smallholder tenure security and smallholder investment in Africa, reports that the causal link between secure title and agricultural investment by smallholders is significant only for investments such as fallow and tree planting (long-term investments), but is less robust for inputs with a shorter time horizon (fertilizer, manure, labor). Moreover, more widespread titling is unlikely to lead to a wholesale expansion of formal credit provision to smallholder farmers. As USAID (2011) notes, banks have little trust in the village level certificate of customary occupancy. Similarly, as Hoekema (2010) states, “Banks have no interest in this kind of small loan, nor (sic) the capacity to administer these. Or they fear nonpayment while evictions are not feasible.”

Nonetheless, given the apparent strong demand for land by investors in rural areas from outside the village system as well as in urban areas, where the economy is growing most rapidly, this impediment affects a large segment of the economy directly. Larger scale businesses requiring land to operate – whether in urban or rural areas, agriculture or manufacturing – are critical to achieving diversification, job creation, and economic growth.

**In addition, the shadow price of the ambiguities in land use rights created by overlapping tenure systems and incomplete implementation of the current land laws can be measured by the high and rising cost of land conflicts.** As Huber *et al.* (2007) state, the increasing number of land conflicts in Tanzania is evidence of a rising and unfulfilled demand for land. The price of land conflicts includes injuries and lives lost. It also includes lost investment as potential investors avoid regions and countries that demonstrate a history of land conflict, as these are considered too risky for commercial investment.

An effective land regime must facilitate larger investments by non-villagers while equipping smaller landholders and village leaders with the information and tools needed to reap the appropriate level of benefit from an exchange of their resources. On this front, the URT land system is also particularly weak. The absence of an active campaign to sensitize village residents and leaders to the procedures and their rights under the Land Acts has prevented their appropriate valuation of land and has contributed to land conflicts with investors. For example, Sulle and Nelson (2009) recount a situation in which the Rufiji District Land Use Committee found that villages were signing contracts with investors that gave away most of their Village Lands to the company SEKAB BT. In one extreme example, leaders in Utunge Village signed a contract giving away 72 percent of its land. Village leaders claim that investors often offer unwritten promises, not understanding that such

promises must be written in a contract to be legally enforced. In addition, conflicts have often occurred when, during the extended period between local level negotiations and the final transfer of Village Land to General Land, some local residents begin to occupy the parcel in order to benefit from improvements that the investor might make. Some conflicts are violent.<sup>39</sup> Conflicts are on the rise, and the ability of the system to resolve them in a timely manner is limited.

There exist several difficulties in implementing the Land Acts at the village level to avoid such conflicts. Among these are ambiguities surrounding the village demarcation process, lack of knowledge of the law by traditional village leaders, and lack of feasible access to the registration system by small landholders. Whereas the Village Land Act gives authority to the Village Councils to maintain customary use rights in the village, and land users may obtain a CCRO from the Village Council, in practice few villages have the capacity to administer the certification program. Applications are frequently sent to a higher-level office outside of the immediate area, without copies of records being provided to the land user. Because obtaining such a certificate is costly in procedural terms and many village landholders fear unfair administration of land issues, they do not apply for official land rights (Hoekema, 2010).

Also central to a successful implementation of the LA and VLA is the village demarcation process, which defines the boundary between Village Land and General Land. Villages are encouraged, but not required, to obtain Certificates of Village Land that officially register a village's land and confer upon the Village Council the authority to manage the land. There is no specific provision to verify the boundaries of the village prior to the land certification process. This creates the potential for conflict when land peripheral to a village may seem unused and is classified as General Land by central authorities, but is viewed at the local level as a productive part of the village (Sundet, 2005).

**The second “test” which is possible to conduct to determine whether a constraint should be characterized as binding is an assessment of the extent to which high cost efforts are made to circumvent the constraint.** Given the costly land search, registration, transfer, and titling processes, several extralegal or informal ways to document land ownership and transactions have emerged, including in urban areas (ILD 2009). In fact, most applicants for land have reportedly turned to informal mechanisms, a sign that investors seek ways to circumvent the constraint (Lugoe, 2008). Kimati (2010) reports that, in a survey carried out in Dar es Salaam, 104 out of 154 parcels visited there were illegally acquired. Lugoe (2008) reports that 70 percent of the Dar es Salaam population resides in informal (unplanned) settlements. In a recent survey on small and medium enterprises, only 5 percent of business owners said they held title to the land on which the business is situated. Yet costly land disputes are frequent, and the extralegal documents are of limited value to obtain mortgages and credits.

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<sup>39</sup>In Meru District in Arusha in 2009, squadrons of enraged residents invaded the estates at Sing'isi location in Meru District, setting fire to about 20 houses, immobilizing a farm tractor and destroying close to 50 acres of land. In 2001, 30 members of the Asian community living in the Kiru Valley (Babati) fled after their farm estates were invaded and set on fire by angry local residents, leaving behind roughly five billion Tsh of losses. Victims included a British investor and a member of the Tanzanian Parliament. Conflicts have also broken out between pastoralists and other land users, which may increase with the spread of irrigation.

Similarly, USAID (2011) states that potential investors have chosen to avoid the complicated bureaucracy, choosing to negotiate for land directly with village leaders. Villages are also incentivized to use this avenue in order to avoid the complicated official land transfer and compensation process and collect rent directly from the tenant. Such informal arrangements do not provide sufficient security in land use rights for a non-local investor, however, as the rights would not be enforceable in the courts.

The two other tests proposed by Hausmann *et al.* are difficult to conduct for land-related issues in Tanzania without better data. First, relaxing a binding constraint should result in significant changes in investment or production in an aggregate measure of economic activity. Unfortunately, data to conduct this test are not available and, in any event, there is relatively little variation over time in the measured cost of accessing land. One could also map out investment projects undertaken within the country which require large investments in the land or in immobile assets linked to the land (such as tall or permanent structures) alongside the level of integration of a region in the current national Land Act framework. If the constraint is binding, one would expect to see a concentration of commercial investments in regions with a history of land titling, secure access and a low incidence of land conflict. Data on comparative land prices and investment rates in and near the areas where pilot projects have been implemented to facilitate the issuance of CCRO's (particularly Mbozi District) could also be used to test this constraint. The final test of the land regime as a binding constraint to growth would be to assess whether there is a relative lack of enterprises in Tanzania requiring secure land rights – i.e., enterprises 'intensive' in the constrained factor. One could benchmark Tanzania's level of investment in fixed or land-based assets by the private sector against other comparator countries and, as suggested above, within the country to the extent there is variation in the effectiveness of the land regime. Unfortunately such data was not available for this analysis either. **Based on the indicators that are available, however, of a very high shadow price, widespread economic impact, and the costs incurred of avoiding the formal land registry system, the current state of Tanzania's land regime appears to constitute a binding constraint to economic growth.**

## B. Taxes

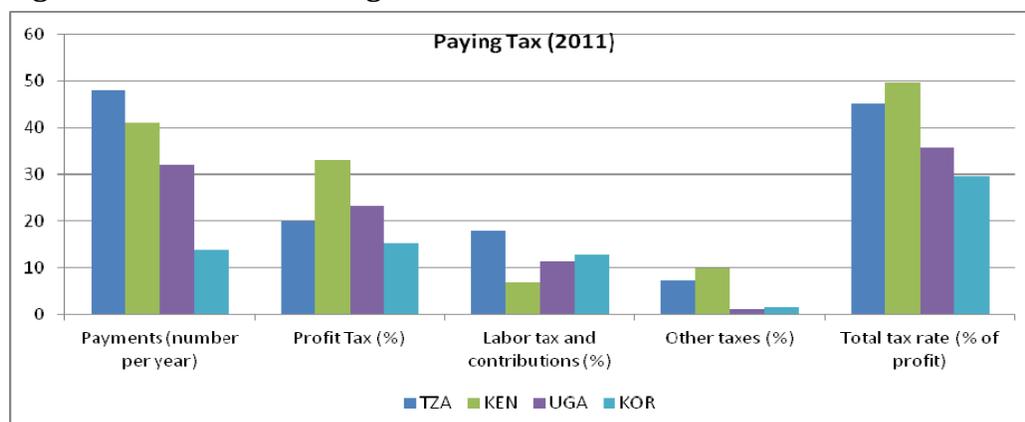
Taxes are necessary to generate revenues which can be utilized to provide key public goods and infrastructure and thereby improve the returns to private investment. If tax collections are too low to close unsustainable fiscal deficits, growth can be harmed through macroeconomic channels as discussed in Chapter 4. At the same time, taxes may also introduce distortions to efficient allocation of resources in production. If unduly burdensome, taxes would severely reduce the expected private return on investment, and thus investment and growth. Finally, if fulfilling tax requirements requires high costs or risks, the system of tax administration itself can be burdensome and deter investment or full formalization of enterprises.

### a. Tax Rates

Figure 5.2 provides a comparative overview of various producer tax rates in Tanzania, Kenya, Uganda, and South Korea in 2011. It is clear from this that Tanzania's tax environment is not

particularly business-friendly. For the five types of taxes analyzed, the rate in Tanzania is never the lowest.<sup>40</sup>Tanzania has the second highest total tax rate as a percentage of profits among the four countries shown, as well as the highest rate of labor tax and contributions.

**Figure 5.2: Tax Rates Facing Firms**



Source: WBDB

**Table 5.4: WBDB Paying Taxes Ranking**

<u>Paying Taxes Ranking</u>			
Country	2010	2011	Country
Korea, S.	48	49	Korea, S.
Uganda	63	62	Uganda
Ghana	80	78	Ghana
Mozambique	98	101	Mozambique
Average SSA-SA	115.4565	116.4565	Average SSA-SA
<b>Tanzania</b>	<b>116</b>	<b>120</b>	<b>Tanzania</b>
Kenya	163	162	Kenya
World Bank Doing Business Survey			

**Table 5.3: Tax Rates for Major Players across Countries**

	<b>Corporate Income Tax</b>
Mozambique	<ul style="list-style-type: none"> <li>• 32%</li> <li>• special rate of 10 % agriculture and animal husbandry</li> </ul>
Tanzania	<ul style="list-style-type: none"> <li>• 30%</li> </ul>
Uganda	<ul style="list-style-type: none"> <li>• 30%</li> </ul>
Kenya	<ul style="list-style-type: none"> <li>• 30% for resident</li> <li>• 37.5% for nonresident</li> </ul>
Ghana	<ul style="list-style-type: none"> <li>• 25% (for Accra and Tema)</li> <li>• 18.75% (for All other Regional Capitals)</li> <li>• 12.5% (Outside other Regional Capitals)</li> </ul>
S. Korea	<ul style="list-style-type: none"> <li>• 24.2%</li> </ul>
Mauritius	<ul style="list-style-type: none"> <li>• 15%</li> </ul>
Source: World Tax Rates 2010/11 ( <a href="http://www.taxrates.cc/index.html">http://www.taxrates.cc/index.html</a> )	

<sup>40</sup>The WBDB Indicators claim that profit tax rate is second lowest to South Korea's, given an estimated profit tax rate of 20 Percent. It is unclear how the 20 percent was derived, given that the current corporate tax rate in Tanzania is 30 percent which would place Tanzania in a similar range as Kenya.

**Table 5.5: A Sample of Tax Rates in Tanzania (2010-2011)**

Tax Type	Rate	Notes
Corporate Income Tax	30%	Resident or non-resident
Corporate Income Tax, Newly Listed Companies	25%	Reduce rate for 3 years if at least 30% of shares are publicly issued
Payroll – Social Security	20% of pay	20% rate shared 10% by employee and 10% employer <sup>41</sup>
Payroll – Skills and Development Levy	6% of pay	Agricultural employment exempt; 5% in Zanzibar
Capital gains – individual asset	10%/20%	Resident/non-resident
Capital gains – company	30%	Resident or non-resident; exemptions for private residence and small agricultural landholder
Value Added Tax	18%	
Import Duty – raw materials, pharmaceuticals, capital goods, agricultural inputs, <u>any goods from member EAC states</u>	0%	
Import Duty – semi-finished goods	10%	
Import Duty – final consumer goods or finished commercial good	25%	Rates of higher than 25% are charged for sensitive products including yogurt milk and cream, cane or beet sugar and solid form sucrose, sacks and bags intended for packaging of goods, and worn clothing and other articles
Excise Duty	7-120%	Wine, spirits, beer, soft drinks, cigarettes, tobacco, petroleum products, plastic bags
Fuel Levy	Tsh200/L	
Export Tax	15%/20%	Raw cashew nuts/hides and skins

Source: Tanzania Revenue Authority (2010)

Table 5.3 similarly shows that Tanzania's corporate tax rates are comparable to those of neighboring countries, *albeit* significantly higher than in Ghana, Mauritius, and South Korea. In addition, paying taxes in Tanzania requires, on average, the highest number of tax payments by firms, which raises the transaction costs to business of meeting these obligations. Enterprises and investors have indicated in four surveys (1999, 2003, 2006, and 2009) that high tax rates are among the top four constraints to business. The WBDB indicator on Paying Taxes, as shown in Table 5.3, ranks Tanzania lower than the Sub-Saharan average and only higher (*albeit* significantly so) than Kenya. More details of the current tax rate schedule relevant to firms are shown in Table 5.5.

There are a few notable features. First, imports from East African Community (EAC) members are duty-free. Second, the taxation of payroll, at 26 percent (with 10 percent of this paid by the employee) is relatively high and may be a significant disincentive to formal wage employment. Finally, some agricultural inputs are exempt from import duties, in particular for larger investors.<sup>42</sup>

<sup>41</sup> Note that although the employer only 'pays' 10 percent of this, in competitive labor markets according to standard economic theory, who pays does not affect the ultimate wage or employment level: the wedge of 20 percent between the cost of employment to firms and the wage remains the same.

<sup>42</sup> It is unclear whether agricultural inputs imported by larger agricultural input supply firms serving small producers would qualify for this exemption.

However, exports of raw cashew nuts, hides, and skins are subject to an export tax. In addition, all domestically consumed goods and services are taxed through a Value Added Tax (VAT), with exemptions for export goods and services and businesses with less than Tsh 40 million annual turnover.

### b. The Tax Base and Collection Efficiency

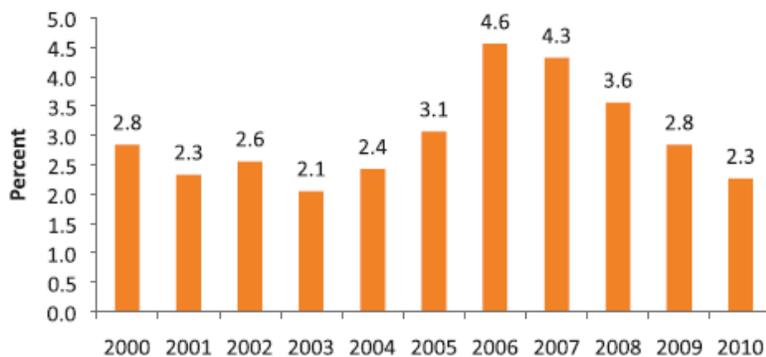
A small tax base, together with high exemption rates, may result in the need for higher tax rates, which subsequently may lead to a larger informal sector and an even smaller tax base. According to AgCLIR Tanzania (2010):

*“A small tax base is most definitely a problem in Tanzania, where the tax base is so small that most of the government’s income is paid by a relative handful of taxpayers. The Tanzania Revenue Authority*

*(TRA) itself estimates that in a country with a population of nearly 40 million persons, there are only about 400,000 registered (business) taxpayers.”*

**Figure 5.3: Tax Exemptions as a Percent of GDP**

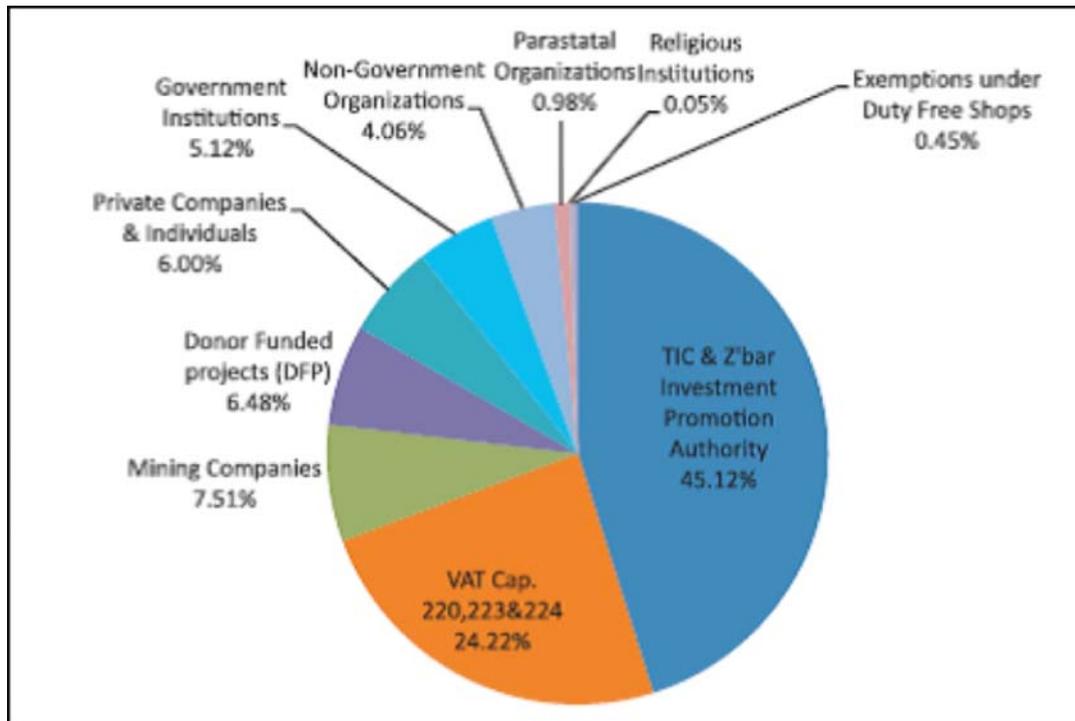
**Figure 7: Tax exemptions as percent of GDP**



Source of data: Tanzania Revenue Authority revenue reports

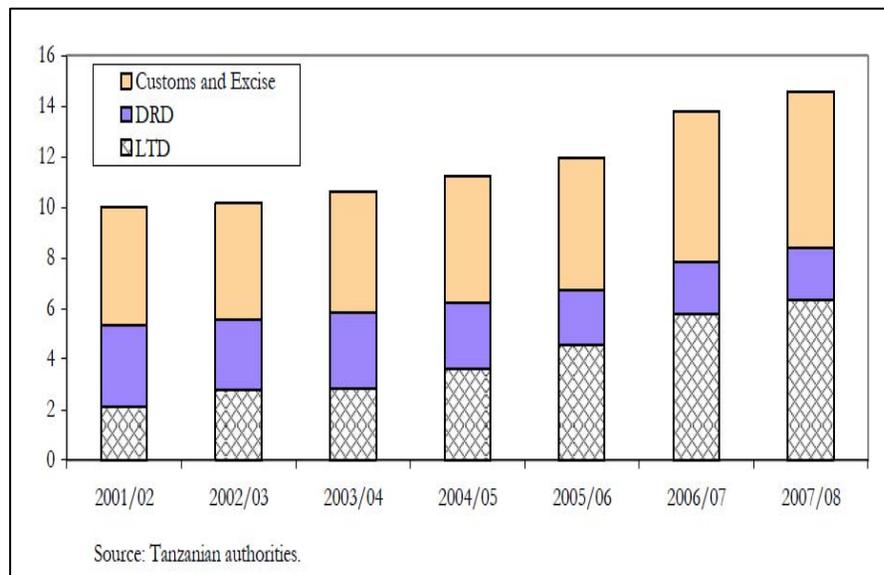
ous level of tax incentives. About 7.5 percent of all tax exemptions during 2008/09 – 2009/10 periods were granted to mining companies. Moreover, some argue that some of the incentives provided are not necessary, and the investments would most likely have taken place regardless of these incentives.

**Figure 5.4: Exemptions Granted by Recipient Category (2008/09-2009/10)**



Source: *Uwazi Policy Brief TZ.12/2010E*

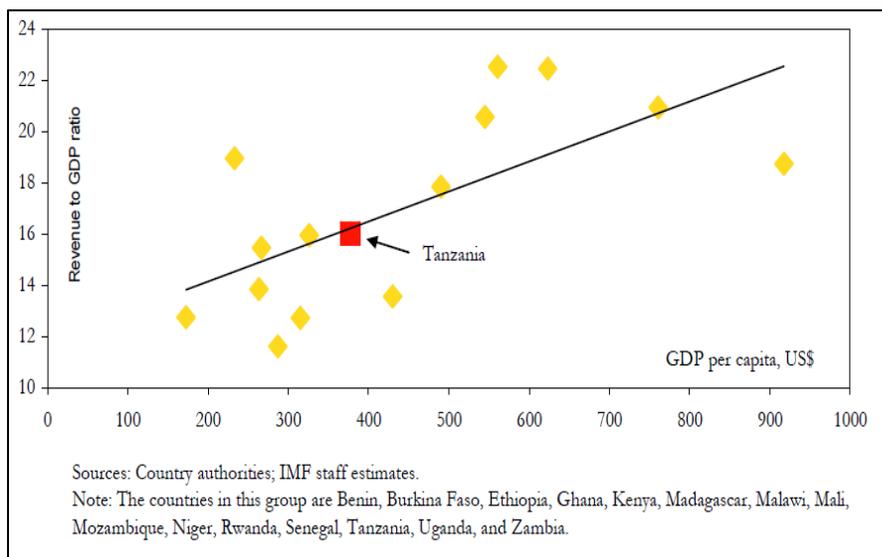
**Figure 5.5: Tax-to-GDP Ratio, Tanzania, 2001-2008**



As shown in Figure 5.5, since the year 2000 the tax-to-GDP ratio has increased by five percentage points (from Nord et al., 2009). As is also shown, nearly half of the increase in revenue has come from the Tax and Revenue Authority's (TRA) Large Taxpayers Department (LTD), which collects taxes from only about 400 entities.<sup>43</sup>

<sup>43</sup>LTD denotes "large taxpayer division", while DRD denotes "domestic revenue division" and handles all other income taxes.

**Figure 5.6: Tax Revenue-to-GDP Ratio by Per Capita Income**

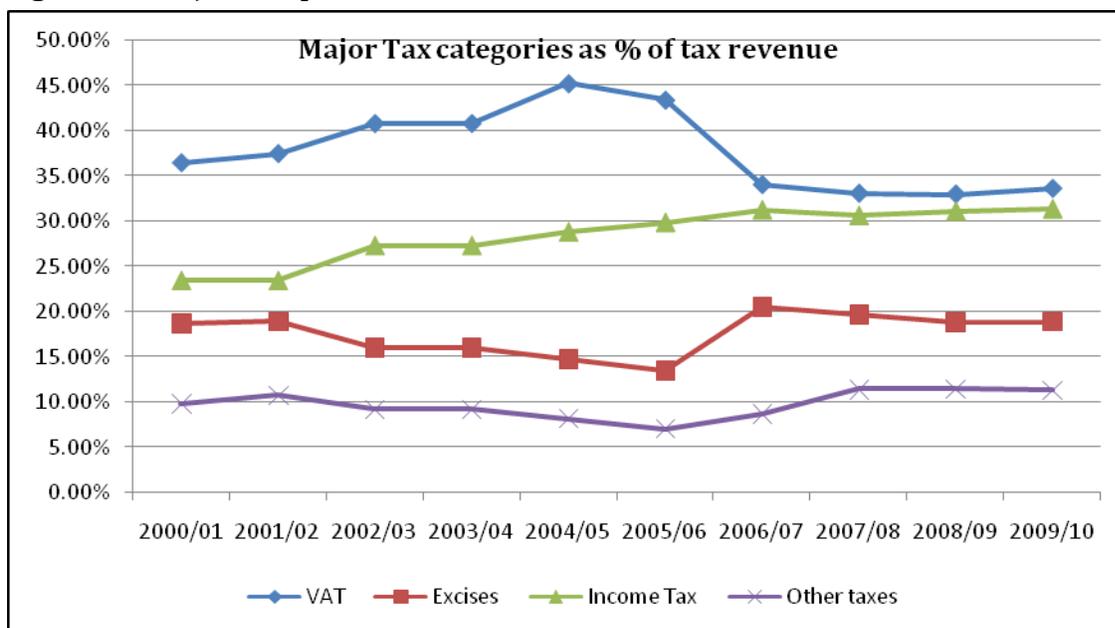


Although the corporate tax base is relatively small, and a high share of government expenditure is financed by donors, improvements over the last decade in Tanzania's ability to collect taxes have brought the country within range of other countries in the region, relative to GDP per capita as shown in

Figure 5.6  
(Nord et al., 2009).

Figure 5.7 shows the major sources of tax revenue as a percentage of total collections, for 2000-2010. VAT comprises the largest share of all sources, although its share has dropped beginning in 2005/06 as a percentage of the total as the share represented by excise taxes increased. Individuals pay a greater share of total income taxes than businesses in Tanzania, at approximately 57 percent of those taxes versus 42 percent paid by businesses (Bank of Tanzania).<sup>44</sup>

**Figure 5.7: Major Components of Tax Revenue Collected in Tanzania, 2000-2010**



<sup>44</sup> Data not shown.

Source: Bank of Tanzania

### c. Taxes on Agriculture

As with all productive sectors, taxation of agriculture can present a potential disincentive to production and investment. A recent Impact Assessment of Tax Reforms Study conducted in 2007 (Ministry of Agriculture, Food Security, and Cooperative – MAFSC 2009) finds that the agricultural tax regime is one of a number of factors explaining low agricultural investment. Although several tax reforms favoring the agricultural sector have been adopted, the study revealed some reforms which have negatively impacted agriculture.

First, the duty on imported inputs can reduce profitability, especially when combined with other taxes. Although large agricultural enterprises benefit from a zero duty on imported inputs, smaller entities do not. Moreover, spare parts (which comprise a higher proportion of operational costs) are charged the normal rates. In addition, the corporate income tax rate of 30 percent is applied to all production sectors in Tanzania, including agriculture. As shown in Table 5.3, Mozambique, for example, stratifies its corporate tax system, applying a 10 percent rate to the agricultural sector rather than the 32 percent rate applied to all other sectors. Ghana has attempted to attract private investment to rural areas through a reduction in the corporate tax rate applied to rural establishments. The MAFSC (2009) tax study recommends that the corporate tax rate in the Tanzanian agricultural sector be reduced to 5-10 percent of net profits.

Currently the 6 percent Skills and Development Levy facing producers exempts employers of farm workers but not employers of factory workers. However, particularly from the perspective of some potential agricultural investors, farm and factory may operate as an integrated entity. Thus, the MAFSC study recommends reducing this tax for the entire agricultural sector (farm and factory) to no more than 1 percent of gross wages.

While local taxes facing agricultural production have been nearly eliminated, the produce ‘cess tax’ remains and has become increasingly controversial. Local and regional authorities assess the ‘cess’ tax as 5 percent of the value of production, but implementation is not consistent across localities. Since these taxes are not levied on profits, they are a potential disincentive to production of higher value crops, which typically entail both higher revenues and costs. As such, a tax based on sales or revenues results in a higher de facto tax on profits for higher value added production.

**Despite these issues, there is no indication that the shadow price of taxes and tax payments is exceptionally high, and there is no indication that Tanzania’s tax system or rates constitute a binding constraint to economic growth.**

## C. Regulatory Environment for Private Business and Trade

In any economy, the set of laws, policies, regulations and traditional practices that affect business costs and risks and, therefore, investment and growth constitute what is known as the “regulatory environment” or “business enabling environment.” Regulatory quality therefore makes a great difference to sustainable, broad-based economic growth. Recent analyses by the World Bank Group

and other third party or private sector organizations suggest that the quality of Tanzania's regulatory environment for business and trade has improved in some aspects and, in other respects, requires continued collaboration among the GOT, development partners, and the private sector to reduce adverse impacts on growth. Ongoing GOT reforms make policy-market relationships dynamic. The data used in these analyses are usually retrospective and thus there have been some improvements in regulatory quality not fully reflected in available indicators. Nonetheless, it is useful to examine the most recent data to develop as accurate a picture as possible regarding the extent to which the regulatory environment is conducive to private sector investment.

Regulatory quality constitutes a constraint to economic growth in Tanzania; though not of the same consequence today as the three binding constraints identified. Further research into the significant ongoing challenge posed by regulatory quality to assess the extent of its impact on economic growth would be beneficial. Firms bear a significant cost of remaining informal, but other constraints to firm growth may be more severe. Business registration and trade appear to be somewhat responsive to reduced regulation, and regulatory quality and trade openness appear to be correlated with aggregate export performance and production in the most affected goods categories.

#### **a. Overview**

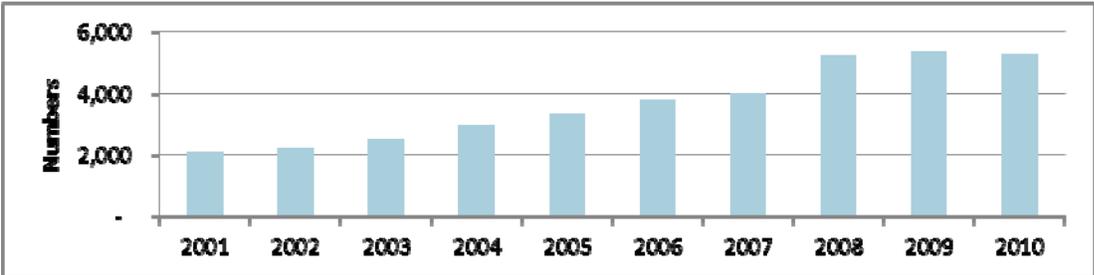
Tanzania's economic liberalization and transition from socialism have significantly improved the legal and regulatory framework for private sector-led growth, with notable results. It is generally believed that the country's growth over the past decades is due in large part to this liberalization process. At the same time, establishing a consistent, conducive regulatory environment for business at the national, regional, and local levels requires sustained engagement on many fronts, including on the complex task of strengthening implementing institutions. The Government of Tanzania has continued to engage in such efforts.

The recent Business Environment Strengthening for Tanzania (BEST) program began in 2003 with the support of the World Bank and bilateral donors (DANIDA, SIDA, DFID, and the Royal Netherlands Embassy). BEST was designed to address key constraints in the legal and regulatory environment for business and outlined the most effective measures using four strategic pillars: (1) reducing the burden of doing business by achieving better regulation and eliminating procedural and administrative barriers; (2) reducing the complexity, cost and time taken to process and resolve commercial disputes; (3) changing the culture of government, aiming at improving service delivery by the government to the private sector; and (4) strengthening the advocacy role of the private sector. These steps include efforts to strengthen implementation of the land laws. The government has achieved several of the BEST program's goals. Indeed the substantial progress on regulatory reform after implementation of the original BEST program was highlighted by the World Bank Doing Business indicators (2007) which ranked the country as 10th best in the world on improving conditions for doing business. Despite the many positive steps that the government has taken to attain a more pro-business regulatory environment, many challenges remain.

The government is now implementing the Investment Climate Roadmap, which is also aimed at improving the regulatory environment for business, including land laws.

Since 2004, the cost of starting a business in Tanzania has dropped. One can see a jump in the number of firms registering after 2007 (Figure 5.8) in apparent response to liberalization and reduced regulatory burden. By 2010, Tanzania is ranked 122nd in the world, better than Kenya and Uganda in business start-up costs. In terms of the cost of closing a business, Tanzania ranks 113th in the world in the Doing Business Indicators, comparable in ranking to Ghana and superior to Mozambique. Tanzania ranks even better on investor protection at 93rd in the world (World Bank, 2011a). In contract enforcement, it ranks 32nd, with the time to enforce a contract lowest among comparators at approximately 450 calendar days from the filing of the lawsuit in court until the final determination and, in appropriate cases, payment.

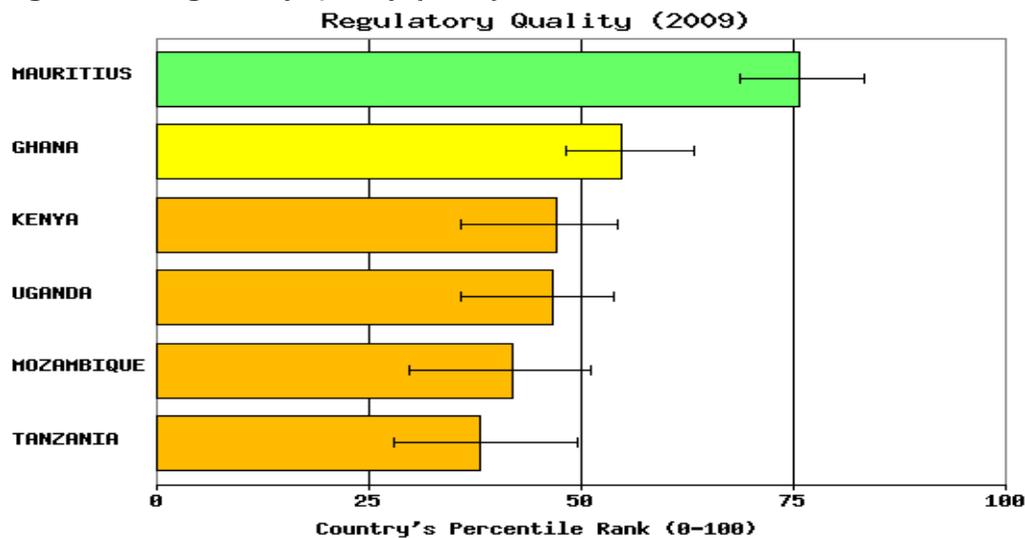
**Figure 5.8: Number of New Businesses Registered, 2001-2010**



Other data suggest that important challenges remain for strengthening and sustaining a regulatory environment conducive for broad-based economic growth. As shown below in Figure 5.9. Tanzania ranked below the comparator countries in 2009 on quality of regulation.<sup>45</sup>

<sup>45</sup> 90 percent confidence intervals are shown in the figure; and, as shown, one cannot reject the hypothesis that Tanzania’s ranking is no lower than for Kenya, Uganda, and Mozambique.

**Figure 5.9: Regulatory Quality (2009) based on Worldwide Governance Indicators**



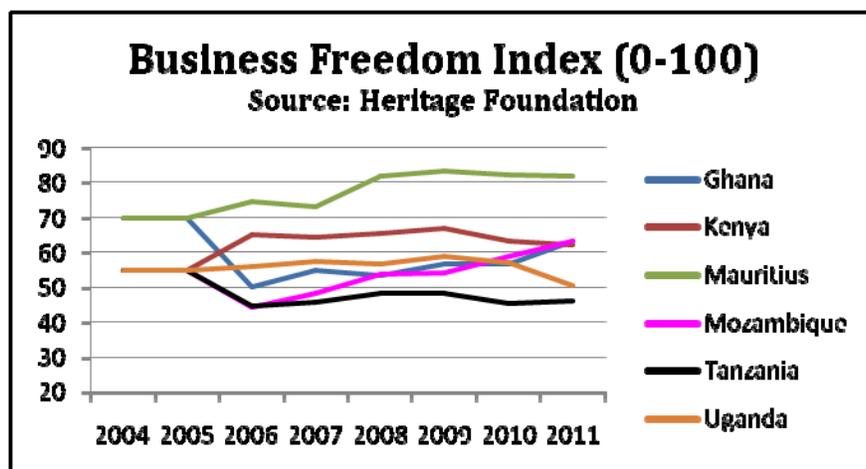
Source: Kaufmann D., A. Kraay, and M. Mastruzzi (2010), *The Worldwide Governance Indicators: Methodology and Analytical Issues*

Note: The governance indicators presented here aggregate the views on the quality of governance provided by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries. These data are gathered from a number of survey institutes, think tanks, non-governmental organizations, and international organizations. The WGI do not reflect the official views of the World Bank, its Executive Directors, or the countries they represent. The WGI are not used by the World Bank Group to allocate resources.

One obtains a similar picture using the World Bank Ease of Doing Business (WBDB) indicator, which covers a range of legal, regulatory, and institutional issues that affect the ease and cost of doing business. In this composite ranking, Tanzania ranks 128th in the world. The Business Freedom Index (BFI), an index derived from similar data of the ability to start, operate, and close a business, is intended to capture the overall burden of regulation as well as the efficiency of government in the regulatory process. On this index, too, Tanzania's scores and rankings from 2011 reflect considerable opportunities to improve to a level more consistent with its comparator countries.<sup>46</sup> It is important to note that Tanzania's ongoing reform efforts may generate better ratings and rankings in future surveys. Still, significant work remains, if only to sustain momentum already generated by reforms to date.

<sup>46</sup> The business freedom score for each country is calculated as a number between 0 and 100, with 100 equaling the freest business environment. The score is based on ten factors, all weighted equally, using data from the World Bank's Doing Business study. These factors include; 1) number of procedures required to start a business, 2) time in days to start a business, 3) cost to start a business, 4) minimum capital required to start a business, 5) number of procedures required to obtain a license, 6) time in days to obtain a license, 7) cost to obtain a license, 8) time in years to close a business, 9) cost to close a business, and 10) recovery rates for closing a business.

Figure 5.10: Business Freedom Index



Further examination of the component parts of these indicators is required to better understand where Tanzania’s regulatory quality has the greatest adverse impacts on business. While a detailed regulatory quality review is beyond the scope of the present diagnostic, continuing regulatory challenges can be grouped

into the following themes. First is the multiplicity of steps and requirements for adhering to the legal and regulatory framework for conducting business. Second is the fact that the rules and procedures do not appear to be implemented in a consistent, facilitative, and non-discriminatory manner.<sup>47</sup> Third, certain labor regulations and their implementation may adversely affect growth and employment.

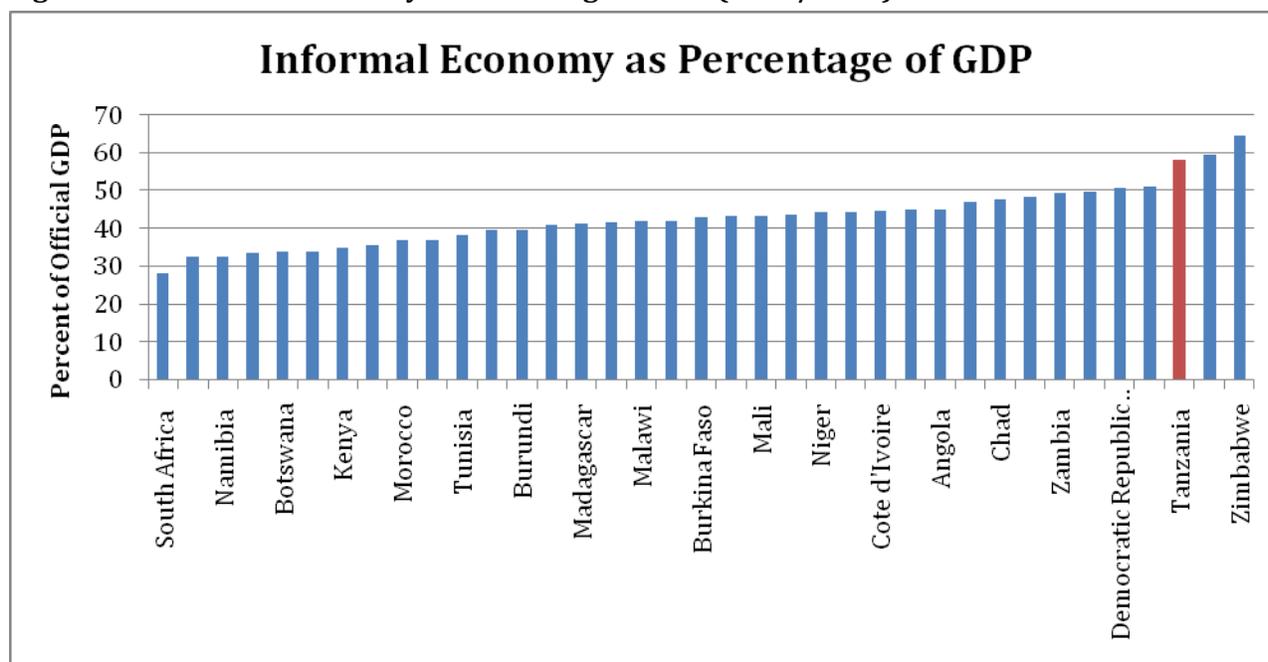
Given the importance of regulatory quality to any economy, the section below assesses certain aspects of Tanzania’s regulatory environment against criteria that give some indication of the ongoing challenges to growth posed by that environment. However, further investigation and application of some of the four tests proposed by Hausmann et al (2008) would be needed in order to assess the extent to which Tanzania’s regulatory environment constrains economic growth. The tests undertaken below rely on correlations and patterns using retrospective information and indicative data, not rigorous tests of causality.

### b. The Informal Economy

When informal economic activity is defined as in Schneider (2007) to mean all activity which is deliberately concealed from public authorities to escape either taxation, social security contributions, labor market standards and regulation, and/or compliance with certain administrative requirements, Tanzania ranks among the most informal economies in Sub-Saharan Africa, as shown in Figure 5.11. In the IFC’s Regulatory Capacity Review of Tanzania, 2010, it is estimated that approximately 55 percent of Tanzania’s GDP is generated within the informal sector, and more than 95 percent of enterprises in Tanzania are estimated to be informal to some degree.

<sup>47</sup> A more recent Enterprise Survey would be useful to assess changes since 2006.

**Figure 5.11: Informal Economy as Percentage of GDP (2004/2005)**



Source: Schneider (2007).

The 2006 Integrated Labor Force Survey showed that 40 percent of all households in mainland Tanzania engaged in informal sector activities. The concentration of informal sector activities is higher in urban households (55 percent) than in rural ones (33 percent). Moreover, the household enterprise sector, which is overwhelmingly informal, contributes more than 40 percent of the total urban labor force and more than 50 percent of rural non-agriculture labor force, and is the fastest growing primary employment source in the country. The main reasons survey respondents gave for starting household enterprises, apart from the need for additional income, are the inability to find other work (36 percent for whom the enterprise was the main activity and 18 percent for whom it was a secondary activity). Other common reasons cited were the fact that the sector provides good income opportunities and that the types of businesses one can engage in informally do not require much capital (ILFS 2006).

Given the magnitude of the informal sector within Tanzania's economy, the ability of the informal sector to operate efficiently – or conversely, the costs of their inability to operate formally – is significant. Many other factors, including access to inputs, also impact the business community and it is not possible to attribute the high rate of informality principally to the quality of regulation.

**The shadow price of the constraint appears to be moderately high, but depends on the sector.** Firms will remain informal as long as the costs of formality – i.e., interacting with the formal regulatory environment – are higher than the costs of informality, which are manifested as lost productivity or profits. Informality can reduce productivity by inhibiting access to inputs such as utilities such as electricity and water, formal finance, business premises and land, as well as achievement of a more efficient division of labor and access to expanded markets. As discussed

elsewhere in this report, there are other severe obstacles for small enterprises and other economic actors to accessing inputs such as electricity and water, land, and finance in Tanzania. Thus, it is not possible to attribute Tanzania's high rate of informality principally to the quality of regulation of business and commerce.<sup>48</sup>

Nonetheless, analysis globally regarding the informal economy in developing countries shows that informality makes accessing key production factors more difficult and risky, and greater formality is associated with greater profitability. Data collected in Tanzania in 2004 as part of a Rural Investment Climate Assessment (World Bank 2007) showed that, with the exception of the construction sector, formal firms in rural areas had higher sales per worker. This outcome is in spite of the fact that larger firms had lower sales per worker than smaller firms. At the same time, 54 percent of surveyed enterprises claimed that the primary reason for not registering was that this was not required as long as they did not intend to expand. Expansion to include moving beyond the local market would mean incurring higher transaction costs, including those of registration, managing a more complex organizational structure, and improved (and more expensive) service, production, or trading methods. The Rural Investment Climate Assessment showed a statistically significant correlation at the community level between increased business registration and annual employment growth, as shown in Table 5.6, although these correlations do not establish causality. The correlation between employment growth and business registration appears particularly significant relative to the cost of regulatory reform, especially when the costs of alleviating other significant barriers that correlate to employment growth, such as roads and electricity, are considered.

**Table 5.6: Constraints to Rural Enterprise Employment Growth**

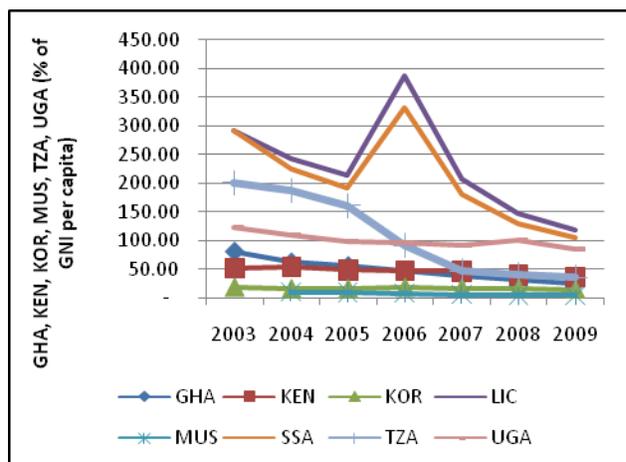
Community-level constraint	Mean impact on annual employment growth	Standard errors
Business environment: 50% reduction of registration time	0.041%	0.014
Social cohesion: 50% reduction of violent conflict	0.109%	0.044
Registration: 50% increase of formal registration	0.138%	0.060
Electricity supply: 50% decrease in interruptions	0.195%	0.059
Demand: 50% increase of agricultural wage rate	0.215%	0.105
Communications: 50% increased access to cell phones	0.236%	0.141
Finance: 50% increased access to lending	0.239%	0.091
Roads: 50% reduction in average market distance	0.279%	0.063

Source: 2005 Tanzania RICS

The conclusion that formality is potentially beneficial for firm profitability is indicated by the apparent response by businesses to a reduction in one aspect of regulatory costs. Since 2004, the

<sup>48</sup>Skof (2008) notes that informal operators cite the unaffordability of permanent premises for their businesses as their top obstacle to doing business, followed by a lack access to credit. In addition, although it is a diminishing problem, informal operators have reported harassment, and demolition or confiscation of property by local authorities.

**Figure 5.12: Cost of Business Start-Up Procedures**



cost of starting a business in Tanzania has dropped, as shown in Figure 5.12. By 2010, Tanzania ranked 122<sup>nd</sup> in the world, better than Kenya and Uganda in these particular costs of formality. One can see a jump in the number of firms registering after 2007, possibly in response to this reduced regulatory burden. This jump suggests that the shadow price of regulatory burdens may have been high with respect to starting a business. If the opportunity cost of remaining regulatory burdens are similarly high, continued GOT progress on regulatory reform could deliver significant private sector response.

### c. Circumvention of Regulation

Tanzania has a fairly well developed system of written agreements that allows for some semi-formal governance of commerce and property rights. This system includes informal village repositories or registries of documents, called *Mwenyekiti*, used to track contractual agreements and property in the event of a dispute. These agreements are largely enforced through social pressures which are effective only within the community, and enforceability would not extend beyond the locality.<sup>49</sup>

This semi-formal contractual system lacks mechanisms for creating distinct legal entities, for partitioning assets between a firm and its owner(s), and for a more flexible and, in some cases, efficient division of labor. The system also fails to provide the legal means for enterprises to operate in markets requiring inspection, regulation, or permits, or to access inputs and factors on a contractual basis via networks beyond family members and social networks. Finally, the system does not facilitate full transferability and movement of property rights to the most efficient use. Given the widespread use of this semi-formal contractual system to record contracts and register property, Tanzania might benefit from an assessment of this system to determine costs to the private sector and their impact on growth in order to inform future steps to improve the regulatory environment.

Another way in which firms may pay the costs of regulatory constraints is by making side payments to facilitate or circumvent regulatory requirements. In general, corruption, like poor regulatory quality, can arise from bureaucratic discretion and a lack of accountability by implementing institutions. In any country, a rising or persistently high level of corruption suggests poor or uneven regulatory quality and poor or uneven regulatory quality can facilitate corruption. As

<sup>49</sup>The exception is transactions involving Village Land approved by the Village Council, which are formally recognized.

shown below in Table 5.7, corruption is rated as less of a problem in Tanzania than in Kenya and Uganda, but it ranks as the most frequent response on the 2010 Global Competitiveness Survey (GCS) (World Economic Forum) to the question of what are the five most problematic factors for doing business in Tanzania, up from second place in 2008.<sup>50</sup>

**Table 5.7: Most Problematic Factors for Doing Business in Comparison (Global Competitiveness Survey 2010)**

	Ghana	Kenya	Mauritius	Mozambique	Tanzania	Uganda	Average
Corruption	8.5	21.7	7.0	17.2	<b>17.4</b>	21.9	15.6
Access to Financing	21.1	12.9	9.1	18.9	<b>15.1</b>	15.3	15.4
Inadequate Supply of Infrastructure	12.5	9.5	15.5	7.3	<b>13.3</b>	13.0	11.9
Tax Rates	8.5	7.2	1.0	4.4	<b>9.0</b>	8.9	6.5
Tax Regulations	4.1	5.0	4.0	4.0	<b>7.9</b>	4.4	4.9
Crime and Theft	3.5	8.0	4.2	5.7	<b>6.3</b>	3.1	5.1
Inefficient Government Bureaucracy	8.6	12.2	15.8	12.2	<b>6.2</b>	6.7	10.3
Inflation	12.2	7.5	4.7	9.1	<b>6.0</b>	6.3	7.6
Poor Work Ethic in National Labor Force	7.9	3.1	12.2	2.4	<b>4.0</b>	7.1	6.1
Inadequately Educated Workforce	3.9	1.1	14.3	5.4	<b>3.9</b>	5.0	5.6
Restrictive Labor Regulations	1.0	2.6	4.9	3.2	<b>3.6</b>	0.8	2.7
Foreign Currency Regulations	3.0	1.8	2.5	6.4	<b>3.2</b>	2.0	3.2
Poor Public Health	0.7	0.9	2.1	1.9	<b>2.6</b>	2.7	1.8
Policy Instability	4.1	3.4	2.4	1.8	<b>1.2</b>	2.4	2.6
Government Instability/Coups	0.4	2.9	0.4	0.0	<b>0.2</b>	0.5	0.7

*Calculations are weighted historical averages which place higher weight on current responses.*

*Firms' Top Five Responses are weighted by their 1-5 Ranking*

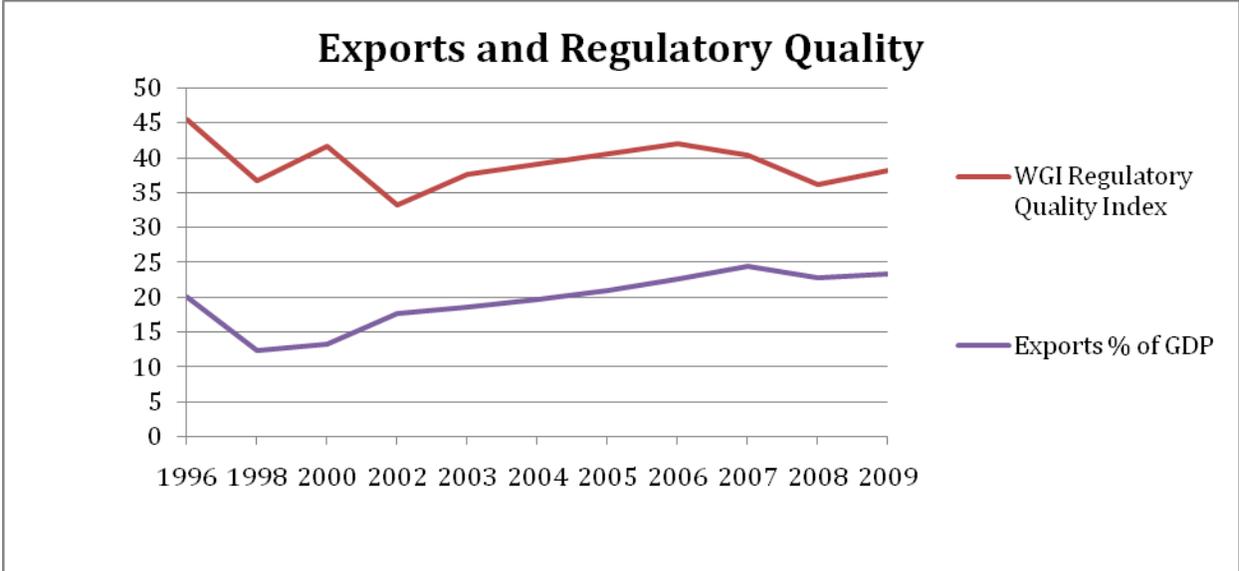
In agriculture, the AgCLIR (2010) report concurs that the level of corruption in Tanzania is not high by regional standards and that it does not pose a “major obstacle to investment”. GOT policies and partnerships that mitigate corruption and continue efforts to improve regulatory consistency should help draw investment and increase the benefits of being in the formal sector, such as access to credit, and thereby facilitate expansion of the formal sector.

<sup>50</sup>This survey is administered to executives of a random sample of firms across all sectors of the economy and responses are weighted by the sector’s share in the economy. Therefore, these responses should not be skewed or biased by a few sector-specific examples. The question asked of firms was for a ranking of the top five most problematic factors, and each response was weighted using its rank. A similar ranking of corruption as a problem across countries is evidenced using Transparency International’s Corruption Perceptions Index.

If a lack of quality regulatory quality were a constraint, one would also expect that those sectors most impacted by the regulatory environment would perform less well than others, and changes in the constrained factor would tend to move the economy overall.

According to the IFC Investment Climate Survey (2004), business regulation does not vary greatly by specific productive sector in Tanzania. However, the survey concluded that bureaucratic burden associated with regulation was much higher for exporters than for non-exporters. As shown below, there appears to be a correlation between Tanzania’s WGI aggregate indicator of regulatory quality and exports. When one controls for the time trend, the relationship between regulatory quality and exports is statistically significant at the 10 percent level.

**Figure 5.13: Exports and Regulatory Quality**

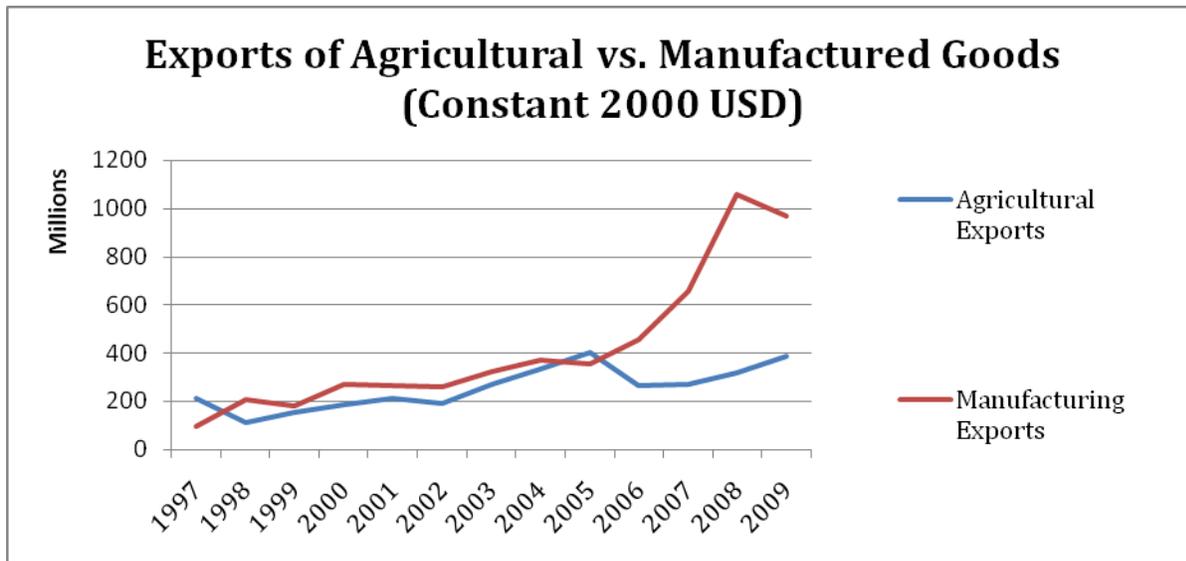


Source: WGI and World Development Indicators

**D. Market Access and Openness to Trade**

Policy or regulatory obstacles to domestic or international trade can make market access more risky or costly for producers, inhibit specialization and gains from trade. In the case of basic food grain markets, such obstacles can hinder the achievement of food price stability, access to food markets, and higher real incomes, all of which are key ingredients to enhanced food security. Regulation which impacts agricultural marketing and exports is a particular area of concern raised by a number of studies of the Tanzanian economy (e.g., AgCLIR (2010), Baregu and Hoogveen (2009), Minot (2009), Nyange (2005), World Bank (2009)).

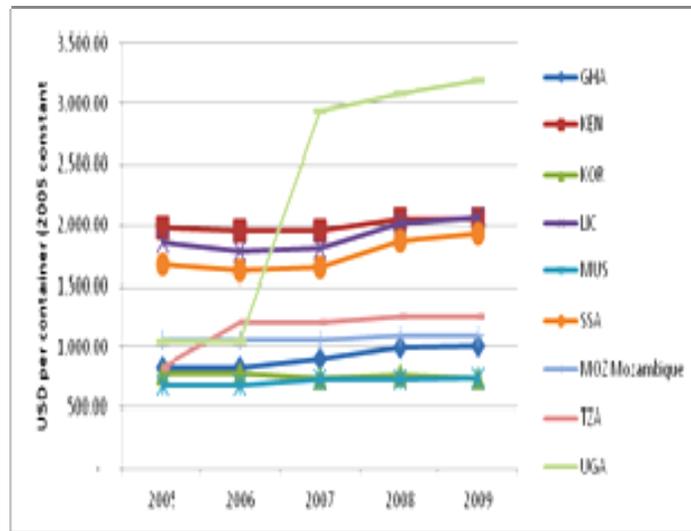
**Figure 5.14: Exports of Agricultural vs. Manufactured Goods**



Source: WDI

As is discussed in Chapter 7, the lack of adequate road infrastructure represents a substantial hindrance to market access, particularly for more remote rural producers in Tanzania. At the same time, regulatory and policy obstacles also appear to increase the costs and risks of market access, especially for output markets in agriculture. Although these markets are in principle fully liberalized, there appear to be ongoing obstacles to achievement of competitive markets.<sup>51</sup> According to the World Bank (2009), based on a survey of total domestic marketing costs, the price differential between farm-gate and capital wholesale markets averaged US\$54 per ton in Uganda, US \$80 per ton in Kenya, and US\$91 per ton of grain in Tanzania. While the majority of this difference is probably explained by direct transport costs, as discussed in Chapter 7, it might be possible that some of the difference is explained by Tanzanian regulatory hurdles.

**Figure 5.15: Cost to Export (WBDB)**



<sup>51</sup> According to AgCLIR (2010), domestic wholesale markets for agricultural produce are often not transparent and open, reducing potential earnings for farmers. Further investigation may be warranted to understand this issue in greater detail.

Tanzania’s regulations imposed on eligible buyers of export crops (cotton, maize, and tobacco) have tended to limit competition among buyers, thereby reducing farm-gate prices.<sup>52</sup> Recent anecdotal information suggests that market reforms and the spread of cell phone technology appear to be leading to improved competition and market information transmission in many markets, but this has not yet been confirmed with reliable data.

Inefficient customs regulations and procedures can also raise the costs of accessing international markets. As shown above in Figure 5.15, Tanzania rates favorably in the cost of exporting relative to Uganda and Kenya; these costs are similar to those for Mozambique, and higher than for Ghana and other comparators, according to the WBDB indicators.<sup>53</sup> The costs of importing reflect a similar pattern. However, according to recent firm-level surveys, such as the Global Competitiveness Survey, Tanzania’s customs procedures are rated the least efficient of the comparator countries, as shown in Table 5.8.

Finally, intentional policies to restrict or tax trade drive a wedge between producers and potentially more profitable markets. This can impede productivity-enhancing competition, as discussed in Chapter 6.

Country	2007	2008	2009
Korea, Rep.	5.89	5.03	4.55
Mauritius	4.45	4.57	4.59
SSA (dev.)	3.29	3.27	3.63
Ghana		3.37	3.44
Kenya	3.27	3.15	3.28
Low income	3.08	3.04	3.37
Uganda	3.31	3.11	3.38
Tanzania	3.00	2.66	2.97
Mozambique	2.93	2.78	3.12

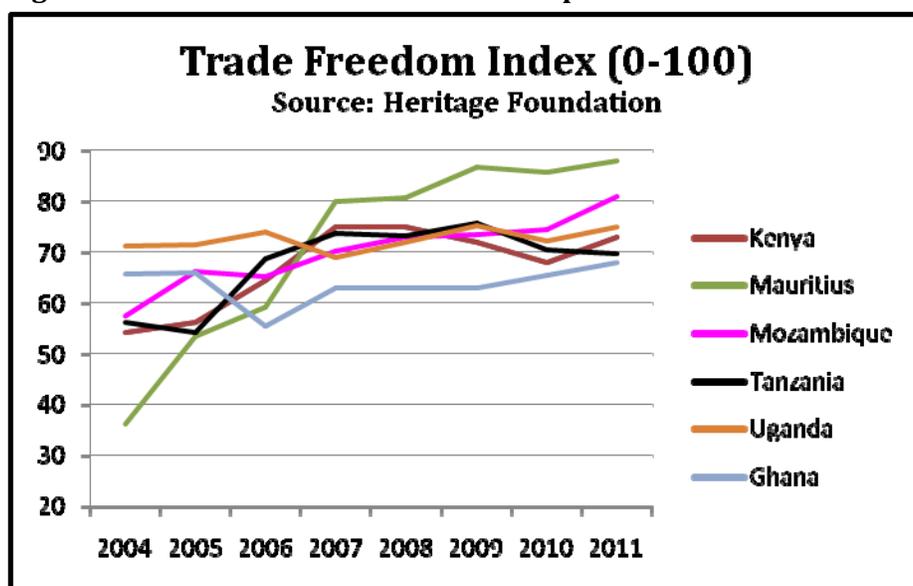
*Source: WEF Global Competitiveness Survey; (1=extremely inefficient to 7=extremely efficient)*

<sup>52</sup> Although these markets have been liberalized, market access difficulties and imperfect competition by agricultural buyers, particularly of traditional export crops in Tanzania, are described by the WB Trade Diagnostic Integration Study 2005, BizCLIR, and Baregu and Hoogeveen 2010.

<sup>53</sup> Compared to LIC’s and SSA, where many countries are landlocked, Tanzania also has lower costs of importing and exporting.

Tanzania's openness to trade has improved substantially since the transition from socialism in the 1990s, and this has accompanied a strong increase in exports until the past few years. However, since 2005, Tanzania has become relatively more closed to trade, according to the Heritage Foundation's Index of Trade Freedom, now ranking below comparator countries in the region. Ghana is the only comparator country ranking more poorly on this measure, as shown in Figure 5.16. The Heritage Foundation determines the extent and severity of non-tariff barriers (NTBs), using both qualitative and quantitative information.<sup>54</sup>

**Figure 5.16: Trade Freedom Index in Comparison**



In addition, the Index captures regulation, policies, and government interventions not strictly related to trade policy but which impact trade. Although the comparison countries within the East African Community (Tanzania, Kenya, Uganda) have a common external tariff, Tanzania makes greater use of allowable exceptions and, therefore, on average, Tanzania's import duties on agricultural products are slightly higher than for other countries in the East African Community, and is also higher than for comparison countries not part of the East African Community.

Given the Government's understandable concerns over food security and food prices, Tanzania periodically imposes bans on the export of commodities it views as vital for the food security of its people, including for example, maize.<sup>55</sup> Both GOT policymakers and USG partners recognize that policies undertaken in response to immediate and urgent food security concerns may impose high costs on the dynamic forces that reduce the likelihood and severity of future crises. GOT policies to provide short-term relief and address food security concerns include food assistance and export bans. The discussion of export bans below highlights the consequences that trade-restricting policies can have on investment and growth. Given the importance of establishing a predictable

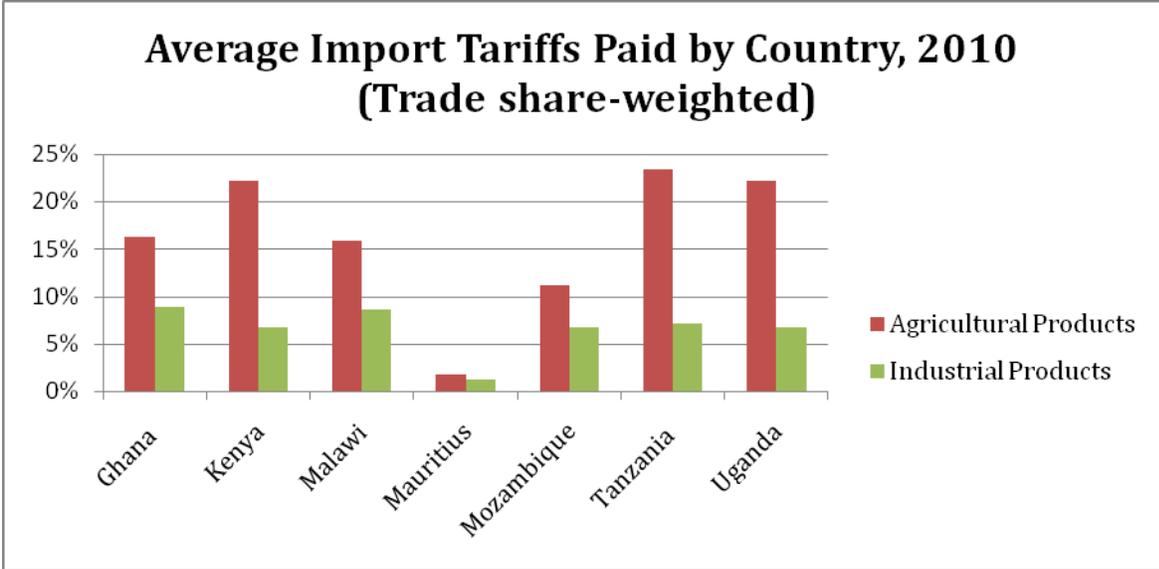
<sup>54</sup>The Trade Freedom Index is a composite measure of the tariff and non-tariff barriers that affect imports and exports of goods and services. The categories considered for calculating NTBs include: 1) quantity restrictions, 2) price restrictions, 3) regulatory restrictions, 4) investment restrictions, 5) customs restrictions, and 6) government interventions.

<sup>55</sup>Maize exports are only allowed once each region of the country is declared to have sufficient maize production to feed its population. The 2011 ban was announced on May 17 and reported on May 20, 2011 by Business Daily Africa. <http://www.businessdailyafrica.com>

policy environment that creates incentives for agricultural growth, the GOT and USG have an opportunity to collaborate in the search for a policy framework that ensures food security while not undermining the basis for rural investment and agricultural development and growth.

Economic reasoning suggests that export bans create uncertainties in access to markets for both food producers and consumers, thereby weakening incentives to enhance productivity. In the case of maize, usually the ban does not stop maize from flowing across the borders entirely; instead it alters the distribution of benefits in the value chain and increases transaction costs, which might be to the disadvantage of farmers. In fact, available data seems to indicate that an export ban is only partially prohibitive. In years in which an export ban on raw maize is imposed, the responsiveness of exports to production drops from approximately 6 percent to 4 percent or lower<sup>56</sup>. The combined effect of Tanzania’s export bans with maize import duties (reportedly 50 percent in surplus years (USAID, 2008), along with bans and restrictions by other neighboring economies, on the agricultural economy and food security is unclear. The likely impact is to reduce producer prices in maize surplus areas (creating disincentives for production in future years and possibly increasing the likelihood of future shortages), while increasing average consumer prices in food ‘deficit’ areas of the country (see Minot 2009) in addition to increasing price variability. A more rigorous study which captures farmers’ response to risk, dynamic incentives, and the annual and spatial variation in rainfall and yields across Tanzania and the East African region would help policymakers formulate policies and regional agreements which could enhance agricultural productivity and food security.

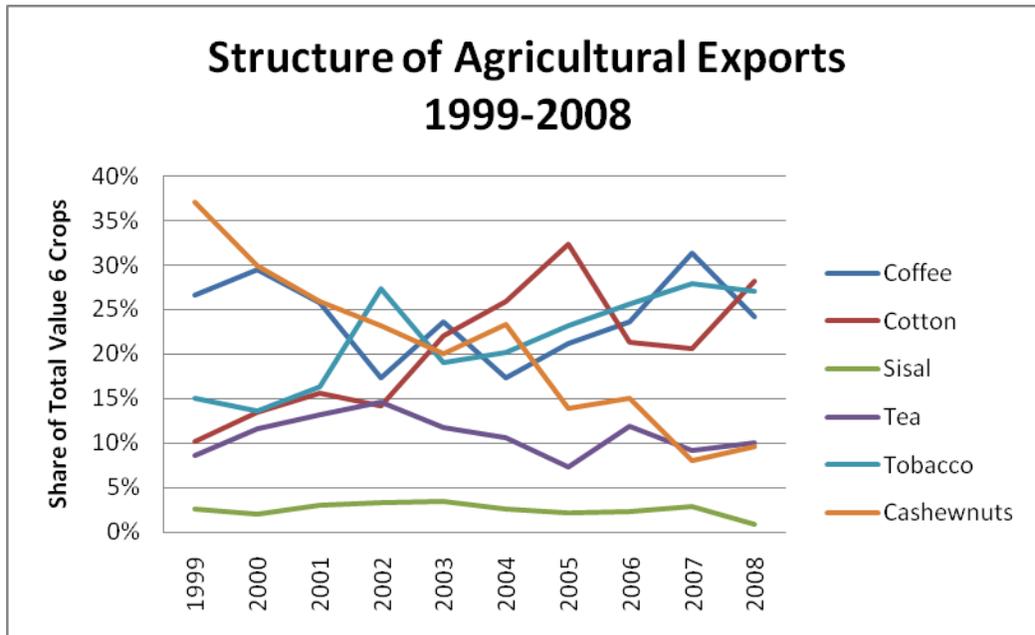
**Figure 5.17: Average Import Tariffs Paid by Country, 2010**



Source: International Trade Center, Market Access Map

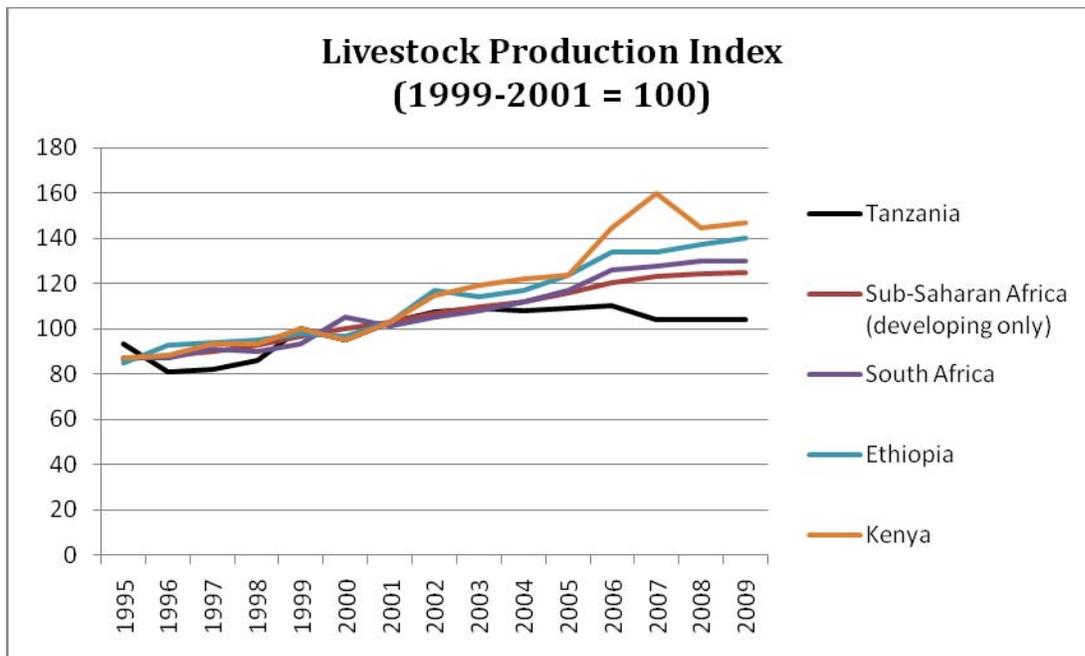
<sup>56</sup> Author’s calculations using FAOSTAT data.

**Figure 5.18: Structure of Agricultural Exports 1999-2008<sup>57</sup>**



Source: World Development Indicators

**Figure 5.19: Livestock Production Index, Tanzania and other Livestock Producers**

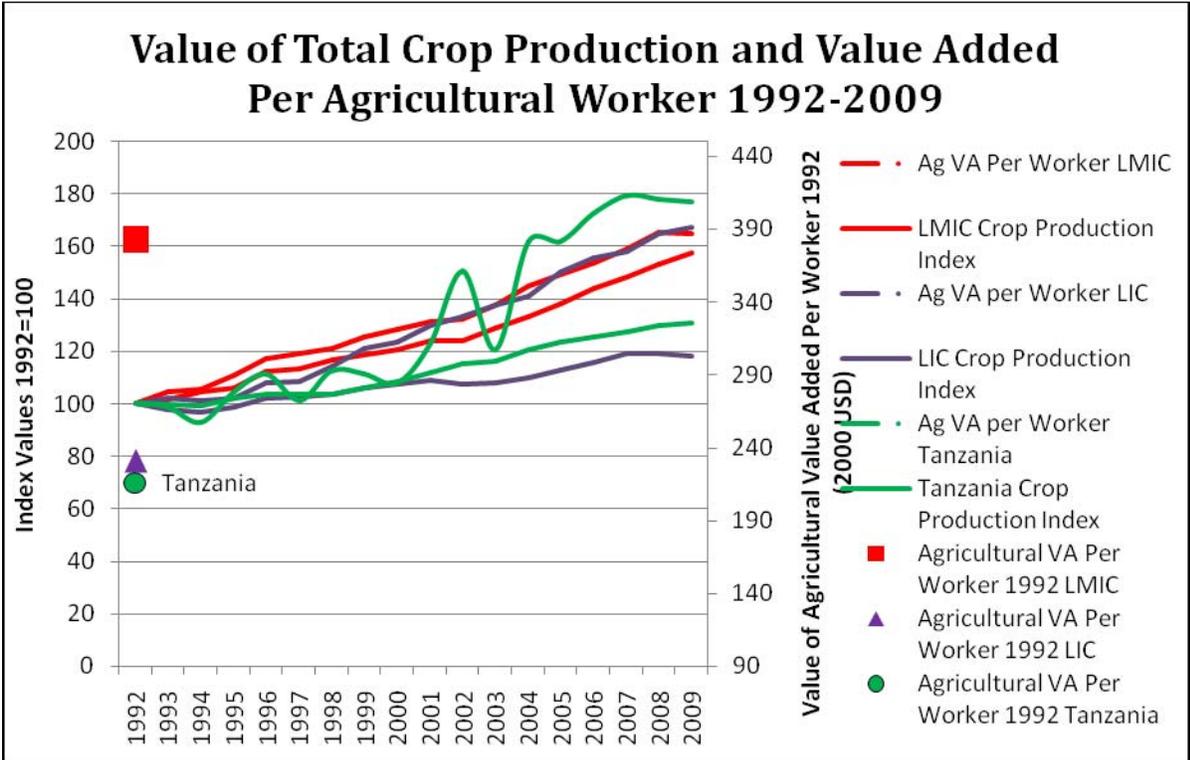


Source: WDI

<sup>57</sup> It should be noted that a declining share in a given crop does not necessarily mean a decrease in the value of exports of that crop.

Tanzania’s agricultural productivity trends have been positive, especially for non-cereals. However, productivity growth has not been sufficiently robust to catch up with that of lower middle income countries. Trends in Value Added per Agricultural Worker (VAPW) and expansion of crop production for Tanzania, low income countries, and low middle income countries are shown in Figure 5.20. In 1992, productivity per worker in Tanzania was slightly lower than for low income countries as a whole, and countries currently classified as lower middle income countries (LMICs) had appreciably higher agricultural productivity at the time. VAPW for current LMICs was in fact higher in 1980 at 291 constant year 2000 USD, than is Tanzania’s today, at 283 USD. VAPW for LMICs today is over 600 USD (constant 2000 USD), given their more rapid productivity gains. Whereas Tanzania’s VAPW has increased faster than that of low income countries as a whole, as shown in Chapter 2, this is largely due to increases in total area cropped. These increases have begun to slow, and incentives to invest in other yield-enhancing inputs will be more important for sustaining income and productivity gains in agriculture in the coming years.

**Figure 5.20: Value of Total Crop Production and Value Added**



Source: World Development Indicators

**E. Conclusions**

There are a variety of microeconomic issues that affect productivity and economic growth in Tanzania. **The most important micro-appropriability issue, which appears to present a binding constraint to economic growth, is the lack of an efficient and secure land rights system.** Secure title to land is necessary to attract land-dependent investments that can directly contribute to economic growth through increased production and job creation, and to facilitate

small and medium enterprise establishment and expansion. In addition, efficient and secure transferability is required for land markets to develop which permit higher return investments. At the same time, small scale land users and village leaders require a sufficient level of knowledge of the Land Acts to receive fair value for their resource and to avoid land conflicts which can be destabilizing to the economy and disincentivize investment.

Whereas the principles of Tanzania's land policy appear sound, further review of the impacts of specific aspects of the legal framework may be advisable, along with an assessment of the risks and benefits of any changes to the 1999 Land Act and Village Land Act or accompanying implementing regulations. In addition, the implementation of the Acts has been incomplete, creating ambiguities for both land buyers and sellers. The procedural costs for registering land are high, as are those to acquire land for investment, a process characterized by Hoekema (2010) as an "awesome series of bureaucratic steps which takes more than a year of full time work and a lot of money." The rate of registration of use rights is very low, and interest by investors – interest which is very often frustrated by the lack of identified land – appears strong. Landholders and investors alike opt to use informal channels to conduct land transactions despite the lack of secure tenure that results. The situation has led to an increased frequency of costly land disputes which adversely affect the investment environment.

**While the GOT has made progress in improving the business environment, there is considerable evidence that suggests serious challenges continue to impede investment.** These challenges have not been determined to be binding constraints to growth but nonetheless pose challenges to Tanzania's efforts to accelerate and sustain broad-based economic growth. The most compelling evidence suggests that regulatory quality has adversely impacted export performance in particular. As discussed in Chapter 6, to the extent that regulatory barriers to entry or to market access reduce competition in key sectors of the economy, this also tends to reduce innovation and productivity growth. The government may benefit from further analysis of the significant constraints to growth that emanate from uneven quality of Tanzania's regulatory environment with a view toward facilitating prioritization and determination by the government as to how to invest its efforts and funds to continue targeting those regulatory issues that, if addressed, would provide the greatest impact on economic growth.

## 6. Market Failures in Innovation

Technological change and innovation are among the key causes of the rapid economic growth that the current rich countries experienced over the past few centuries. Technological innovation is also an important means to sustain growth in standards of living once the diminishing returns from better institutions, infrastructure, macroeconomic stability, and improved human capital are exhausted (World Economic Forum, 2010). They are increasingly critical for Tanzania's sustained growth prospects, as the major gains from improved allocative efficiency spurred by economic liberalization may have been largely exhausted.

Even in the presence of an otherwise adequate investment climate, market failures resulting from weak 'learning by doing' or technological spillovers, coordination failures, or inadequate appropriability of the gains from innovation can inhibit investments which would be viable for private investors. By examining a number of indicators, as well as the totality of evidence presented in this report, we can determine whether such market failures act as a binding constraint to private sector investment and therefore economic growth in Tanzania. If other areas of weakness cannot explain poor performance in innovation, then it is possible that an economy's growth and development are significantly impeded by these market failures. In that instance, deeper investigation into where these failures may lie, and whether there are policy or other weaknesses underpinning them, may be in order.

### A. Spillovers in Innovation and Intellectual Property Rights

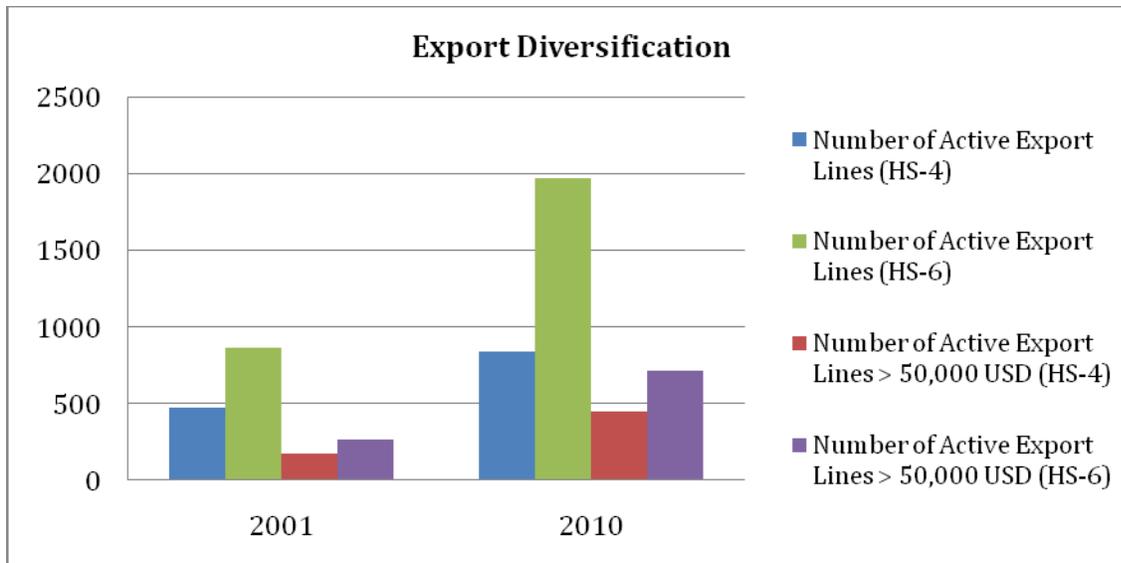
Export performance and diversity is one measure of an economy's ability to innovate in the production of goods and services. While Tanzania has been able to grow rapidly in recent years, a substantial part of this growth may be due simply to the transition to a more efficient or intensive use of existing factors of production, without necessarily signaling substantial technological progress.

Tanzania's performance over the past decade in this area is mixed. Export diversification has increased, and not only into primary commodities and minerals. Between 2001 and 2010, Tanzania successfully increased the number of distinct product lines exported from the country, as measured at the 4-digit and 6-digit levels of the Harmonized Commodity Description and Coding System (HS), standardized across 170 countries. A more diverse export base is also increasing in value, as measured by the number of export lines valued at more than 50,000 USD.

Compared to other similar countries Tanzania comes second only to Uganda in export diversification over the past decade, as measured by the rate of increase of 4-digit export product

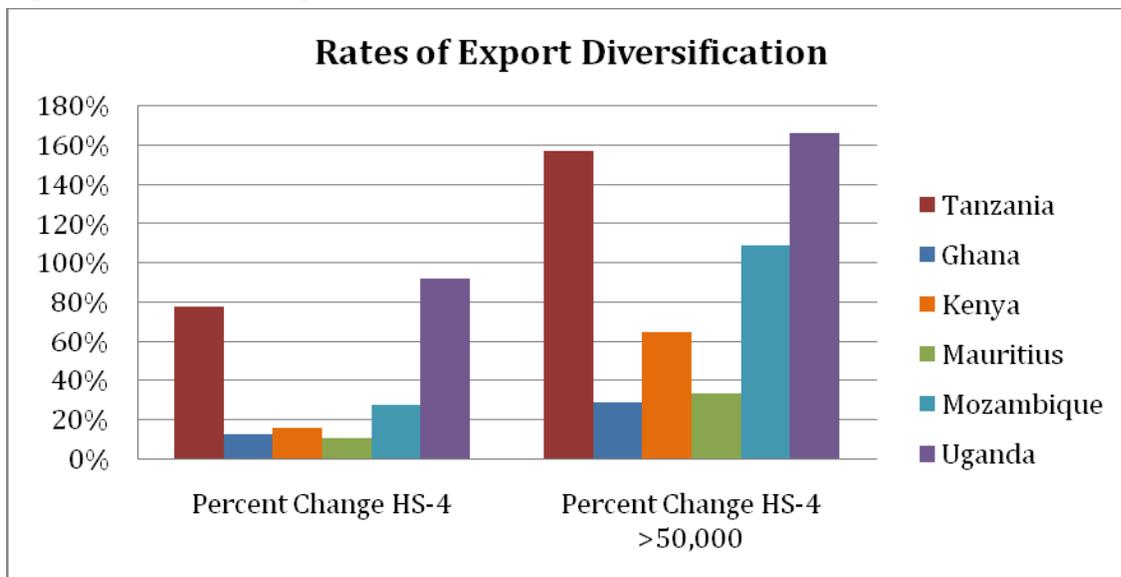
lines (total and those exceeding 50,000 USD in value).<sup>58</sup> This suggests that Tanzania has a relative ability to adapt and innovate as compared to other countries.

**Figure 6.1: Export Diversification**



Source: International Trade Centre and COMTRADE

**Figure 6.2: Rates of Export Diversification**



Source: International Trade Centre and COMTRADE

As shown in Tanzania’s export product rankings for 2001 and 2010, there are several product categories at the HS-4 level that have increased in the rankings – *i.e.*, manganese ores and concentrates, furnishing articles, dried vegetables, and fertilizers – and that cannot be classified as

<sup>58</sup> Available International Trade Centre export statistics for Ghana cover the period 2003-2009; for Kenya, Mauritius, Mozambique, and Uganda, the period 2001-2009.

unprocessed primary commodities. Despite the fact that Tanzanian exports continue to be dominated by commodity exports and raw materials, this list suggests that Tanzania has been able to avail itself of opportunities to produce new, higher value added products closely related to existing comparative advantage.

**Table 6.1: Major Export Products**

Product Category	Export Rank 2001	Export Rank 2010
Gold (unwrought or in semi-manufactured forms)	1	1
Fish fillets and pieces (fresh, chilled, frozen)	2	8
Brazil nuts, cashew nuts, and coconuts	3	6
Coffee	4	7
Precious metal ores and concentrates	5	2
Tobacco (unmanufactured and refuse)	6	5
Tea	7	15
Diamonds (not mounted or set)	8	
Cotton (not carded or combed)	9	11
Precious and semi-precious stones (not strung)	10	20
Manganese ores and concentrates		3
Copper waste and scrap		4
Dried vegetables (shelled)		9
Furnishing articles		10
Petroleum gases		12
Mineral or chemical fertilizers		13
Oil seeds		14

Source: International Trade Centre, Trade Map

## B. Product Sophistication Index versus GDP Per Capita

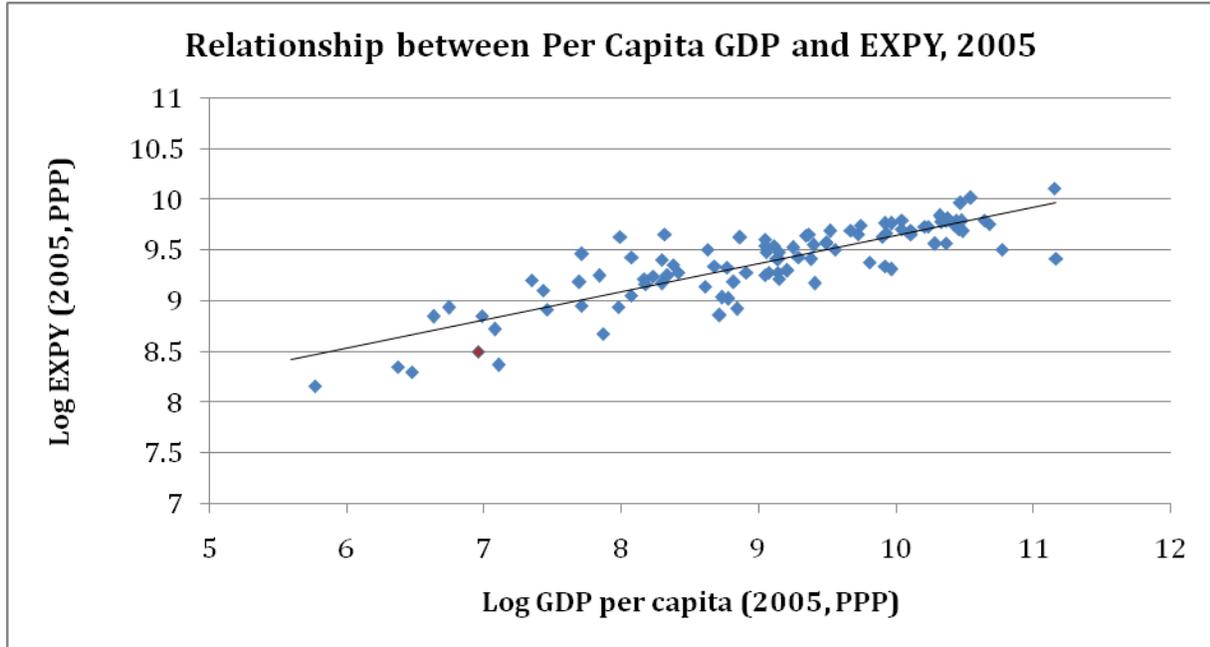
An export sophistication index – also known as EXPY – calculated by Hausmann, Hwang, and Rodrik (2005) suggests that Tanzania has a low level of export sophistication relative to its GDP per capita. Figure 6.3 displays the relationship between GDP per capita and export sophistication for more than 150 countries, based on 2005 export figures; Tanzania, shown as the single red diamond mark, falls below the regression line within the scatter plot.

Figure 6.4 depicts Tanzania's performance relative to similar countries in Africa. Since 2000, Tanzania has performed worse than the comparators available, mainly Uganda and Mauritius. Moreover, the flattening or declining curve since 1999 relative to Uganda is a possible indication that Tanzania is not able to develop its comparative advantage in more sophisticated products.

A similar indicator – 'open forest' – measures the distance-adjusted level of income associated with all potential new export goods, or the economic value of products which are close to a country's existing products in terms of ease and likelihood of entry from existing production patterns. Hausmann and Klinger (2006) show that this indicator strongly predicts the speed of structural

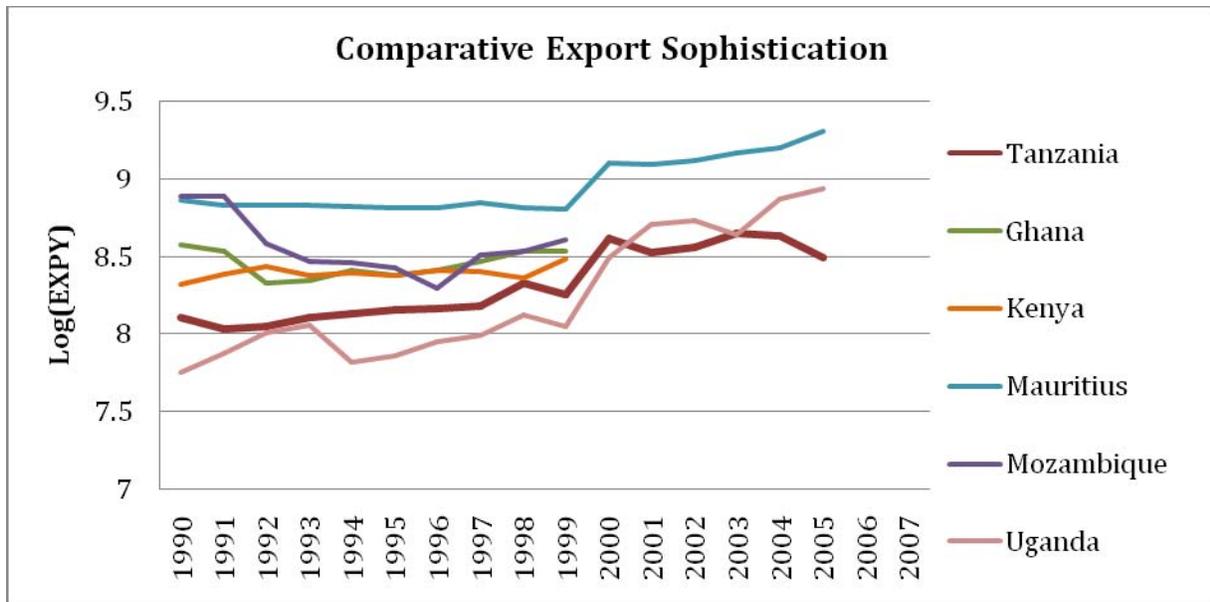
transformation of an economy as measured by growth in the level of sophistication of exports. On this measure, Tanzania (once again the red diamond mark) is slightly better placed relative to its GDP per capita than many countries in its unexploited potential to diversify production and develop new areas of comparative advantage.

**Figure 6.3: Relationship between Per Capita GDP and EXPY, 2005**



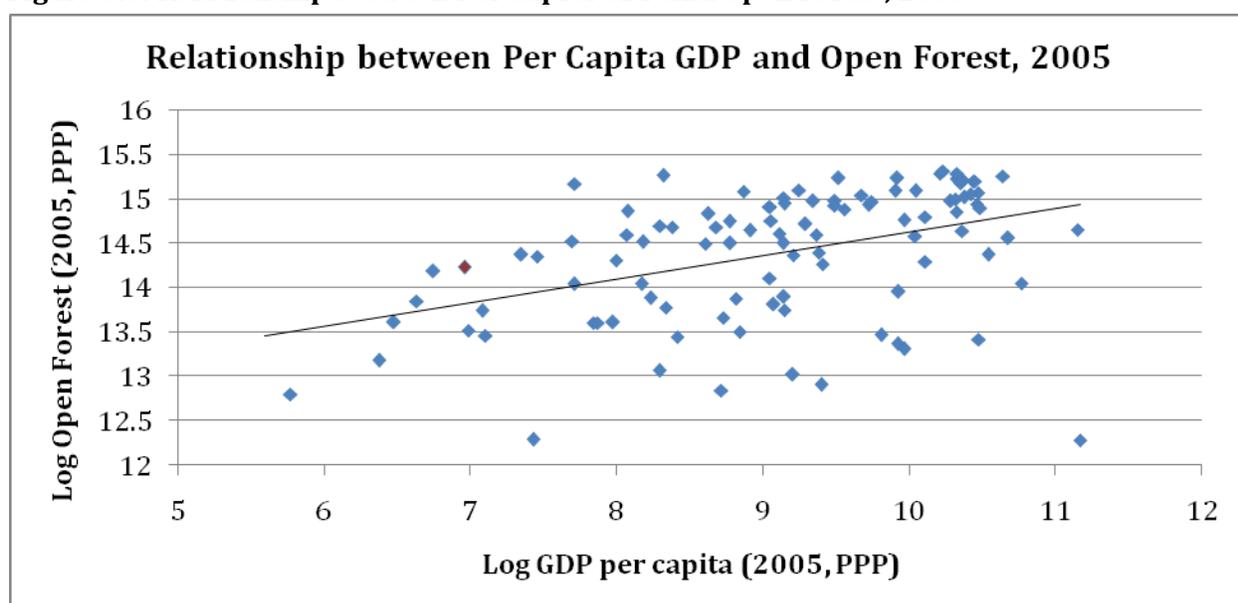
Source: Hausmann, Hwang, Rodrik (2005)

**Figure 6.4: Comparative Export Sophistication**



Source: Ricardo Hausmann

**Figure 6.5: Relationship between Per Capita GDP and Open Forest, 2005**



Source: Ricardo Hausmann

### C. Business Sophistication, Technological Readiness, R&D Levels

Tanzania's ability to move to new, higher value-added products depends in part upon its technological readiness and business sophistication, which increase efficiency and opportunity for innovation as well as the quality of firms' operations and strategies.<sup>59</sup> According to the Global Competitiveness Report, Tanzania performs at roughly the same levels as comparator countries on broad indices of innovation and business sophistication. Based on an aggregate score ranging from 1-7, only Kenya performs better on the measure of business sophistication; Kenya and Mozambique both out-perform Tanzania on the innovation index.

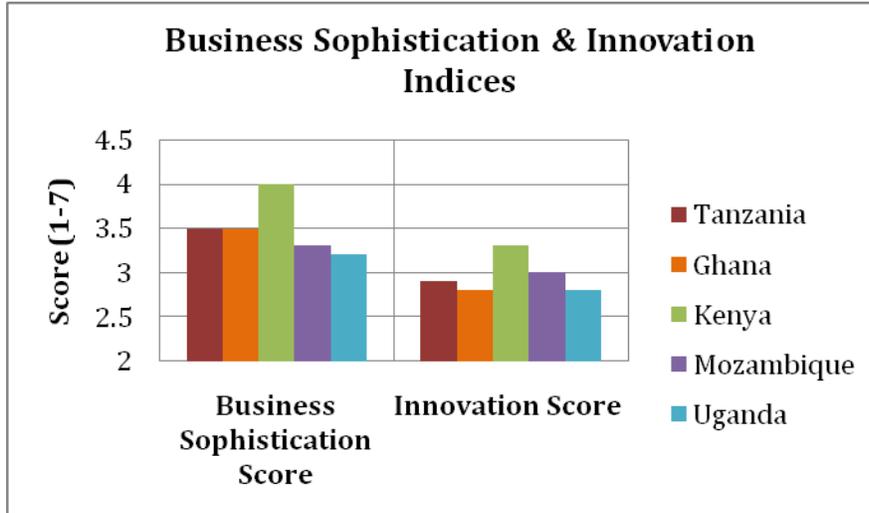
A variety of sub-measures are used to calculate business sophistication measures, including the quality and quantity of local suppliers and sophistication of the production process. Figure 6.6 shows Tanzania's relative ranking on business sophistication, where a higher number represents relatively poorer performance, suggests that Tanzania's performance is in line with most comparator countries. Its performance on local supplier quantity and quality, however, are notably poor as compared to every country except Mozambique.

The Global Competitiveness Report of technological readiness attempts to measure the agility with which an economy adopts *existing* technologies to enhance the productivity of its industries, with specific emphasis on its capacity to use information and communication technologies in daily activities and production processes for increased efficiency and competitiveness. Tanzania compares poorly to comparator countries on each sub-measure used to assess technological readiness, including availability of latest technologies, foreign direct investment (FDI) and technology transfer, and the absorption of technology at the firm-level. Figure 6.8 shows Tanzania

<sup>59</sup> Global Competitiveness Report 2010-2011.

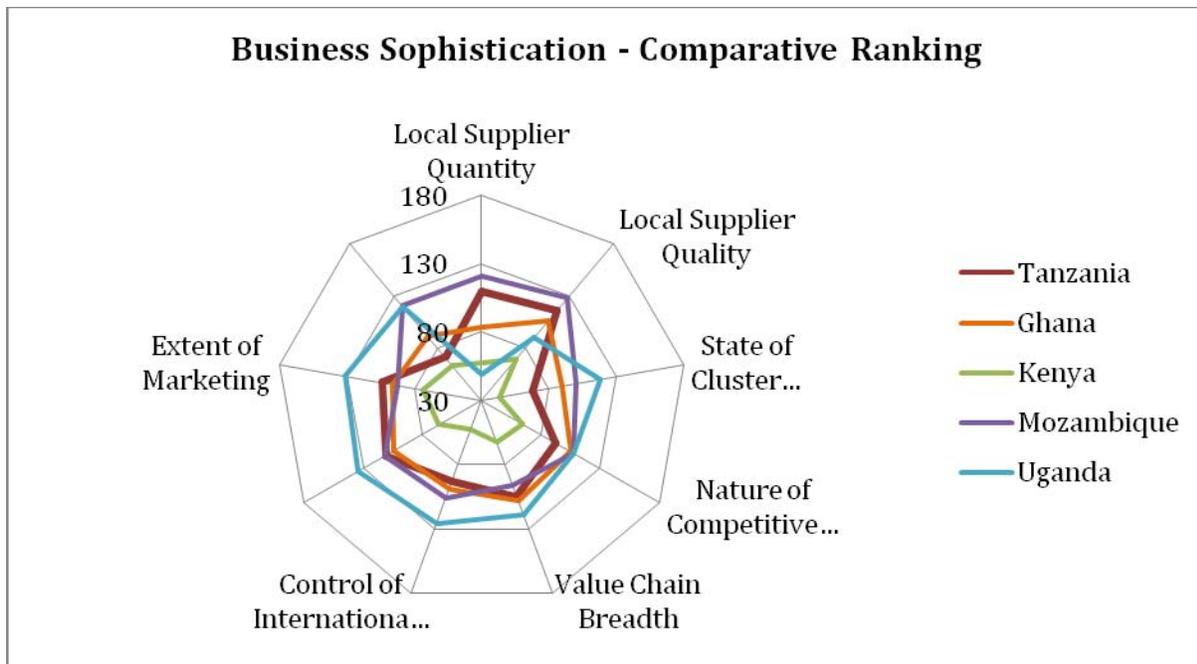
as the worst performer among the benchmark countries on all sub-indicators. It is unclear whether the lack of broadband subscriptions and internet bandwidth is due to poor infrastructure versus a lack of demand, although if the spread of mobile phone networks is any indication, a lack of interest is not a serious barrier to the spread of Internet in the country.

**Figure 6.6: Business Sophistication & Innovation Indices**



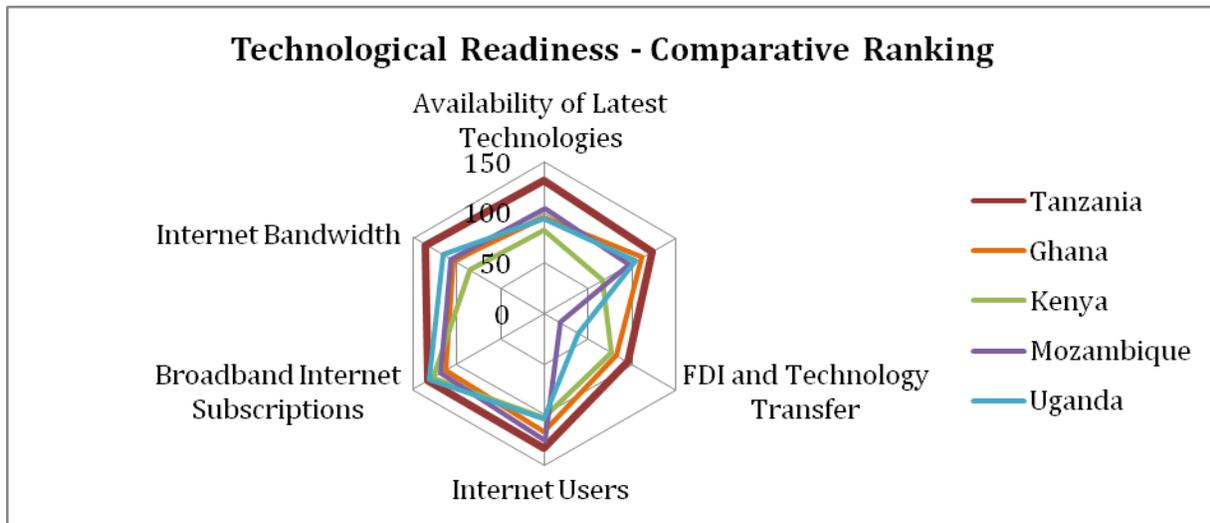
Source: World Economic Forum, Global Competitiveness Report 2010-2011

**Figure 6.7: Business Sophistication - Comparative Ranking**



Source: World Economic Forum, Global Competitiveness Report 2010-2011

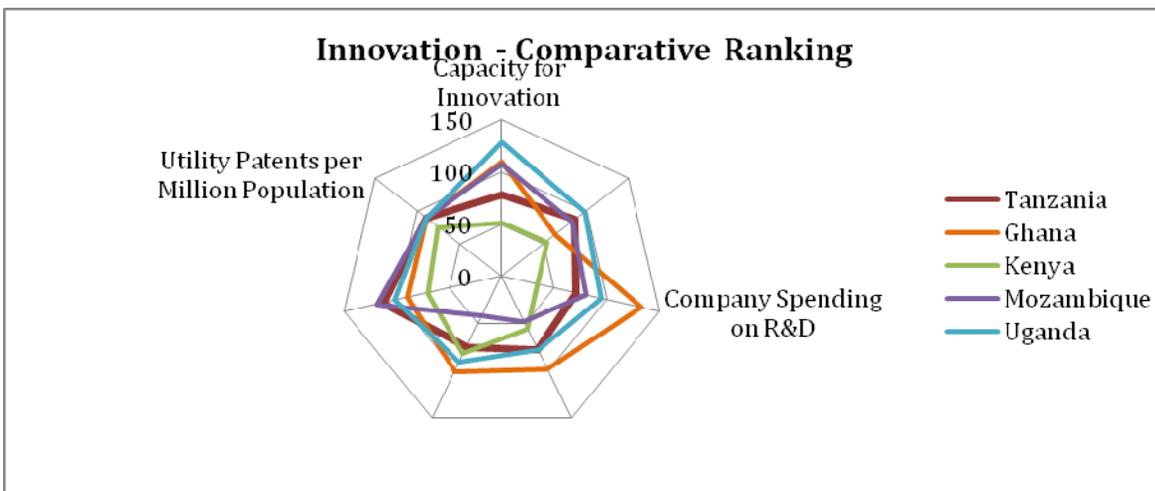
**Figure 6.8: Technological Readiness - Comparative Ranking**



Source: World Economic Forum, Global Competitiveness Report 2010-2011

The Global Competitiveness Report also rates the level of investment in innovation across countries, including company spending on research and development (R&D), collaboration between universities and industry in R&D, and the availability of scientists and engineers in the domestic economy. Figure 6.9 suggests that Tanzania’s performance is favorable relative to that of comparator countries, despite poor measures of the quality of scientific research institutions and the availability of scientists and engineers; the country does relatively well on capacity for innovation and company spending on R&D. Unfortunately, a more detailed look into the availability of scientists and engineers is not possible, as hard data on the number of scientists and technicians performing research and development are not available for Tanzania or its comparator countries.<sup>60</sup>

**Figure 6.9: Innovation - Comparative Ranking**



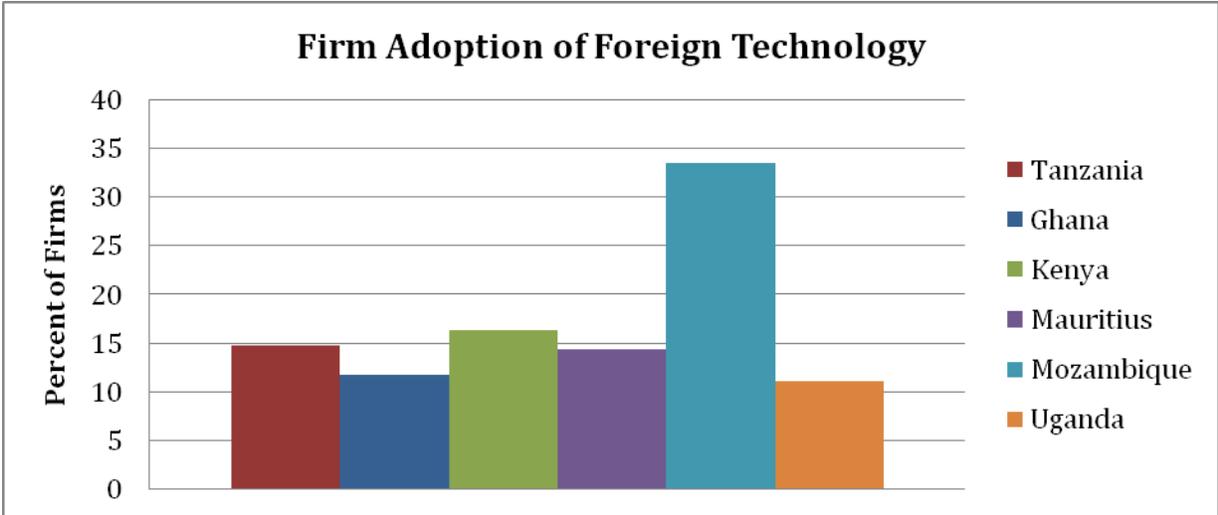
Source: World Economic Forum, Global Competitiveness Report 2010-2011

<sup>60</sup> World Bank, World Development Indicators return no data for any of the comparator countries or regions for “Researchers in R&D (per million people)” or “Technicians in R&D (per million people).”

### D. Registration of New/Imported Technologies

According to the most recent available data from the World Bank Enterprise Surveys, 14.7 percent of Tanzanian firms surveyed reported that they license technology from foreign firms. This places Tanzania behind Mozambique and Kenya, but ahead of Ghana, Mauritius, and Uganda on this measure. Due to limited data availability for all of these countries, however, it is not possible to determine their relative performance over time.

Figure 6.10: Firm Adoption of Foreign Technology



Source: World Bank Enterprise Surveys

### E. Intellectual Property and Information Externalities

Market failures can arise through ‘information externalities’, whereby others can imitate new products, services, or innovations and learn from others’ success in the marketplace. If these externalities are important, entrepreneurs would be deterred by lower barriers to entry and a high degree of competition; other potential investors would enter and compete for profits, possibly lowering them to within a range that does not compensate the investor for his investment in innovation. Given this problem, governments worldwide attempt to protect intellectual property by issuing trademarks and patents so that the innovator can capture a larger share of the returns. According to the Global Competitiveness Report and other similar studies, Tanzania demonstrates a relatively low degree of local competition in the market (see Figure 6.15). While this reduces the need to innovate, it also suggests that Tanzanian entrepreneurs should face a relatively lower information externality than in comparator countries.

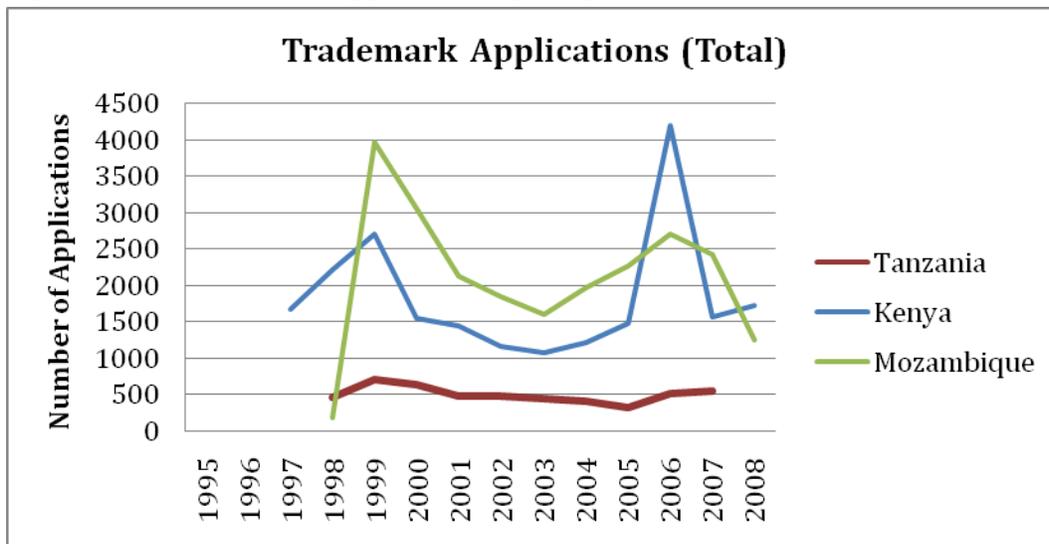
#### a. Trademark Applications

Trademarks are used by an individual or business to identify and distinguish its products and services. Tanzania provides legal protection for trademarks under the Trade and Service Marks Act No. 12 of 1986. Under the law, trademarks are registered for a period of seven years, with a

renewal period of ten years. Tanzanian ‘common law’ also extends limited protections to unregistered trademarks.

Data on applications to register a trademark with a national or regional intellectual property office can be informative regarding the degree of innovation, product branding, and/or level of intellectual or technological property protection in an economy. In absolute numbers, relatively few trademark applications are filed in Tanzania as compared with the two benchmark countries for which data are available, Kenya and Mozambique (Figure 6.11, Figure 6.12).

**Figure 6.11: Trademark Applications (Total)**

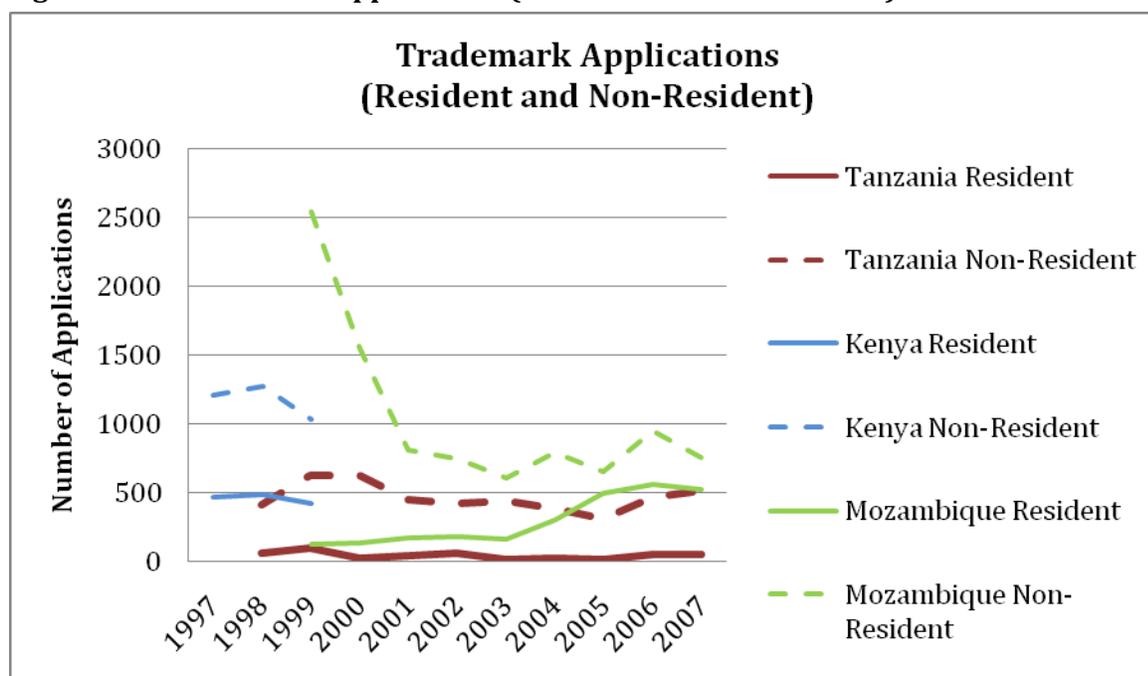


Source: World Development Indicators

### b. Patent Applications and E-Filing

Patents confer upon an inventor or innovator the sole right to make, use, and sell that invention for a set period of time and is another means of IP protection that fosters business innovation. Tanzania provides legal protection for patents under the Patents Act No. 1 of 1987. Under the law, invention and utility patents are protected for a period of 20 years. However, according to the World Trade Organization (2006: A2-168), “Although Tanzania can grant patents, it has never done so; it has registered patents granted elsewhere.” Instead, Tanzania has relied on its membership within the African Regional Intellectual Property Organization (ARIPO) for the review of all patent applications received. Ghana, Kenya, and Uganda are also members of ARIPO.

**Figure 6.12: Trademark Applications (Resident and Non-Resident)**

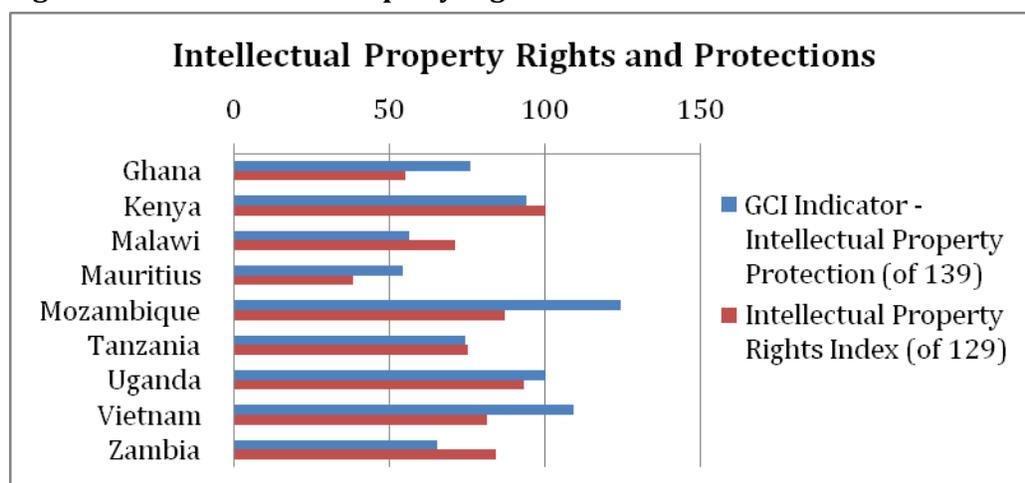


Source: World Development Indicators

### c. Intellectual Property Rights Indicators

According to Tanzania’s Ministry of Industry, Trade and Marketing, the country’s intellectual property protections may be insufficient in practice due to lack of adherence to the law; difficulties in securing enforcement in the commercial courts; and deficiencies in the appropriate laws and acts themselves. The World Trade Organization, in its last Trade Policy Review of Tanzania, noted that the country lacks the resources to properly enforce intellectual property rights (IPR) (2006: A2-169). Despite the challenge of establishing and enforcing intellectual property rights in Tanzania, its performance falls in the middle of comparator countries according to the International Property Rights Index and the Global Competitiveness Index. The country’s performance on both indicators, which measure legal protections as well as effective enforcement, results in lower rankings (with lower being stronger rights and protections) than those of Kenya, Mozambique, Uganda, and Vietnam. This suggests that IPR protections are not an undue impediment to business and investment in Tanzania.

**Figure 6.13: Intellectual Property Rights and Protections**



Source: Global Competitiveness Indicators, 2010-2011; International Property Rights Index 2011

## F. Monopoly Power and Lack of Competition

Although technological spillovers and learning-by-doing effects can create market failure and reduce investment in innovation in the absence of adequate intellectual property protection, imperfect competition and barriers to entry can also reduce the incentives to innovate. Firms enjoying relatively un-competitive domestic markets for their goods and services will be less likely to turn to export markets, which require continual investment in productivity-enhancements.

Under the Fair Competition Act of 2003, Tanzania prohibits the abuse of dominant market position (though not dominant market position *per se*), anti-competitive agreements, misuse of market power, and mergers and acquisitions that create or strengthen a position of market dominance in a specific market. Tanzania, like Kenya and Uganda, is subject by law to the protocols of the East African Community (EAC), which provides the legal basis for competition policy. Unfortunately, no structured analysis is available to determine comparative application and performance in implementing these rules among these three countries.

Competition is generally correlated with investment in new products or processes in the region, including Tanzania, as shown in Table 6.2. Although one cannot necessarily conclude from this that increased competition causes innovation in Tanzania, there is a growing body of research linking productivity growth to increased competition, especially at low levels of competition. For example, Aghion et al. (2008) find that higher mark-ups have a negative impact on productivity growth in

**Table 6.2: Innovation and Competition**

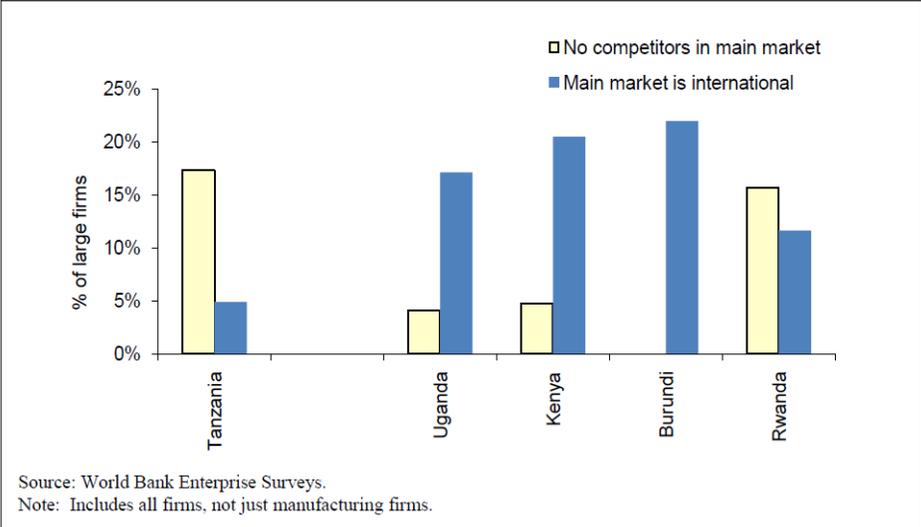
	Percent of Firms Introducing New Products or Processes	
	0-1 competitor	> 2 competitors
Burundi	40.00%	57.89%
Kenya	70.00%	80.62%
Rwanda	77.78%	70.83%
Tanzania	53.33%	81.05%
Uganda	70.00%	83.65%

Source: World Bank Enterprise Surveys

South African manufacturing firms, and in a 56-country sample of firms. The increase in productivity growth associated with 10 percent higher profit margins is 2-3 percent, which is high relative to median productivity growth of 1-2 percent.

Tanzania’s economy has recently shown a higher degree of market concentration and a lesser degree of competition among large firms. In the most recent World Bank Enterprise Survey (2006), which ask detailed questions of a representative sample of registered forms, Tanzanian firms reported a particularly high focus on domestic markets, relative to neighboring countries which are, in three out of the four comparison cases, land-locked. In addition, firms report facing relatively little competition in their main (domestic) market, as shown in Figure 6.14

**Figure 6.14: Degree of Competition Faced by Large Firms**



According to data from the Tanzania Annual Survey of Industrial Production, however, most of the manufacturing sub-sectors have become less concentrated over time. With the exceptions of textiles, apparel, coke, and other non-metallic mineral products, where concentration has increased, the level of concentration in manufacturing decreased between 2001-2002 and 2006-2007 (World Bank background note, unpublished).

In addition, Global Competitiveness Survey indicators of monopoly power show that the Tanzanian economy may be becoming more competitive overall. On a measure of intensity of local competition, a higher ranking (on a scale of 1-7) indicates that local entrepreneurs judge competition to be intense in most industries. A higher score on the extent of market dominance indicator reflects corporate activity that is spread across many firms, as opposed to few. A higher score on effectiveness of anti-monopoly policy means that policy is more effective at promoting competition. Tanzania performs roughly in the middle of comparator countries on two of the three measures, among tightly-clustered scores. These scores suggest that while the Tanzanian economy is not strongly marked by monopoly overall – perhaps due to reasonably effective anti-monopoly policies –neither is the business environment marked by exceptional competition among firms. Large firms appear to dominate some sectors, whereas others have become more competitive.

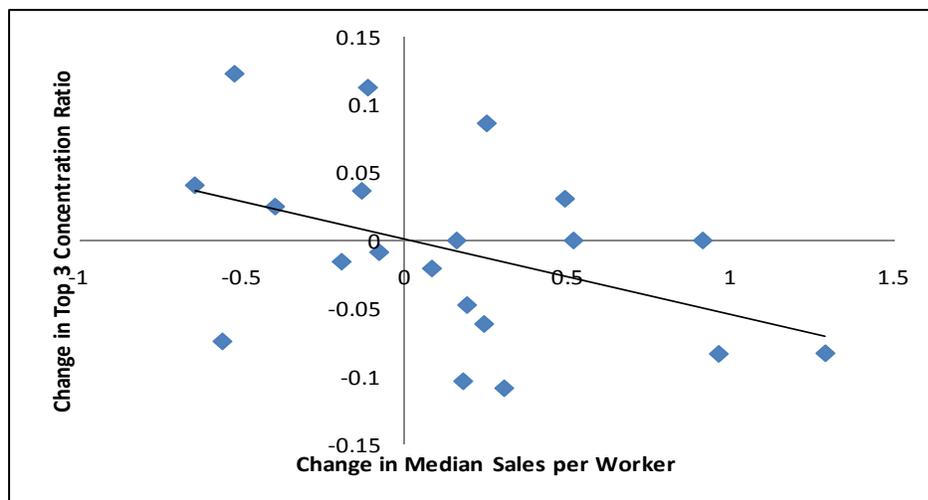
**Figure 6.15: Comparative Performance – Goods Market Efficiency**

COMPARATIVE PERFORMANCE - GOODS MARKET EFFICIENCY (Scale 1=poorest rating; 7=best)			
	Intensity of Local Competition	Extent of Market Dominance	Effectiveness of Anti-Monopoly Policy
<b>Tanzania</b>	4.3	3.6	4.0
<b>Ghana</b>	4.8	4.2	4.0
<b>Kenya</b>	5.1	4.0	4.3
<b>Mozambique</b>	4.0	3.1	3.6
<b>Uganda</b>	4.9	3.0	3.8

Source: World Economic Forum, Global Competitiveness Report 2010-2011

Greater competition is generally associated with increased factor productivity in Tanzania. The correlation between concentration and lower sales per worker is a proxy for labor productivity, as shown in Figure 6.16.

**Figure 6.16: Changes in Market Concentration and Labor Productivity**



Source: Unpublished background note using Tanzania Annual Survey of Industrial Production.

## G. Conclusions

Economic history clearly shows that innovation is essential to growth and development. The data and indicators presented above, in tandem with the investment rates of benchmark countries as presented in Chapter Two, present clear evidence regarding the importance of market failures that impede technological innovation and exploitation of comparative advantage.

Tanzania’s performance in innovation and technological readiness is mixed. It has a relatively low level of export sophistication. Having improved its performance over the past, improvements have tapered off somewhat, and there remains considerable unexploited potential to enhance

technological sophistication level and GDP. Tanzania ranks broadly in the middle of comparator countries on indicators of business sophistication and innovation, though its relatively poor performance on technological readiness suggests a serious barrier to the import and application of technology. Tanzania demonstrates generally weak protection of intellectual property rights, but this does not appear to be substantially worse than in benchmark countries. Reliable data do not exist to demonstrate a correlation between improved (*de facto*) IPR protections and the level of investment in Tanzania, or to demonstrate whether firms take costly and evasive measures to protect their intellectual property and other investments. Tanzanian firms enjoy somewhat less competition than comparator countries, although market concentration appears to be declining overall. Altogether, the evidence available suggests, while market failures in innovation may be a challenge, they do not impose a significant cost on private investors in Tanzania, and thus cannot be considered a binding constraint to private investment in the country.

## 7. Lack of Infrastructure

### A. General Overview

The poor quality of infrastructure in Tanzania is routinely cited as a constraint to economic growth and investment. The following analysis uses a wide variety of indicators to assess Tanzania's electricity, transportation, telecommunications, and water infrastructure in order to determine whether any weaknesses found are binding constraints to growth. Tanzanian data is benchmarked against ten countries (Botswana, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Senegal, Uganda, Zambia, and Zimbabwe) as well as the average for Sub-Saharan Africa (SSA) and low income countries when available.

While every sector of Tanzania's infrastructure faces serious challenges, the focus of this report is on identifying the *key* bottlenecks in Tanzania's infrastructure that are currently binding constraints to growth. **The poor provision of electricity is one such constraint. Tanzania's well documented electricity problems are by far the most important infrastructure constraint to investment and economic output. In addition, the poor state of rural roads that connect high production agricultural areas to markets is a binding constraint to growth.** While this report focuses on the physical constraints within infrastructure networks, institutional issues are also important. A common theme that runs through Tanzania's infrastructure challenges is insufficient funding due to underpricing, unaccounted losses, and inefficient collection efforts, as well as weak institutional arrangement for governing infrastructure services.

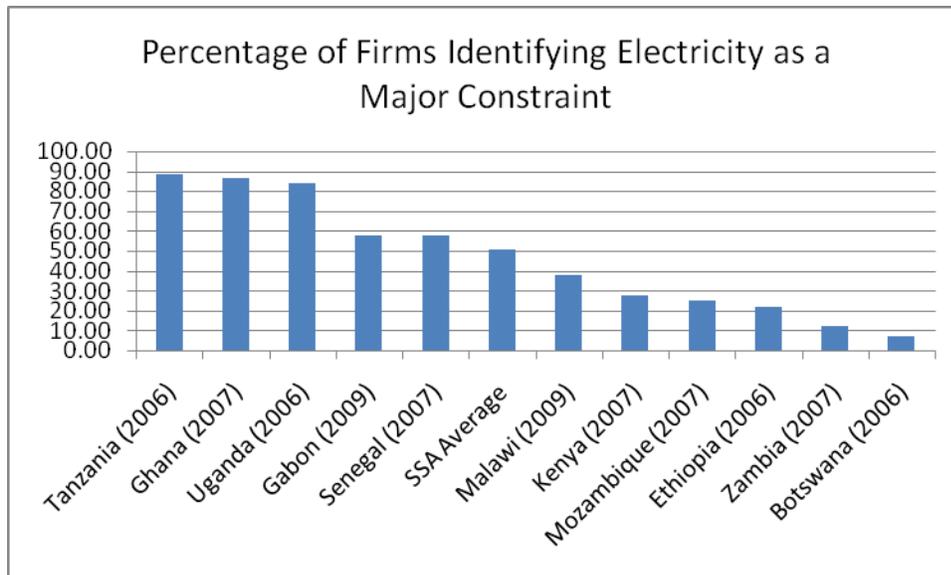
A great deal of economic literature is dedicated to the linkage between infrastructure and growth in developing countries. The majority of studies estimate a positive causal relationship between economic growth and the physical indicators of infrastructure quality and provision in a country. In general, the strongest relationships between infrastructure and growth have been identified with telecommunications, roads, and electricity (Ter-Minassian et al., 2008: 5). The relationship between publicly funded infrastructure and a country's growth is less clear, with different studies arriving at different results (Straub, 2008). The key determinants of the effectiveness of public spending on infrastructure seem to be how the investments are financed (excessive debt and taxation can crowd out other private sector economic activity); the quality of project evaluation; and the presence of complementary inputs (Ter-Minassian et al., 2008: 6).

### B. The Power Sector

Inadequate and unreliable electricity is the most commonly cited infrastructure challenge for Tanzanian firms, both on the mainland and in Zanzibar. In 2006, 88 percent of Tanzanian firms considered inadequate electricity to be a major constraint to their operations, the highest percentage of any country in the World Bank's Enterprise Surveys. More recent survey data from the World Economic Forum rank the quality of Tanzania's electricity supply 122<sup>nd</sup> out of 139

countries. Frequent and sustained power outages, low levels of power coverage, and a high level of generator use in both mainland and Zanzibar all point to electricity being a binding constraint to growth.

**Figure 7.1: Percentage of Firms Identifying Electricity as a Major Constraint**



Source: World Bank Enterprise Survey (respective years in parentheses)

### a. Power Generation

While power generation in Tanzania has grown by about 6 percent per year since 2000, it has not kept pace with demand. Total installed capacity on the main grid amounts to 1,051 mega-watts (mW), which is well below the per-capita average for sub-Saharan Africa. Hydropower constitutes 561 mW, or 55.7 percent of total installed capacity. Thermal and gas generating capacity forms the rest, mainly from independent power producers (IPPs). Distributional and transmission losses of almost 20 percent have exacerbated the problem and are twice the average for Sub-Saharan Africa.

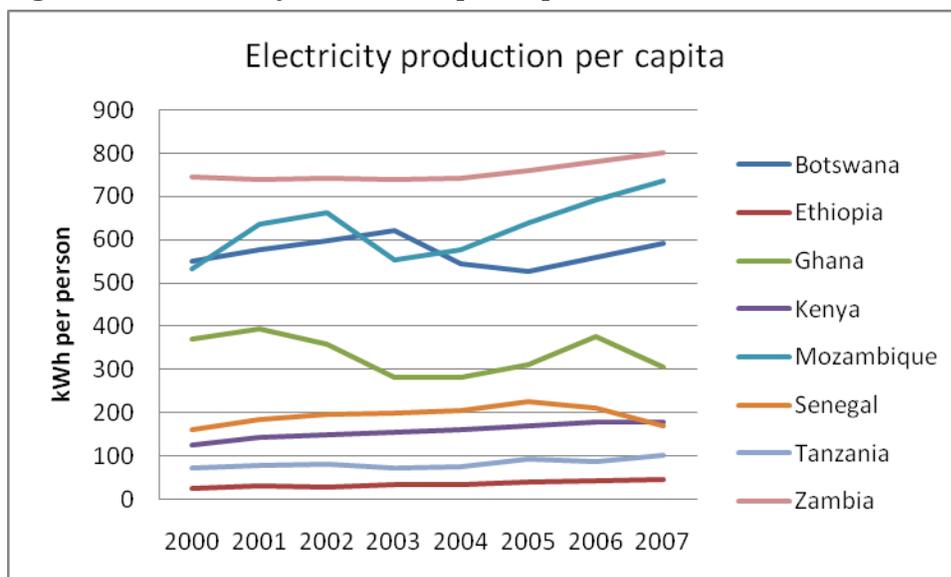
### b. Private Investment in Power Generation

The Government of Tanzania has sought to attract private sector investment in the sector, including through enactment of the Electricity Act of 2008 and the introduction of Power Purchase Agreements. There are two main IPPs in the country contributing about 289 mW of national installed capacity: Independent Power Tanzania Ltd. (IPTL) with 100 mW (diesel based) of installed capacity and SONGAS with 189 mW (natural gas based) capacity (Tanzania Electricity Supply Corporation, TANESCO, 2010).<sup>61</sup> Both systems sell their power to TANESCO for distribution through the national grid. The importance of the IPPs to national power production was

<sup>61</sup> Small diesel generating plants in various regions of the country are connected to the grid and have total installed capacity of 80 MW, of which only five MW is currently being used while the rest is due for disposal due to obsolescence and high maintenance costs. Other isolated diesel generators have installed capacity of 31 MW. The Artumas Group Ltd power plant based in southern Tanzania supplies eight MW of electricity from gas found in Mnazi Bay.

highlighted during the power problems created by the 2006 and 2010 droughts and subsequent drops in hydro-power production. The situation would have been much worse without the contribution of SONGAS power generation, as well as gas-based rental power plants operated by the government, and electricity imports from Uganda and Zambia.<sup>62</sup>

**Figure 7.2: Electricity Production per Capita**



Source: World Development Indicators

The IPTL IPP has been plagued by a legal dispute with the government over capacity charges, the unit price of electricity, operating levels, and other issues. Negotiations are now underway for the government to assume control of the project. A key challenge for this and any other IPP selling to TANESCO is that the price of electricity TANESCO can charge consumers, which is set by the Energy and Water Regulatory Authority (EWURA), is often below the contracted price TANESCO must pay IPTL per kWh for generation alone.

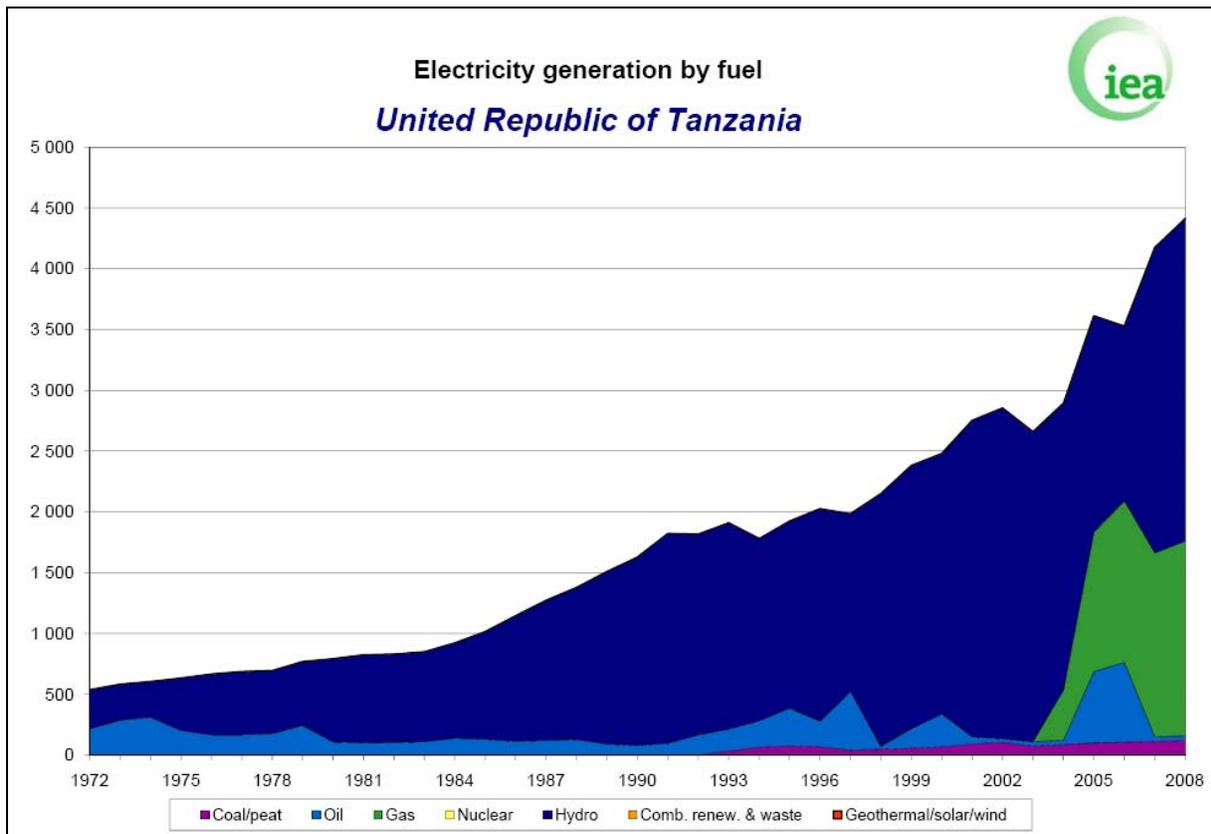
### c. Power Usage and Transmission and Distribution System Coverage

As with generation, Tanzania’s power system has suffered from under-investment in transmission and distribution as well. The national grid covers a relatively small part of the country, and any major increase in generation capacity must also be met by upgrades to the grid. According to the International Energy Agency’s (IEA) Electricity Access Data, Tanzania’s electrification rate in 2009 was just 13.9 percent (14.5 percent in 2010 according to TANESCO), which is one of the lowest in the world and well below that of all comparator countries except Malawi and Mozambique, as well as the 30.5 percent average for SSA (IEA, 2011) (Figure 7.4). In rural areas only 2 percent of the population has access to electricity.

<sup>62</sup> At the time of preparing this report, TANESCO announced that, due to maintenance and inspection of the gas supply facilities that feed SONGAS, the electricity supply to much of the country would be cut off for 15 hours per day (8am to 11pm) for at least one week in late May.

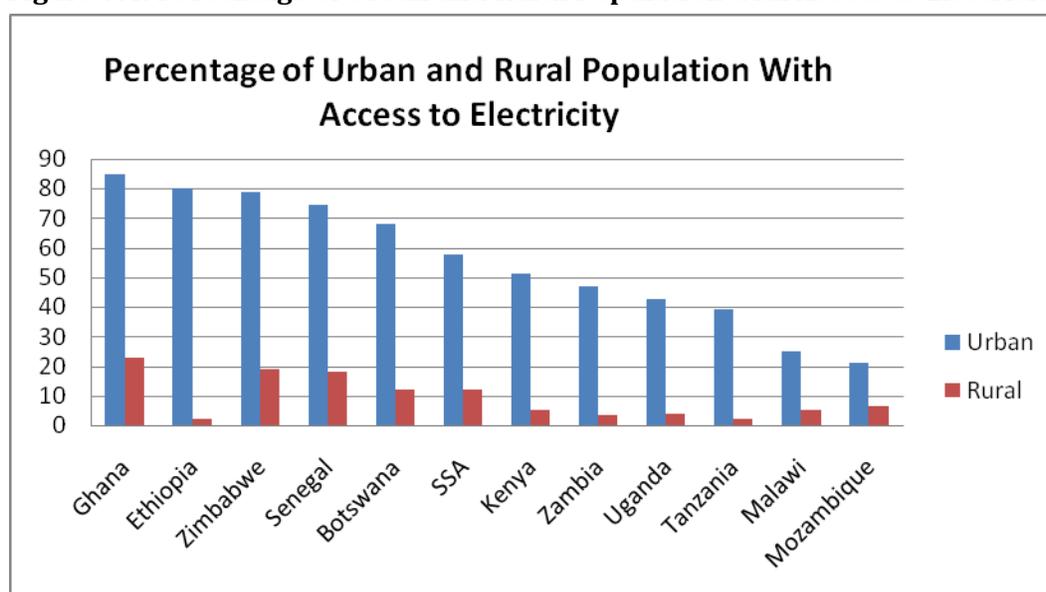
Zanzibar electric power is fully dependent on a single sub-marine electric cable connecting Zanzibar (on Unguja island) with mainland Tanzania. Problems with this cable led to a three-month power outage between December 2009 and March 2010. Obviously, the power blackout affected productivity across the islands that comprise Zanzibar, and hence fluctuations in the growth rate. The cable has a load capacity of 45 mW, which is just sufficient for the current consumption level of 44 mW but far below what is necessary for future demand. A project funded by the Millennium Challenge Corporation (MCC) is being implemented to provide a new electric submarine cable with a capacity of about 100 mW. The project is expected to be completed in late 2012.

**Figure 7.3: Electricity Generation by Fuel**



Source: IEA web site ([http://www.iea.org/stats/pdf\\_graphs/TZELEC.pdf](http://www.iea.org/stats/pdf_graphs/TZELEC.pdf))

**Figure 7.4: Percentage of Urban and Rural Population with Access to Electricity**



Source: IEA Electricity Database 2008

#### d. Power Outages

Power outages, exacerbated by drought, impose a high cost on the economy. Among comparator countries, Tanzania ranks first in terms of the number of power outages per month in the World Bank's Enterprise Survey Data.<sup>63</sup> While Ghana and Uganda both experience more total time of power outages per month, Tanzania's 94.66 hours of outages is well above the SSA average of 65.29 hours per month. Tanzanian firms also incur a high loss value due to power outages, second only to Uganda among comparator countries and well above the SSA average. The Africa Infrastructure Country Diagnostic (AICD) initiated by the World Bank estimated the economic cost of outages in Tanzania is one of the highest in Africa (World Bank, 2010: 8).

**Table 7.1: Power Outages**

Country (year)	Number of Power Outages in a Typical Month	Average Total Time of Power Outages per Month	Value Lost Due to Power Outages (% of Sales)
Tanzania (2006)	12.00	94.66	9.62
SSA Average	10.80	65.29	6.44

Source: World Bank Enterprise Survey 2006

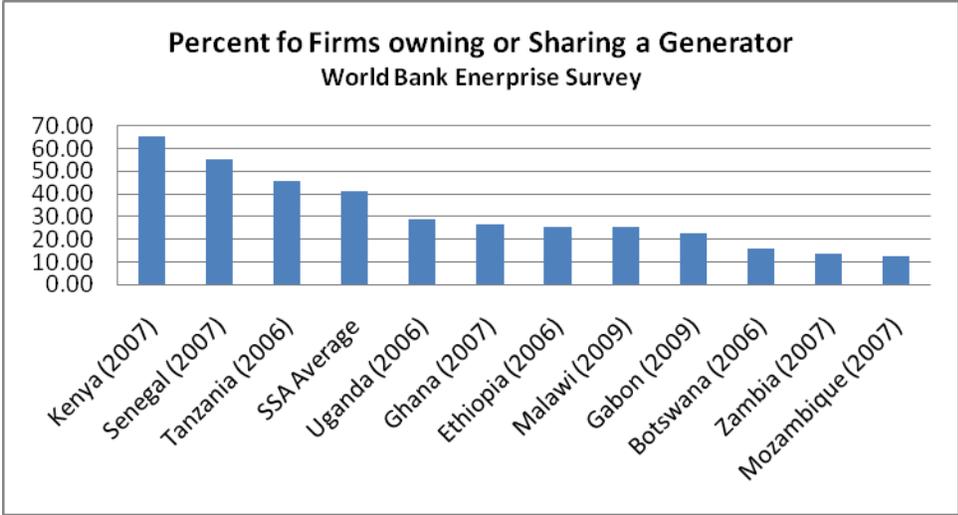
#### e. Private Generator Usage

If the lack of reliable electricity from the national grid is a binding constraint to growth, we should see firms attempting to overcome that constraint by investing in off-grid electricity sources, such as

<sup>63</sup> It is important to note that the data in Table 7.1 were collected in 2006, when widespread power outages were common due to low rainfall.

back-up generators. While few enterprises reliant upon electricity could be profitable generating the bulk of their own electricity, investing in backup power generation allows firms to hedge against the threat of costly power outages that disrupt their business operations and reduce profits. But this investment is costly, as the electricity produced by small generating units is generally much more expensive to per kWh than purchasing electricity from the national grid due to the economies of scale in power production. Foster and Steinbuks (2009) estimate the total average cost of private generation in Tanzania at more than three times the price of grid power.

**Figure 7.5: Percent of Firms Owning or Sharing a Generator**



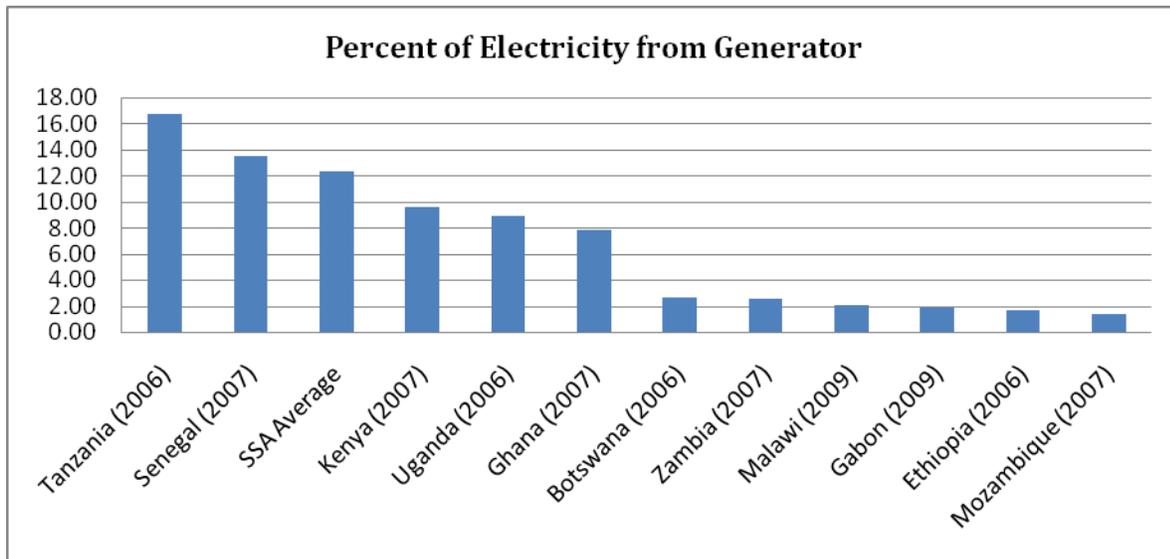
Source: World Bank Enterprise Survey (respective years in parentheses)

As shown in Figure 7.6, World Bank Enterprise Survey data indicate that 45.7 percent of firms in Tanzania own a generator, which is above the SSA average of 41.7 percent but not the highest among comparator countries. Tanzanian firms, however, receive the highest percentage of their electricity from generators among our comparator countries (see Figure 7.6). The fact that firms are willing to bear the high cost of generator-produced electricity suggests a high shadow price for electricity and provides strong evidence that electricity is a binding constraint to economic growth.

**f. GDP Growth in Years of Power Crisis**

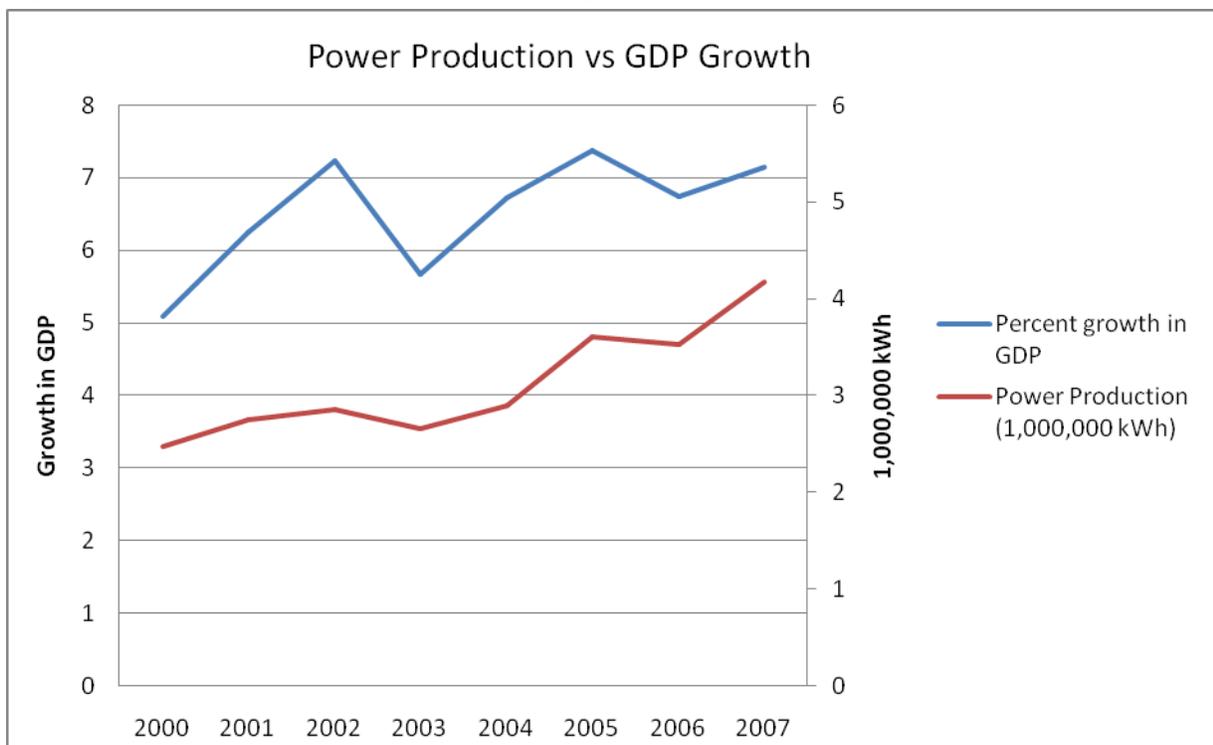
When a binding constraint is tightened, we should expect to see lower levels of investment and economic growth in the affected sectors. Regional droughts in 2003 and 2006 reduced electricity production at Tanzania’s hydropower facility. While direct causality is difficult to prove, 2003 and 2006 were the only two years since 2000 in which GDP growth slowed from the previous year, which suggests these electricity problems had a direct impact on growth (Figure 7.9). While part of the decline in GDP growth can be attributed to the direct effect of lower rainfall on agricultural output, there were also temporary declines in manufacturing and construction growth in 2006, when a drought-induced drop in hydroelectric production was particularly severe.

**Figure 7.6: Percent of Electricity from Generator**



Source: World Bank Enterprise Survey (respective years in parentheses)

**Figure 7.7: Power Production and Percentage GDP Growth over the Years 2000-2007**



Source: World Development Indicators

### **g. Policy and Institutional Challenges**

Institutional challenges explain part of the challenge in expanding and maintaining the power sector in Tanzania. The AICD estimates that 'hidden costs' in the power sector due underpricing, poor collection, and distributional losses amounted to as much as 2.1 percent of Tanzania's GDP in

2008. These are hidden fiscal costs which ultimately the government, as TANESCO's owner, may have to compensate. Underpricing of electricity relative to production costs constitutes the largest share of TANESCO's losses. Electricity prices are well below historical costs, meaning that TANESCO struggles simply to maintain current operations, leaving little or no funds available for capital improvements. Last year TANESCO requested an increase of 36.4 percent in electricity tariffs, but was only granted 18 percent increase.<sup>64</sup> The Energy and Water Regulatory Agency (EWURA) cited insufficient justification and documentation from TANESCO in its decision not to approve the full increase requested in TANESCO's rate application. In addition, a history of weak planning and governance of the sector appears to be an underlying cause of the sector's difficulties. Issues, including board governance at TANESCO and the inability to attract sufficient financing and private investment to the sector, merit further in-depth investigation.

#### **h. Energy Poverty**

The AICD uses the term 'hidden costs' to mean lost income by a service provider, in this case TANESCO. However, the actual economic costs of inadequate power supply are much higher than these revenue losses suggest – the shadow value of electricity substantially exceeds the costs of production. Consumers, including the poor, who lack access to electricity pay a much higher cost for substitutes, including kerosene lighting, candles, and solar systems. Modern forms of energy, like electricity, make up a small fraction of the total energy consumption in Tanzania. In fact, 90 percent of total energy consumption in Tanzania is biomass (fuel wood and charcoal). Commercial energy (petroleum, hydropower, natural gas, and coal) represents about 9.2 percent, while solar and wind account for less than 1 percent (Ministry of Energy and Minerals, 2010).

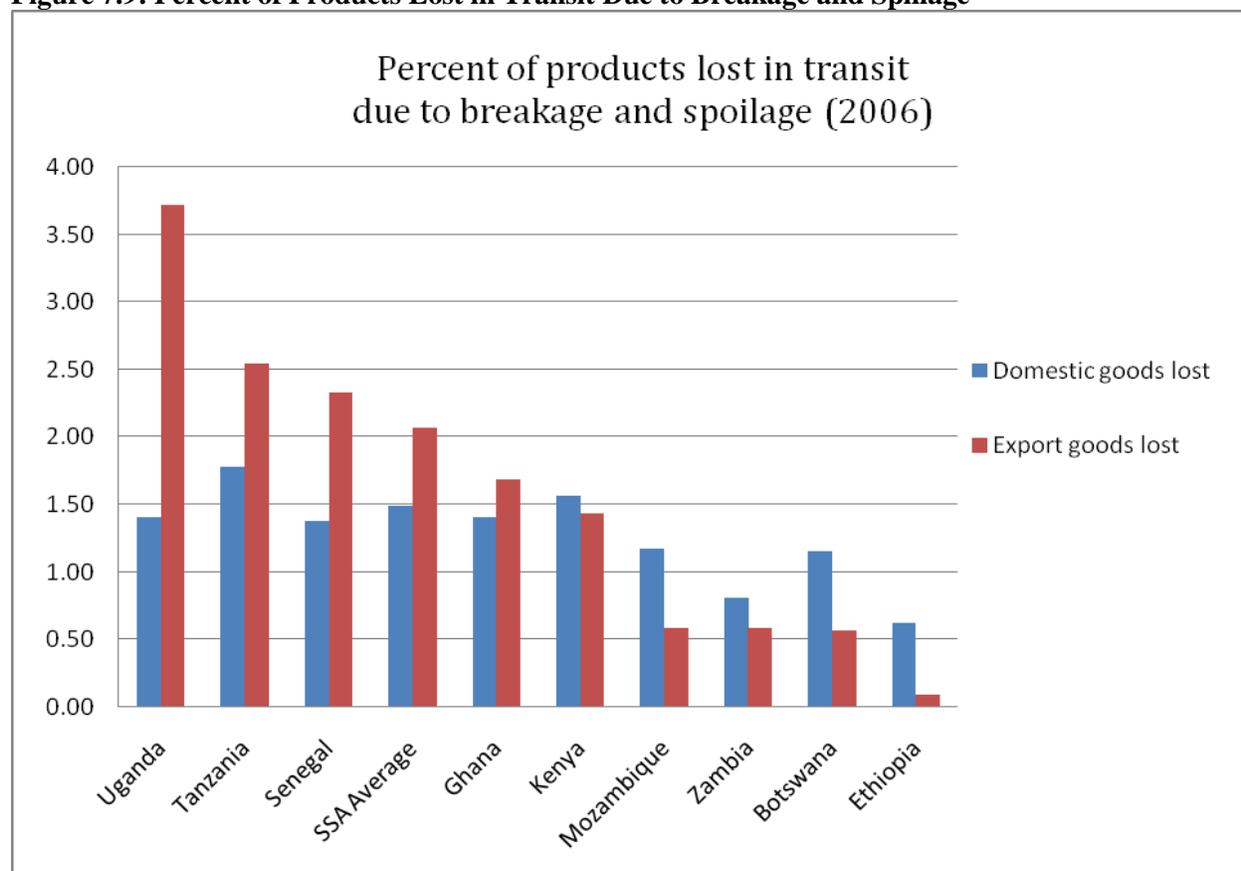
The International Energy Agency (IEA) has developed an Energy Development Index to measure a country's transition to the use of modern fuels. The EDI is modeled after the UN's human development index and uses four indicators to measure a country's "energy poverty", namely, per-capita commercial energy consumption, per-capita electricity consumption in the residential sector, share of modern fuels in total residential sector energy use, and the share of population with access to electricity. Using these inputs, the IEA ranked Tanzania 60<sup>th</sup> out of the 64 developing countries in its database (International Energy Agency, 2010: 264).

This low level of modern energy is not due to a lack of natural resources. The country has estimated hydropower potential of 4,700 MW compared to a current installed capacity of 561 MW. Tanzania also has 4,636 billion cubic feet (bcf) of proven natural gas reserves, which represents 24 years of reserves at current levels of production (more than 100 years if probable reserves are included). In fact, with abundant energy resources, the AICD concludes that Tanzania has the potential to be a substantial power exporter to the East African Community in the long term.

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<sup>64</sup> A full explanation of Tanzania's electricity tariffs is in the Annex.

**Figure 7.9: Percent of Products Lost in Transit Due to Breakage and Spillage**



Source: World Bank Enterprise Survey Data

Only 7 percent of Tanzania’s roads are paved, one of the lowest percentages in Sub-Saharan Africa, leaving 93 percent of the network unpaved (gravel or earth) and susceptible to erosion. Three quarters of the paved kilometers are trunk roads. The GoT has a stated goal of paving all of the country’s main trunk roads by year 2018. The projects are behind schedule, with only 5,166 km of paved roads, leaving 7,260 km unpaved. The primary challenge for Tanzania has been in extending the **reliable** road networks to rural areas. Only 24 percent of Tanzania’s rural population lives within two kilometers of an all-weathered road, which makes the flow of goods and services to and from the rural areas difficult and expensive.

#### **Assessment of Demand (Traffic) and Shadow Value of (Poor) Road Condition**

The high shadow price of the constraint is first demonstrated by breakage and spillage of goods in transit, which represents a direct loss of revenue for Tanzanian firms and the economy as a whole. Tanzania compares poorly on this indicator of the cost of relatively poor overall road quality, as shown in Figure 7.12, in comparison to other African countries.

Yet, as shown in Table 7.2, demand for road transport is high. Traffic levels for both paved and unpaved roads are quite high compared to other low income countries. Similarly, using aggregate

percent of the main trunk road network was paved and 90 percent of the trunk roads were in good or fair condition. There is very little evidence that the main trunk roads in Tanzania are constraining growth.

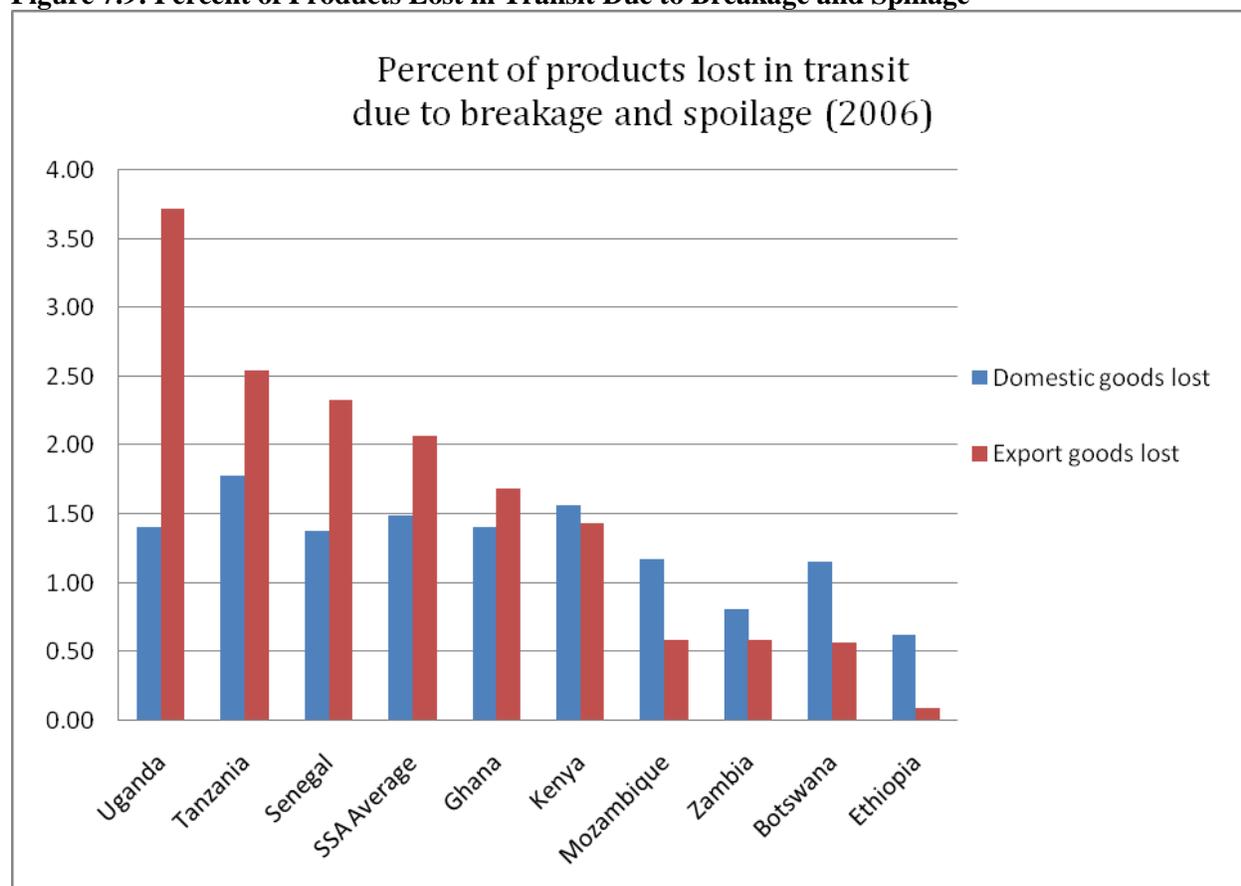
Table 7.2 provides benchmarked data on the quantity and quality of Tanzania's roads as reported in the AICD report for Tanzania (World Bank, 2010). Measures of the quantity of roads (road density) in Tanzania compare poorly to other low income countries, while measures of road quality compare favorably. The density of paved roads is well below the average for other low income countries, but the density of unpaved roads is roughly comparable.

**Table 7.2: Benchmarked Road Indicators**

Indicator	Unit	LIC	Tanzania
Paved Road Density	km/1000 km <sup>2</sup> of arable land	86.6	47.1
Unpaved Road Density	km/1000 km <sup>2</sup> of arable land	504.7	482.6
Rural Accessibility	% of rural population within 2 km of all-season road	21.7	24
Paved Road Traffic	Average Annual Daily Traffic	1,049.6	1,797.0
Unpaved Road Traffic	Average Annual Daily Traffic	62.6	99.8
Paved Network Condition	% in good or fair condition	80	94.7
Unpaved Network Condition	% in good or fair condition	57.6	69.1

*Source: Africa Infrastructure Country Diagnostic 2010 (data from 2008)*

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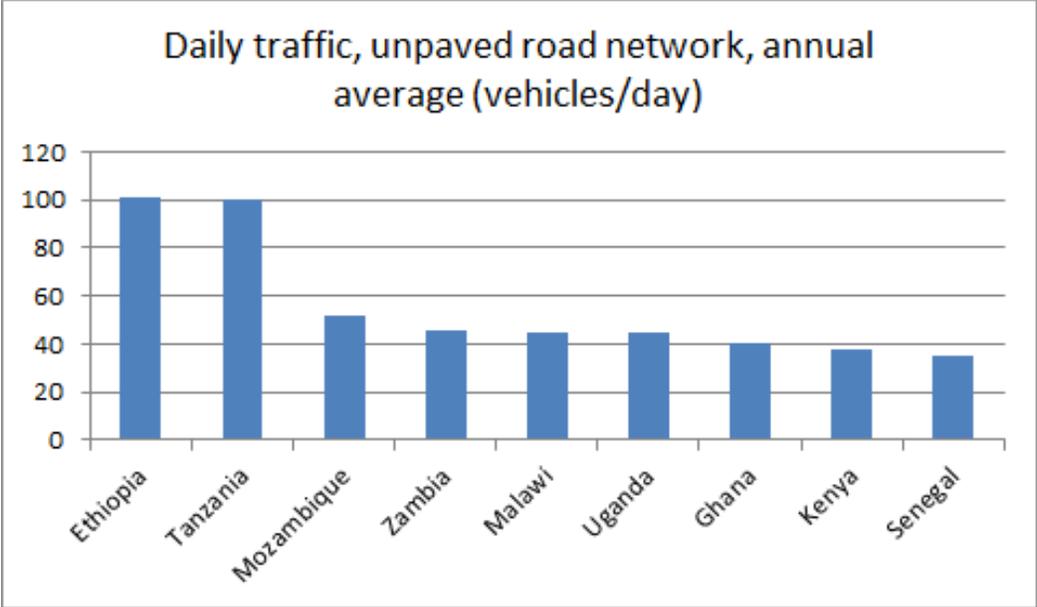
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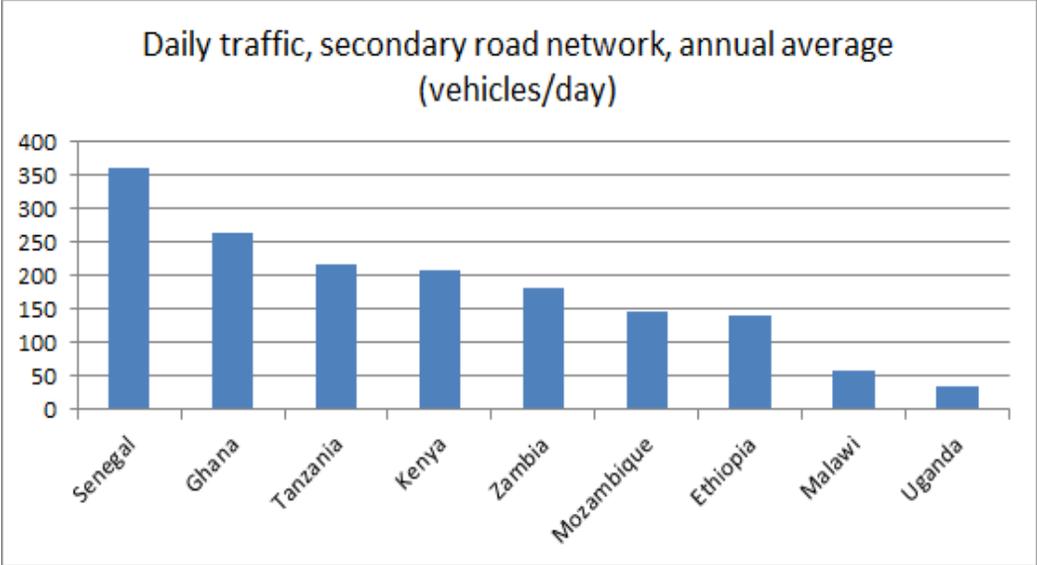
cross-country data from the World Bank’s Africa Infrastructure Database, traffic levels on Tanzania’s unpaved roads are relatively high (Figure 7.13) and traffic on Tanzania’s secondary roads is above the average for our comparator countries (Figure 7.14). The percentage of the unpaved secondary network in Tanzania with a high level of traffic (greater than 300 vehicles per day) is the highest among our comparator countries (Figure 7.15). Taken together, these results suggest a relatively high level of demand for road services in Tanzania’s secondary road network. By comparison, the general traffic levels on Tanzania’s primary network are roughly equal to the average of our comparator countries.

**Figure 7.10: Average Annual Daily Traffic, Unpaved Road Network**



Source: World Development Indicators, Africa Infrastructure Database

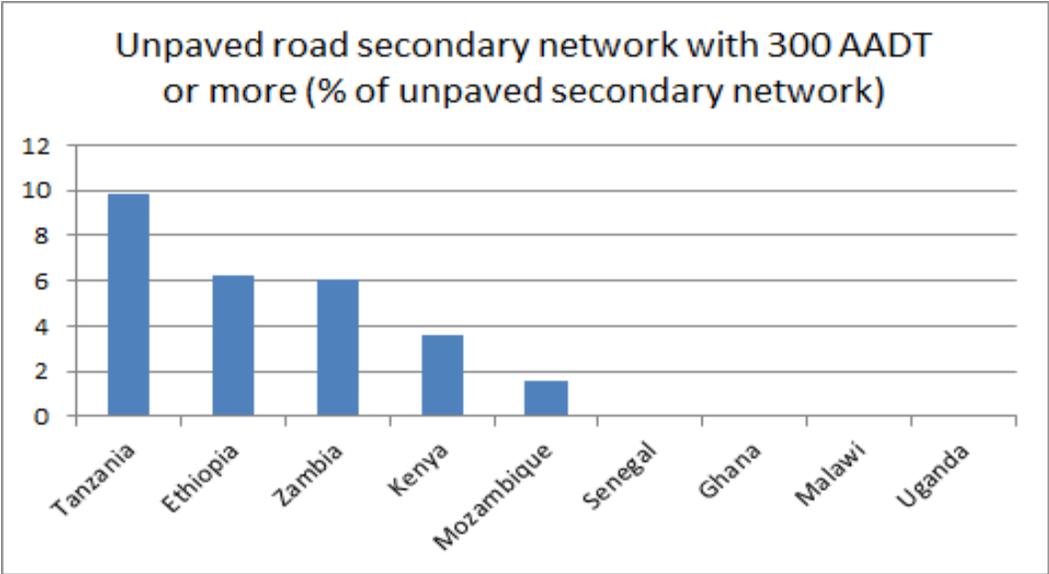
**Figure 7.11: Average Annual Daily Traffic, Secondary Road Network**



Source: World Development Indicators, Africa Infrastructure Database

One can also examine traffic levels on roads in relatively poor condition as an indicator of firms' willingness to incur a high cost. Roads in poor condition with high traffic suggest a high shadow cost for transportation services and potentially high return investments. Data from the Africa Infrastructure Country Diagnostic gives a clear picture of the traffic levels for Tanzania's primary (trunk) and secondary (regional) roads, and classifies each road segment by condition. Unfortunately, there was no reliable data available for traffic levels on Tanzania's tertiary roads.

**Figure 7.12: Unpaved Secondary Road Network with > 300 AADT**



Source: World Development Indicators, Africa Infrastructure Database

<b>Table 7.3: Tanzania Road Condition and Traffic Indicators (AICD)</b>				
	<b>Secondary only</b>		<b>Primary only</b>	
	Km	Percent of Roads with Known Condition	Km	Percent of Roads with Known Condition
Data comprises	15,209		9,973	
<i>Of which:</i>				
Known Condition	12,154	100%	8,177	100%
Poor condition with AADT > 50	889	7%	404	5%
Poor condition with AADT > 150	297	2.4%	225	2.7%
Poor condition with AADT > 300	106	0.9%	156	1.9%
Poor, or Fair condition with AADT > 500	557	4.6%	838	10.2%
Poor or Fair Condition with AADT > 1500	92	1%	151	2%
Unknown condition with AADT > 300	136	n/a	518	n/a
<i>Note: No Data Available on Tertiary Road Network</i>				

Table 7.3 indicates that a relatively small fraction of Tanzania's primary and secondary roads have both a high level of traffic and are in poor condition, suggesting that the existing problems with primary and secondary roads are concentrated in a few key roads that have a high shadow price. For instance, 297 km of secondary roads (2.4 percent) have average traffic levels of more than 150 vehicles per day, yet are listed in poor condition. 557 km of secondary roads (4.6 percent) have average traffic levels of more than 500 vehicles per day, yet are listed as fair or poor condition.

### **c. Road Management**

Financing transport infrastructure projects in Tanzania has long been a challenge for the Government. In 2007, the Government of Tanzania provided USD 6.2 billion to finance Phase One of its ten-year Transport Sector Investment Program (TSIP), which sought to significantly improve transport infrastructure in the country. By June 2009, escalating road costs had led to less than 40 percent of the prioritized projects being implemented, while 64 percent of the budget for the projects had been spent. As a result, TSIP Phase One is unlikely to be completed as planned by June 2012.

The biggest distinction in the quality of roads indicators is between the roads managed by the central government and the roads managed by local government authorities. Table 7.4 indicates that only 10 percent of roads under the management of TANROADS are in poor condition, versus

nearly half of the roads under local management. Most of the rural roads that provide market access to the agricultural sector are under the management of local government authorities.

**Table 7.4: Road Condition under TANROADS and District Councils**

TYPE	CONDITION (%)			NETWORK LENGTH (km)
	GOOD	FAIR	POOR	
<b>A: TANROADS (Central Government)</b>				
Trunk Paved	76	21	3	5,478.0
Trunk Unpaved	60	30	10	7,308.0
Regional Paved	85	13	2	840.0
Regional Unpaved	55	32	13	20,265.0
Overall Condition (weighted for length)	61	29	10	33,891.0
<b>B: Roads Under District Councils</b>				
Paved	54	23	23	745.7
Gravel	38	47	15	12,049.55
Earth	18	31	51	45,241.88
Overall Condition (weighted for length)	21	32	47	58,037.13
NB: Council roads are District, Feeder, and Town/Municipal roads.				

Source: TANROADS; Prime Minister's Office, Regional Administration & Local Government (PMO-RALG)

#### d. Transportation Costs in Agriculture

Estimates for transportation's share of agricultural production costs vary widely. For traditional export crops (coffee, tea, cotton, tobacco, cashew, sisal), transportation, at least until recently, appears to have represented a relatively small fraction of the total marketing cost. In a 2005 study, Nyange found that transportation represented about 20 percent of total marketing costs for cotton, tobacco, and cashews; for coffee, that figure was around 5 percent (Utz, 2008: 120). These relatively low costs likely represent either a decision by farmers to grow export crops in areas that are close to export routes and have good quality roads, or a decision by previous governments to improve roads serving important export source markets. Given the increase in fuel prices since 2005 when this analysis was conducted, these percentages have almost certainly increased.

Transport seems to account for a much higher fraction of marketing costs for grains, however. A World Bank study on the maize sector estimates that transportation costs comprise 83 percent of total marketing costs for maize in Tanzania (Zorya and Mahdi, 2009). Other World Bank research finds that the cost of getting maize from the farm gate to the primary market is higher in Tanzania than in Kenya or Uganda (World Bank, 2009: 49). Transportation costs (USD/ton-km) for maize in this first stage of transport (from the farm to the first primary market) are 33 percent higher in Tanzania than in Kenya; costs to move maize from the primary market through the secondary market and onto the wholesale market are comparable to Kenya and lower than Uganda, suggesting that the key bottleneck is in the first stage of transport (see Table 7.5). Much of the difference in the overall cost of transporting maize is due to the longer distances in Tanzania versus the other two countries. On average, maize in Tanzania must travel 461 km to reach a wholesale market, compared to 373 km in Kenya and 133 km in Uganda. Since these distances cannot change, transport costs are always likely to represent a larger fraction of marketing costs in Tanzania than

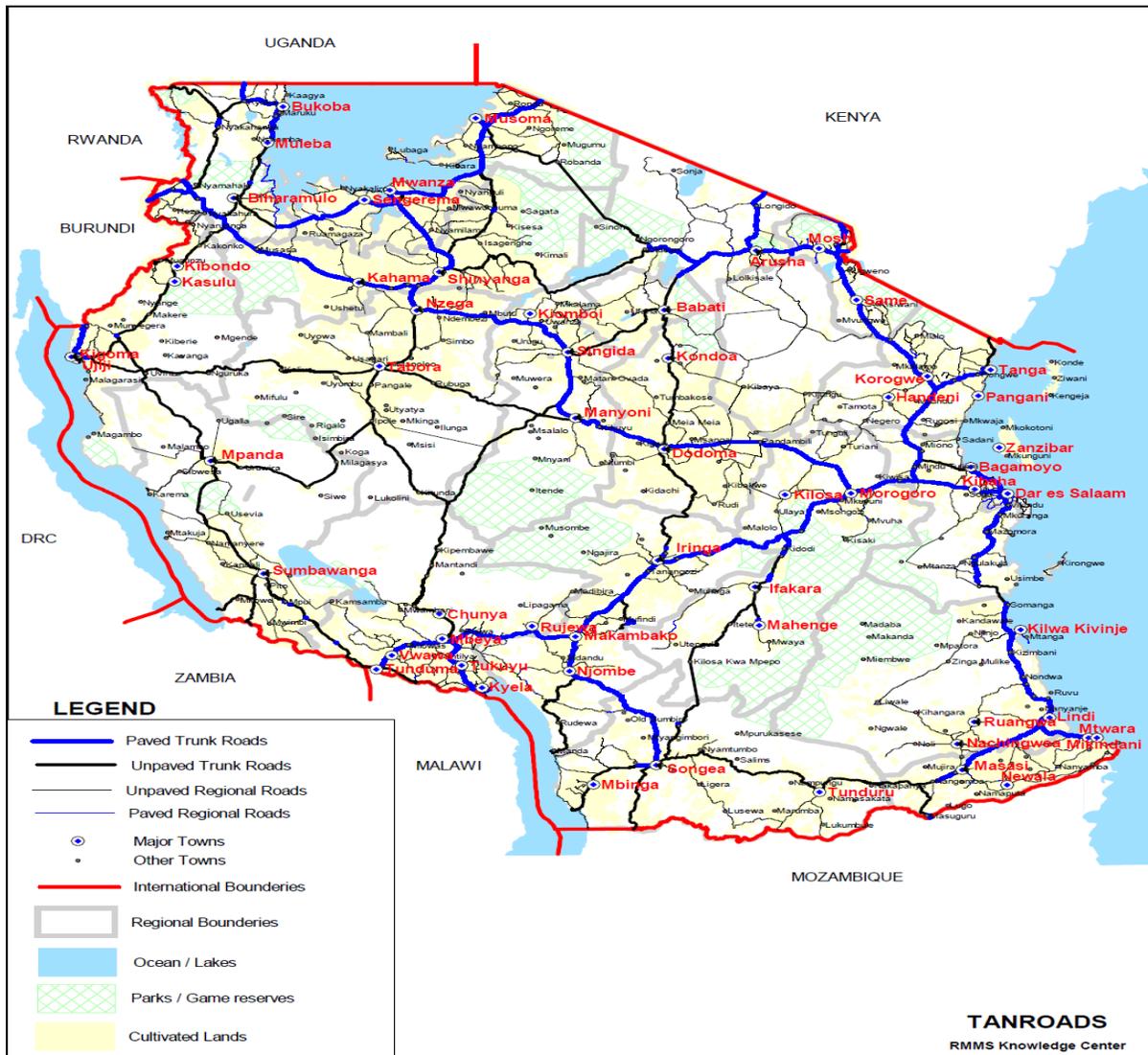
in the other two countries. Improving the rural road connections to high production agricultural areas will help reduce these costs.

**Table 7.5: East Africa: A Study of the Regional Maize Market and Marketing Costs**

Category of market	Mode of transportation	Average distance, km	Transport prices, US\$/ton-km	Transport prices, US\$/ton
<b>Kenya</b>				
Farm-gate to first primary	Lorry 5MT	6	0.30	1.80
Primary to secondary market	Lorry 5MT	67	0.30	20.10
Secondary to wholesale/miller	Lorry 10MT	300	0.11	33.00
Farm-gate to wholesaler/miller	Lorry 10MT	400	0.11	44.00
<b>Tanzania</b>				
Farm-gate to first primary	Lorry 5MT	16	0.40	6.40
Primary to secondary	Lorry 10MT	100	0.27	27.00
Secondary to wholesale/miller	Lorry 10MT	345	0.12	41.40
<b>Uganda</b>				
Farm-gate to first primary	Bicycle	3	1.50	4.50
Primary to secondary	Lorry 5MT	50	0.33	16.50
Secondary to wholesaler /miller	Lorry 10MT	80	0.15	24.00*

Source: World Bank survey carried out in November-December 2008.

**Figure 7.13: Tanzania Road Network (Trunk and Regional Roads)**



### e. Institutional and Policy Issues for Roads

Tanzania receives high marks in the AICD on the quality of the institutional reforms it has undertaken in the road sector. The creation of the independent roads agency, the Tanzania National Roads Authority (TANROADS), helped boost budget execution rates for major trunk road projects from around 50 percent in 2002-03 to over 75 percent in 2006-07. Execution rates for regional and local road rehabilitation projects remain around 40 percent.

Tanzania's road fund meets all of the criteria of a properly designed fund for financing road maintenance put forward by the Africa Transport Policy Program. On paper, the fund should collect enough in fuel taxes to pay for all maintenance needs in the country. However, only 39 percent of the taxes due are collected, which is one of the lowest collection rates in Africa (World Bank, 2010: 15). This will make it extremely challenging for TANROADS to fund maintenance on newly upgraded

roads. It also reduces the funding available to the local government authorities to maintain the road networks in rural areas. The GOT recognizes the problems and is exploring ways to increase collection, including the collection of fuel taxes at the point of entry of fuels into the country.

Another area where the government has adopted sound policies but where execution has been a problem is the weighbridges, which impose fees and penalties to prevent the overloading of trucks on the main trunk roads. Overloading damages roads and increases maintenance costs, so this is an important policy. However, truckers complain of long wait times and unnecessary stops. In their analysis of Tanzania's central corridor, Nathan and Associates estimate that improving the operation of the weighbridges and other checkpoints could cut travel times between Dar es Salaam and Kigali by a full day (Nathan Associates, 2011b: 35).

#### **f. Urban Traffic**

If there is a place in Tanzania where there is clearly a high level of demand for roads, it is in Dar es Salaam. Traffic congestion is a growing challenge for the flow of people, goods, and services in Dar es Salaam as well as Arusha, Mwanza and Mbeya. Excessive commute times reduce the overall productivity of the workforce and increase fuel consumption in cities.

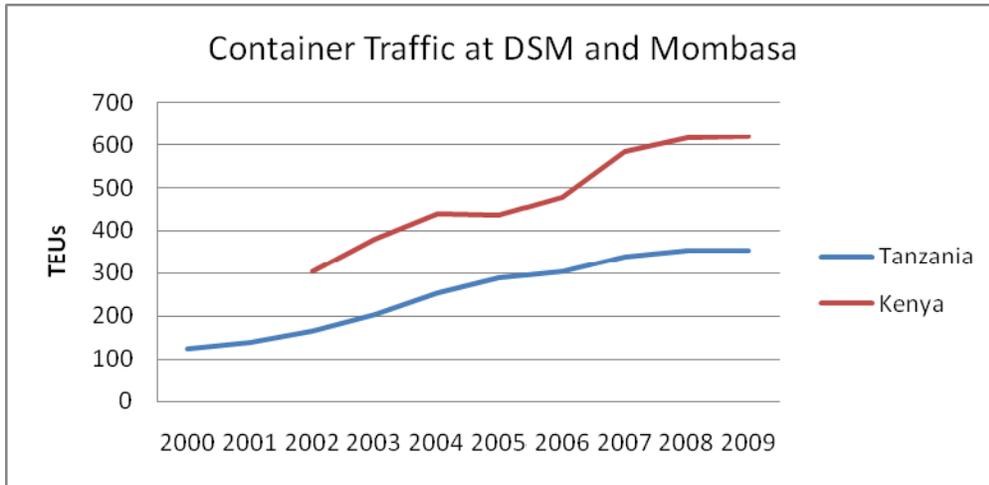
While there is very little hard traffic data for Dar es Salaam to adequately quantify the extent of the problem or allow benchmarking against other cities in the region, anecdotal evidence suggests that it is not unusual for some Dar es Salaam residents to spend several hours per day commuting to and from work in the city center. The population of Dar es Salaam has increased from 2.5 million people in 2002 to about four million in 2011 without a comparable increase in transportation infrastructure. The available data on traffic in Dar es Salaam suggests that the number of cars in the city increased by more than 12 percent from 2004 to 2006, while the kilometers of roads increased by less than 5 percent and the kilometers of paved roads increased by about 2 percent over that same period (Ministry of Infrastructure, 2010).

#### **g. Ports**

In addition to the primary port in Dar es Salaam (DSM), Tanzania has coastal ports serving Zanzibar, Tanga (in the north), and Mtwara (in the south). There are also two lake ports in the west, at Mwanza on Lake Victoria and at Kigoma on Lake Tanganyika. This analysis will focus on the port at DSM, which handles roughly three quarters of Tanzania's overseas trade (Economist Intelligence Unit, 2008: 13).

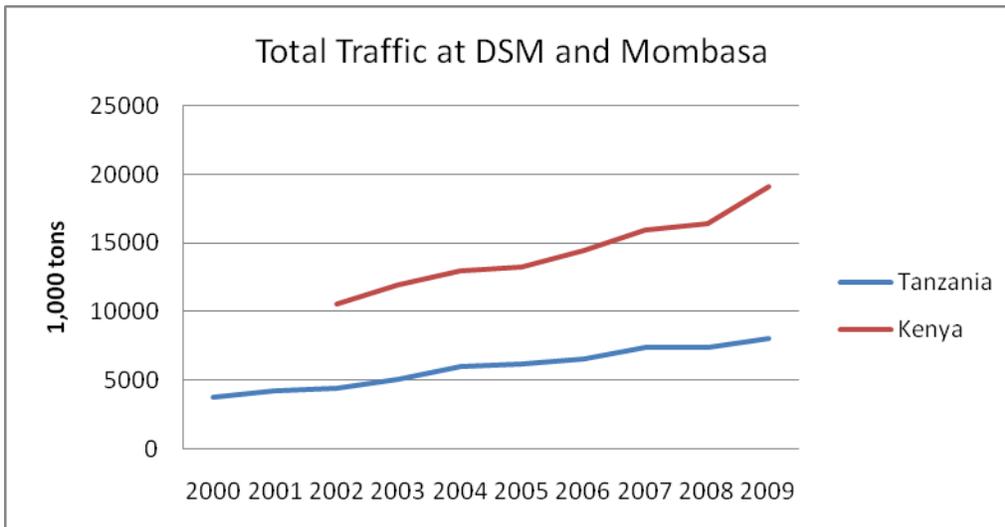
Total tonnage through DSM increased at 8.7 percent per year between 2000 and 2009, while container traffic increased at 12.2 percent, indicating a growing level of demand for port services. In 2009, imports constituted 82 percent of the total cargo (in tons). Transit traffic (imports and exports) constituted about 40 percent of total trade, with the port serving markets in Zambia, Rwanda, Burundi, Uganda and the eastern region of the Democratic Republic of the Congo (DRC) (Nathan Associates, 2011a: 36). Figure 7.17 and Figure 7.18 display these trends.

**Figure 7.14: Container Traffic at DSM and Mombasa**



Source: Nathan Associates

**Figure 7.15: Total Traffic at DSM and Mombasa**



Source: Nathan Associates

The growing demands on the DSM port have increased congestion and wait times. As a result, some of the traffic has been diverted to the port of Mombasa in Kenya, which is evidence of firms attempting to overcome a constraint (Economist Intelligence Unit, 2008). Analysis by Nathan Associates estimates that importing or exporting a 20-foot light container through DSM is 7 percent more expensive and 25 percent slower than the port at Mombasa in Kenya (Nathan Associates, 2011a: 49,66). But in the key indicators of port performance, DSM generally compares favorably to other ports in the region as shown in Table 7.6.

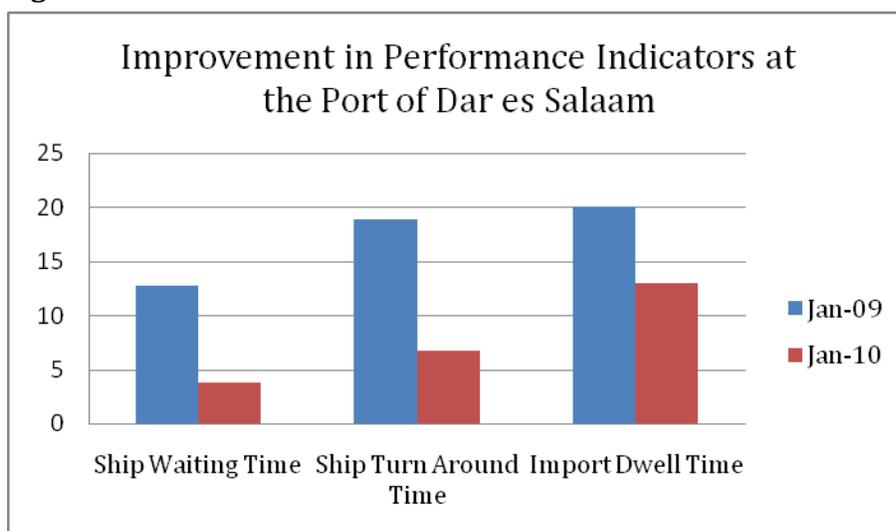
**Table 7.6: Benchmarked Port Indicators**

Efficiency Indicator	DSM (Tanzania)	Mombasa (Kenya)	Maputo (Mozambique)	Sudan	Cape Town (South Africa)
Average container dwell time in terminal (days)	7	5	22	28	6
Average truck processing time for receipt and delivery of cargo (hours)	5	4.5	4	24	4.8
Average container crane productivity (container loaded-unloaded per crane hour)	20	10	11	8	18
Average general cargo crane productivity (Tons loaded-unloaded per crane working hour)	20	20.82	11	8	15

Source: Nathan Associates

A concerted effort in recent years to improve the operation of the port at DSM, including the expanded use of inland container depots to reduce port congestion, has improved the performance indicators of the port (Figure 7.19) but more could be done (Nathan Associates, 2011a: 37). As a result of the port’s relatively good performance indicators, it does not appear to be a binding constraint to Tanzania’s overall economy.

**Figure 7.16: Performance Indicators at the Port of Dar es Salaam**



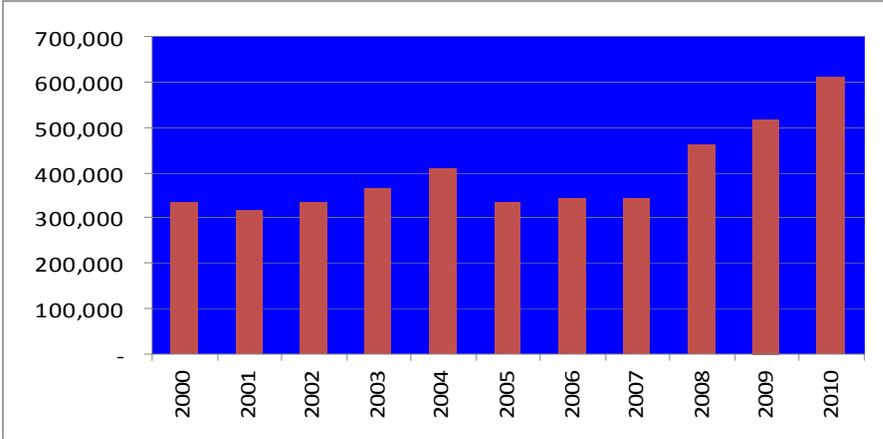
Source: USAID

However, absent improvements in port capacity, the DSM port could become a binding constraint to growth as trade and economic output continue to increase. The port of DSM faces physical and operational constraints that will hinder Tanzania’s international trade if not addressed in the coming years. The depth of the harbor limits the size of ships that can use the port. The port has

limited space to grow as trade expands, such that the GOT is considering options to build another deep-water port along the coast. Institutional improvements are also likely to be important to reducing the cost of using this port. Shipping experts have recommended that the Tanzanian Port Authority adopt a “landlord model” of port management, where the government regulator allows private firms to handle most port operations, thereby injecting some competition into provision of port services. This model has worked well in many parts of the world, but has not been implemented widely in Africa (World Bank, 2010: 13).

Zanzibar’s main maritime transport facility is the Malindi Port which handles domestic, regional and international traffic. About 95 percent of Zanzibar imports and exports pass through Malindi. The port has the busiest passenger terminal in East Africa, handling an average of 1.2 million people per year. The port operations improved considerably between 2008 and 2010 after a major rehabilitation project that was funded by EU and completed in 2008. The number of containers handled for the last two years was above the port’s official capacity, and demand for port services is expected to continue to increase.

**Figure 7.17: Total Tonnage at Zanzibar’s Malindi Port (2000-2010)**



Source: Zanzibar Ports Corporation

**h. Rail**

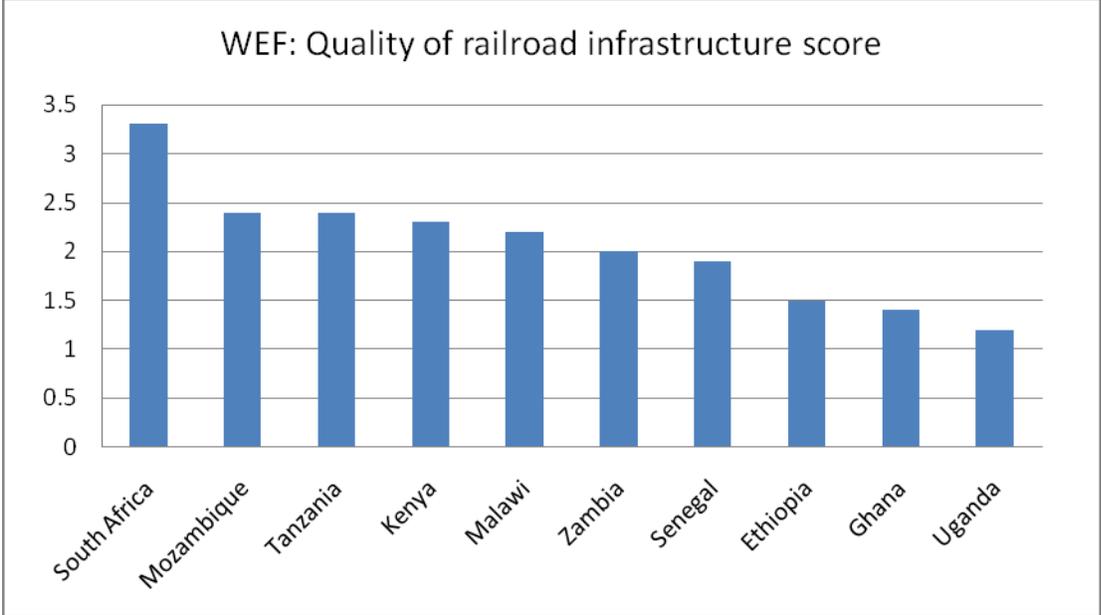
Tanzania’s rail systems are generally described as unreliable and poorly maintained. The World Economic Forum’s Global Competitiveness Report scores Tanzania better than most of its comparator countries in the quality of its rail infrastructure (Figure 7.21). However, this is more a comment on the rail infrastructure in Sub-Saharan Africa, given that all scores fall below 2.5 out of seven, except for that of South Africa.

The principal indicator of poor rail system performance is that most companies now use the road system to move their goods, including heavy and bulk goods that would be good candidates for rail shipment. In 2009, only 5 percent of the containers cleared from the port of Dar es Salaam were transported by rail, the rest traveled by road (Nathan Associates, 2011a). This diversion of goods away from the railway has increased traffic and maintenance costs for the roads. While diversion of

cargo to roads may indicate businesses attempting to get around a constraint, firms may simply favor the flexibility of road transport.

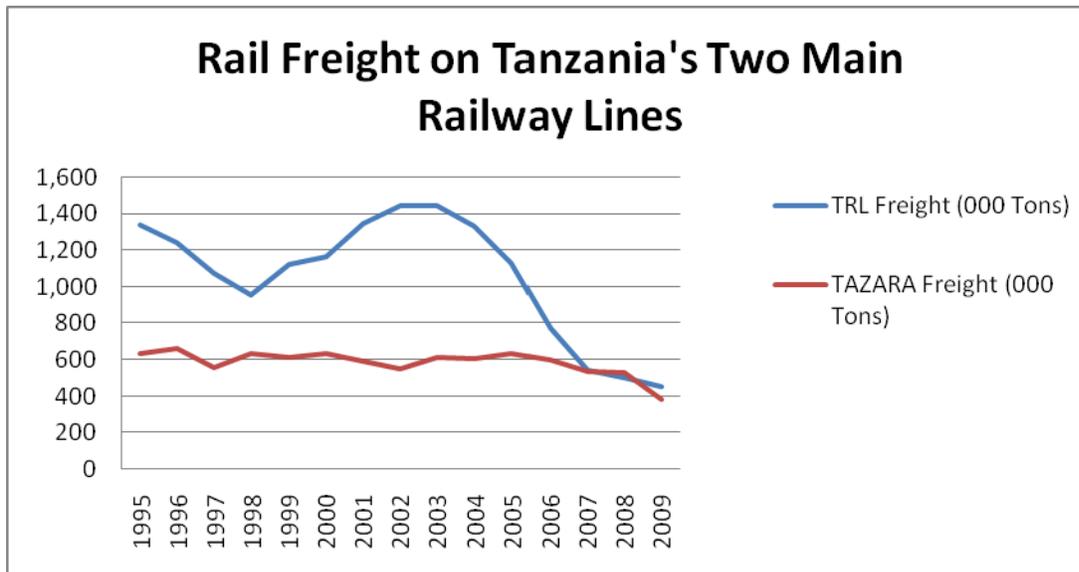
There are two main rail lines in the country. The TAZARA line, jointly owned by the Tanzanian and Zambian governments, connects the port at Dar es Salaam to the copper producing regions of Zambia, and has a total length of 1,860 km of main line, of which 960 km are in Tanzania. The larger Tanzania Railways (TRL) system consists of about 2,600 km of track. This “central line” connects Dar es Salaam to Kigoma in the far west of the country, with connections to Mwanza on Lake Victoria, the northern port of Tanga, and Arusha near Kilimanjaro. In 2007, a concession to operate the TRL system was awarded to the Indian firm RITES under a joint venture with the Government of Tanzania, called the Tanzanian Railway Corporation (TRC). The deal included guaranteed financing from the World Bank/IFC (World Bank, 2010: 17). Unfortunately, declines in operational and financial performance indicators continued under the concession, leading to mutual recrimination and GOT assumption of control over the TRC system in 2010.

**Figure 7.18: Quality of Railroad Infrastructure**



Source: Global Competitiveness Report, 2010-2011

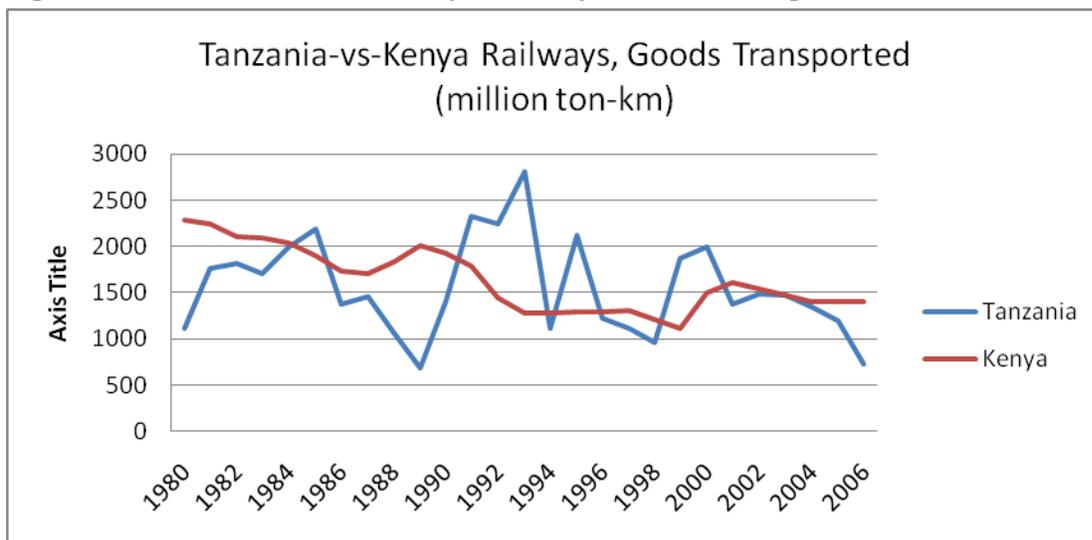
**Figure 7.19: Raid Freight on Tanzania's Two Main Railway Lines**



Source: Ministry of Transportation

Figure 7.22 shows rail freight volumes over the period 1995-2009. The relatively high level of rail freight reached in 2002 and 2003 may indicate that demand for rail services could be higher if the rail system performed better. During brief periods in the mid-1980s and the early 1990s, freight exceeded 2000 ton-km, more than four times the current usage. However, those peaks were followed by sharp drops in rail usage, suggesting difficulties in maintaining high levels of usage on the 100-year-old system (Figure 7.23). Poor track conditions mean that speed restrictions are imposed on many sections of the rail network, leading to long delays. The 1,229 km trip from Dar es Salaam to Mwanza takes an average of 120 hours, which works out to an average of roughly 10 km per hour. Wait times on the trip range from two days to ten days (Nathan Associates, 2011a: 67).

**Figure 7.20: Tanzania versus Kenya Railways, Goods Transported**



Source: Nathan Associates

The drop in rail services since 2003 on the TRL line has coincided with an improvement in the main trunk roads that follow roughly the same route. The large-scale switching from rail to roads over the last seven years has occurred despite generally higher fuel prices.

Given the efforts to accelerate and broaden investment and growth, and given projections for continued increases in domestic and transit traffic in Tanzania, the existing state of Tanzania's railway system, while not currently a binding constraint to growth, does appear to be constraining economic growth.

A 2009 study conducted by BNSF railway for the US Trade and Development Agency concluded that upgrading the rail line between Dar es Salaam and Isaka (a one billion dollar project) is financially and economically viable. BNFS's "most likely" scenario projects that a rehabilitated rail line between Isaka and Dar es Salaam would see traffic increase from 1.5 million metric tons in 2012 to 22.4 million metric tons in 2031. BNSF also concluded that there will be continued annual growth in demand along Tanzania's central corridor of 6 per cent regardless of whether the central rail line is rehabilitated. The quality and overall cost of rail service will determine whether this additional traffic uses the rail or the road.

**Figure 10.5-1  
Net Metric Tons by Year**

Traffic Source	2012	2016	2021	2026	2031
Intra-Tanzania Traffic	1,006	2,684	4,816	6,914	9,253
Transit Traffic	399	1,710	3,944	6,170	8,362
Mineral Traffic	117	857	2,242	4,789	4,739
<b>Total Metric Tonnes (000)</b>	<b>1,522</b>	<b>5,251</b>	<b>11,002</b>	<b>17,873</b>	<b>22,354</b>

*BNSF Report p. 67*

BNSF estimates the economic rate of return for upgrading the rail line between Dar es Salaam and Isaka at 31.5 percent in its "most likely" scenario, while financial rates of return on the project vary from 11.9 percent in the low growth scenario to 18.4 percent in the high growth scenario.

**Figure 10.6-6  
Capital Structure and Rates of Return – Total Project**

<b>Capital Structure</b>	<b>Most Likely</b>	<b>Low Growth</b>	<b>High Growth</b>
20 Yr Capital Investment (USD Million)	\$1,583.8	\$1,447.6	\$1,727.6
Initial Capital Investment (USD Million)	\$1,052.8	\$1,045.4	\$1,053.9
Working Capital (USD Million)	\$100.0	\$225.0	\$100.0
Interest During Const (USD Million)	\$75.6	\$79.3	\$75.6
Total Initial Investment (USD Million)	\$1,228.4	\$1,349.7	\$1,229.5
Equity Funding (USD Million)	\$345.8	\$381.1	\$346.2
Debt Funding (USD Million)	\$882.6	\$968.6	\$883.3
<b>Internal Rates of Return</b>	<b>Most Likely</b>	<b>Low Growth</b>	<b>High Growth</b>
EIRR (Constant 2008 USD)	31.1%	N.A.	N.A.
FIRR (Constant 2008 USD)	15.4%	11.9%	18.4%
Return on Equity (Constant 2008 USD)	23.4%	16.6%	28.2%
FIRR (Nominal USD)	23.7%	21.0%	26.8%
Return on Equity (Nominal USD)	34.9%	29.2%	39.9%

*Source: BNSF Team Calculation*

*BNSF Report p. 85*

BNSF cautions, however, that the operator of the railway is likely to sustain financial losses for the first four years after the upgrade is completed, which would necessitate additional borrowing (BNSF p 83). The projected increases in freight rail also assume that there are significant capacity expansions at the port of Dar es Salaam to handle additional freight traffic (BNSF p 31). Other risks to investors include unanticipated changes in tax and regulatory laws, and potential for passenger service demands that impact the ability to provide high quality freight operations (BNSF p 85). Despite these risks, BNSF concludes that the total economic benefits of upgrading the line from Isaka to Dar es Salaam are substantial.

A separate 2008 study conducted by DB International GmbH (DBI) assesses the feasibility of upgrading the rail line between Isaka and Dar es Salaam as well as constructing new rail lines into Rwanda and Burundi. The total investment cost for the project was estimated at \$4.7 billion: one billion dollars to upgrade the line from Dar es Salaam to Isaka (roughly equal to BNSF's estimate) and an additional \$3.7 billion to construct new rail lines into Rwanda and Burundi (substantially higher than BNSF's estimate of \$2.6 billion). The study concluded that the project would have a sufficient financial return to attract private financing if the three governments can agree to a proper institutional framework and undertake other measures to limit the risks to investors (DBI p 9-10).

### **i. Air Transport**

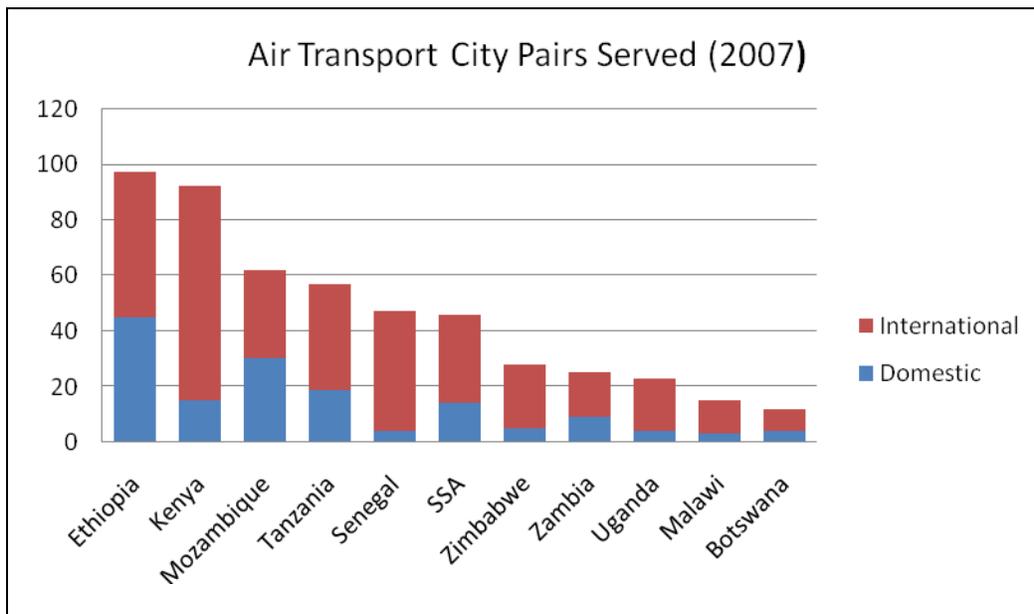
Tanzania has three international airports located at Dar es Salaam, Kilimanjaro, and Zanzibar and a number of small domestic airports throughout the country. While Tanzania's air transport system ranks low in the WEF global competitive report (118<sup>th</sup> of 139), Tanzania is one of the few countries in Sub-Saharan Africa to have adopted reforms which allow real competition in its domestic air transportation market, which is one of the largest in SSA. Tanzania rates well against comparator

countries in the number of city pairs served both domestically and internationally (Figure 7.24), and has seen a significant increase between in the total number of seats available (Figure 7.25).

Yet there are still challenges. The airport terminal in Dar es Salaam is operating beyond its passenger capacity, although expansion is underway. Many runways at the small domestic airports are not paved, and all airports require upgrading to improve flight safety (World Bank, 2010: 17). Improving safety at its international airports would allow for more international flights to support tourism. In the meantime, Dar es Salaam is a Federal Aviation Administration “Category Two” airport, meaning there can be no direct flights between the United States and Tanzania.

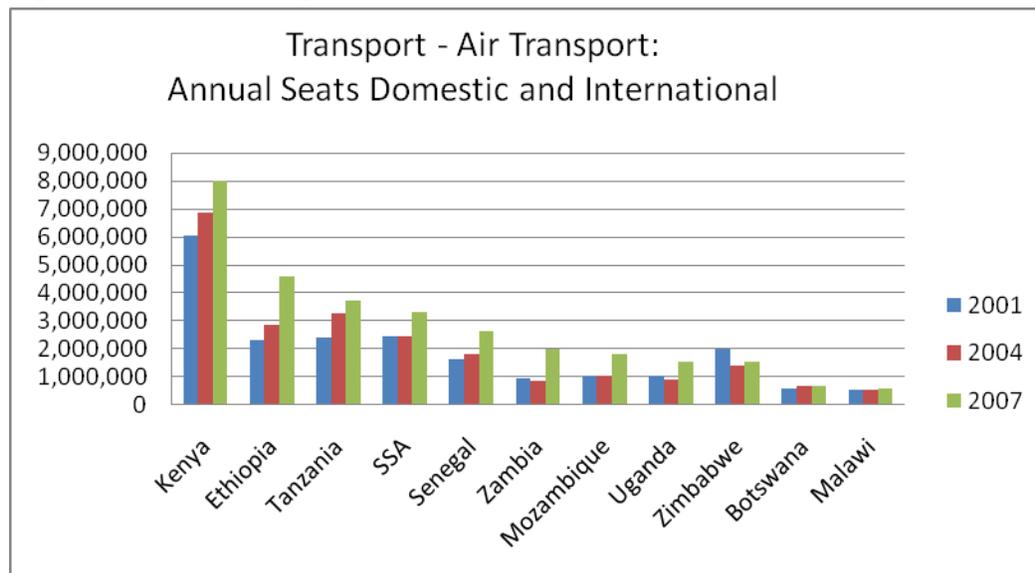
Based on the available indicators, Tanzania’s air transport infrastructure does not appear to be a binding constraint to growth in the Tanzanian economy. Improving the performance and safety of the air transport system will be important, however, to supporting future growth, especially in the tourism industry.

**Figure 7.21: Air Transport, City Pairs Served (2007)**



Source: World Bank Africa Infrastructure Database

**Figure 7.22: Air Transport, Annual Seats Domestic and International**



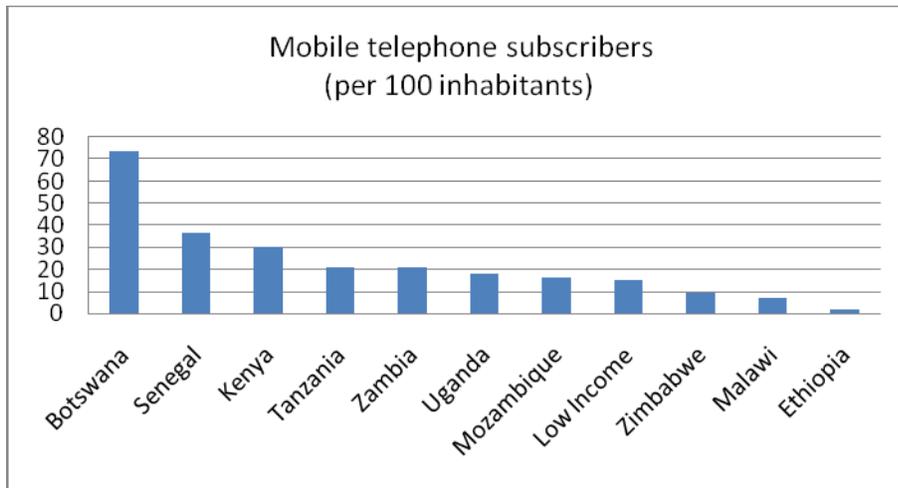
Source: World Bank Africa Infrastructure Database

#### D. ICT Infrastructure/Provision

Improvements in the telecommunications sector have been an important contributor to GDP growth over the last decade (World Bank, 2010: 1), with the most impressive results seen in the mobile sector. Tanzania has introduced significant institutional reforms in the mobile sector to create an appropriate regulatory framework and foster competition. As a result there four private operators in the country, i.e., MIC Tanzania Ltd., Vodacom Tanzania Ltd., Airtel, and Zantel, plus one public operator, Tanzania Telecommunications Company (TTCL). Tanzania's Herfindahl index is among the lowest in Sub-Saharan Africa, which demonstrates a high level of competition in the mobile sector. Among selected comparator countries, Tanzania seems about average with 20 percent of the population having cell phone subscriptions as of 2007, well above the 15.1 average for other low-income countries.

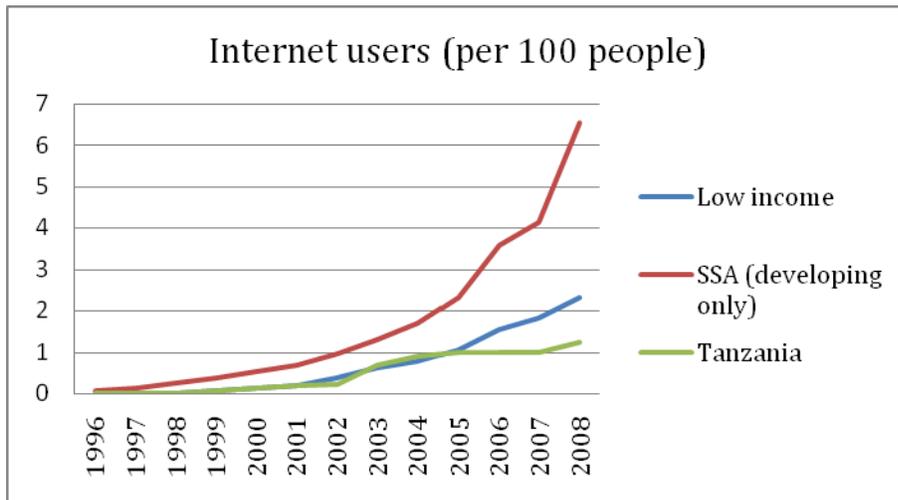
Other telecom indicators tell a different story. Tanzania has a low level of both internet and landline subscribers. Data from the World Bank's Enterprise Survey (2006) suggests that Tanzania is about average among its comparator countries for the percentage of firms that have their own web site and the percentage of firms using email to communicate with clients and suppliers. With this mixed evidence, it does not appear that the state of the telecom sector is a binding constraint to growth in Tanzania.

**Figure 7.23: Mobile Telephone Subscribers, per 100 Inhabitants**



Source: World Bank Enterprise Surveys

**Figure 7.24: Internet Users, per 100 People**



Source: World Bank Enterprise Surveys

## E. Water Infrastructure

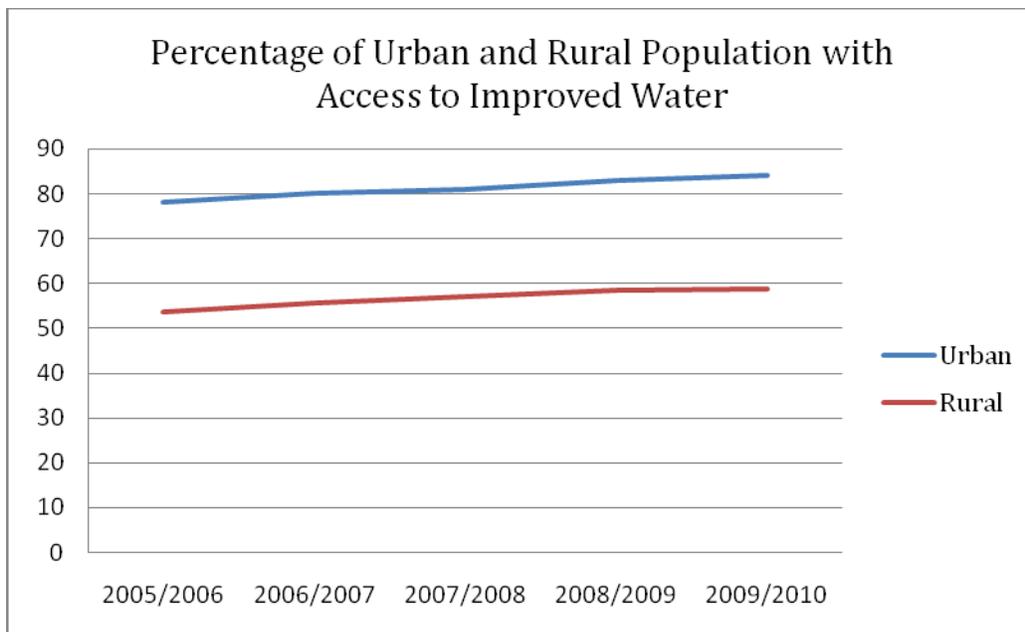
Unlike many African nations, Tanzania has sufficient freshwater resources to meet its needs. Yet during the last twenty years, Tanzania has experienced little improvement in the access to improved water for Tanzanian homes and businesses. According to data from the Ministry of Water (Budget Speech for FY 2010/2011), access to improved water supply for the rural population increased from 53.7 percent in 2005 to 58.7 percent in 2009, while access to improved water for the urban population increased from 78 percent in 2005 to 84 percent in 2009. For Dar es Salaam, access has been maintained at 68 percent.

Historic data from the World Bank shows that access to improved water in urban areas declined from 94 percent in 1990 to 80 percent in 2008. Among the comparator countries, only Ethiopia had a lower percentage of the population with access to improved water (38 percent). Tanzania

also ranked lowest among comparators in the World Bank’s Enterprise Survey data on the number of incidents of water insufficiency in a given month. AICD analysis cites an inability to collect revenue, low tariffs, and distributional losses of up to 50 percent (compared to 33 percent in other low income African nations) as the main problems limiting the expansion of service coverage. (World Bank, 2010: 20)

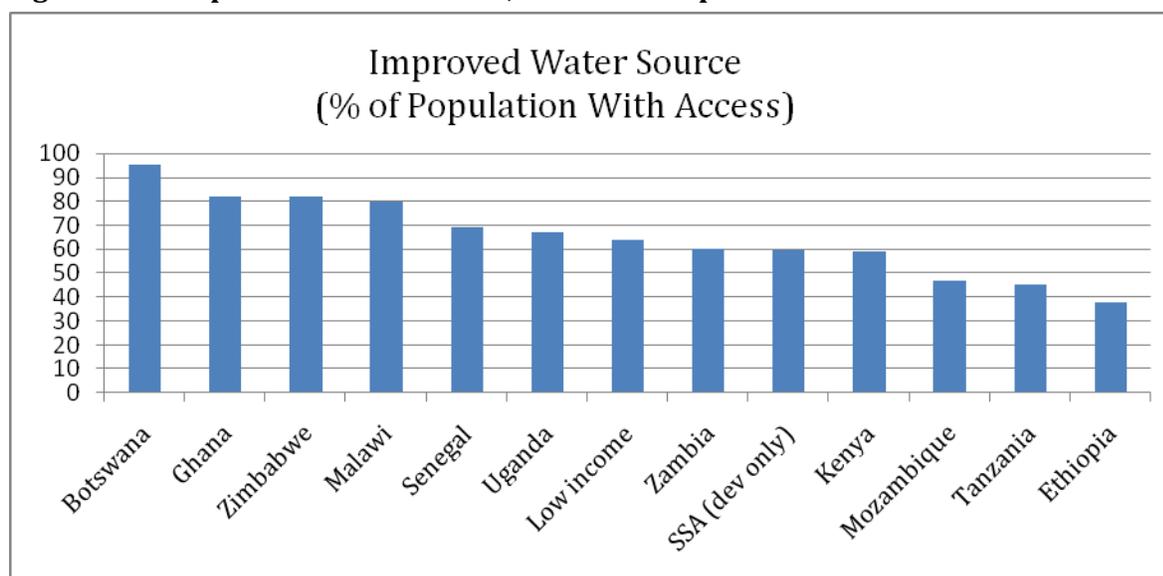
Piped water in Dar es Salaam is provided by the Dar es Salaam Water and Sewage Corporation. The Energy and Water Regulatory Authority (EWURA) sets water prices, including the prices that can be charged by the many “water kiosks” in the city. A 2010 survey conducted by Uwazi at Twaweza found that many of the water kiosks charge up to seven times the official rate of one shilling per liter, indicating that consumers are willing to pay more than the regulatory ceiling price for water.

**Figure 7.25: Improved Water Source Access by Rural and Urban Population**



Source: Ministry of Water, 2011

**Figure 7.26: Improved Water Sources, Percent of Population with Access**



Source: World Bank World Development Indicators

Anecdotal evidence suggests that Tanzanians are spending time, effort, and financial resources to overcome a lack of water. There is rising production of bottled water in Tanzania and a rising number of firms drilling private wells. Many houses and businesses across Tanzania have water tanks. Just as firms might use a generator to get around an electricity constraint, a water tank at a business that has access to piped water represents an effort to circumvent a constraint arising from inadequate public water service. The difference between the two is that the marginal cost to operate a water tank is low in comparison. Although the water service sector in Tanzania faces clear challenges, access to improved water service is not an abiding constraint to economic growth in Tanzania.

### **a. Irrigation**

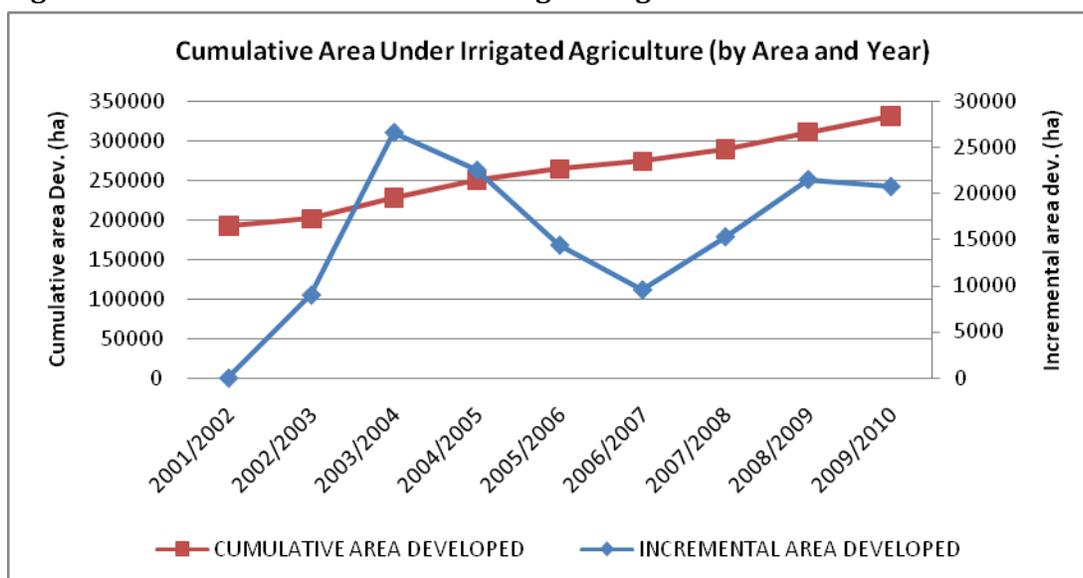
Tanzania has substantial irrigation potential. About 44 million hectares of land area in Tanzania is classified as arable land, and the National Irrigation Master Plan (NIMP) 2002 identified a total irrigation development potential area of 29.4 million hectares with varying potential levels of irrigation development. About 2.3 million hectares of this potential area are categorized as high irrigation potential, 4.8 million hectares as medium potential, and 22.3 million hectares as low potential. The FAO lists Tanzania's total potential for irrigation at 2.1 million hectares which is roughly equal to the NIMP's definition of high potential land. As of June 2010, 331,490 hectares had been equipped for irrigation and drainage. The developed irrigation area is comprised of 276,261 hectares under smallholder farmers and 55,229 hectares under medium and large scale commercial farmers cultivating cash crops like tea, coffee, sugarcane, flowers, vegetables, and paddy rice.

**Table 7.7: Irrigation Use and Potential**

	Tanzania	Kenya	Uganda	Mozambique	Ghana
Potential area for Irrigation development (ha)	2,132,000	353,060	90,000	3,072,000	1,900,000
Full or partial control irrigation: equipped area (ha)	331,490	103,203	5,580	118,120	30,900
Total water withdrawal (10 <sup>6</sup> m <sup>3</sup> /yr)	5184	2,735	300	635	982
- irrigation (10 <sup>6</sup> m <sup>3</sup> /yr)	4425	2,165	120	550	652
- livestock (10 <sup>6</sup> m <sup>3</sup> /yr)	207	470	0	0	0
- municipalities	527	100	134	70	235
- industry	25	87	46	15	95
per inhabitant (m <sup>3</sup> /yr)	143	87	12	36	50

Source: FAO-AQUASTAT

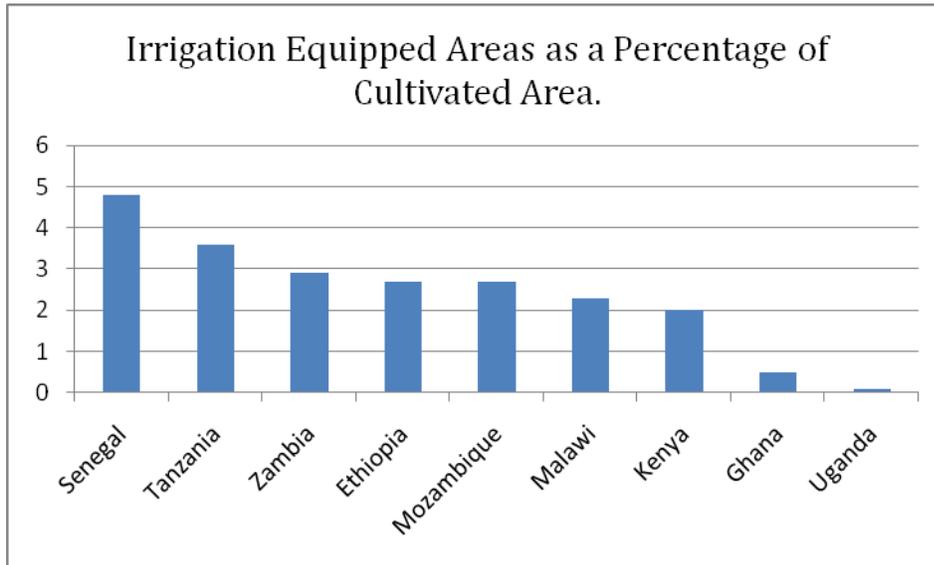
**Figure 7.27: Cumulative Area under Irrigated Agriculture**



Source: Ministry of Water and Irrigation (MOWI)

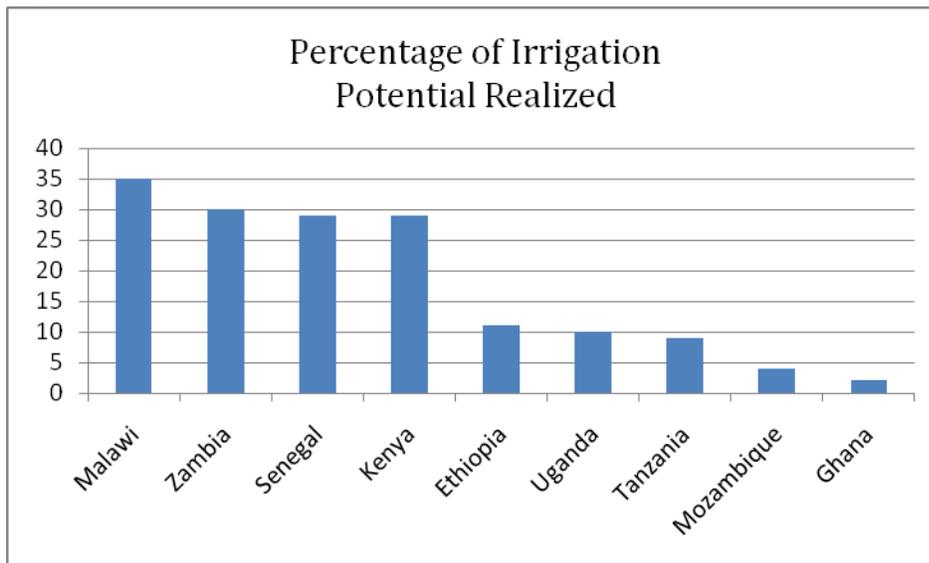
Tanzania's use of irrigation compares favorably to comparator countries on most measures. At 331,490 hectares of irrigated lands, Tanzania has more than three times as much irrigated land as Kenya. It also leads the comparator countries in total water withdrawals for irrigation and per capita water withdrawals, and the area under cultivation has grown substantially since 2001 (Table 7.7). Tanzania compares relatively poorly in the percentage of irrigation potential realized, however, given its greater potential (Figure 7.27).

**Figure 7.28: Irrigation Equipped Areas a Percentage of Cultivated Area**



Source: FAO-AQUASTAT

**Figure 7.29: Percentage of Irrigation Potential Realized**



Source: FAO-AQUASTAT

Given these mostly positive outcomes cited above, it is difficult to conclude that a lack of irrigation infrastructure is a binding constraint on the overall Tanzanian economy. The Government of Tanzania has identified several constraints to the greater use of irrigation in the country, which include the availability of adequate financial resources for irrigation investments, a low capacity and low level of participation by the private sector, and inadequate capacity of irrigation institutions both at the national level and within local government authorities.

## F. Conclusions

**While this report cites many problems with Tanzania’s infrastructure, based on the analysis two sectors - electricity and rural roads – are binding constraints to economic growth.** The evidence to support the conclusion that the electricity sector is a binding constraint is overwhelming. Less than 15 percent of the population has access to power, which is about half the average for Sub-Saharan Africa. High generator usage is evidence of firms attempting to overcome a constraint, and the high cost of fuel for those generators suggests a high shadow price for electricity. Declines in GDP growth across several sectors of the economy during recent power crises provide further evidence that the problems in the power sector are binding constraints to growth. Whereas the root causes of this constraint require further detailed investigation, underpricing and inadequate governance of the sector (including in long range planning, utility governance, and the regulatory process) have been cited by sector experts and the AICD as issues.

Evidence of the need for improvements in rural roads is strong but not overwhelming, in part, because data are lacking particularly on the tertiary road network. Nonetheless, there are compelling indications that poor rural feeder and tertiary roads constrain market access for agricultural producers. This weakens the role of price signals to the farm gate and the reliability of food markets, which are required to specialize in the most profitable crops, raise incomes, and achieve improved food security. Relatively high levels of traffic on secondary and unpaved roads in Tanzania provide evidence of high demand for road transport in rural areas. A low percentage of the population living near an all-weather road and high levels of spoilage and breakage in transport also point to poor rural roads as a costly problem for rural agriculture. Recent World Bank analysis suggests that the cost for moving maize, a widely produced grain in Tanzania’s rural areas, from the farm to the first market is significantly higher for Tanzania than its neighbors (Kenya and Uganda). Moreover, the fact that Tanzanian farmers are willing to pay this price suggests a relatively high shadow price for transportation services in rural areas. The primary issue in this area appears to be a lack of funding mechanisms for maintenance and investment at the local and district levels, although institutional capacity for managing the sector and project implementation are also highlighted by experts working in the sector.

This analysis also finds that the state of Tanzania’s rail and port services could become binding constraints to growth if other constraints are relaxed, and if not improved over the coming years. The deterioration of Tanzania’s railways has contributed to a switch from rail to the road for many shippers, despite the higher cost of road transport. Expected increases in traffic along Tanzania’s central corridor (especially in heavy bulk goods) will lead to increased congestion and damage to roads absent improvements to the rail system. Independent feasibility studies suggest that upgrading Tanzania’s rail system would be economically viable. However, the rarity of successes in African rail systems provides a cautionary note on the complexity of the financial and institutional arrangements required to alleviate this constraint. The port of Dar es Salaam is likely to become a binding constraint to economic growth if the operational efficiency and physical infrastructure of the port are not improved to handle the expected increases in international trade and transit traffic in the coming years.

## 8. Lack of Human Capital

Without adequate availability of human capital –the skills and productive capacity of the country’s labor force – the productivity of other factors of production will be low, as will returns on investment. Despite Tanzania’s dramatic progress in expanding the supply of education and progress in improving health, there appear to be significant gaps in the availability of vocational and technical skills provided by the Tanzanian labor force relative to demand.

There is no strong evidence that a more general lack of skills or education currently constitutes a binding constraint to economic growth in Tanzania. Returns to schooling in Tanzania, as of 2006, appear to be on par with those of Kenya, Uganda, and Ghana when adjusted for the probability of employment, but higher than the returns of comparator countries of Kenya, Mauritius, Uganda, Ghana and Vietnam. A lack of demand for educated labor relative to supply is demonstrated by high unemployment rates among the skilled working age population, especially in urban areas and among youth, and a relatively modest social and private return to education.

Tanzania also has made significant improvements over the past several years in the health and nutritional status of its population. While the welfare and productivity costs of poor health and nutritional outcomes in Tanzania remain high for affected individuals and households, there is no compelling evidence to suggest that poor health and nutritional deficiencies are binding constraints to investment or growth of the economy as a whole.

### A. Education and Skills

The subsequent sections present an analysis of the supply and demand for cognitive and technical skills relying primarily on educational attainment. It is important to distinguish between human capital, defined broadly, and educational attainment, measured as years of schooling or highest grade completed (see, e.g. Hanushek and Woessmann (2008), Knight and Sabot (1990)). Human capital is a composite of cognitive skills and other skills and characteristics, which are likely to be correlated with, but not entirely caused by, years of schooling. In fact, cross country evidence shows that cognitive skills are significantly correlated with economic growth in a cross section of countries much more strongly than indicators of educational attainment (Hanushek and Woessmann, 2008).

Apart from the importance of investing in cognitive skills development, the policy implications for Tanzania of this finding are not clear. First, this is an average finding, and the impact on growth is context and country-specific. Second, there is a complex causal relationship between nutrition very early in life, health status, other parental inputs, social environment, and school quality on learning, schooling attainment, and labor market outcomes. For instance, cross country evidence suggests that cognitive skills are complementary with other features of the economy which promote investment and growth, in particular, openness to trade and institutional quality (Hanushek and Woessmann, 2008). If returns to education and training, for instance, are relatively low in Tanzania today, it would be equivalent to a low shadow price for this factor and thus a strong

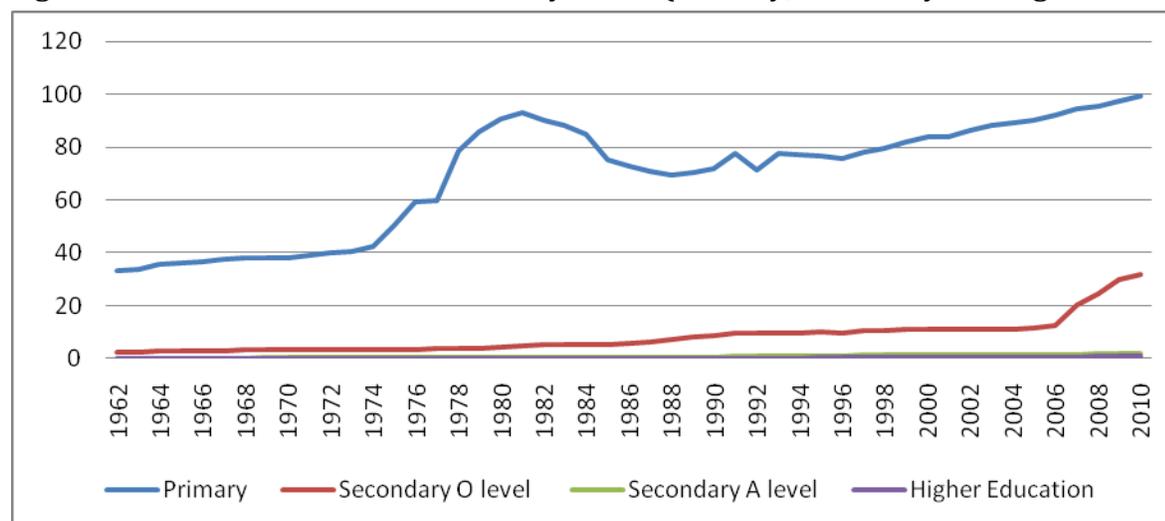
indication that there are other, more binding constraints to economic growth than inadequate human capital.

### a. Supply Side: Education and Skills and Training Sector Reforms and Results

In 1995, the Government of Tanzania initiated a series of education sector reforms with the objectives of expanding access and enhancing the quality and efficiency of formal education and adult literacy programs. In early 1997, the Government developed a Basic Education Master Plan (BEMP) to guide development in basic education provision. The structure of the Formal Education and Training System in Tanzania constitutes two years of pre-primary education, seven years of primary education, four years of Junior Secondary (ordinary level), two years of Senior Secondary (advanced level), and up to three or more years of Tertiary Education, which includes vocational education.<sup>65</sup> Measures to reform higher education included encouragement of private sector provision of education, and the private sector is now active in the education sector. Between 1995 and 1999, first year enrolments in the two state universities of Dar es Salaam and Sokoine increased by 50 percent (Mbele and Galabawa, 2000). By the year 2000, eight private universities were established and the number of universities rose from two to ten from 1990 to 2000 (United Republic of Tanzania, 2002). The reforms resulted in increased enrolment, reaching over 100 percent gross enrolment in primary. Enrolment in pre-primary reached 33 percent, as compared to a Sub-Saharan Africa average of 27 percent, by 2009 (UNESCO Institute for Statistics).

Enrolment rates for secondary and higher education have also increased (Figure 8.1) with secondary enrolment reaching over 30 percent in 2010.<sup>66</sup>

**Figure 8.1: Trends in Enrolment Rates by Levels (Primary, Secondary and Higher Education)**



Source: Compiled using various economic surveys, official education statistics and Statistical Abstract.

<sup>65</sup>Specifically, the education system has three levels, namely: Basic, Secondary and Tertiary Levels. Basic or first level education includes pre-primary, primary and non-formal adult education. Secondary has Ordinary and Advanced levels, while Tertiary includes programs and courses offered by vocational and higher education institutions.

<sup>66</sup> Enrolment rates are for both private and public educational institutions.

Tertiary enrollment remains low at only 1.5 percent, as compared to much higher rates for comparison countries in earlier years: 3.24 percent for Uganda and 3.52 percent for Kenya in 2001, Botswana at 4.69 and South Africa at 15.05 percent in 2002. The expansion of technical/vocational education and training (T-VET) has been rapid relative to an extremely low base. The total number of short and long course training centers has grown from 36 in 1995 to 819 centers and annual training capacity of students has grown from 39,200 in 1995 to 100,653 as of 2005/2006 (VETA DG paper, Sea Cliff Nov. 2006). The number of distinct skills training programs offered has also

increased from 36 to 93 in the same timeframe.<sup>67</sup> The number of graduates from public and private vocational training institutions has increased to 73,851 as of 2005, and today's enrolment capacity is 120,000, which is very limited relative to the over one million primary school leavers annually. Enrolment in tertiary education has increased, as shown in Figure 8.2 with enrolments the highest in law, education, business, science and ICT, and medical science.

<b>Table 8.1: Total Graduates in Vocational Training Courses by Gender and Year</b>			
<b>Long Vocational Training Courses</b>			
<b>Year</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
2002	17459	12384	28843
2003	18331	13004	31335
2004	18331	13004	31335
2005	21748	16241	37989
<b>Short Vocational Training Courses</b>			
2002	17298	12384	28843
2003	18161	19412	37573
2004	18161	19412	37573
2005	17569	18266	35862

*Source: Compiled using official education statistics and Statistical Abstract.*

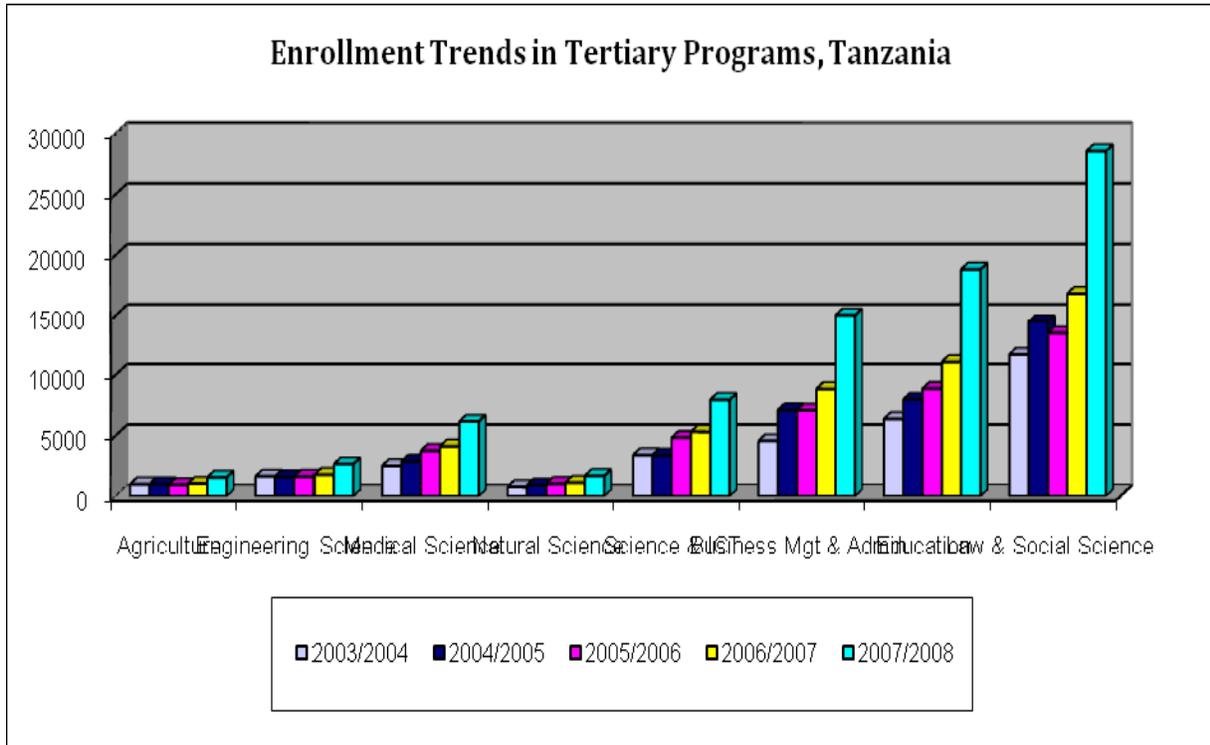
Enrolment and other patterns are similar in Zanzibar. Recent analyses (e.g., by the African Development Bank (2010) and Wort et al. 2008) show a relatively under-developed vocational educational system, with only an estimated three vocational training institutions with an acceptable quality. There are approximately 209,000 primary school pupils, and the enrolment capacity for the secondary level is just approximately 78,000.

**Primary completion rates have improved dramatically vis-à-vis comparator countries, as shown in**

Figure 8.3. As shown in Figure 8.4, there are significant disparities between rural and urban populations in the fraction of the population with no education, at 28 percent for the rural population versus approximately 10 percent for the urban population. As shown in Figure 8.4, there have been modest increases in primary and junior secondary completion rates for the rural areas, junior secondary completion for 'other urban' areas, and for the increased proportion of people with tertiary degrees, which tripled from 0.2 to 0.6 percent.

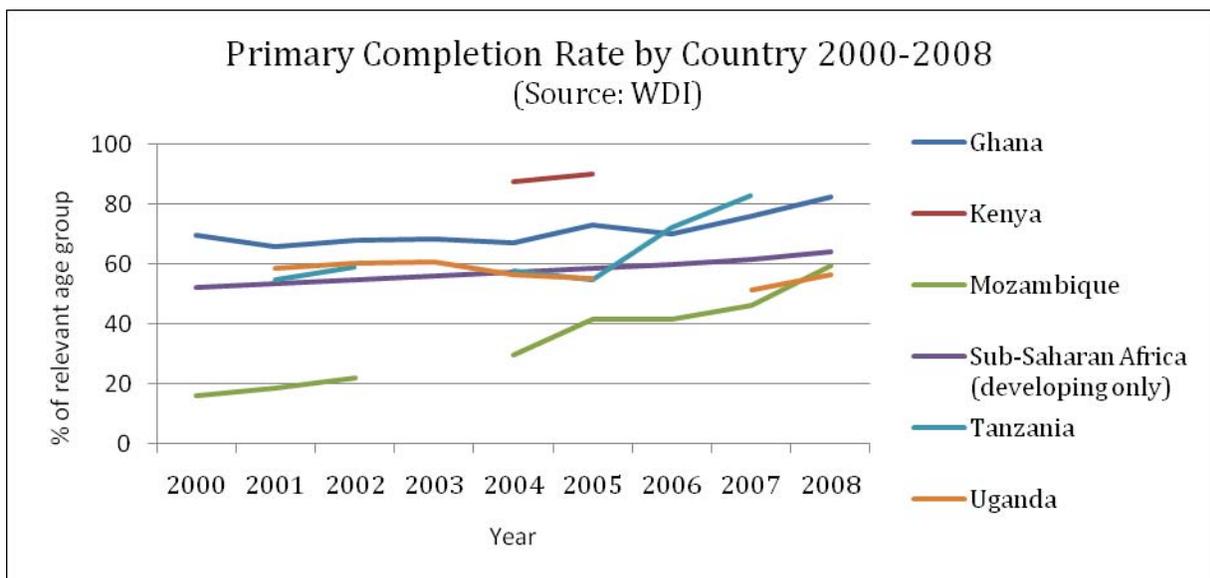
<sup>67</sup> The greatest training capacity is found in carpentry/joinery, electrical installation, masonry and brick making, welding and fabrication, tailoring and motor vehicle mechanics. Other popular programs are plumbing, fitter mechanics, secretarial and computer, machinery fitter, catering and hotel services, computer, printing and sign writing, and auto electric.

**Figure 8.2: Enrollment Trends in Tertiary Programs, Tanzania**

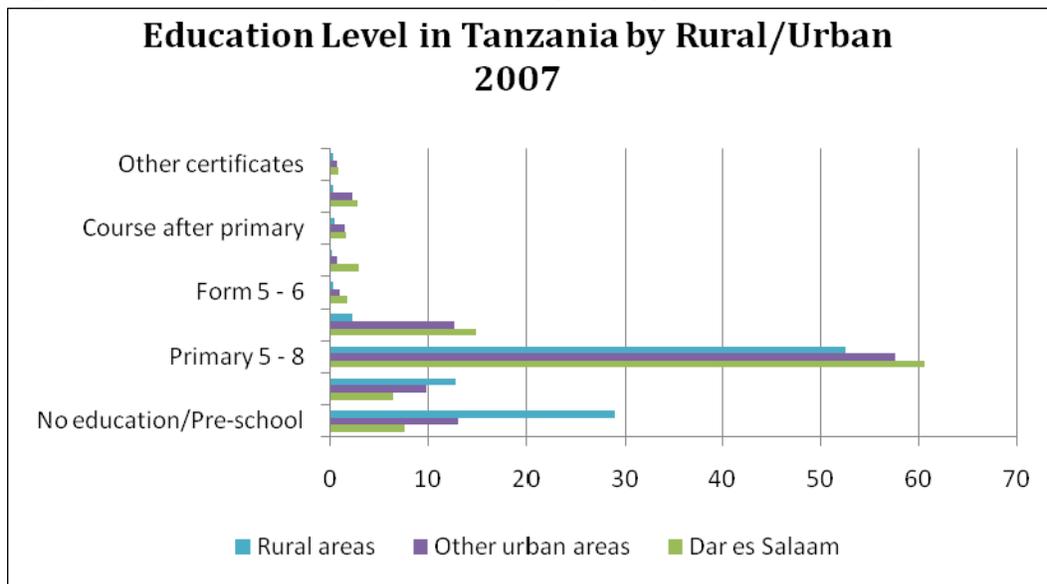


Source: Basic Education Statistics

**Figure 8.3: Primary Completion Rate by Country 2000-2008 (Source: WDI)**



**Figure 8.4: Education Level in Tanzania by Rural/Urban 2007**

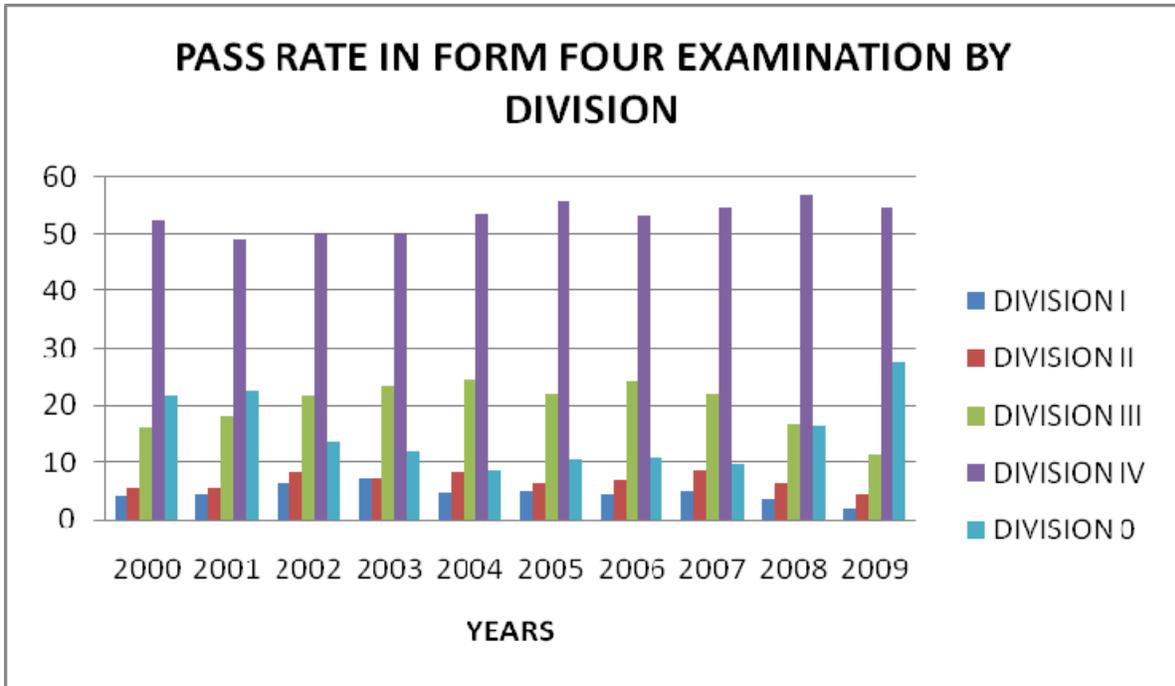


Source: Household Budget Survey (2007)

There is a tradeoff between quality and access to education, and the quality of Tanzania’s educational institutions remains an important issue. Average student-teacher ratios in primary and secondary schools have risen to 52 percent recently. There is a decrease in the percentage of students passing their primary school leaving examinations. In secondary schools, the pass rate is less than 50 percent, and an increasing fraction of students obtain the lowest passing results (i.e., Division zero) on their exams, as shown in Figure 8.7.

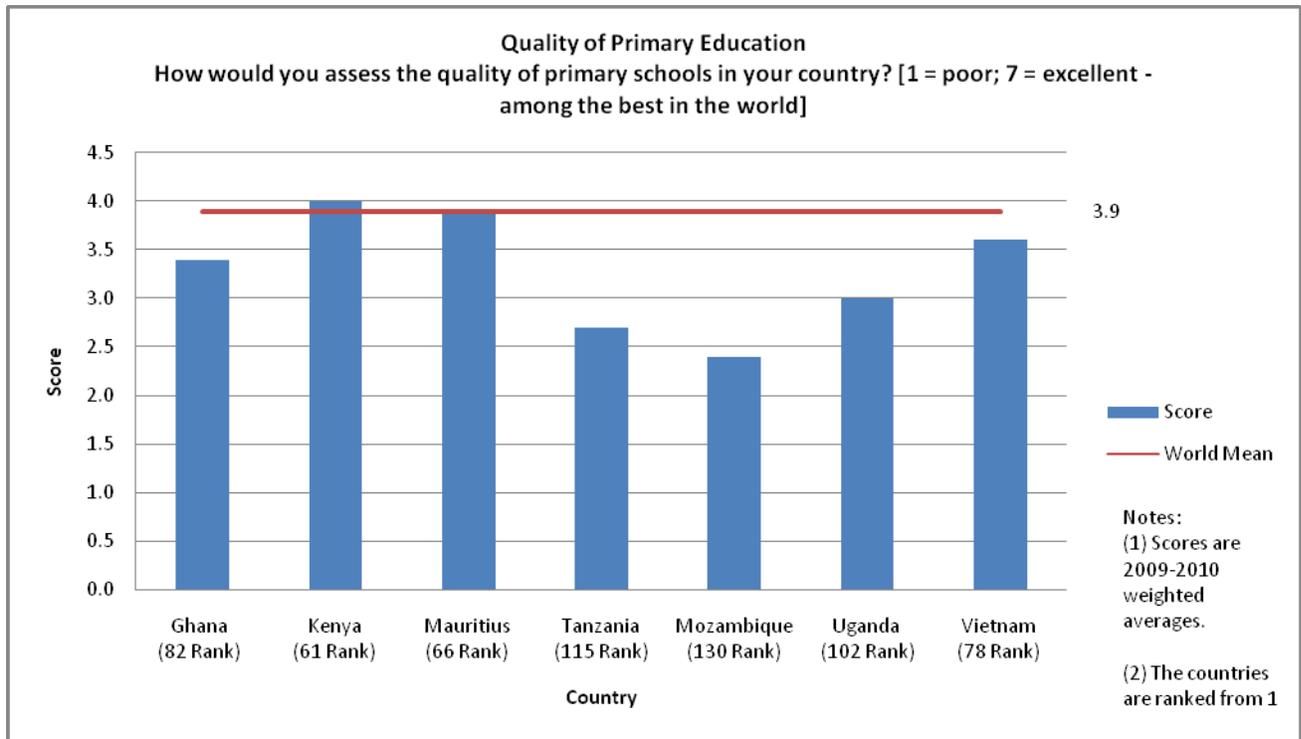
In addition, executives of firms operating in Tanzania rate the quality of the educational system poorly. The Global Competitiveness Report (2010-2011) ranks the quality of Tanzania’s primary schools as 115<sup>th</sup> in the world, and below all comparators except Mozambique, as shown in. Respondents also ranked Tanzania’s quality of math and science education particularly poorly, the lowest among comparator countries and among the lowest of the 139 countries surveyed, as shown in Figure 8.9. In addition, when asked to rate the ability of the educational system as a whole to “meet the needs of a competitive country,” firms rate Tanzania at 99<sup>th</sup> out of 139 countries, worse than the comparator countries, as shown in Figure 8.5.

**Figure 8.5: Pass Rate in Form Four Examination by Division**



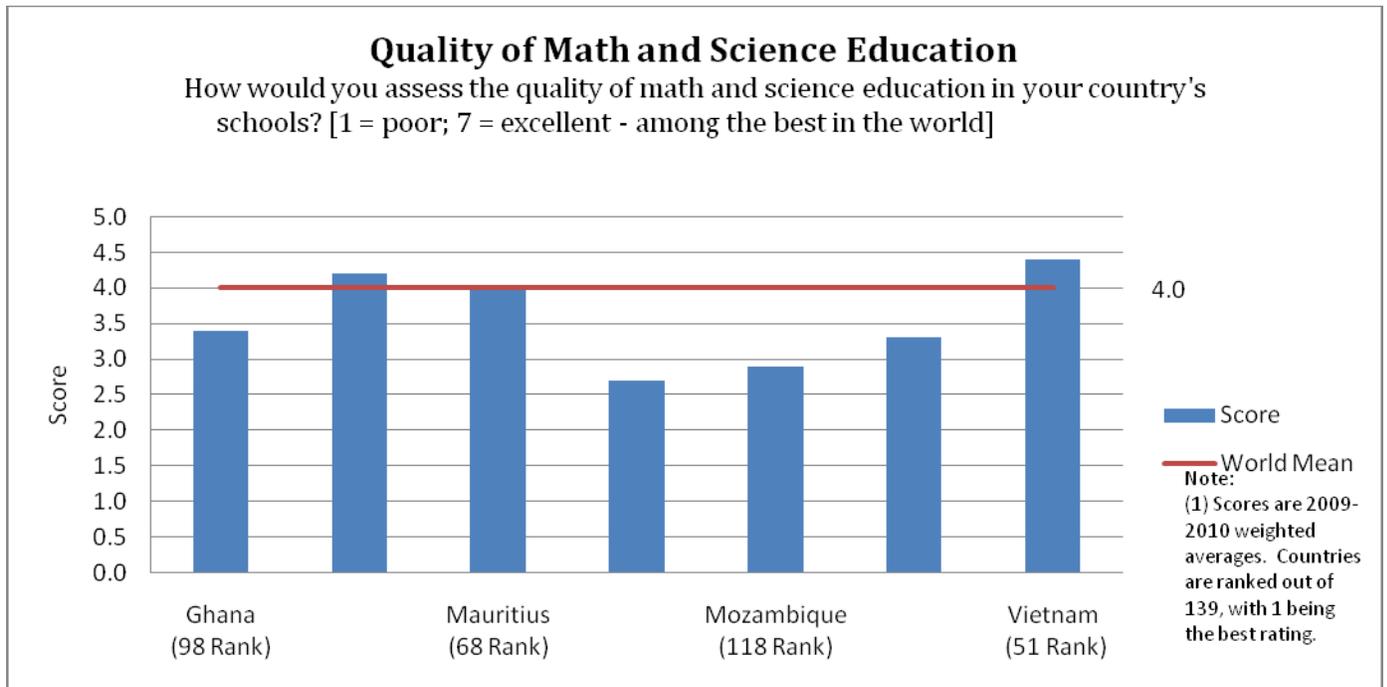
Source: Basic Education Statistics (2010)

**Figure 8.6: Quality of Primary Education**



Source: The Global Competitiveness Report 2010-2011

**Figure 8.7: Quality of Math and Science Education**

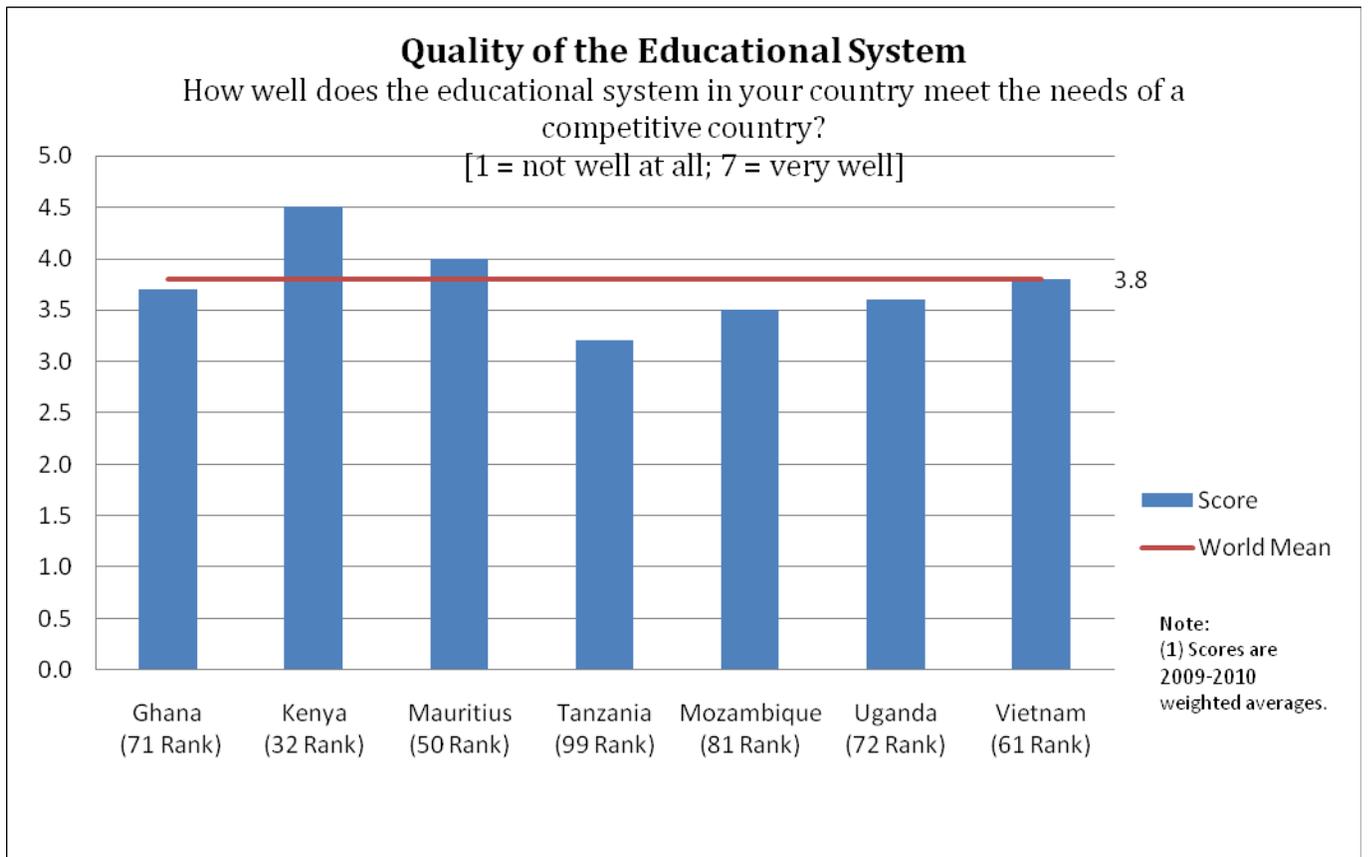


Source: *The Global Competitiveness Report 2010-2011*

Although Tanzania's educational system faces issues of quality and relevance to the labor market, according to recent indicators of cognitive achievement in Tanzania's primary education system, Tanzania's current pupils fare surprisingly well on average in both mathematics and reading skills on standardized tests, with the highest mean scores in reading among the Southern and Eastern Africa Consortium on Monitoring Education Quality (SACMEQ) group, and among the highest mean scores in mathematics, after Mauritius and Kenya (SACMEQ III 2007).

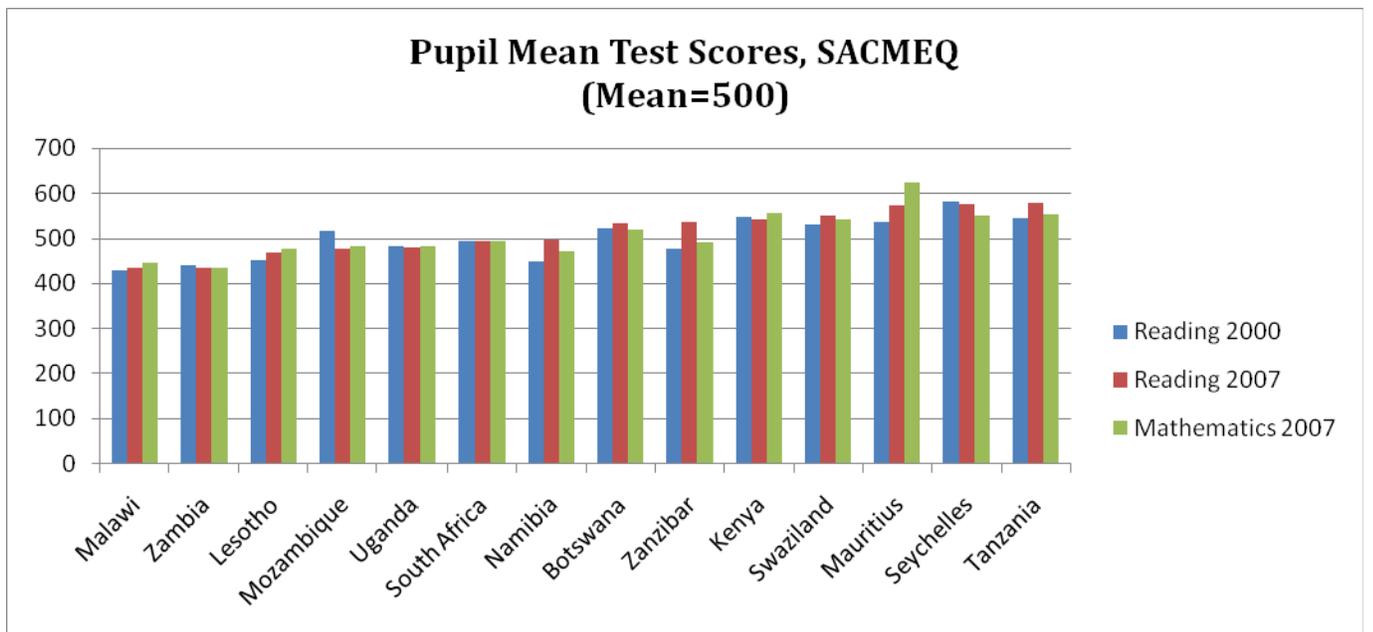
As measured against absolute competency standards, as shown in Figure 8.12, Tanzania ranks in the middle of the group in the fraction of students achieving the measured competencies. Whereas most comparison countries had higher percentages of Level 1 students showing pre-numeracy skills, by Level 5 Tanzania had the highest percentage of students showing mathematical competency, due presumably to more consistent quality of education. Nonetheless, for all these countries very few students (apart from those in Mauritius) had abstract problem solving competency in Level 8, including Tanzania at only one percent.

**Figure 8.8: Quality of the Educational System**

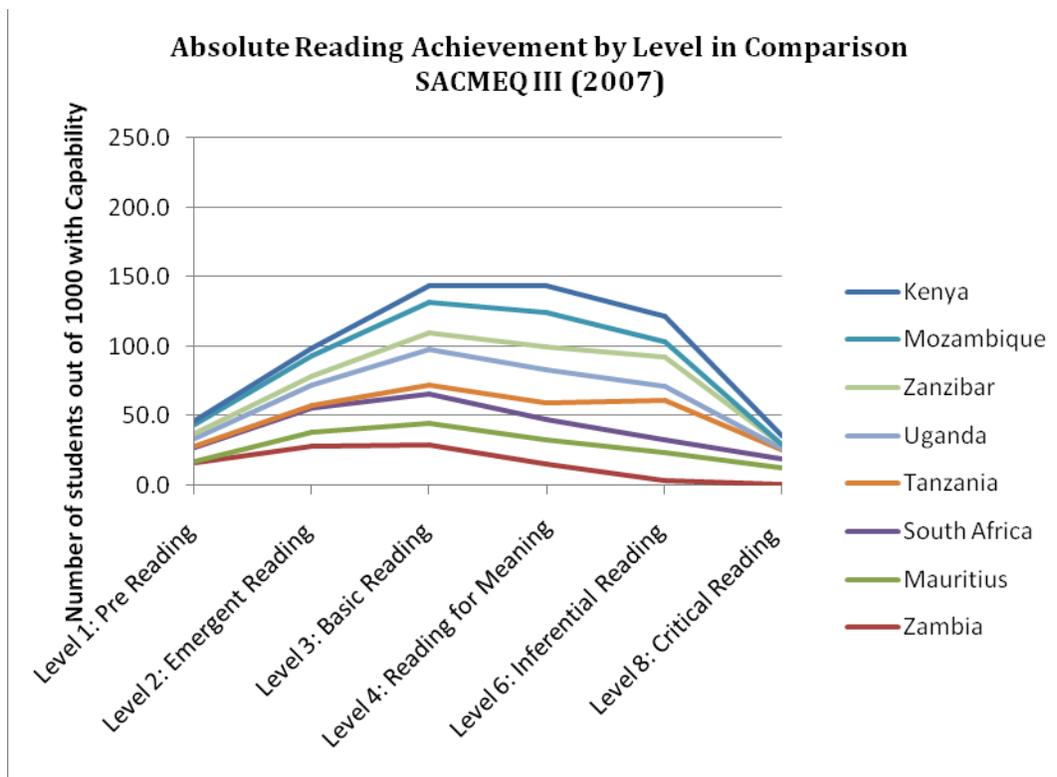


Source: The Global Competitiveness Report 2010-2011

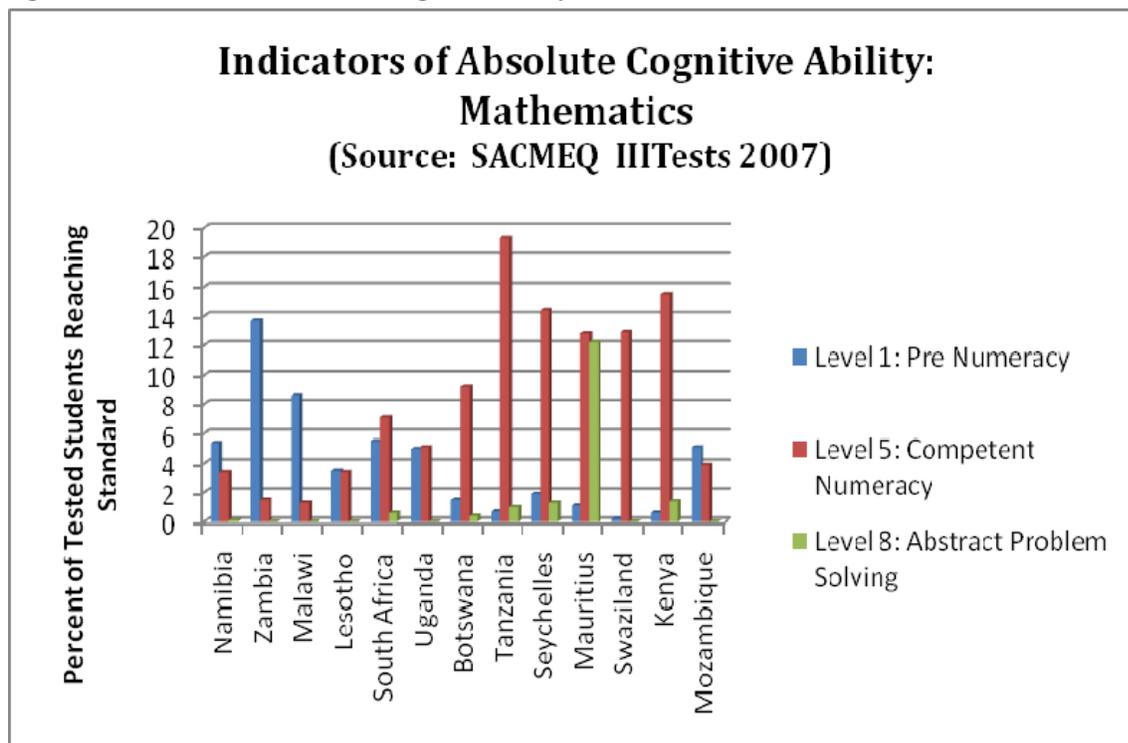
**Figure 8.9: Pupil Mean Test Scores, SACMEQ**



**Figure 8.10: Absolute Reading Achievement by Level in Comparison SACMEQ III**



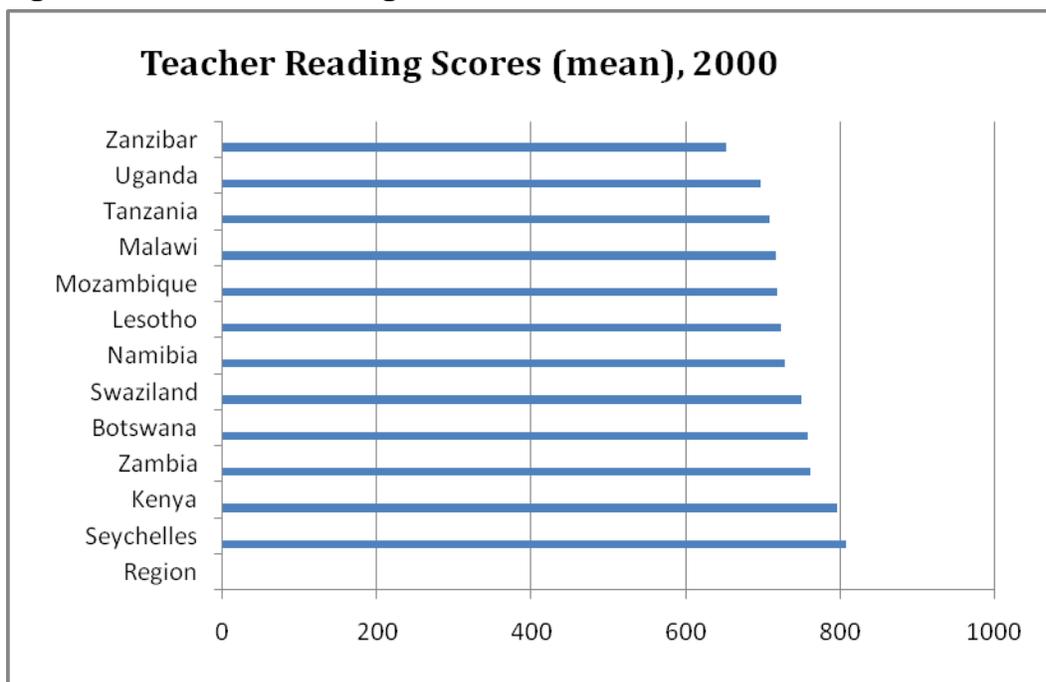
**Figure 8.11: Indicators of Absolute Cognitive Ability: Mathematics**



Tanzanian students' relatively higher cognitive achievement occurs in spite of relatively low teacher reading scores (Figure 8.14) and a low ownership of reading textbooks (

Figure 8.15). While Tanzania's school facility rankings were well below the mean for Southern and Eastern Africa, for rural areas they ranked higher than for all Eastern African countries except Kenya on the basis of an index of school resources (apart from the low ranking for Zanzibar) (Figure 8.16).<sup>68</sup> Whereas school quality may have increased along these dimensions since 2000, this improvement would not explain the discrepancy as Tanzanian students' test scores were relatively high in the 2000 SACMEQ testing round as well (data available at [www.sacmeq.org](http://www.sacmeq.org)).

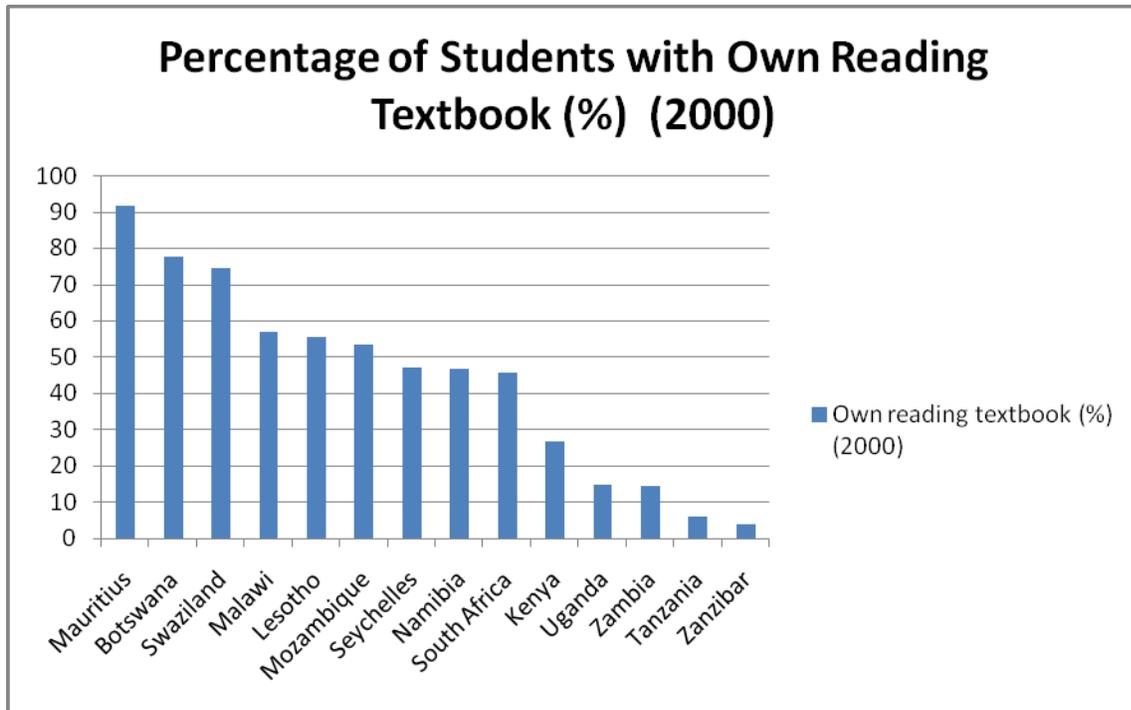
**Figure 8.12: Teacher Reading Scores**



Source: SACMEQ 2000

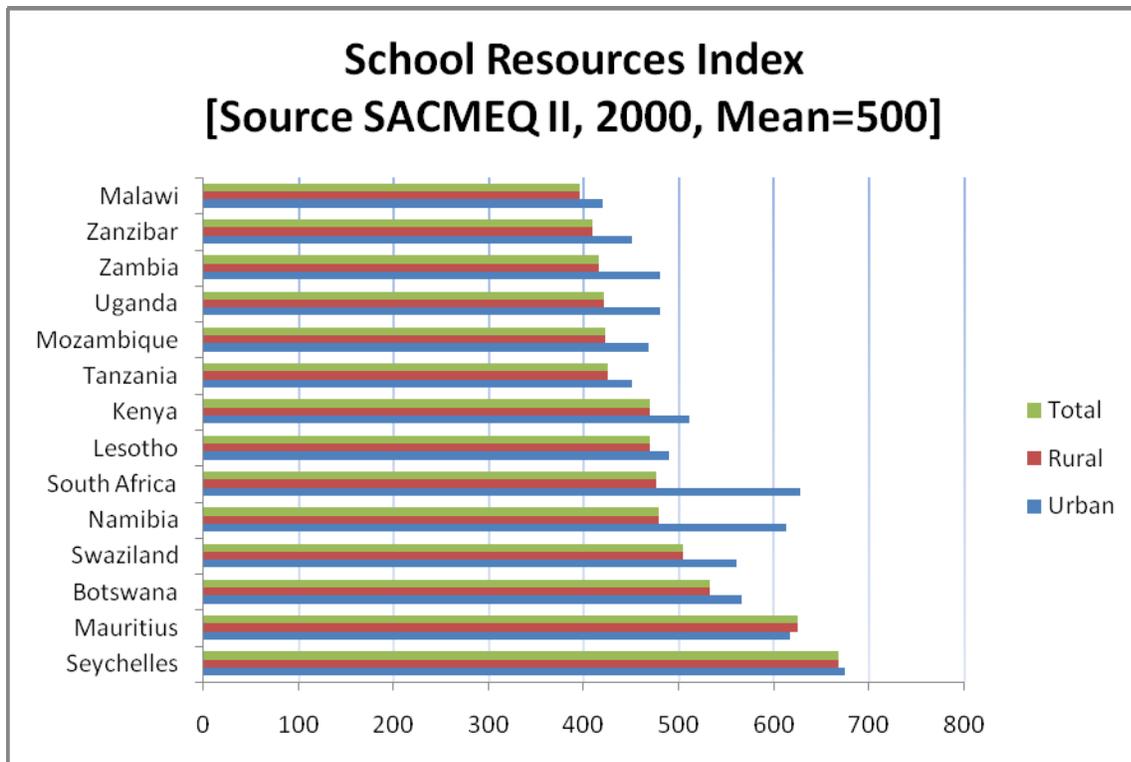
<sup>68</sup>The School Resources Index compiles information from surveys of pupils, teachers, and school heads and takes account of 68 categories of school resources and conditions, including teaching resources, materials and equipment, physical facilities and their condition.

**Figure 8.13: Percentage of Students with Own Reading Textbook**



Source: SACMEQ 2000

**Figure 8.14: School Resources Index**



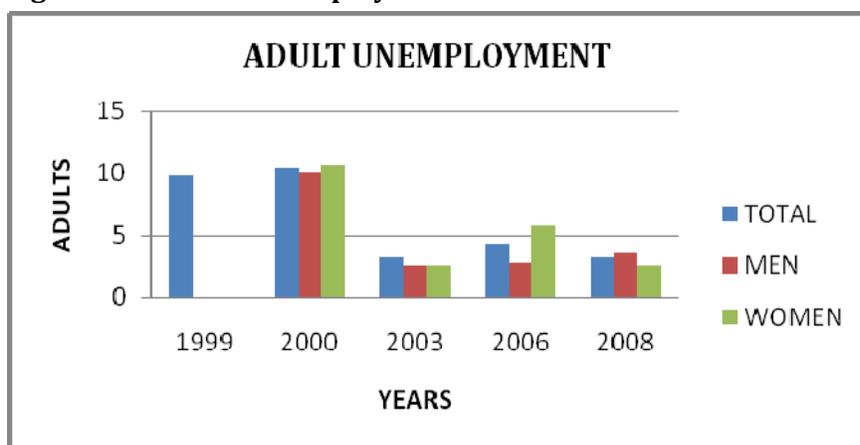
## b. Demand for Skills and the Social and Private Returns to Human Capital

The supply of labor with all levels of education has expanded since 1990 as it has in Sub-Saharan Africa generally. To assess whether there is a critical shortage of skills relative to market demand, the premium received in the labor market for education and skill acquisition (or ‘returns to education’) is a key indicator.<sup>69</sup> If a lack of skills is a binding constraint to growth, one would expect to see high and rising returns to skills and education and relatively low unemployment of skilled and educated individuals.

### 1) Unemployment and Labor Force Participation

Expected returns to additional education or training depend on the individual’s ability to obtain employment, as well as the compensation premium he or she obtains for periods employed. Therefore, it is important to quantify the probability of being employed for people with different levels of education. In addition, unemployment by skill level is an important indicator of the scarcity of human capital relative to demand. For example, if unemployment rates decline rapidly by skill level, and returns for those employed increase, this is an indication of a potentially binding constraint to growth. Using the strict international definition of unemployment – i.e., excluding from the labor force individuals who are not actively seeking employment – unemployment rates fell between 2000 and 2003, then rose in 2006, a year of slower growth, and then appear to have stabilized somewhat.<sup>70</sup>

**Figure 8.15: Adult Unemployment**



<sup>69</sup>Social returns to education may be either higher or lower than private returns, because individuals may seek additional education for a variety of reasons. Education may help a given individual compete with others for certain desirable jobs, in which case education is partly a ‘signaling’ device and the impact on the economy as a whole is less than the returns to the individual. Additionally, a rapid expansion of education may simply lower the returns to education for everyone. At the same time, private returns may understate economic returns to society through positive knowledge or technology spillovers. The Growth Diagnostic methodology is based on the acknowledgment that our ability to estimate spillovers and other indirect effects of releasing a given constraint is limited, and assumes that alleviating the constraints with the largest direct impacts will also have largest total impact on the economy. In this case, that means focusing on the private returns to education as our key indicator.

<sup>70</sup>All sectors are covered in estimates of the labor force and unemployment rates, and individuals engaged in agriculture are counted as employed.

<b>Table 8.2: Unemployment Rate by Educational Attainment and Area, 2006</b>				
	Dar es Salaam	Other Urban	Rural	Total
No schooling	38.1	14.2	7.5	9.0
Primary only	32.4	16.7	7.5	12.0
Secondary and Above	26.6	17.8	8.2	17.3
Total	31.3	16.5	7.5	11.7

*Source: Integrated Labour Force Survey 2006*

However, the national definition of unemployment is deemed by the National Bureau of Statistics of Tanzania to be the most informative for assessing labor market conditions, as it also includes individuals who are discouraged from actively seeking work, and it counts as unemployed those who, although working on the day of the survey, were unsure about the availability of work at an acceptable rate of pay the following day (Analytical Report on 2006 ILFS).<sup>71</sup> By this definition, there is a significant fraction of people with education and skills training who do not have steady work. Moreover, the level of unemployment is actually increasing with the level of educational attainment, as shown in Table 8.2.

Unemployment of people with secondary education and above nationwide is 17.3 percent, and is significantly higher in Dar es Salaam and other urban areas. This fact is a strong indication that a lack of skills obtained through education (or cognitive skills which are highly correlated with education) is not currently a binding constraint to economic growth in Tanzania.

Table 8.3 shows a more disaggregated view of labor force activity and employment status by educational attainment and by age group, using the standard international definition and national definitions of unemployment, respectively. This table shows that for the young workforce, with the exception of 'tertiary non-university' educated people (i.e., people with vocational or technical degrees), unemployment rates rise with the level of educational attainment, and are very high for university educated workers at 18.6 percent under both definitions. The level of inactivity is also very high, in the 40 percent range, for Senior Secondary and University graduates, although a significant fraction of these younger individuals may be still studying. For more mature or experienced workers, unemployment levels are much lower, and unemployment rates decrease as individuals gain more secondary education, and non-university tertiary education, but again rise with tertiary education.<sup>72</sup>

<sup>71</sup> Since the labor force survey is a household-based survey, all types of work are captured, including informal work.

<sup>72</sup> Caution must be used in using the numbers for tertiary graduates, given that the samples are much smaller for these levels of education.

**Table 8.3: Labor Force Activity Status**

Standard Definition of Unemployment			National Definition of Unemployment			
	Employed	Unemployed	Inactive	Employed	Unemployed	Inactive
<b>Youth age 15-29</b>						
STD 0-3	88.3%	3.5%	8.2%	81.9%	9.9%	8.2%
STD 4	75.5%	3.1%	21.4%	70.8%	7.7%	21.4%
STD 5-6	60.9%	2.0%	37.1%	57.6%	5.3%	37.1%
STD 7-8 (primary complete)	85.1%	7.6%	7.3%	78.7%	14.0%	7.3%
FORM 1-3	43.1%	9.3%	47.6%	40.0%	12.5%	47.6%
FORM 4 (Jr. sec. complete)	69.7%	17.3%	13.0%	64.3%	22.6%	13.0%
FORM 5-6 (Sr. sec. complete)	37.8%	22.7%	39.6%	34.5%	26.0%	39.6%
Tertiary non-Univ.	46.8%	4.3%	48.9%	42.6%	8.5%	48.9%
University	22.8%	18.6%	58.6%	22.8%	18.6%	58.6%
Total	77.4%	7.3%	15.3%	71.8%	12.9%	15.3%
<b>Age 30+</b>						
STD 0-3	91.2%	1.1%	7.8%	84.0%	8.3%	7.8%
STD 4	87.7%	1.4%	10.9%	81.9%	7.2%	10.9%
STD 5-6	94.1%	1.6%	4.2%	86.6%	9.2%	4.2%
STD 7-8 (primary complete)	93.9%	3.0%	3.1%	86.4%	10.6%	3.1%
FORM 1-3	90.1%	4.6%	5.3%	81.0%	13.8%	5.3%
FORM 4 (Jr. sec. complete)	92.5%	3.9%	3.6%	86.8%	9.6%	3.6%
FORM 5-6 (Sr. sec. complete)	95.4%	1.8%	2.8%	92.6%	4.6%	2.8%
Tertiary non-Univ.	96.1%	0.0%	3.9%	96.1%	0.0%	3.9%
University	91.9%	3.7%	4.4%	91.9%	3.7%	4.4%
Total	92.8%	2.7%	4.6%	85.7%	9.7%	4.6%
Note: STD = primary education. FORM=secondary						

These patterns cannot be explained by higher labor force participation rates for educated people. In fact, individuals with secondary education and above participate at lower rates than those who never attended school or who completed primary education (see Table 8.4). Labor force participation rates are actually lower for the more educated (with some drop in 'primary incomplete' rates vis-à-vis primary 'complete'). Moreover, high inactivity levels are not driven by lower female labor force participation rates or other gender differences. Using the definition of 'active' that an individual was either employed for at least one hour during the previous calendar week, was temporarily absent from work but had a job attachment, or was available for work, the rates of labor force participation (i.e., employed and unemployed) are similar for males and

females, at 90.5 percent for males and 88.8 percent for females, with the gender gap in participation rates highest for those with secondary and above education (82.2 percent versus 74.2 percent). This pattern holds for Dar es Salaam, other urban and rural areas. It also suggests that females more often opt out of female labor force participation when they are more able to meet household consumption needs without the additional income, although cultural factors are undoubtedly important to these patterns (ILFS 2006).<sup>73</sup>

**Table 8.4: Labor Force Participation Rate 15+ Years by Educational Achievement**

Education Level	Dar es Salaam	Other Urban	Rural	Total
Never attended	80.6	80.5	89.2	88.1
Primary not complete	67.6	72.5	80.1	78.2
Primary complete	94.5	95.5	97.7	96.8
Secondary and above	75.8	79.1	81.6	78.8
Total	85.8	87.2	90.8	89.6

Source: *Integrated Labour Force Survey 2006*

As these data show, employment growth has been too slow to absorb the influx of educated labor supplied, particularly in urban areas and for younger age groups. Some individuals have invested in household and micro enterprises, but others appear to be either discouraged by the available opportunities or their skills – even tertiary degrees – are not in demand.<sup>74</sup>

The unemployment patterns, however, do indicate that workers with vocational-technical training are in greater demand relative to supply, signaling the need for greater investment in vocational and technical training at that level.

The situation in Zanzibar is similar to the mainland. Based on a skills assessment by the African Development Bank, there is a shortage of vocational and technical skills relative to demand, specifically related to the management of agriculture, horticulture, and poultry, hospitality, and the creative arts.

## 2) *Estimates of Returns to Education*

Estimating returns to education is complicated by several issues, and estimates of returns to schooling in Tanzania vary dramatically depending on the methodology and data used. There are at

<sup>73</sup> Many of these females may be working at home on domestic and child care duties; however, these activities do not count as economic activity.

<sup>74</sup> Anecdotally, many unemployed individuals are able to rely upon family and friends for their living, as is common in Sub-Saharan Africa.

least two major issues. First, there is the commonly observed problem of likely correlation between schooling and ability or other attributes correlated with both schooling attainment and subsequent income, but which cannot be measured. These attributes may be acquired through a variety of means apart from education, including parental inputs, work habits, and innate ability. This correlation will tend to introduce an upward bias in the simplest estimator used to quantify returns to schooling – ordinary least squares (OLS) – and this ‘returns’ estimate cannot be used to derive the ‘treatment’ effect of supplying more education. Moreover, in the case of Tanzania, such upward bias may be more pronounced for more advanced levels of education, given that a minority of the population acquires post-primary education.

In addition, the number of years of schooling is only a proxy for skills and abilities which raise productivity but are much more difficult to measure. The only attempt to directly estimate the returns to measured cognitive skills using cognitive test data in Tanzania (Knight and Sabot 1990) showed that an increase of a standard deviation in measured cognitive skills increased incomes in Tanzania by 13 percent, which at the time was low relative to Kenya at 19-22 percent, or South Africa at 34-38 percent. Using educational attainment as a proxy, Knight and Sabot also found that secondary education increased wages by 25 percent in urban areas in Tanzania. Assuming four years of secondary education, this is similar to recent estimates by Barro and Lee (2010) showing that, for Sub-Saharan Africa as a whole, an additional year of schooling increases wages by approximately 6.6 percent in cross country regressions, but this does not include returns in rural areas.<sup>75</sup>

Using Tanzanian data on manufacturing employees – an unrepresentative sample relative to the entire population – Soderbom, Teal, Wambugu, and Kahyarara (2006) show that income of young manufacturing employees rises by approximately 10 percent for every additional year of schooling, when one controls in a plausible way for unobserved factors.<sup>76</sup> The study also shows that this return is very similar to the return to schooling of older manufacturing workers in Kenya in the same year.<sup>77</sup> Moreover, in contrast to the Kenyan case, estimated returns to an additional year of schooling of *young* Tanzanian manufacturing workers do not increase as years of schooling increase. However, the population of manufacturing workers is likely to differ systematically from the population at large, and these estimates could over-state the average market returns to education.<sup>78</sup> For all individuals employed outside of agriculture, Table 8.5 below shows median real earnings by education level using the 2001 and 2006 Integrated Labour Force surveys:

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<sup>75</sup> This estimate uses parental education as an instrument for years of schooling, but this approach is likely to be flawed since parental education also has a direct effect on student achievement as well as on years of schooling.

<sup>76</sup> The approach these authors take – to utilize parents’ education as an ‘instrument’ – has been shown to be invalid in other studies using US data.

<sup>77</sup> The studies use different estimation methods, but both use parental education as an exclusion restriction to deal with endogeneity issues.

<sup>78</sup> The evidence also suggests that the return to schooling of manufacturing workers in Kenya has fallen over the 1990s, whereas it has risen in Tanzania, as one would expect.

**Table 8.5: Median Real Monthly Earnings by Education Level 2001-2006**

<b>Median Real Monthly Earnings by Employees in Non-Agriculture by Education Level 2001-2006 (Tanzanian Shillings)</b>		
Survey year	<b>2001</b>	<b>2006</b>
No Education	15,000	18,750
1-4 Years	28,000	27,054
5-8 Years	30,000	30,603
9-14 Years	70,000	62,500
15+ years	245,000	120,313*
<i>Source: Kerr and Quinn (2010) using ILF Surveys 2001 and 2006</i>		
Note: Data are not weighted given lack of weights in 2001 survey.		
*Differences for higher levels of education may be due to small sample sizes.		

This shows little to no income gains over the five-year period for any positive level of educational attainment.

Education can increase entrepreneurship outside of agriculture. Using data from a pilot rural investment climate survey, the World Bank (2007) reports that the probability of engaging in a non-farm rural enterprise – an activity which is strongly associated with increased income in Tanzania – is much more likely for individuals with some primary education; 75 percent of such enterprises were run by an individual with at least some education, although only 11 percent had completed primary. Each year of schooling was associated with a 2.3 percent increase in the probability of starting a rural business. These results cannot be used to imply causation, however. Moreover, other constraints to business were estimated to be strongly associated with these outcomes, including demand arising from agricultural sector growth, access to finance, and transport.<sup>79</sup>

<b>Table 8.6: Estimated Returns to Skills Associated with Schooling in Tanzania, 2001 and 2006 Conditional on Wage or Self-Employment*</b>		
	2001	2006
Average Percent Increased income per Year of Schooling	14%	12%
<i>By level:</i>		
STD 7 (Primary complete)	13.5%	13.0%
FORM 4 (O Levels or 11 years)	16.0%	19%
*Sample has more education and higher income than average Tanzanian population, and is estimated using only employed non-agricultural workers.		
Source: Kerr (2011) Using Integrated Labour Force Surveys 2001 and 2006		

Each year of schooling was associated with a 2.3 percent increase in the probability of starting a rural business. These results cannot be used to imply causation, however. Moreover, other constraints to business were estimated to be strongly associated with these outcomes, including demand arising from agricultural sector growth, access to finance, and transport.<sup>79</sup>

estimated to be strongly associated with these outcomes, including demand arising from agricultural sector growth, access to finance, and transport.<sup>79</sup>

<sup>79</sup>World Bank (2007). Tanzania Pilot Rural Investment Climate Assessment: Stimulating non-Farm Enterprise Growth.

Although OLS estimates of returns are likely to be biased, with appropriate caveats, they still may provide some indication of the magnitude of returns. Because the degree of estimation bias may not be constant across countries, it may be somewhat misleading to benchmark returns across countries using methods which are not guaranteed to be unbiased. One can interpret OLS estimates of returns to education as the return to all human capital, attributes, and opportunities which are correlated with education.<sup>80</sup> This can be called the ‘*schooling-correlated ability and acquisition of skills*’ (henceforth SCAAS). This provides less policy guidance. The appropriate intervention in the event that a lack of SCAAS constitutes a principal constraint to growth might be greater investment in early childhood education, school vouchers, parental or community training, de-worming, nutritional interventions, or changes to teacher supervision or compensation systems.

<b>Table 8.7: Comparative Rates of Returns to Education</b>			
	Primary Education	Secondary Education	Tertiary Education
Tanzania	13.0%	19.0%	N/A
Ghana	5%	8%	18%
Uganda	30.20%	11.50%	24.20%
Vietnam	2.33%	7.65%	10.7%
Kenya	7.90%	17.20%	32.50%

Notes: The returns to education in Tanzania are estimated using only individuals who are employed in non-agricultural activities in 2006, and do not account for returns in agriculture or differential unemployment rates.

Ghana estimates are based on Ghana Living Standard Survey of 2000, Uganda data used are National Household Survey 2000, Vietnam estimates are based on the 2004 Labor Force Survey. Kenya estimates are from the 2007 Welfare Monitoring Survey.

Using the ILFS for 2006 and 2001 and the simple OLS estimator of returns to SCAAS, one obtains the estimates shown below (Kerr and Quinn 2010, unpublished). Although the return of 12 percent is slightly higher than the global mean estimated by Barro and Lee, it has not risen since 2001 despite rapid economic growth over the decade. In addition, the estimate uses only employed individuals and must be multiplied by the probability of being employed, which falls with educational attain-

ment. Since unemployment rates rise with the level of education in Tanzania, making this adjustment will bring the returns to secondary and higher SCAAS closer to the regional means for Sub-Saharan Africa. If one compares these numbers – adjusting downward appropriately for the fact that the estimates are likely to be overstated for Tanzania in particular – to returns in other countries, one observes generally similar returns to those in Kenya and Uganda, and higher returns than for Ghana and Vietnam, although the years and methodologies differ.

<sup>80</sup>This is only true if one is willing to make the assumption that current income does not cause educational attainment.

### 3) *Firm Behavior and Survey Responses*

Additional indications of excess demand for skills can be provided by firms' perceptions and behavior. According to the most recent Global Competitiveness Survey (2010/11), a lack of skilled labor in Tanzania, ranked only the 10<sup>th</sup> most frequently cited answer to the most problematic factor out of 15 possible responses. Similarly, in the most recent World Bank Enterprise Survey for Tanzania (2006), respondents rated several other constraints more severe. Approximately 12 percent of firms said that inadequately educated labor was a major or severe constraint to their business. This fraction is higher for non-microenterprises. Among manufacturing firms, 19 percent rated a lack of skill as a major constraint to doing business, for 'other' types of businesses, 23.68 percent rated this as one of the top three constraints, but for retail and information technology firms, the fraction was only 11 percent.

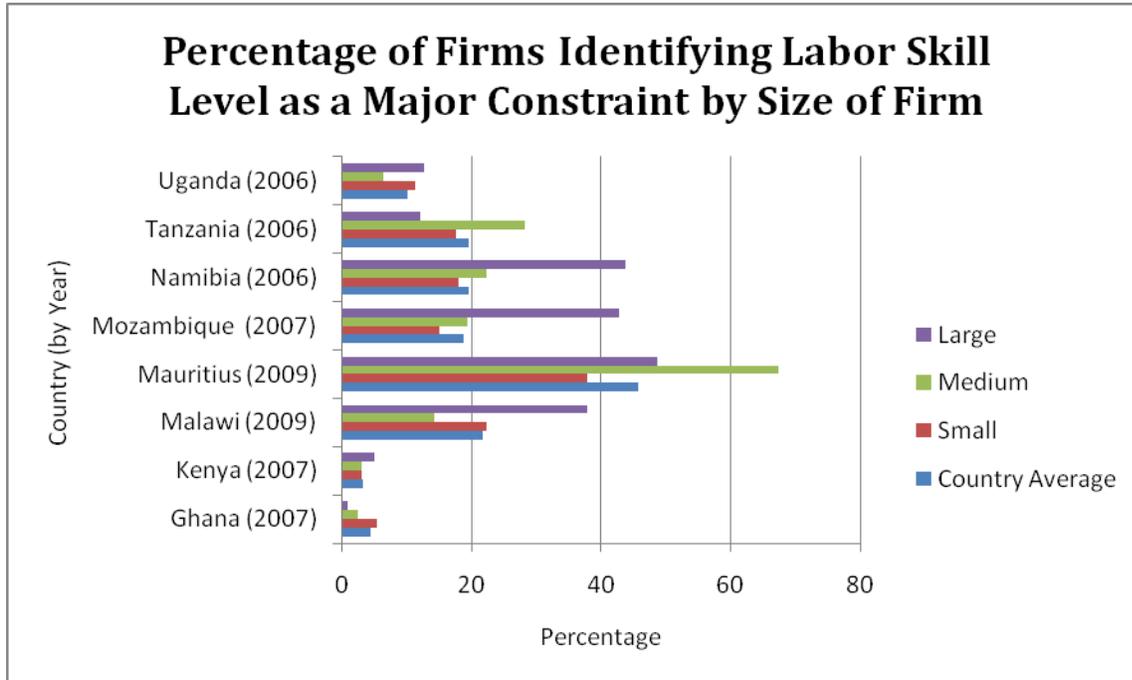
As shown in Figure 8.19 more Tanzanian firms rate a lack of skilled labor as a major constraint than firms in Uganda and Ghana, and Kenya, but less than in Malawi and Mauritius, and similar to Namibia and Mozambique. Exporters more often rate a lack of skills as a major constraint than do non-exporters.<sup>81</sup>

Efforts by existing firms to train their workers is another potential indication of whether or not unusual or costly efforts are being made to relax a constraint that they face with respect to the availability of these skills. Based on responses by formal manufacturing firms, Tanzania has a rate of employer-provided formal training slightly higher than the mean for Sub-Saharan Africa, higher than Ghana, similar to Uganda, but not as high as Kenya, Mozambique, Malawi, and Namibia. The percentage of employees offered formal training by their employers is reasonably high, but not as high as Namibia, Mozambique, Kenya, or Uganda, and the fraction of manufacturing firm respondents offering training is higher than Uganda and Ghana. Information from the Global Competitiveness Report Survey is similar, as shown below in Figure 8.16.

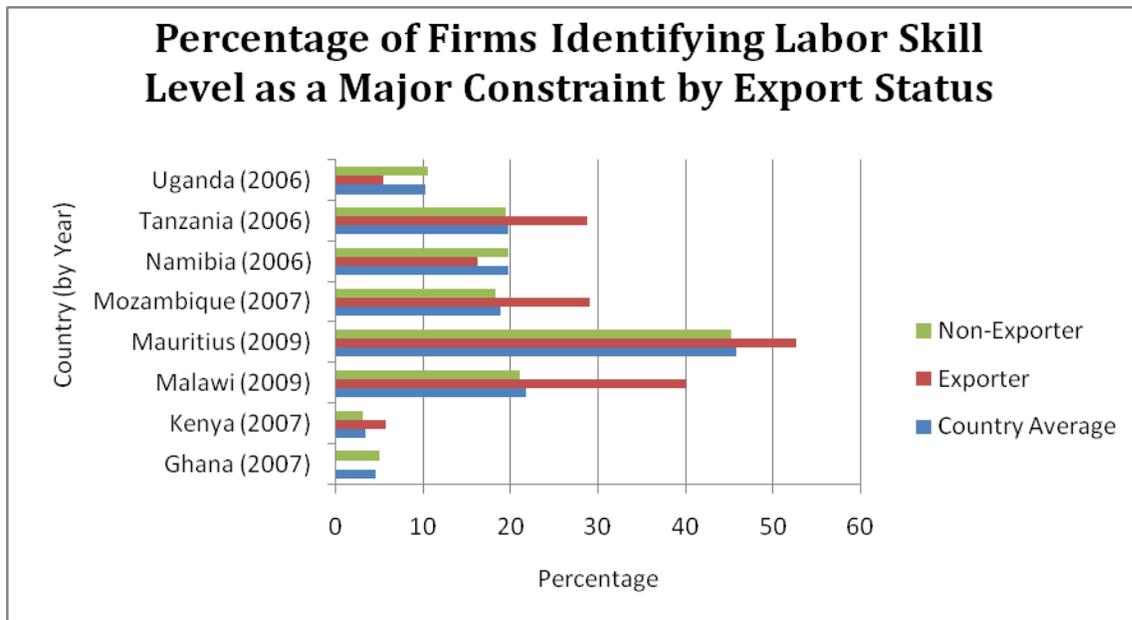
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<sup>81</sup> The data also show that medium sized firms rate the constraint more severely, as do foreign owned firms.

**Figure 8.16: Percentage of Firms Identifying Labor Skill Level as a Major Constraint**



**Figure 8.17: Percentage of Firms Identifying Labor Skill Level as a Major Constraint**

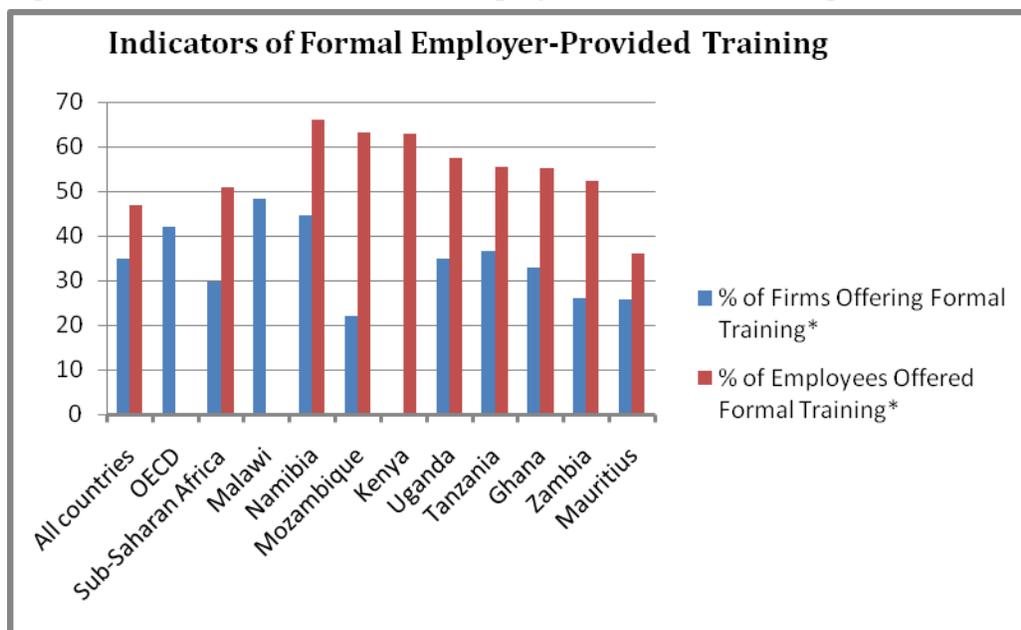


Source: World Bank Enterprise Surveys

Firms in Tanzania invest in training their employees directly to a lesser degree than the comparison countries, except for Mozambique. This could be in part due to the 6 percent levy they pay on payroll which is intended to fund vocational and technical training. Nonetheless, if this was a

crucial binding constraint, one would expect firms to be willing to invest more in training their workers in the required skills.<sup>82</sup>

**Figure 8.18: Indicators of Formal Employer-Provided Training**



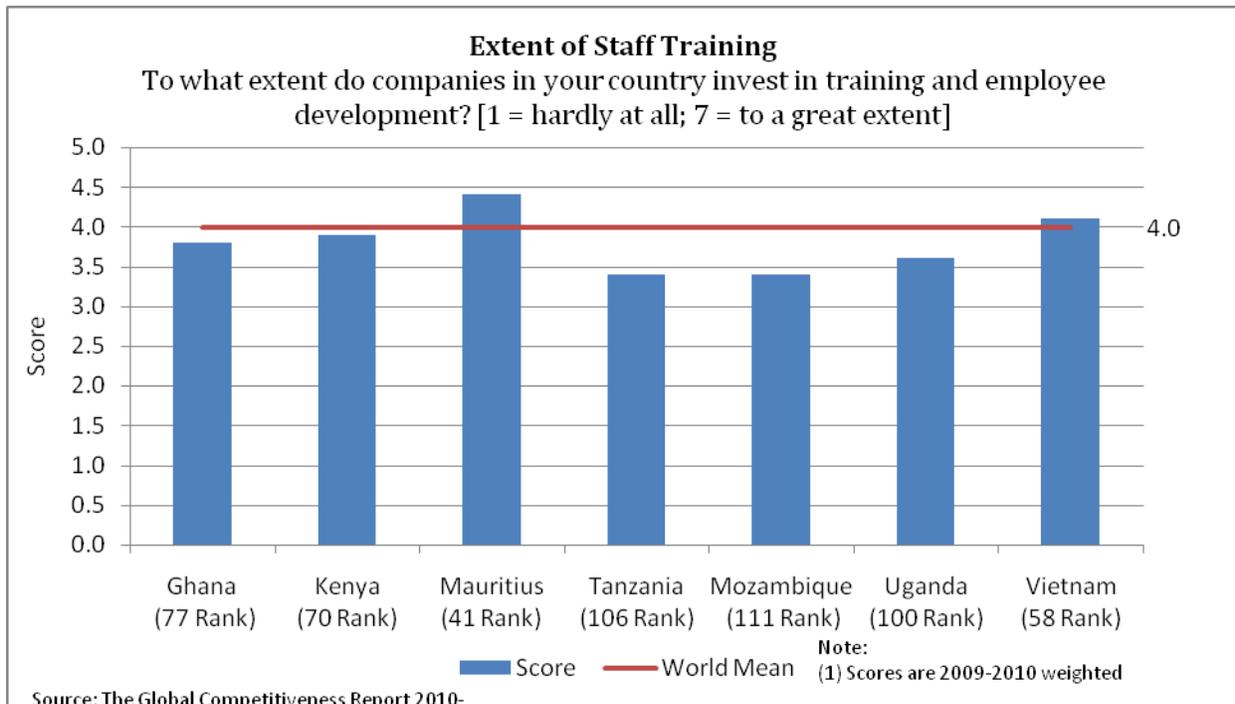
Source: World Bank Enterprise Surveys, most recent years.

Given the relatively low unemployment rate for technically or vocationally trained individuals, of all levels of education the lack of specialized practical and technical skills appears to pose the largest constraint for the private sector. Firms rate Tanzania relatively poorly in the availability of relevant and quality training services locally, as shown in Figure 8.20. This is an indication that employers may feel relatively little ‘return’ on the relatively high payroll levy (6 percent) they pay.

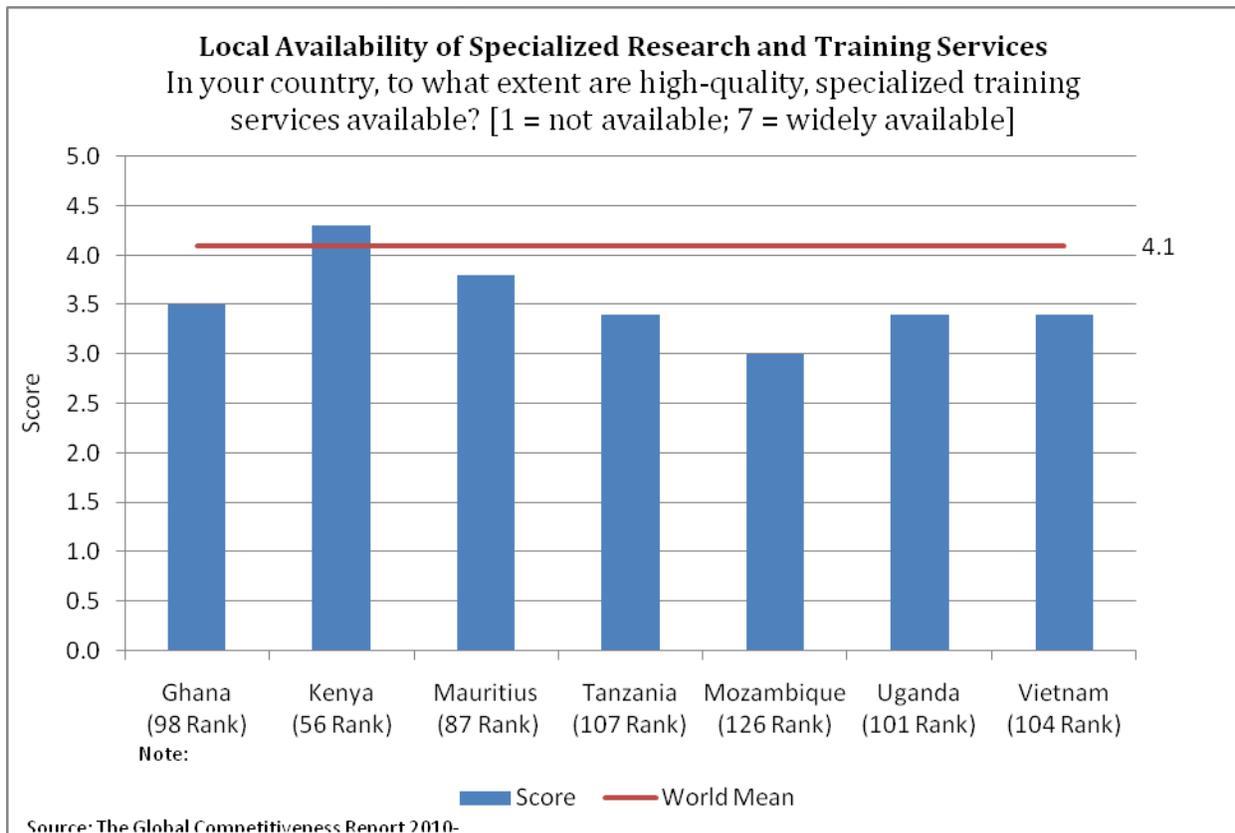
Another means of getting around the constraint would be to hire foreign workers. Tanzanian enterprises appear to employ foreign workers with a more appropriate mix of skills, but the numbers were not available for this report. The only estimate available was for the approximately 16,000 foreign worker permits obtained during the 2001-2005 period, approximately 4,000 per year. This is a relatively high number as compared with T-VET graduates in those years, but is a low number as compared with the educated labor force. More recently with the introduction of the free movement of workers within the East African Community, the costs of importing skills have been reduced substantially. Nonetheless, this indicator, combined with the low quality of general education and the low unemployment rate for vocational/technically trained workers indicate that this is a serious problem, and that the Tanzanian population may not have access to the kind of relevant training that is needed for their full participation in the economy.

<sup>82</sup> The problem of capturing the benefits of training workers who may leave to take employment elsewhere is common across countries and should not affect these rankings.

**Figure 8.19: Extent of Staff Training**



**Figure 8.20: Local Availability of Specialized Research and Training Services**



## B. Lack of Health and Nutritional Status

Another important form of human capital is health and nutritional status. There is an abundance of evidence that higher income and wealth levels generally lead to improved health and nutrition. However, evidence of the reverse – that improved health and nutrition raise incomes - is less clear. In principle, poor health or nutrition could impact sectors such as agriculture or manufacturing where strength and endurance are required, but there is relatively little empirical evidence of an effect, except at extreme levels of deprivation and illness.<sup>83</sup> At the same time, there is little doubt that preventable illness and poor nutrition cause welfare and economic losses in developing countries, which tend to be located in latitudes most prone to virulent contagious diseases (e.g., malaria, tsetse, schistosomiasis).<sup>84</sup> Estimates of the direct and indirect costs of malaria, TB, and HIV/AIDS, including lost productivity, travel time for treatment and preventative and therapeutic treatments, total approximately 1-2 percent of aggregate income, but these estimates do not consider broader economic impacts, including substitution of labor resources that may be in excess supply, lost school days or learning, deterrents to investment, or other effects. Sachs and Malaney (2002) broadly estimate the loss to the level of GDP in Sub-Saharan African countries to be high at an average of 10 percent, through the combined effects of reduced investment and productivity; however, they admit that their estimates are somewhat speculative.<sup>85</sup>

There is little debate that income has a major impact on nutritional and health outcomes, and those outcomes are also likely to impact income at the household level. The question for this diagnostic study is whether poor health and/or nutritional outcomes in Tanzania today constitute a binding constraint to productive investment and broad-based growth of the economy.

### a. Trends in Nutritional Status

Rates of malnutrition have been declining in Tanzania along with economic growth in recent years. The rate of stunting in children according to the 2010 Demographic and Health Survey (DHS) has dropped slightly over the previous five years to 35 percent as shown in Table 8.8.

Earlier measures obtained from WDI, which allow for international comparison, show Tanzania's rate of child malnutrition at similar rates to benchmark countries (Ghana, Kenya, and Uganda), as

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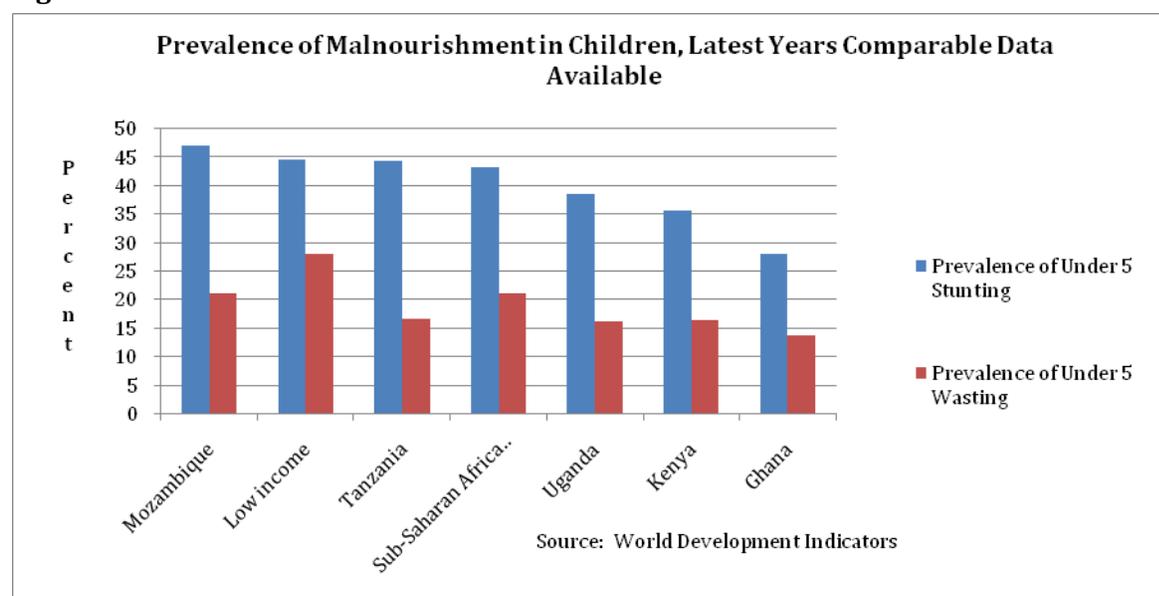
<sup>83</sup> Empirical studies have found some support for a causal linkage between nutrition and wages or agricultural productivity especially at very low nutrition levels (see e.g. Foster and Rosenzweig (1994)) but on the whole cast doubt on the nutrition-wage efficiency models which are predicated on this relationship (Binswanger and Rosenzweig [1984], Rosenzweig [1988], Strauss (1996)). In fact, maintaining close to recommended caloric intakes is inexpensive relative to wages in even in some poor economies such as rural India (Subramian and Deaton [1996] and Swamy [1998]). The nutritional status of the Indian population, for instance, is among the worst among developing countries, despite decades of growth and increasing incomes, despite having enjoyed rapid increases in agricultural productivity. There is some evidence of a direct impact on schooling and cognitive attainment (see Alderman, Hoogeveen, and Rossi 2008), and that there are high economic return interventions available to improve these outcomes (Berhman, Alderman, and Hoddinott 2004). For a review see Strauss and Thomas (1998).

<sup>84</sup> The link to natural capital and geography is discussed briefly in the chapter on Natural Capital.

<sup>85</sup> Other research points to an important long run impact through the development of pro-growth institutions Acemoglu, D., S. Johnson, and P. Robinson (2001).

shown in Figure 8.21, but lower than for Sub-Saharan Africa (developing) and low income countries.

**Figure 8.21: Prevalence of Child Malnutrition**



**Table 8.8: Trends in Nutritional Status of Children**

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Tanzania 2010

Survey year	Height-for-age		Weight-for-height		Percentage below +2 SD	Weight-for-age	
	Percentage below -3 SD	Percentage below -2 SD	Percentage below -3 SD	Percentage below -2 SD		Percentage below -3 SD	Percentage below -2 SD
2004-05 TDHS	12.8	37.7	0.4	3.0	3.0	3.7	21.8
2010 TDHS	12.4	35.4	0.5	4.0	3.2	3.8	20.7

Note: Table is based on children who slept in the household the night before the interview. Each of the indices is expressed in standard deviation units (SD) from the median of the NCHS/CDC/WHO reference. Table is based on children with valid dates of birth (month and year) and valid measurement of both height and weight.

## b. Health and Disease Status

The welfare and economic costs of tropical and other diseases in Tanzania and tropical Sub-Saharan Africa generally are high. The most costly diseases in terms of lost lives and productivity are Tuberculosis, Malaria, and HIV/AIDS, but diarrhea, anemia and other conditions related to living conditions and poverty also exact a toll. Malaria remains the leading cause of disease-related death in children under five in Tanzania.

The economic burden of these diseases is likely to be significant. One study (Jowett Miller 2000) estimates that expenditures on treatment and prevention of malaria in 1998 totaled approximately 1.1 percent of GDP, with 71 percent of that being borne by households. For the individuals affected by TB in particular, the economic costs can be as high as 100 percent of annual income, according to some studies.

In the past decade, Tanzania has made significant strides in reducing disease prevalence, both for malaria and HIV/AIDS. Ownership of mosquito nets increased from 56 percent in 2007/8 to 75 percent in 2010, and ownership of insecticide treated nets from 23 percent in 2004/5 to 64 percent in 2010. Moreover, the percentage of children under the age of five who slept under an insecticide treated net (ITN) the night before the household was surveyed increased from 16 percent in 2004-05 to 26 percent in 2007-08 and to 64 percent in 2010. Prevalence rates were halved in the past decade to approximately 18 percent among children (2007/08 NBS). In Zanzibar, prevalence rates are reported to have dropped from 35 percent to only 1 percent recently. In Dar es Salaam, the reduction in all prevalence has been dramatic, from 24 percent in 2004 to just 4 percent in 2008.

**Table 8.9: Trends in Early Childhood Mortality Rates**

<b>Trends in early childhood mortality rates</b>			
Infant and under-five mortality rates, Tanzania, 1996-2010			
Survey year	Approximate calendar period	Infant mortality	Under-five mortality
1996	1992-1996	88	137
2004/5	2000 -2004	68	112
2007/8	2003 -2007	58	91
2010	2006 -2010	51	81

Note: Data refer to the five years prior to each survey  
Source: Tanzania Demographic and Health Survey 2010 Preliminary Report

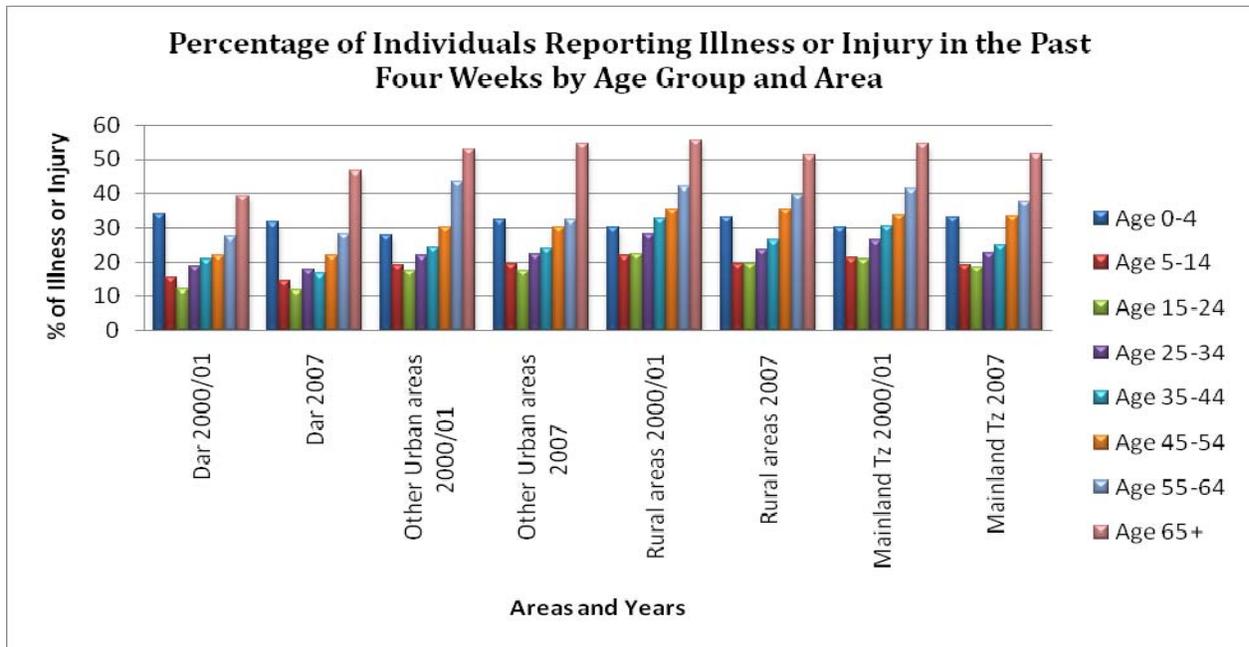
Using data from the 2007 Household budget survey to compare with the survey from 2000/01, as shown in Figure 8.22 one sees a slight drop in the percentage of individuals reporting an illness or injury in the past four weeks. People in rural areas appear to be slightly more affected by illness (27

percent) than those in urban areas (24 percent).

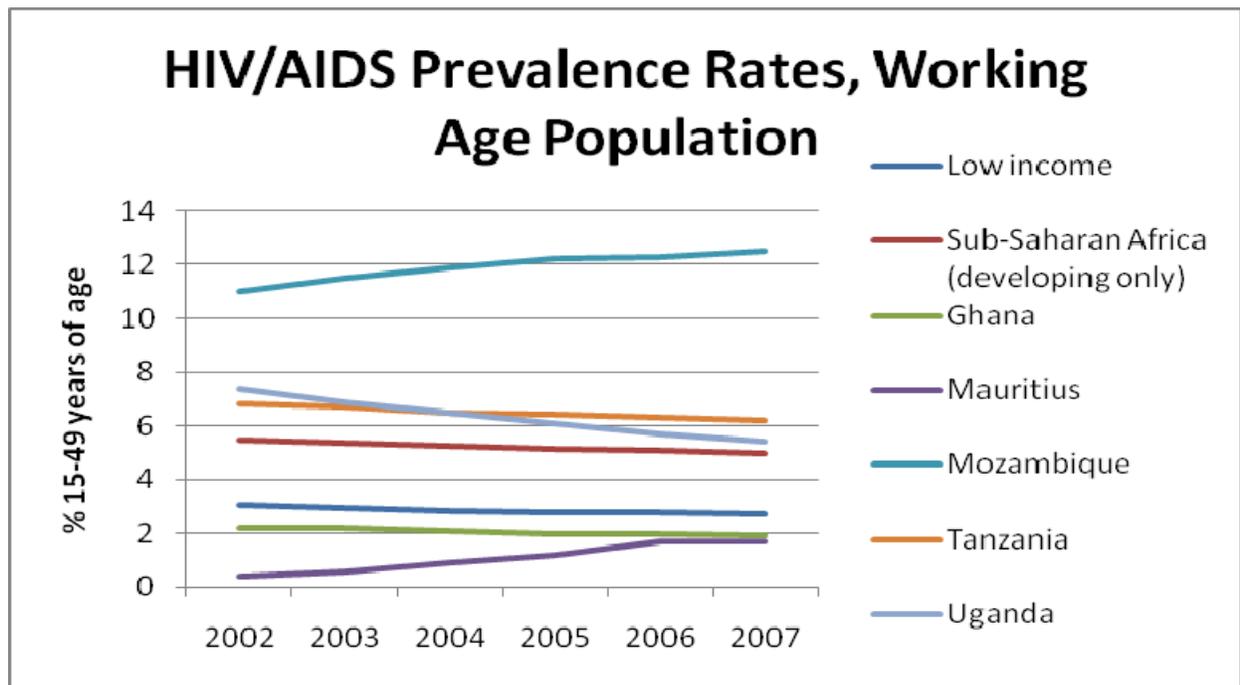
Similarly, the prevalence of HIV/AIDS has declined over time to 5.6 percent in 2009, as shown in Figure 8.23, but not nearly as quickly as it has in Uganda. Nonetheless, as of 2011, Tanzania ranked 4<sup>th</sup> in the world among countries in absolute numbers of AIDS related deaths (CIA Factbook 2011) at 86,000.

Malaria, other fevers, and chronic illnesses such as cancer, heart disease, and TB are the primary self-reported causes of illness, although malaria is generally believed to be somewhat over-diagnosed.

**Figure 8.22: Percentage of Individuals Reporting Illness or Injury in the Past Four Weeks**



**Figure 8.23: HIV/AIDS Prevalence Rates**



**Table 8.10: Lost Days of Work or School**

<b>Working Age Individuals (Ages 15-65)</b>		
Source: Household Budget Survey 2007		
	Urban	Rural
None	86.3%	81.7%
1 week or less	7.5%	9.1%
1 to 2 weeks	3.4%	5.3%
more than 2 weeks	2.7%	3.8%
Non response	0.0%	0.0%

As shown in Table 8.10, in 2007 approximately 9 percent of all working age individuals lost over one week of school or work out of the past four weeks. The fractions are somewhat higher in rural areas, but are also high in urban areas, as shown. The costs to individuals and households experiencing illness are significant. Indeed, of individuals who are currently unemployed but who had been employed, 22 percent report being unemployed due to illness (2007 HBS). Another 18 percent of such individuals are unemployed due to disability. Based on estimates of the direct and indirect costs that can

be measured of the three diseases of TB, malaria, and HIV approximately 1-2 percent of household income is lost each year.<sup>86</sup> This estimate excludes the costs of lost life, the effects occurring through anemia, educational attainment and cognitive development, and any economic impact through reduced foreign or other investment.

Aggregate lost productivity is difficult to quantify directly, given the possibility of substituting between workers and through time. Whereas there is excess labor supply in urban areas, individuals with more specialized skills or firm-specific knowledge would not be replaceable, and formal sector employers replacing them would be obligated by law to pay employees when they are unable to work due to illness. Agricultural workers may not be able to locate adequate replacement labor at critical times as well.

Lost work time is generally decreasing in the level of educational attainment. Whether not this imposes a high cost to investment and productivity depends somewhat on the labor regulations and practices of firms.

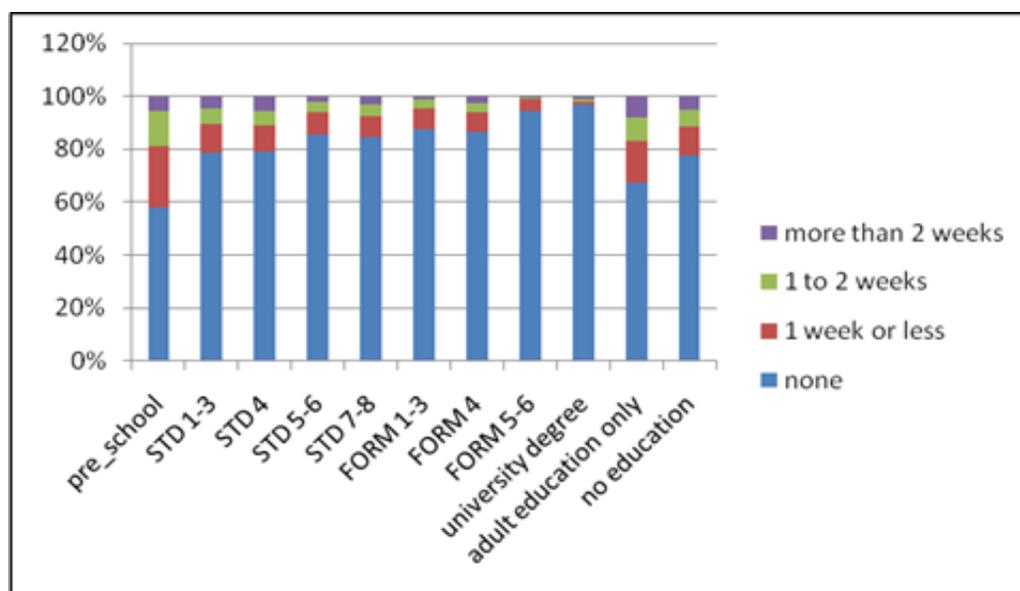
The costs of poor health to business appear to be significant in Tanzania. According to the Global Competitiveness Rankings, Tanzania ranks among the lowest countries in the world in terms of the business impact of malaria (131<sup>st</sup> out of 139), and slightly better on the business impact of Tuberculosis (129<sup>th</sup>) and HIV/AIDS (125<sup>th</sup>), where firms are asked to rate their anticipated impacts on the company through death, disability, medical and funeral expenses, productivity and absenteeism, recruitment and training expenses, and revenues, as shown in Table 8.25. Anticipated impacts are about halfway between 'severe' and 'none.' Given Tanzania's overall competitiveness ranking of 113<sup>th</sup>, these indicators are clearly pulling down the overall rating.

Similarly, Figure 8.25 shows the business impact of HIV/AIDS on Tanzanian companies, with the impact rated at the midpoint between severe and none, which is at the mean for Sub-Saharan Africa (population-weighted).

<sup>86</sup> Studies such as Russell (2004) and Masha et al. (2007) tally the costs per episode and do not appear to multiply by the prevalence rate of those episodes in their survey populations.

Nonetheless, in this same survey, public health was rated the 13<sup>th</sup> most problematic issue for business by the same companies, out of 15 possible problem areas, below education and labor regulation. One would also expect that, if poor public health were a binding constraint to private sector investment, over the past five years when disease prevalence has improved, investment would accelerate. So far, no such improvement in private investment rates has occurred as a response to improved public health.

**Figure 8.24: Amount of Time Lost by Educational Attainment**

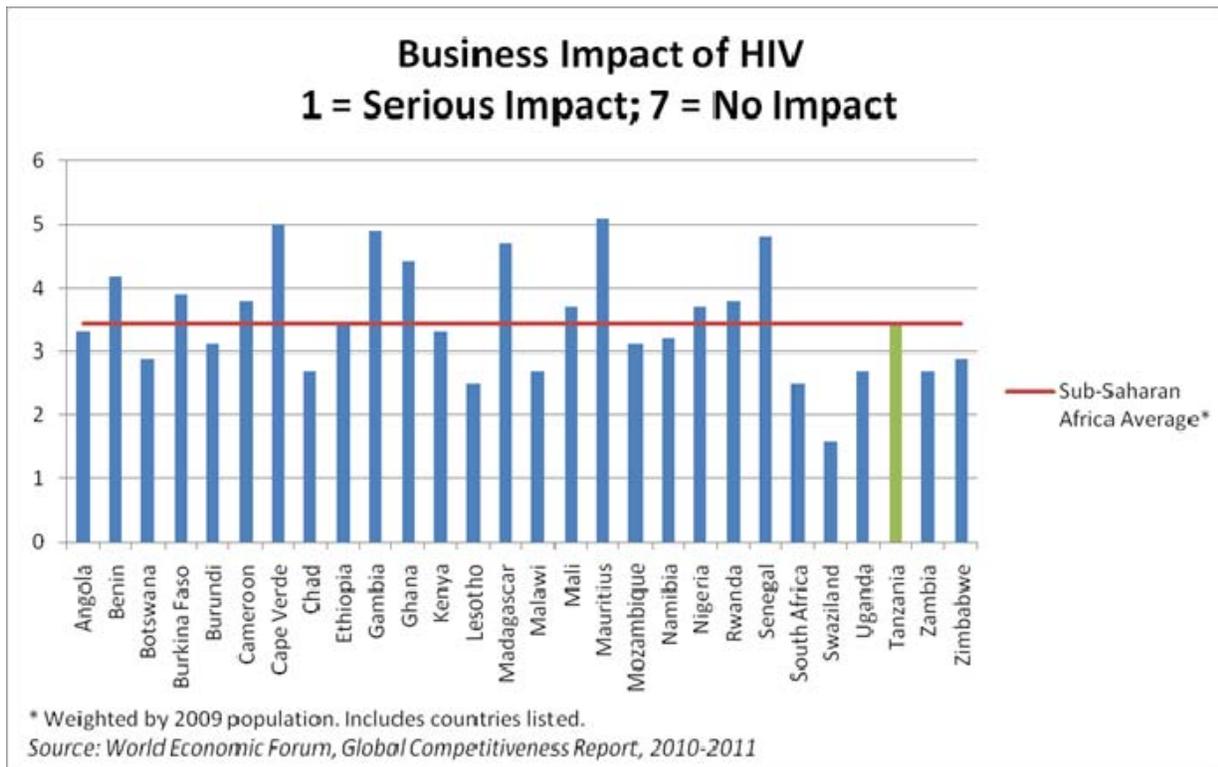


**Table 8.11: Business Impacts of Disease**

Global Competitiveness Rankings, out of 139 Countries					
	Ghana	Kenya	Mozambique	Tanzania	Uganda
Business Impact of:					
Malaria	126	119	128	131	136
TB	103	126	130	129	128
HIV/AIDS	109	127	130	125	134

Source: Global Competitiveness Report 2010

**Figure 8.25: Business Impact of HIV**



### C. Conclusions

While a serious problem for some investors and potentially for some Tanzanian laborers, the lack of human capital does not appear to rank as a binding constraint to broad-based economic growth. Increasing the supply of skills, health, and nutrition, while socially worthwhile, would not be sufficient on its own to accelerate growth. Whereas public health and poor nutrition remain important issues and challenges, there is no strong indication that alleviating these constraints would lead to an acceleration of private sector investment and economic growth. Raising the income level of the population would, however, go a long way towards improving nutrition and health. It is difficult to estimate how many more investors would invest or how much more productive self-employed and existing enterprises would be with each expansion of human capital, but the available evidence presented in this report strongly indicates that producers and businesses face other, much more binding constraints at present.

There are issues to be addressed to ensure that a lack of human capital does not become a binding constraint, an eventuality that is more likely if the binding constraints are released. An acceleration of growth would increase the demand for human capital and increase the returns to skill and labor, all else equal. One challenge is the quality of education. As in many low income and African countries, the level of skills acquisition of primary and secondary students lags that of middle and

upper income countries markedly. This is partly, but not only, due to the quality of the educational system.

The second challenge is to improve the effectiveness and reach of the current T-VET system. A shortage or a mismatch of the skills supplied relative to those demanded in the economy appears to be most severe for vocational-technical skills. The government's T-VET policy, codified through the Vocational and Training Act (VTA) of 1994, aims at facilitating the development of a flexible skills training system that is responsive to the skills demands of the private sector and offers training suitable to workers with varying educational backgrounds. The VTA established an autonomous training authority which was to allocate funding to training centers in a demand-driven manner, in coordination and consultation with the private sector. The skills training levy of 6 percent of payroll expenses was instituted to finance these training programs. Although the revenues collected through the skills training levy may be adequate to expand capacity, there are indications that the actual funding flows to the VTA may have fallen short of levies collected.<sup>87</sup> Moreover, the levy was designed to be used for vocational training only. There is no sustainable financing for technical training centers or for students wishing to attend such centers. In addition, the absence of a levy drawback provision leads to potential double 'taxation' of firms who may find it advantageous to directly finance and select their own employees' training programs.

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<sup>87</sup> Anecdotal. This has not been confirmed.

## 9. Natural Capital

A lack of natural resources or unfavorable geographic attributes can limit viable investment opportunities and make rapid economic growth more difficult to achieve. A lack of water, land, vegetation, mineral or soil wealth would reduce the productivity of other factors of production (capital and labor) and curtail investment and wealth creation. Tanzania faces natural advantages and geographic disadvantages. It is endowed with relatively high natural capital in the form of water and mineral resources, wildlife and scenery, and a long coastline on the Indian Ocean. However, Tanzania lies in a tropical zone prone to disease, between latitudes 1° and 12° South and longitudes 29° and 41° East. Tanzania may be increasingly prone to drought and climate change-related increased volatility in rainfall and temperature. Tanzania's neighbors are also classified as low income -- Kenya to the north, Uganda to the northwest, Rwanda, Burundi and Democratic Republic of Congo to the west and Zambia, Malawi and Mozambique to the south. This geographic position makes access to richer markets more costly. Based on the available indicators, a lack of natural capital is not presently a binding constraint to growth of the Tanzanian economy. However, improving the management and exploitation of natural resources – in particular, soil, vegetation, and water resources necessary for livestock and crop production – will become increasingly important for enhancing growth over the medium term.

### A. Access to Sea and Distance to Markets

Like many developing countries, Tanzania is geographically distant from its largest trading partners of Europe, India, and China. Major trade is done by sea using international maritime shipping vessels while transit trade is by rail and road transport. Tanzania's port of Dar es Salaam is a major regional port providing a transit route for goods to and from land-locked countries of Uganda, Burundi, Rwanda, eastern DRC, Zambia and Malawi. Other major sea ports include Tanga to the north and Mtwara to the south. The ports compete with Mombasa in Kenya and Nacala and Beira in Mozambique for transit goods from and to Uganda, Burundi, the DRC and Malawi, respectively.

### B. Mineral Wealth

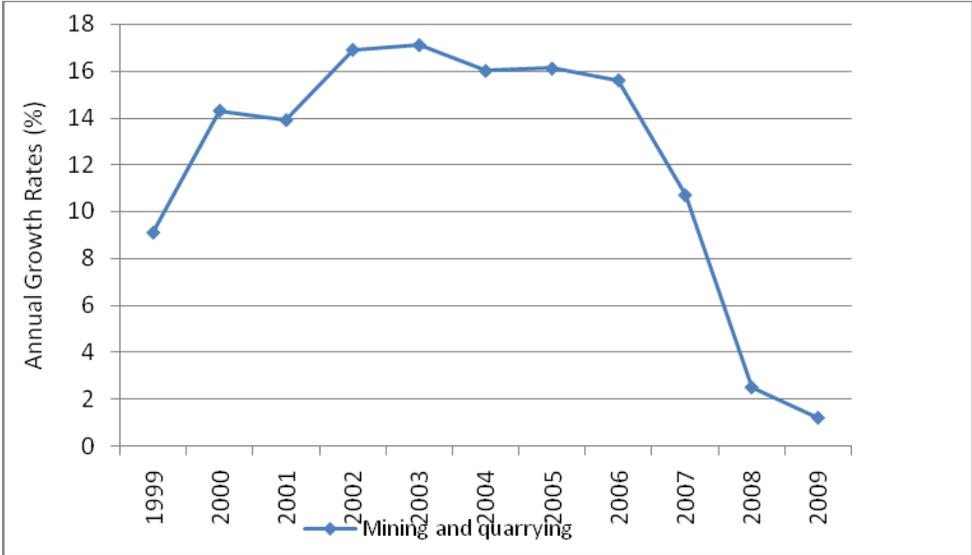
Tanzania is endowed with great mineral resources, including gold, base metals, diamonds, ferrous minerals and a wide variety of gemstones, some of which are unique, such as tanzanite. Moreover, coal, natural gas, uranium, and various industrial minerals such as soda, kaolin, tin, gypsum, phosphate and dimension stones are available at attractive economic rates. This conducive geological environment, in combination with major economic reforms, has enabled a rapid growth of minerals exploration and exploitation over the past ten years.<sup>88</sup> Today, the mining sector employs around 1 percent of wage earners, and the sector presents both challenges and economic opportunities.

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<sup>88</sup>Reforms undertaken since the mid 1980's include the Mineral Policy of 1997, and enactment of internationally competitive fiscal and legal regimes for the mineral sector.

Gold has replaced diamonds as the primary source of government mining-related revenues, and has become the largest mineral export of Tanzania, at 93.7 percent of total mineral exports. In the most recent year for which data are available, the total value of mineral exports increased to USD 1,217.3 million in 2009 from USD 1,098.8 million the year 2008, equivalent to an increase of 10.8 percent. Exports increased from USD 992.8 million in 2008 to USD 1,140.7 million in 2009, or 14.9 percent. At the same time, diamond export sales increased only 1.5 percent in the same year, from USD 22.4 million to USD 22.73 million in 2009. Whereas production of diamonds decreased 22.8 percent, from 237,676 carats to 181,874 carats, better sales prices were obtained by auctioning in the world market rather than direct sale to DTC, a subsidiary company of the De Beers. There have been no new substantial investments in replacement equipment or new mines in recent years. Diamond deposits at Williamson Diamonds Limited mine, exploited since the 1950s, may have been depleted, and no new major diamond discoveries have been found since New Alamasi mine in 1975.

**Figure 9.1: Annual Growth Rates Mining and Quarrying Year 1999 - 2009 (%)**

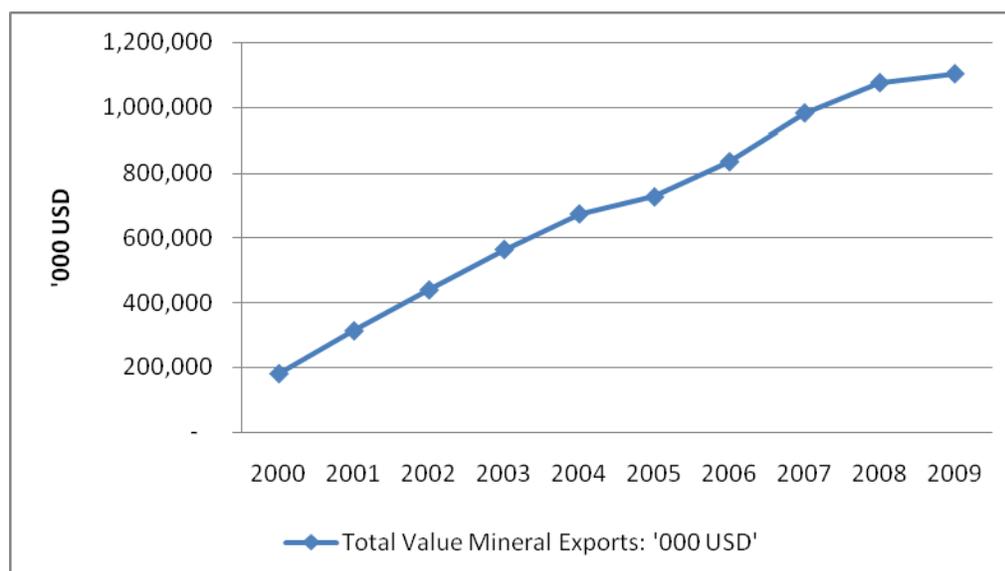


Source: *The Economic Survey 2007, 2008, and 2009 (Ministry of Finance)*

There are some indications that the Tanzanian government has not enjoyed a very high share of mining royalties, levies, or profits from the large gold mining companies. This appears to be due in part to unfavorable contract terms between investors and the government on behalf of the public (see Chapter 5). Whereas mining companies are expected to contribute to local development through the provision of schools, health facilities, or local infrastructure, there has been little reinvestment of mining profits in other productive enterprises within Tanzania. If invested effectively as has been done in countries such as South Africa, Ghana and Botswana, which have avoided the ‘resource curse’, increased public revenues from gold exploitation could help finance public investments in public goods and infrastructure.<sup>89</sup>

<sup>89</sup>The resource curse refers to the paradox that countries and regions with an abundance of natural resources, specifically non-renewable resources like minerals and fuels, tend to have slower economic

**Figure 9.2: Total Value for Mineral Exports: '000 USD' Year 2000-2009**



Source: *The Economic Survey 2000- 2009 (Ministry of Finance)*

### C. Land Resources

Tanzania's surface area is 94.3 million hectares, of which 22 million hectares (23 percent) is allocated to reserves (4.2 million hectares of National Parkland, 7.7 million hectares of game reserves, and 10.1 million hectares of forest reserves). Agricultural land, including arable and non-arable agricultural land, represents about 36 million hectares, or 38.6 percent of total land, and total arable land area is 19.1 million hectares, or 20.3 percent of total land. This includes 5.1 million hectares of gross area cultivated annually, or 5 percent of Tanzania's surface area, and 10 million hectares of arable uncultivated land – much of which is used for livestock grazing.<sup>90</sup>

Tanzania is abundant in arable land per capita, as shown in Figure 9.4, but most recently fell below the Sub-Saharan African average of arable land per capita, given the country's high population growth rate. The per capita endowment of arable land is declining particularly in the Arusha, Kilimanjaro, Mbeya and Kagera regions, due to rising population.

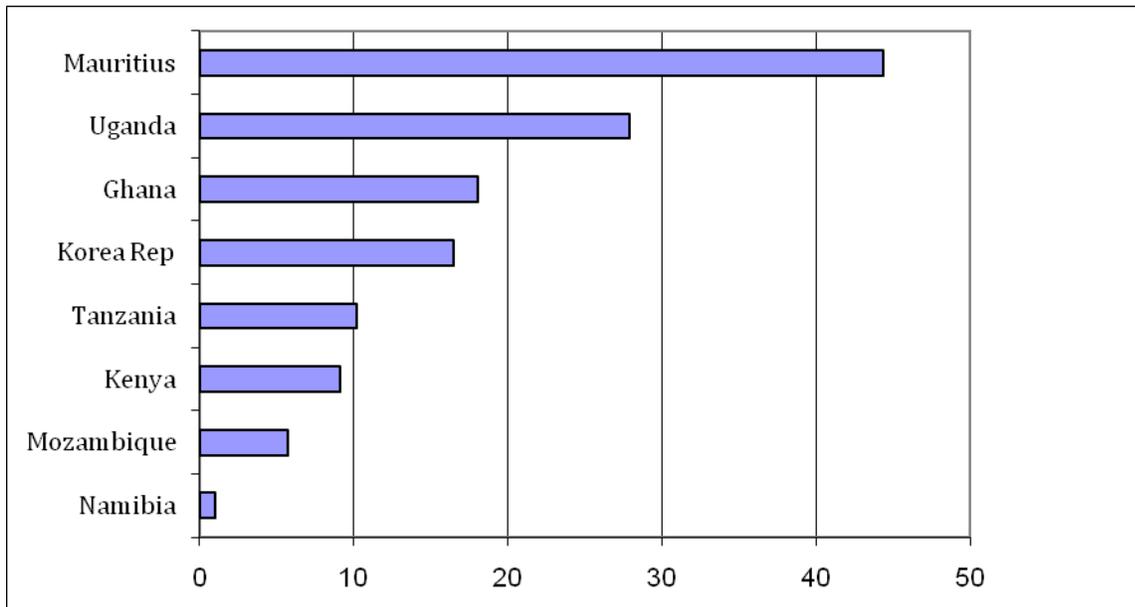
As shown in Figure 9.5, Tanzania is also relatively abundant in total agricultural land compared to the benchmark countries, although Zambia and Namibia are even more land abundant.

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growth and worse development outcomes than countries with fewer such resources. This is hypothesized to happen for different reasons, including a decline in the competitiveness of other economic sectors, volatility of revenues from the natural resource sector, mismanagement of government resources, or weak, ineffectual, unstable or corrupt institutions.

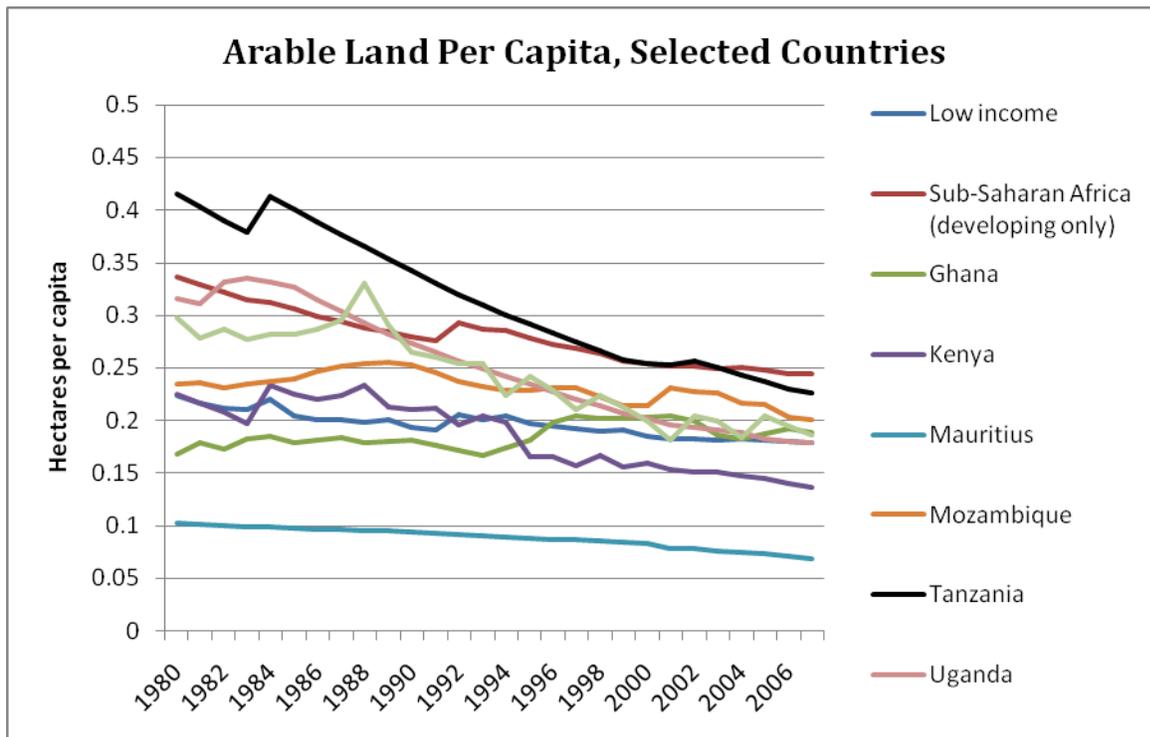
<sup>90</sup> Agricultural land refers to arable land plus land that is under permanent crops or permanent pasture. Arable land includes land under temporary crops, temporary pastures, land under market or kitchen gardens, and land which is temporarily fallow, excluding land abandoned as a result of shifting cultivation.

**Figure 9.3: Arable Land as Percentage of Total Land Area per Country**

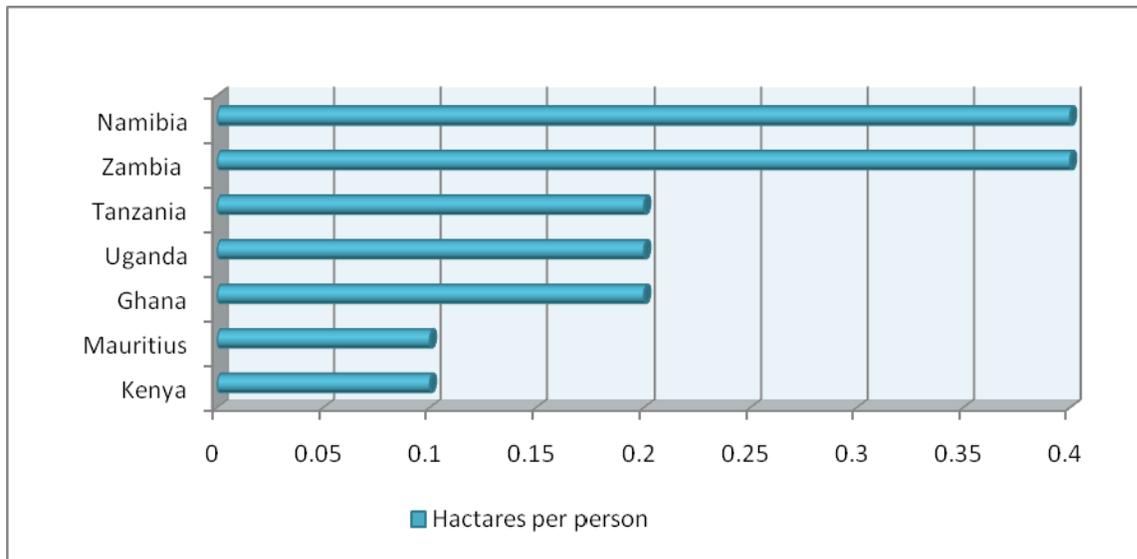


Source: [www.tanzania.go.tz/lands.html](http://www.tanzania.go.tz/lands.html), WDI

**Figure 9.4: Arable Land Per Capita, Selected Countries**



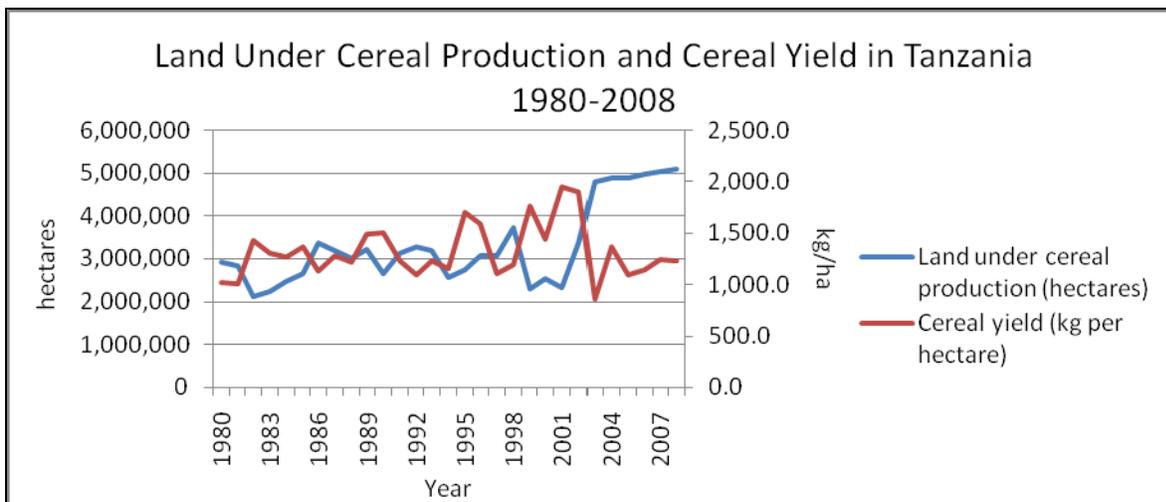
**Figure 9.5: Per Capita Agricultural Land by Country (Hectares per Person)**



Source: World Bank Development Indicators

If a lack of arable land were presently a binding constraint to growth, one would expect to see a trend of increased application of other factors of production to the land and consequent rising yields. In fact, one sees the opposite pattern – growth in cereals output has been driven primarily by expansion of cultivated area, as shown in Figure 9.6.

**Figure 9.6: Land Under Production and Cereal Yield in Tanzania (1980–2008)**



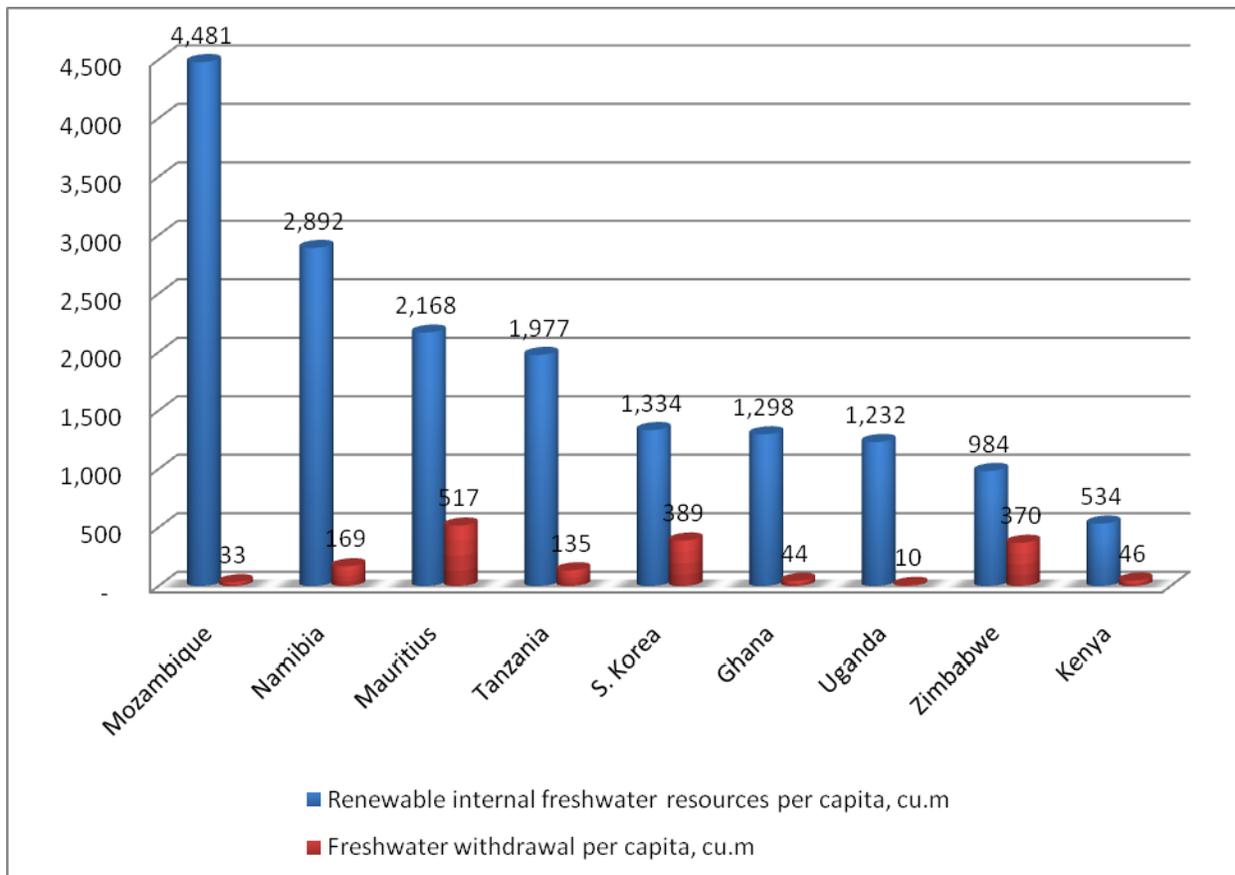
In addition, if lack of land were a binding constraint, one would expect to see per capita agricultural production falling, due to increasing labor intensity in agriculture. This is not evidenced in the current trends shown in Figure 2.9 (Chapter 2), nor in the trends in yields per hectare, which remain fairly flat.

## D. Water Resource Wealth

Tanzania is endowed with abundant water resources (89 km<sup>3</sup> annually renewable water resources, including three of Africa's largest freshwater lakes, rivers, springs and groundwater (40 km<sup>3</sup>)). While it faces challenges in applying a more strategic approach to exploiting these resources and adopting sustainable management practices, a lack of water resources does not appear to be a binding constraint to economic growth.

Figure 9.7 shows the internal freshwater capacity and water withdrawal for five countries. Mauritius and South Korea utilize their water resources more fully, as would be expected for more developed economies. Tanzania's water withdrawal is high relative to other low income countries shown, although it still has plenty of room to develop and utilize its water resources without constraining the resource. As shown in Figure 9.8, Tanzania uses a relatively high share of total water withdrawals for irrigated agriculture, and a relatively low share on domestic and industrial use. The low usage for industrial production in particular may be an indicator that poor urban water delivery constrains investments in water intensive non-agricultural production, including light industry and agricultural processing.

**Figure 9.7: Freshwater Capacity and Withdrawal**



Source: World Bank Development Indicators

**Figure 9.8: Freshwater Withdrawals by Sector**

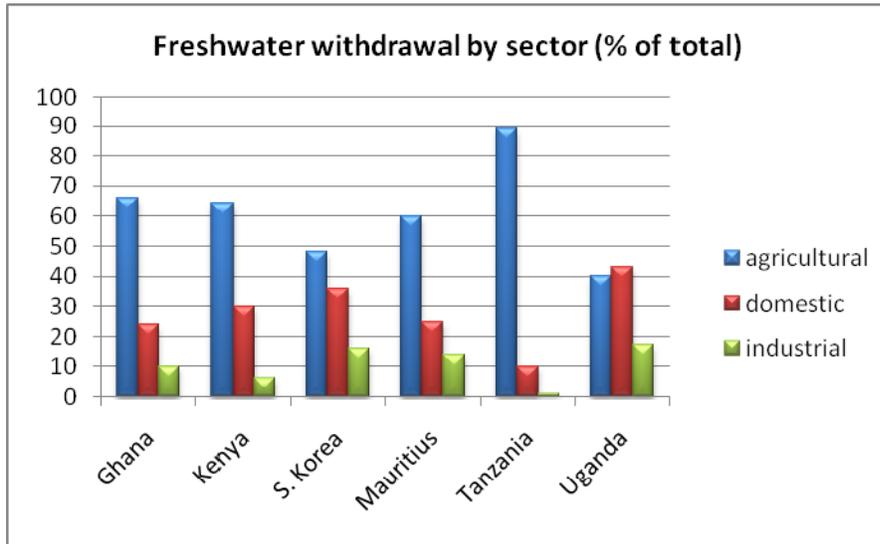
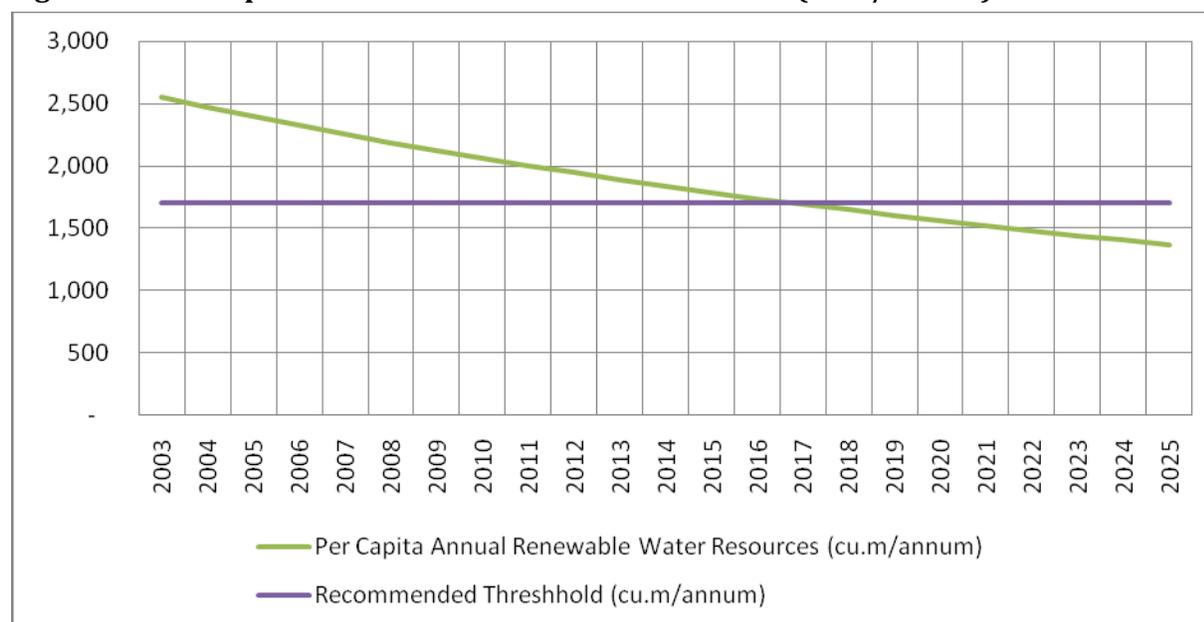


Figure 9.10 below shows a declining trend in per capita annual renewable water resources. According to the World Business Council for Sustainable Development, water stress applies to situations where there is not enough water for all uses, whether agricultural, industrial or domestic. When annual per capita renewable

freshwater availability is less than 1,700 cubic meters, countries begin to experience periodic or regular water stress. Below 1,000 cubic meters, water scarcity begins to hamper economic development and human health and well-being. At current trends, Tanzania will reach the threshold value of 1,700 cubic meters by the year 2018. By 2025, the annual per capita renewable water resources value is estimated to reach 1,488. Additional water resource management challenges including control of pollution and overexploitation of groundwater (in, for example, Singida and Arusha towns), which can permanently damage the water aquifers. Given the expanding human population, expanding economic activities such as irrigation, industrial, mining and hydropower generation, climate change and potential for and actual water pollution, there will be growing competition for water which will require robust integrated water resource management practices, including river basin and demand management. Currently, Tanzania is preparing basin Integrated Water Resources Management and Development Plans (IWRMD Plans) that will bind different users to allocated water resources for a period of five years. In cases of scarcity, priority is domestic water supply, the environment, and other social economic activities.

Given that water availability is still above this scarcity threshold, water resource availability is not presently a binding constraint to economic growth. Moreover, the constraint can be alleviated over the medium and long run by sustainable exploitation practices and improved management of water resources.

**Figure 9.9: Per Capita Annual Renewable Water Resources (cu.m/annum)**



Source: World Bank Development Indicators, National Bureau of Statistics – Population Estimates

## E. Other Natural and Cultural Resources

Tanzania is well endowed with natural resources which can attract tourism and hunting revenues. Tanzania contains Mount Kilimanjaro, Africa's highest peak, pristine sandy beaches, many large and ecologically significant wildlife parks, including the world famous Ngorongoro Crater, Serengeti National Park, Selous Game Reserve, Mikumi National Park, Lake Mnyara National Park, Tarangire National Park, and Gombe National Park, known as the site of Dr. Jane Goodall's studies of chimpanzee behavior. Other important resources for tourism are Kalambo waterfalls in the southwestern region of Rukwa, the second highest waterfall in Africa. Tanzania also shares with its neighbors the Great Lakes of Victoria, Africa's largest; Tanganyika, Africa's deepest; and Lake Nyasa. She is host to precious Ramsar sites with significant and unique biodiversity of interest to tourists, as well as conservationists and harvesters of forest and fisheries products. It contains Olduvai Gorge, excavated by Louis and Mary Leakey in the mid-1950s and known as the Cradle of Mankind, in northern Tanzania. And, of course, islands such as Zanzibar offer a unique cultural heritage and beach destinations on the Indian Ocean. Although it is difficult to benchmark Tanzania's natural advantage as a tourism destination, Tanzania clearly possesses the requisite natural assets for growth of the tourism sector, assuming that it can compete in service provision and that international tourism demand continues to grow.

## F. Climate and Climate-Related Vulnerability

Tanzania is vulnerable to increasing incidence of droughts and floods due to climate change. The incidence of the occurrence of droughts has increased from one in ten to one in four years over the past 50 years (Government of Tanzania). The Food and Agriculture Organization (FAO) defines

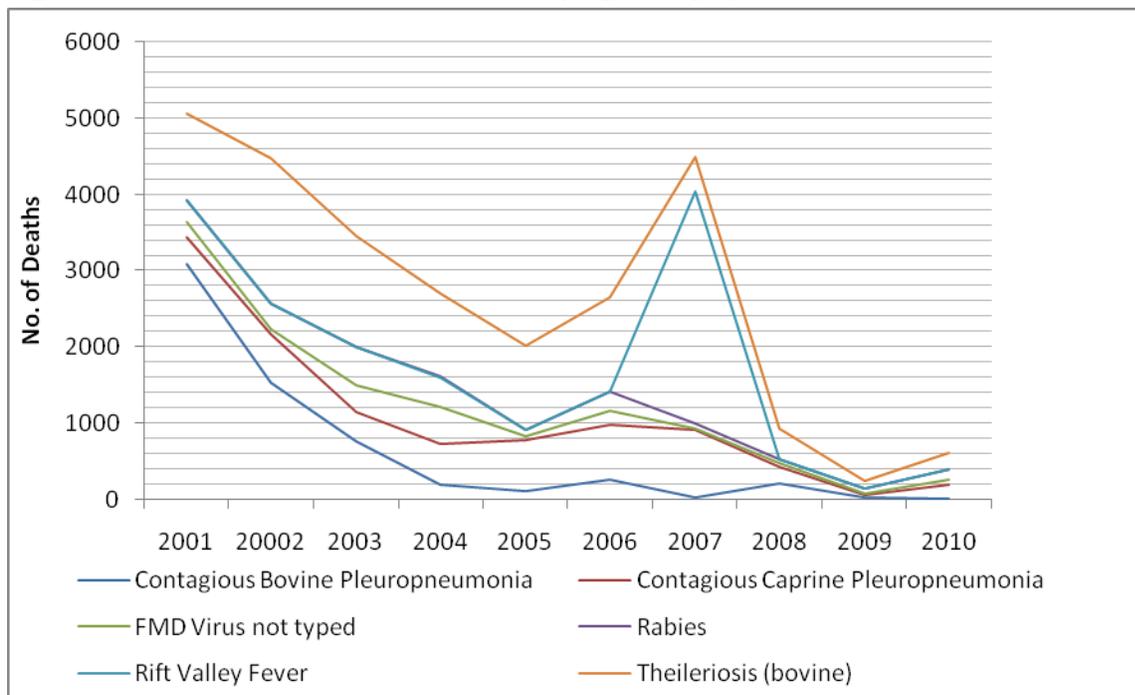
drought as a long period of extremely dry weather when there is not enough rain for the successful crop cultivation or the replenishment of water supply; or an extended period of months or years when a region notes a deficiency in its water supply. Greater investment in water storage, dams, and irrigation could be used to cope with some drought conditions, although this is somewhat limited by the spatial allocation of water resources, downstream water use rights, and the cost-benefit relationships of such infrastructure. For example, whereas the availability of lake water is a natural advantage, the distances to cultivated areas may make irrigation from these sources infeasible. In addition, about 30 to 40 percent of Tanzania's water resources are trans-boundary (Nile/Lake Victoria, Zambezi, Ruvuma, Lakes Tanganyika, Nyasa and Rukwa and the Lakes Chala-Jipe and Uмба river system), and therefore it must adhere to International Treaties/Conventions governing the resources where the development of such resources has to be done in accordance to these Treaties' rights and obligations. These rights and obligations require ensuring water security and avoidance of any significant harm to downstream riparian users. The question of whether a lack of water infrastructure constitutes a binding constraint to growth is addressed in Chapter 7.

## **G. Geographically Determined Prevalence of Human and Livestock Disease**

Given its tropical climate and geography, Tanzania is subject to many of the tropical zone diseases impacting livestock productivity and human health. Trans-boundary Animal Diseases (TADs) in particular can pose significant barriers to the export of livestock and their products, in particular to higher value markets which require compliance with the sanitary measures outlined by the World Organization for Animal Health (OIE). Common TADs found in the country include Contagious Bovine Pleuropneumonia (CBPP), Rabies, Foot and Mouth Disease (FMD) and Contagious Caprine Pleuropneumonia (CCPP). Emerging TADs, including Bovine Spongiform Encephalopathy (BSE), Rift Valley Fever (RVF), West Nile Virus (WNV) and Highly Pathogenic Avian Influenza (HPAI), are also important. Other TADs include Newcastle Disease (ND), which accounts for more than 90 percent mortality of rural chickens, Lumpy Skins Disease (LSD), and African Swine Fever (ASF). Rinderpest has now been eradicated and the nation has an emergency preparedness plan in place in order to prevent re-introduction of the disease. A new vaccine has been developed for Newcastle Disease control and has led to improved local chicken production.

As shown below, the incidence of disease-related livestock deaths has trended downward over the past decade due to improved veterinary health services and animal husbandry in the country, apart from the temporary outbreaks of Rift Valley Fever and Bovine Theileriosis in 2007.

**Figure 9.10: Number of Livestock Deaths (Reported) by Disease, 2000 - 2010**



Tanzania's current livestock wealth consists of 21.3 million cattle, 15.2 million goats, 6.4 million sheep, 35 million local chicken, 23 million commercial chicken and 1.9 million pigs (National Census of Agriculture 2007/20080), which contributes 4 percent of the national GDP (The Economic Survey 2009).

While lack of greater livestock disease control denies the country access to some export markets for beef with stringent standards, other markets are accessible to Tanzania, including COMESA and SADC countries. In addition to improved disease control and veterinary services, greater livestock productivity would require improved livestock husbandry, including pasture and water source management. Given meat grading and market standards which reward larger and younger animals, stronger land use rights which enable improved community management of the commons may be crucial to exploiting these opportunities. One alternative would be the allocation of individual land titles or long term private use rights, which would lead to proper land management consistent with its carrying capacity.

Tanzania is also subject to tropical human diseases which take a severe toll on health and human capital accumulation (see Chapter 9). Malaria is prevalent in most parts of the country except Zanzibar where it has been almost eradicated, with only a 5 percent prevalence rate. Affected zones have expanded to highland areas previously unaffected, presumably due to climate change and greater movement of people who can transmit the disease, as well as resistance of the parasites to treatment drugs. In addition to malaria, schistosomiasis is especially prevalent in flood areas.

In some sense geography, and in particular Tanzania's tropic disease environment, may explain Tanzania's low income status, which means its low average growth rate over the past hundred

years and more. Tanzania has the twin disadvantages of being located in a poor region and in a tropical zone. The tropics entail high disease prevalence and potentially increasing climate-related risks, and managing these conditions imposes a high cost to the economy, discourages investment, and may have created a long run dynamic unfavorable to economic growth.<sup>91</sup>

## H. Conclusions

Tanzania enjoys the advantages of access to the sea, mineral and wildlife endowments, and adequate land and water resources in non-drought periods. Many other tropical countries, from Asia to Latin America, have seen long periods of sustained economic growth and improved living standards. Although natural capital is not a constraint to economic growth at present, Tanzania can benefit more economically from its endowment of natural resources. Some areas for improvement which are suggested by the analysis in this report are:

- Adopting improved strategies and legal frameworks for entering into more beneficial value sharing on mineral contracts with private companies and for the management and disposition of the resulting fiscal inflows, with Botswana as one successful and relevant model.
- Strengthening institutions for water resource management to cope with the challenges of population growth, catchment degradation, and pollution due to increased human activities.
- Investing in infrastructure to improve access to tourism sites and upgrading of hospitality skills.

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<sup>91</sup> According to some economists (Easterly and Levine 2003, Acemoglu, Johnson and Robinson 2001, 2002) who have taken a historical perspective on long run growth, the disease environment has conditioned the quality of institutions introduced by colonization, and these institutions may significantly impact a country's ability to grow and develop economically.

## 10. Summary of Conclusions

Although the policies of the Government of the United Republic of Tanzania have been highly successful in stimulating economic growth over the post-liberalization period, the more recent deceleration of private investment and growth suggests that the high growth rates recorded over the past decade cannot be sustained without addressing the factors most constraining to growth, particularly those identified in this diagnostic report. Private returns to investment across the economy are generally low and uncertain, with the apparent exception of construction, communications, and relatively less competitive goods sectors served by large enterprises. Low social returns are due primarily to a lack of key infrastructure services, and private returns are reduced even further by weak or uncertain appropriability of those returns.

More specifically, based on the available evidence, the most binding constraints to growth identified in this report are **(1) the lack of adequate and reliable supply of electrical power; (2) the lack of acceptable secondary and tertiary roads** to connect rural producers to markets, and **(3) a lack of supportive conditions for an effective land market, access to land by investors, and for security of tenure.**

A skills mismatch in the labor market (in particular, a lack of specific vocational and technical skills), access to finance, key transport bottlenecks including rail and the port in Dar es Salaam, and a relatively weak environment for private sector business and trade, either constitute significant constraints to broad based growth, or will likely emerge as binding constraints if not effectively addressed over the medium term.

Addressing the binding constraints will require a more detailed review of the primary causes and the potential solutions likely to prove most effective. Based on the analysis conducted for this report, the Government's broad policy direction appears generally favourable across the constrained and unconstrained sectors. A common theme which emerged from the analysis is the need for improved and consistent application and implementation of existing policies. This observation applies to earlier reforms to the enabling environment for investment in the power sector, the T-VET system, to the land regime, and the operationalization of the Road Fund. Successful implementation may require, in some cases, refinements to the specific legal, governance, or regulatory frameworks, as well as improved institutional capacity to implement them.

## Annex I – Data

### Chapter 3

	2006	2007	2008	2009	2010
Agriculture	11	10.8	9.6	10.4	10.7
Fish	1	0.8	0.5	0.4	0.6
Forest	0.2	0.3	0.2	0.3	0.4
Hunting	0.3	0	0	0	0
Financial intermediaries	3.8	3.2	2.6	2.2	2.3
Mining and Quarrying	1.5	1.1	1	0.5	0.5
Manufacturing	20.4	18.6	15.1	12.7	13.8
Building and construction	4.2	4.1	3.6	3	3.1
Real estate	2.4	2	2	2.1	2.6
Leasing	0.3	0	0.1	0.1	0.1
Transport and communication	8.2	8	8.3	8.1	9.4
Trade	22.8	22.2	20	17.2	18.1
Tourism	2.7	1.5	0.6	0.6	0.6
Hotels and Restaurant	3.5	4.1	3.9	4	4.2
Warehousing and Storage	0	0.1	0.2	0.2	0
Electricity	4.7	4.6	4.6	4	3.3
Gas	1.2	0.7	0.5	0.9	1.5
Water	0.1	0.1	0	0	0.1
Education	0.7	1	1.1	1.2	1.2
Health	0.2	0.3	0.4	0.5	0.3
Others Services	10.4	3.5	8.7	9	5.7
Personal (Private)	12.7	15.8	19.9	21.2	21.6

Source: Bank of Tanzania

**TABLE 1: REGIONAL BRANCH DENSITY MEASURE (RBD) SQ 1000KM/BRANCH/PERSON.**

S/no	Geographical Area	Number of institution's Branches	Number of ATMs	LAND AREAS/ SQ. KM	LAND AREAS/ SQ. 1,000 KM	BRANCH DENSITY/S Q.1,000KM	BRANCHES + ATMS	B+A DENSITY	pop. Density (sq.km)	pop. Density/ sq.1000Km	branch coverage area/person	total pop.
1	Arusha	33	74	36,486	36.5	1.1	107	0.3	35	0.04	31.6	1,277,010
2	Coast	9	19	32,407	32.4	3.6	28	1.2	27	0.03	133.4	874,989
3	DSM	155	367	1,393	1.4	0.01	522	0.003	1793	1.79	0.01	2,497,649
4	Dodoma	12	39	41,311	41.3	3.4	51	0.8	41	0.04	84	1,693,751
5	Iringa	18	41	56,864	56.9	3.2	59	1	26	0.03	121.5	1,478,464
6	Kagera	12	21	28,388	28.4	2.4	33	0.9	72	0.07	32.9	2,043,936
7	Kigoma	6	10	37,037	37	6.2	16	2.3	45	0.05	137.2	1,666,665
8	K/njaro	22	49	13,309	13.3	0.6	71	0.2	104	0.1	5.8	1,384,136
9	Lindi	9	12	66,046	66	7.3	21	3.1	12	0.01	611.5	792,552
10	Manyara	10	15	45,820	45.8	4.6	25	1.8	23	0.02	199.2	1,053,860
11	Mara	13	19	19,566	19.6	1.5	32	0.6	70	0.07	21.5	1,369,620
12	Mbeya	23	51	60,350	60.4	2.6	74	0.8	34	0.03	77.2	2,051,900
13	Morogoro	21	46	70,799	70.8	3.4	67	1.1	25	0.03	134.9	1,769,975
14	Mtwara	10	14	16,707	16.7	1.7	24	0.7	68	0.07	24.6	1,136,076
15	Mwanza	35	67	19,592	19.6	0.6	102	0.2	150	0.15	3.7	2,938,800
16	Rukwa	6	10	68,635	68.6	11.4	16	4.3	17	0.02	672.9	1,166,795
17	Ruvuma	9	19	63,498	63.5	7.1	28	2.3	18	0.02	39.2	1,142,964
18	Shinyanga	12	27	50,781	50.8	4.2	39	1.3	55	0.06	76.9	2,792,955
19	Singida	6	13	49,341	49.3	8.2	19	2.6	22	0.02	373.8	1,085,502
20	Tabora	10	23	76,151	76.2	7.6	33	2.3	23	0.02	331.1	1,751,473
21	Tanga	16	29	26,808	26.8	1.7	45	0.6	61	0.06	27.5	1,635,288
22	Pemba	3	5	906	0.9	0.3	8	0.1	428	0.43	0.7	387,768
23	Unguja	14	25	1,554	1.6	0.1	39	0	700	0.7	0.2	1,087,800
	<b>Total</b>	<b>464</b>	<b>995</b>	<b>847,263</b>								<b>35,079,928</b>

## Chapter 4

### a. Inflation-Money Supply Correlation

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
INFL (annual percent change)	6.0	5.1	4.3	5.3	4.7	5.0	7.3	7.0	10.3	12.1	7.2
MO2 (annual percent change)	23.0	11.8	21.3	21.1	24.8	26.3	22.8	23.8	22.6	23.2	23.6

Simple Correlation (E-View)

INFL	MO2
1.000000	0.173494
0.173494	1.000000

### b. Real Exchange Rate Movements

The calculation of real exchange rates for Tanzania and comparator countries is based on an approach used by Rodrik (2008). Data inputs – the official, nominal exchange rate to the U.S. dollar ( $XRAT$ ) specified per country ( $i$ ) and per year ( $t$ ) and the purchasing-power parity conversion factors ( $PPP$ ) – are drawn from the Penn World Tables, version 7.0. The principal equation is:

$$\ln(RER_{it}) = \ln\left(\frac{XRAT_{it}}{PPP_{it}}\right)$$

The interpretation of the result is as follows: An RER greater than one (1.0) indicates that the value of a currency is lower – or more depreciated – than is indicated by purchasing-power parity.

## Chapter 7

### Power Tariff Categories

Tariff Category	Definition
Domestic Low Usage Tariff (D1)	This category covers domestic customers who on average have a consumption pattern of 50 kWh. The 50 kWh are subsidized by TANESCO and are not subjected to a service charge. Under the category, any unit exceeding 50 kWh is charged a higher rate up to 283.4 kWh. In this tariff category, power is supplied at a low voltage, single phase (230 V).
General Usage Tariff (T1)	This segment is applicable for customers who use power for general purposes, including residential, small commercial and light industrial use, public lighting, and billboards. In this category, the average consumption is more 283.4 kWh per meter reading period. Power is given at low voltage single phase (230), as well as three phase (400V).
Low Voltage Maximum Demand (MD) Usage Tariff (T2)	Applicable for general use where power is metered at 400V and average consumption is more than 7,500 kWh per meter reading period and demand doesn't exceed 500KVA per meter reading period.
High Voltage Maximum Demand (MD) Usage Tariff (T3).	Applicable for general use where power is metered at 11KV and above.

Energy Tariffs (Tshs)					
	Domestic Low Usage (D1)	General Usage (T1)	Low Voltage Max (T2)	High Voltage Max (T3)	Zanzibar
Low Energy(0-50 kWh) - per kWh	60.00	157.00	94.00	84.00	83.00
Service Charge per Month		2,303.00	8,534.00	8,500.00	8,534.00
Demand Charge per KVA			9,347.00	8,669.00	4,755.00
Energy Charge per kWh		129.00	85.00	79.00	75.00

Note: All charges exclude VAT and EWURA.

Source: TANESCO

## Chapter 8

Level of Education Achieved as Percentage of Tanzanian Population Aged 15 and Above												
Level Achieved	Dar es Salaam			Other Urban			Rural			Mainland Tanzania		
	91/92	00/01	2007	91/92	00/01	2007	91/92	00/01	2007	91/92	00/01	2007
No Education	9.0	7.6	7.9	13.0	13.1	12.1	28.0	29.0	28.5	24.9	25.2	23.6
Adult education only	1.2	0.9	0.4	1.3	1.1	0.7	3.7	2.3	1.2	3.3	2.1	1.1
Primary 1 – 4	8.6	6.4	5.2	14.3	9.8	7.9	15.8	12.8	12.3	15.2	11.9	10.9
Primary 5 – 8	57.0	60.6	57.0	58.8	57.6	58.9	49.0	52.5	52.4	50.7	53.8	54.0
Form 1 – 4	17.4	14.9	16.6	8.9	12.7	13.7	2.1	2.2	4.1	3.9	4.6	7.0
Form 5 – 6	1.4	1.7	2.4	1.0	0.9	1.0	0.1	0.2	0.2	0.3	0.4	0.6
Diploma/university	1.6	2.9	2.6	0.4	0.7	0.9	0.0	0.1	0.3	0.2	0.4	0.6
Course after primary	0.2	1.6	2.0	1.1	1.4	1.4	0.8	0.4	0.5	0.8	0.6	0.8
Course after Secondary	2.3	2.7	4.8	0.6	2.2	2.8	0.2	0.2	0.4	0.4	0.7	1.1
Course after form VI	n.a	n.a	0.8	n.a	n.a	0.4	n.a	n.a	0.0	n.a	n.a	0.2
Other certificate	1.3	0.8	1.1	0.6	0.6	0.4	0.2	0.2	0.1	0.3	0.3	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes: Adults are aged 15 years and above. 'No education' includes pre-school in 2000/01 and 2007; pre-school was not included as a category in 1991/92.

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