Agriculture and Environmental Services

AGRIBUSINESS INDICATORS:
Tanzania

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ACRONYMS AND ABBREVIATIONS

ABI	Agribusiness Indicators
ACT	Agriculture Council of Tanzania
ARIs	Agriculture Research Institutes
ASA	Agriculture Seed Agency
AgFiMS	Agricultural Finance Markets Scoping
ASDP	Agriculture Sector Development Program
ASDS	Agriculture Sector Development Strategy
BOT	Bank of Tanzania
CAGR	Compound Annual Growth Rate
CIF	Cost, Insurance and Freight
CRDB	Cooperative Rural Development Bank
CTI	Confederation of Tanzanian Industries
EAC	East African Community
ECGS	Export Credit Guarantee Scheme
ESRF	Economic and Social Research Foundation
ETG	Export Trading Group
FSDT	Financial Sector Development Trust
IFDC	International Fertilizer Development Center
ISTA	International Seed Testing Association
LGA	Local Government Agency
QDS	Quality Declared Seed
MAFC	Ministry of Agriculture, Food Security and Cooperatives
MFIs	Micro Finance Institutions
MITM	Ministry of Industry, Trade & Marketing
MOW	Ministry of Works
MT	Metric Ton
NAIVS	National Agriculture Input Voucher Scheme
NBS	National Bureau of Statistics
NMB	National Microfinance Bank
NPLs	Non-Performing Loans
NPS	National Panel Survey
OPVs	Open Pollinated Varieties
PASS	Private Agricultural Sector Support
RAI	Rural Access Index
SADC	Southern African Development Community
SAGCOT	Southern Africa Growth Corridor of Tanzania
SACCOS	Savings and Credit Societies
SMECGS	Small and Medium Enterprises Credit Guarantee Scheme
STACO	Shival Tank & Company
SUMATRA	Surface and Marine Transport Regulatory Authority

TANAXA	Tanzania Exporters Association
TAHA	Tanzania Horticulture Association
TATOA	Tanzania Truck Owners Association
TCCIA	Tanzania Chambers of Commerce, Industry and Agriculture
TIB	Tanzania Investment Bank
TOSCI	Tanzania Official Seed Certification Institute
TRA	Tanzania Revenue Authority
WRS	Warehouse Receipt System

CURRENCY EQUIVALENTS
Currency Unit = Tanzania Shilling (TSh)
US$1.00 = TSh 1,598

EXECUTIVE SUMMARY

Agriculture in Tanzania accounts for 28 percent of the country's GDP and employs 80 percent of its labor force. The sector is also an important source of export revenues. Despite its significance to livelihoods and to the overall macro economy however, Tanzanian agriculture remains hampered by widespread underinvestment. As a result it continues to operate largely at subsistence levels and its potential to bring commercialization to scale remains for the most part unrealized. The data and findings presented in this report provide a summary of the performance of the agriculture sector in Tanzania using a set of indicators covering six areas. These are: (i) access to and availability of certified seed; (ii) availability of and access to fertilizer; (iii) access to farm machinery, particularly tractor hire services for land preparation; (iv) access to agricultural and agro-enterprise finance; (v) the cost and efficiency of transporting agricultural commodities; and (vi) measures of policy certainty and uncertainty as perceived by private investors and the effects these have on the enabling environment for producers and agribusinesses. The Agribusiness Indicators (ABI) team conducted interviews with Government agencies, private firms (fertilizer importers, seed companies, tractor importers and distributors, transporters), commercial banks, farmer-based organizations, donors, and NGOs. In addition to these interviews with key informants, data were collected from the Statistics Unit of the Ministry of Agriculture, Food Security and Cooperatives (MAFC), FAOSTAT, World Bank WDI indicators and from surveys undertaken by the National Bureau of Statistics (NBS). The interviews and sourcing of secondary data were combined with literature reviews. The summary findings are presented below.

Seed. Since the liberalization of the seed sector in Tanzania, there has been an increase in availability of improved seed for farmers. Tanzania enacted a new Seeds Act in 2003, repealing the Seeds Regulation of Standards Act of 1973. The 2003 Act encourages private sector seed production and distribution in the country and has introduced measures to ensure that the seed produced and imported meet a set of required standards. As a result, there has been growth in number of private companies operating in the market, and during 2010/11 season, nearly 80 percent of the total commercial seed was supplied from the private sector. In 2007/08, 16,174 metric tons of commercial seeds were available in the market. This increased to an estimated 28,602 tons in 2011/12. Despite the increase in the availability of improved seed, only 27 percent of cropped area for maize is estimated to have used improved seed. With respect to rice cultivation, this proportion is much lower, with only 1 percent of cropped area estimated to be planted with improved seed. In addition, most rice cultivation in Tanzania is non-irrigated. The 2010/11 National Panel Survey (NPS) found that just 16.8 percent of rural households used improved seeds.

The low adoption of improved seed is attributed to several factors. Despite the liberalized environment, a number of policy-level hurdles have constrained the seed industry's ability to deliver services. A recent Government directive lifted a restriction prohibiting private companies from producing their own foundation seeds from public varieties, but local seed companies that multiply

seeds from public varieties are still unable to access foundation seeds in a timely manner. Nor do all local companies have the necessary capacity or facilities to process foundation seeds. The other constraint relates to the time it takes for companies (local as well as international) to introduce new seed varieties in the country. Even after the passage of new Seeds Act, the certification and release of new seed varieties in Tanzania can take up to three years. Meanwhile, on the demand side, a large percentage of farmers retain seed from their prior year cereal crop for planting and are less likely to buy new seed every year. Farmers still lack awareness about the use of improved seed for higher yields. The seed-to-grain price ratio for maize crop using hybrid seed is 10:1, which is considered high. As a result, many farmers cannot afford to buy seeds.

Fertilizer. Similar to the seeds sector, the supply and distribution of fertilizer in Tanzania is primarily in the hands of the private sector. At the national level, an increasing number of agro-dealers have been operating in the districts -alongside a number of importers. The Government's National Agriculture Input Voucher Program (NAIVS) has been instrumental in building the capacity of the dealers and in facilitating their expansion into rural areas. The private sector therefore finds the policy environment quite conducive to doing business and over the years, fertilizer imports with zero rated duties have increased. In 2007, Tanzania imported 169,027 metric tons of fertilizer, an amount that increased to 318,060 tons in 2011 - a Compound Annual Growth Rate (CAGR) of 13.5 percent. From 2008 to 2010, there was a sharp increase in total fertilizer use. Notwithstanding this increase, the average fertilizer application rate of 19.3 kg/ha in Tanzania is still low. Average maize yield is 1.5 tons per ha, which is far below the potential of 6-7 tons per ha when good agronomic practices and proper amounts of fertilizer are applied.

Very few farmers in Tanzania have access to fertilizer. The National Panel Survey (2010/11) found that 16.5 percent of rural households used chemical fertilizer. Even with NAIVS program, significant numbers of farmers have difficulty paying for the cost of fertilizer that is subsidized. Without the subsidy, retail price equals the CIF price plus 41% of additional in-country costs and with the nutrient output ratio (Pn/Po) for maize as high as 6.7, farmers have less incentive to use fertilizer owing to the combination of its high cost and low returns, especially when crops are sold at farm gate levels. Another factor contributing to low use is limited practical information among farmers about the proper agronomic uses of fertilizer. This is also a result of poor extension. The national extension service recommends rates that are out of date and prescribes blanket national recommendations per hectare which do not account for soil type differences or nutrient deficiencies. Understanding these factors requires soil testing. Despite the increase in the number of agro-input dealers, many farmers still need to travel long distances to buy fertilizer because dealers are mainly based in district headquarters and not all villages have agents or stockists with adequate supply of fertilizers.

Mechanization. The Mechanization Department of the Ministry of Agriculture, Food Security and Cooperatives (MAFC) estimated that in 2010, there were 8,466 tractors in use in Tanzania, in a country with 11.5 million hectares of arable land. Based on this estimate, there are only 7 tractors per 100 sq km of arable land in Tanzania, while Kenya and South Africa have 27 tractors and 43 tractors per 100 sq km respectively. Thus, 92 percent of Tanzanian farmers still use hand hoes and farm a few acres of land, with just 5 percent of farm households using tractors. Starting in 2009, there has been an upward trend in the number of tractors being imported. Between 2009 and 2010, the number of tractors imported more than doubled. In the mechanization sector, the Government has disengaged itself from direct commercial activities, opening doors for the private sector to operate and distribute tractors. Still, a few limited public programs remain in operation. In 2011, 1,800

Farmtrac tractors and 400 power tillers were imported by the Government with a soft loan financed by the Government of India. The private sector expressed concern regarding the Government's current interest in re-entering the mechanization sector on a large scale.

Since the sector opened up, private companies have set up distributorships of various tractor brands, and there are about 10-12 major importers of tractors in Tanzania. The large farms are their main clientele, in addition to farmer groups or savings and credit cooperatives that have access to subsidized financing from public banks or donor financed programs. Private companies foresee increased demand for 50-75 HP tractors in Tanzania, but consider access to finance as a major constraint to farmers interested in purchasing a tractor. Moreover, for a tractor services market to work efficiently, it is critical that there are tractor hire services and support services that are easily available to provide regular maintenance. In Tanzania, tractor distributors are mainly based in the capital and only a few have support services available in the rural areas. Spare parts are not accessible on a timely basis and when available, spare parts are costly. Because of their expense, tractors are not affordable to small and medium scale farmers unless they are provided with low interest loans.

Finance. Reforms in the 1990s led to the liberalization of the financial sector in Tanzania. Since then, the sector has grown with the expansion of commercial banks, pension funds, insurance companies, and other financial intermediaries including microfinance institutions (MFIs) and savings and credit associations. Together these institutions have increased the availability of credit to the private sector. In 2011, 15.4 percent of the commercial bank lending portfolio consisted of agriculture sector related loans. While competition has driven some financial providers to be more efficient, the supply of credit remains limited, and especially in rural areas. Commercial bank coverage is poor, with a total of 503 branches all across the country out of which 36 percent of the branches are in Dar es Salaam. Tanzania has less than 2 bank branches per 100,000 adults, while in South Africa there are 10 bank branches providing services to the same number of people. In rural areas, the density of bank branches is even lower. Other types of non-bank financial services are available but their operation is concentrated in peri-urban areas with higher population density.

A number of surveys confirm that most of the people in Tanzania have limited access to credit. The National Panel Survey (2008) found that only 6.5 percent of rural households have access to credit. Bank interest rates on loans to agriculture are high, and the commonly offered short term loans are not attractive for farmers or agribusinesses. Further, in the absence of titles to land, smallholders have little if any collateral to offer. The warehouse receipt system and a variety of credit guarantee programs have been introduced to address these constraints, though with limited reported success to date. Initiatives are also underway to establish a credit reference bureau and collateral registries for movable assets.

Transport. In addition to finance, access to roads and availability of transport services are critical for agricultural development. Over the years, Government investments in Tanzania's road network have increased substantially. Yet, in 2010, only 24 percent of rural people had access to an all season road. Poor connectivity of rural roads to regional and trunk roads and limited maintenance of rural road networks have been serious constraints for the agriculture sector. Only about 43 percent of trunk roads are paved, while less than 2 percent of district and feeder roads are paved. This has resulted in higher marketing costs for agricultural inputs and outputs. Recent research confirms that due to poorer quality of roads and lower volumes of trade, per ton per km costs are much higher from farm-gate to primary and secondary markets than from secondary markets to wholesale markets in urban areas. Meanwhile, the policy environment for transport business is favorable with an open

market and relatively easy entry into the sector. Without Government intervention in the operation of transport businesses or in setting prices, the sector is quite competitive with a sizeable number of companies operating businesses. Still, transport costs and prices are high, particularly in rural areas. Transporters find the cost of credit to be one of the major constraints for their businesses. New trucks are not affordable and more than a third of the total numbers of trucks in the Tanzanian roads are between 16 and 20 years old. High maintenance costs with rising fuel prices have added to the cost of doing business, which is not favourable for users of transport services in the agriculture sector.

Policy Environment for Agribusinesses. The private sector generally has a positive view of the policy environment for agribusinesses in Tanzania. Incentives for agriculture investors that include zero-rated duty on farm inputs including fertilizer, seeds, tractors and zero rated VAT on agricultural exports are encouraging. Tanzania is a signatory of the CAADP compact that calls for the Government to allocate at least 10 percent of the total annual budget to agricultural development. Tanzania has not met this target so far but over the years, the agriculture budget has been growing both in nominal and real terms. Nonetheless, policies for the sector are not always consistent. Periodic export bans on a number of crops, chiefly maize, have led to major disincentives for producers and businesses. There are policies inconsistencies related to taxes and in particular the sometimes arbitrary nature of local taxes. Duties on imports and exports that affect the agriculture sector also change from time to time, with inadequate information available to private firms on which to base planning or investment decisions.

In the seed sector, the lengthy process for approval and release of new seed varieties has been a constraint, along with ad hoc duties on goods that affect the sector. The private sector is also quite concerned about the weak regulation that has been unable to address the problem of fake seeds. Private sector informants expect the Government to be more proactive. On fertilizer, some companies have raised concerns about the implementation of the Government subsidy program and report that weak planning has resulted in large amounts of fertilizer stocks in their warehouses. Late payments by the Government to participating banks to redeem vouchers have had adverse impacts on demand and may be discouraging agro input dealers from continuing to participate in the program. In the machinery sector, the private sector have expressed concern about the current policy environment in which the Government has just started to directly import tractors on a large scale. Such programs have usually failed in the past.

A summary table of study findings on the various indicators is presented below:

Table 1: Summary of Matrix Tables of Agribusiness Indicators and Findings for Tanzania, 2012

Success Factor	Indicators	Results of Indicators	Data Source
Improved Seed	% staple crop area planted to certified seed (maize, rice	Maize=27%; Rice=1% (mainly hybrids)	MAFC Seed Unit; Author's own calculations
	Existence and implementation of national seed law &	Rating=4; Seed Law exists and regulations are fully implemented. The law was developed based on the principles of regional harmonization and encourages	MAFC & Seed Companies

	regulations (Y/N, 0-5 scale[1])	private sector participation in the seed sector.	
	Sales of imported seed as % total sales of certified seed (maize)	56% (2011); There are no restrictions on seed imports into Tanzania. Following liberalization of the market since mid-1990s, seed is imported primarily by the private sector. Over the five year period (2007-2011), imports averaged 48% of seed supplied in the country, and the ratio has substantially increased since 2008.	Tanzania Revenue Authority; MAFC & Author's own calculations
	Time required for registration, testing & obtaining approval for imported seed.	Up to 3 years; For new varieties, 2 seasons of research data are required. In addition, the Certification Unit will undertake the National Performance Trial & DUS[2] testing for an additional season. Without irrigation facilities, it could take up to 3 yrs.	Tanzania Official Seed Multiplication Institute (TOSCI); Seed Companies
	% of foundation seed provided by government organizations	Data not available. The Seed Law allows the private sector to produce foundation seeds of private varieties, but still restricts production of foundation seeds of public varieties. However, recently a Government directive was issued which has lifted this restriction.	MAFC Seed Unit
	% of certified seed multiplied by private firms & farms vs. government entities	79%; Private sector plays a key role in multiplying improved seed and most of the seed they produce is hybrid. The rest are produced by the Agriculture Seed Agency (ASA)[3], a Government entity that has been in operation since 2006 and multiplies Open Pollinated Varieties (OPVs).	MAFC Seed Unit; Author's own calculation
	Number of private firms operating in country	In 2011, there were 52 registered private companies, but not all were active. There are a few multinationals like Monsanto, Pannar, Pioneer but the rest are local companies.	MAFC Seed Unit, Tanzanian Seed Trade Association (TASTA)
	Seed to Grain Price Ratio (Maize)	7:1 (OPVs); 10:1 (Hybrids)	MITM; AMITSA
	ISTA accreditation (Y/N)	N; Without the International Seed Testing Association (ISTA) accreditation of the laboratories where the seed testing is done, Tanzania cannot export seeds. However, it is already a non-accredited member and is in the process of trying to get the accreditation for the Tanzania Official Seed Certification Institute (TOSCI) laboratory, which according to respondents has taken too long due to lack of attention paid by the Government to further improve its testing facility.	TOSCI
	Perception of stakeholders and private sector about government interventions and crowding out of private sector (0=complete Govt.	Rating=3.7; Private sector companies have a favorable perception of the policy environment. Government crowding out does not appear to be a problem. A recent directive now allows the private sector to produce foundation seeds from public varieties. Local companies consider this a positive step. This rating is better than what was found in Ethiopia and Mozambique, both of the countries that received lower ratings of 1.5 and 2	Seed Companies

[1] Ordinal scale: 0=no framework; 1=draft law or revision, 2=its passage/conforms with regional protocols, 3=development of bylaws or guidelines for implementation, 4=actual implementation & 5=effective implementation

[2] DUS stands for Distinctness, Uniformity and Stability. DUS test is used as main criteria for deciding the novelty of a variety.

[3] Govt. decided to establish ASA to produce and distribute foundation and certified seeds from public varieties, to help improve farmer adoption of seed, which had not experienced considerable improvements even after opening of the market to the private sector starting 1990s.

	control; 5=significant opportunities for the private sector to participate)	respectively.	
Fertilizer Use	Total fertilizer use in past three years (in MT)	208,229 MT (2008/09); 263,390 MT (2009/10); 221,899 MT (2010/11)	MAFC, Tanzania Port Authority; Private Importers
	Fertilizer application rates (kg/ha)	19.3 kg/ha (2011); Fertilizer application rate is far below the Abuja Declaration's target of 50 kg/ha.	Tanzania Port Authority; FAOSTAT & author's own calculation
	Timeliness in the importation of fertilizer (proxy for timeliness in the application of fertilizer)	Timely imports are not a problem, but receiving vouchers on time for farmers and Govt payment to Banks participating in the subsidy has been problematic.	Private Importers
	Agro-dealers per 10,000 farmers	1.3 dealers; Despite efforts to build capacity and encourage expansion of agro dealers, there are far fewer dealers in rural areas (estimated to be 2,500) though there has been an increase in number since the introduction of the Government subsidy program.	MAFC, Agro-input dealers, CIA Factbook (calculation of labor force)
	Avg. price of 50 kg bag of major fertilizers	Urea=$48; DAP=$56.5; NPK 17-17-17=$48; NPK 20-10-10=$46.5; Urea, DAP, and NPK are the most commonly used fertilizers.	AMITSA
	Nutrient /Output Price Ratio{Pn/Po}	Urea/maize = 6.7	Ministry of Industry, Trade & Marketing (MITM), IFDC
	Fertilizer Subsidy (% of retail cost), 2011	Average 50%; Respondents stated that in instances where the prices for fertilizer have increased since the printing order for the vouchers (where the fertilizer prices are quotes), farmers have received less than a 50% subsidy.	MAFC, Agro-input dealers
	Tariffs and taxes on fertilizer	0%	TRA
	Retail price of fertilizer (as a % of CIF price)	141%; Retail price equals the CIF price plus 41% of additional in-country costs. This is considered to be very high. Costs associated with transport, credit, distribution, and other charges may have contributed to this additional cost.	Author's own calculation based on data from AMITSA and TRA
	Ease of private sector participation in the fertilizer market (Scale: 0-5)	Rating=4; Private sector has a favorable view of the environment to do business in the fertilizer sector. Despite the existence of a Government owned fertilizer company that distributes fertilizer, there is no intervention or crowding out by the Government.	Private importers and agro-input dealers
Mechaniz-ation	Total # of tractors per 100 sq km of arable land	7.4 tractors per 100 sq km; in 2010, it is estimated that Tanzania has 8,466 tractors in use. With an arable land area of 11.5 million hectares, there are about 7 tractors per '00 sq. km.	Mechanization Unit, MAFC
	Cost of plowing one hectare of land	$68/ha; Avg. rates based on data collected from Ruvuma, Iringa, Morogoro, Dodoma, Pwani and Dar es Salaam regions.	Match Makers Associates Ltd.
	Number of tractors	10% (2011); Data for 2011 only covers 7 months so it is	Mechanization

	imported by the private sector as a % of the total number of tractors imported into the country	not representative of the whole year. 2011 was a unique year as GOT imported 1860 tractors upon negotiating a soft loan from the Government of India. In the previous years, private sector imports were a greater percentage of the total imports, but data were not available which allowed for disaggregation.	Unit, MAFC
	Useful life of tractors	Avg. 10 years	Machinery Importers
	Tariff on tractor spare parts	Tractors (Zero import duty rate; VAT exempt); Spare parts (10% import duty; VAT exempt)	TRA
	Ease of private sector participation in the agricultural machinery market (Scale: 0-5)	Rating=3.6	Machinery importers
Use and access to Agriculture Finance	% of commercial bank lending to agriculture	12.38% (2009); 14.97% (2010) and 15.4% (2011)	Bank of Tanzania
	% of HHs with access to credit	2.4% (2008' Nat'l Ag Census); 6.5% (2008; Nat'l Panel Survey[4]	National Agriculture Census 2008; National Panel Survey 2008
	% of agribusinesses with access to credit	11%; AgFiMS survey found that only 4 percent of businesses took loans from the bank, while 7 percent received loans from SACCOS (Savings and Credit Cooperative Societies) and MFIs (Micro Finance Institutions).	AgFiMS Tanzania Survey 2011
	Commercial Bank branches per 100,000 rural adult population	NA for rural areas; Overall penetration of banks is very low in Tanzania. On a national level, there are less than 2 branches of commercial banks per 100,000 adults in Tanzania, while in South Africa and Thailand, there are 10 and 11 branches respectively.	
Efficiency and cost of agriculture finance	Commercial bank interest rate on loans to agriculture	14-24%; inflation of 7.2% in 2010. The lower band is for subsidized loans.	Bank of Tanzania
	Percent of non-performing loans (NPLs) for agriculture	58 percent; NPL for agriculture in Tanzania for 2011 was extremely high, but apparently is not representative of the years before. Agriculture loans were very hard hit due to the adverse impact of the global financial crisis. Drought was also a problem in some areas.	Bank of Tanzania
	Interest rate spread (Lending-deposit spread %)	8%; Ratio of 8% is high in comparison to South Africa (3.4%) and Thailand (4.9%), but it is lower than Zambia which has a spread of 13.5%.	IMF International Financial Statistics
Other financial services and	Existence of a warehouse receipt system (0-5 scale)[5]	Y; Rating=4 The Warehouse Receipt System has been in place in Tanzania since 2007. The Government enacted the Warehouse Receipts Acts in 2005 and the regulations	Interviews with the Banks, NGOs

[4] National Panel Survey is a HH survey which has an agriculture module funded by the Gates Foundation.

[5] 0 = no warehouse receipt system in place; 1 = warehouse receipt system under development; 2 = Warehouse receipts laws/regulations developed and passed/approved; 3 = Warehouse receipts laws/regulations implemented by commercial

regulations		were passed in 2006. About 30 warehouses have been certified so far.	
	Availability of Loan Guarantee Programs (Y/N)	Y; Several guarantee schemes exist with varying degrees of success and most are found in the agriculture sector.	Interviews with Banks, NGOs
	Presence of a Credit Reference Bureau/service that lenders can access (Y/N, 0-5 scale)[6]	N; There is no Credit Reference Bureau in Tanzania but the Central Bank is committed to open one soon.	Bank of Tanzania
	Presence of a unified collateral registry (Y/N)	N; There is a registry for land and for motor vehicles but a unified registry with information on different types of assets are not yet in place.	Bank of Tanzania
	Existence of a law on leasing (Y/N)	Y; A Financial Leasing Act (2008) exists and the supporting regulation was passed in 2011.	Bank of Tanzania
Transport	Transport prices	Regional avg. rates for 15 regions (Dar @ $0.09/ MT/km; Ruvuma @ $0.14/MT/km; Mbeya @$0.19 MT/km; Mwanza @$0.23 MT/km). Major trunk roads (Dodoma-Dar ($0.10 MT/km); Arusha-Dar ($0.13/MT/km); Dar-Iringa ($0.10 MT/km)	SUMATRA Survey 2011
	Cost to ship a 20' and 40' container load of inputs and outputs ($ per ton)	Exports for 20' container to: -US: $2048 -Europe:$1150 -India/ Pakistan:$414 -South Africa:$450	Surface and Maritime Transport Regulatory Authority (SUMATRA)
	Number of days required to (a) register a truck for hauling agriculture products and (b) to obtain a license for hauling agriculture products	Avg. 6 days	Transporters interview
	Government interventions in setting transport prices	None	
	Tariffs and tax rates on imported vehicles and spare parts	Trucks (5-18.5 tons): 10% (import duty); 18% (VAT); Trucks (above 18.5 tons): 0% (import duty) and 18% (VAT). New trucks are VAT exempted as an incentive to import new vehicles. Spare parts: 10% (import duty) & 18% (VAT). Rates are relaxed from year to year. In 2010, several countries within the East African Community (incl. Tanzania) decided to reduce the import duty from 25% to 10% (for trucks of 5-18.5 MT) and from 25% to 0% for trucks with a carrying capacity of over 18.5.	Tanzania Revenue Authority
	Perceptions of	Rating=3.6; transporters do not find the regulatory	Transporters and

banks; 4 = Warehouse receipts accepted by commercial banks (farmers/traders able to use as collateral); 5 = WRS expands - increased number of banks and certified warehouses, increased grain stored in certified warehouse against receipts issued and used as collateral

[6] 0 = CRB does not exist; 1 = CRB planned, under design; 2 = CRB underway, but used by small number of FIs with limited number of farms/firms covered; 3 = most commercial banks participate; 4 = widespread use with POS additions (stores/suppliers that sell goods on credit); 5 = most commercial farms and firms covered in reporting system on bank credit histories and PO sales on credit

	truckers on ease of entry into trucking of foodstuffs (0-5 scale) 0 = Disagree strongly 5 = Agree strongly	environment to be constraining. Entry is relatively easy and the procedures to register and obtain a license take no more than 6 working days.	traders interview
	Perceptions of truckers on the competitiveness of transport services (0-5 scale); 0=Disagree strongly; 5 = Agree strongly	Rating=4	
	Logistics Performance Index (LPI) Score Quality of Infrastructure Score[7]	2.65 out of 5; 2.41 out of 5	World Bank
	Rural Access Index (RAI) - % of people within two kilometers of a road	38% (HH survey 2006); 24% (GIS)	Africa Infrastructure Core Diagnostics Database
Private Sector Perception of Policy Environ-ment & Advocacy Role	Private sector perception of agribusiness enabling environment (0-5 scale)	Rating=3.6; Managers of private firms representing the fertilizer, seed, mechanization and transport sectors and representatives of business associations have a favorable perception of the enabling environment. However, concerns were raised about high taxes, implementation modalities of the subsidy program and intervention in the grain market in various forms from time to time.	Interviews with private sector firms
	Policy Consistency: 0-5 scale as perceived by private sector (frequent, unexpected or arbitrary changes in policy, regulations & rules that affect operations and profitability of businesses).	Rating=2.5; they are concerned about Government's ad hoc decisions leading to policy changes that are pursued with little or no consultation with the private sector stakeholders. As a result, they give a lower rating of 2.5 out of a 5 point scale.	Interviews with private sector firms
	Private sector advocacy group for agribusiness: existence & effectiveness[8]	Rating=3.3; Tanzania has several advocacy groups that have been active since the early 1990s. The private firms interviewed rated their existence and effectiveness to be 3.3, meaning they have at times been successful in influencing policies, but their capacity and resources are an issue and that they need to further build recognition for the important work that they do.	Interviews with private sector firms
Governmt Commit-ment to Agriculture	Federal government budget outlays on agriculture as % total budget	6.83% (2010/11). The ratio is below the 10% target set by CAADP.	MAFC

Source: Summary of Indicators presented in the Report

[7] Quality of the Infrastructure Score is a sub-indicator of LPI.

[8] Scale: (0) no such group; (1) just established; met 1-2 times w/key Gov. policymakers; (2) underway for several years w/at least annual meetings w/policymakers; (3) at least one policy/regulatory victory; (4) several victories; (5) highly respected entity often consulted by Gov. Yet beware danger of elite capture/cronyism.

Chapter 1: INTRODUCTION

1.1 Background

Tanzania's agriculture sector accounts for 28 percent of GDP and employs 80 percent of the labor force. In 2010, the rate of real agriculture GDP growth increased to 4.2 percent from 3.2 percent in 2009. This was attributed to the increase in prices of food and cash crops that resulted from the recovery of the global economy and due to favorable weather. Tanzania's agriculture sector consists of food and cash crops. Maize is a dominant staple crop, while cash crops such as coffee, cotton, tea, cashews, tobacco are important sources of export earnings. Nearly 90 percent of cropped area in Tanzania grows food crops. Over the years, production volumes of major agricultural crops have been on the rise, primarily due to an increase in the area under cultivation and between 2007 and 2010, total agricultural exports increased by 50 percent. The crops that contributed to this increase included tobacco, coffee, cashews and cotton. Tanzania is food self-sufficient and in 2011 produced 12.8 million metric tons of food crops. The total national food requirement was 11.5 metric tons (MAFC, 2011).

Table 2: Production of Major Agricultural Crops, Tanzania Mainland, 2001/2011 ('000 MT)

Crop Type	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11p
Food Crops											
Maize	2,579	2,705	2,322	3,157	3,219	3,373	3,302.1	3,593.7	3,555.8	4,733.1	4,122.6
Rice	564	640	713	688	759	784	872.2	896.7	875.1	1,722.6	1,439.1
Wheat	89	77	74	67	102	110	82.8	86.4	92.4	62.4	112.7
Pulses	733	683	850	879	886	1,018	1,156	1,112.2	1,125.5	1,298.9	1,684
Cash Crops											
Coffee	58.1	37.5	52.4	32.5	54	34.3	54.8	43.1	68.5	34.6	56.6
Cotton	41.2	49.9	63.4	46.9	114.6	125.6	43.8	67.3	123.6	89.5	54.7
Tea	26.7	24.7	27.6	30.1	30.7	30.3	31.3	34.8	31.6	32.1	31.6
Cashewnuts	98.6	67.3	95	79	72	77.4	92.6	99.1	79.1	75.4	121.1
Tobacco	24.8	28	28	34	47	52	50.7	50.8	55.4	60.7	94.2
Sisal	20.5	23.5	23.6	23.8	27	27.8	30.9	33.3	23.8	24	25
Pyrethrum	1.5	1.7	1.1	0.8	1	2.8	2	2.3	3.3	3.3	5

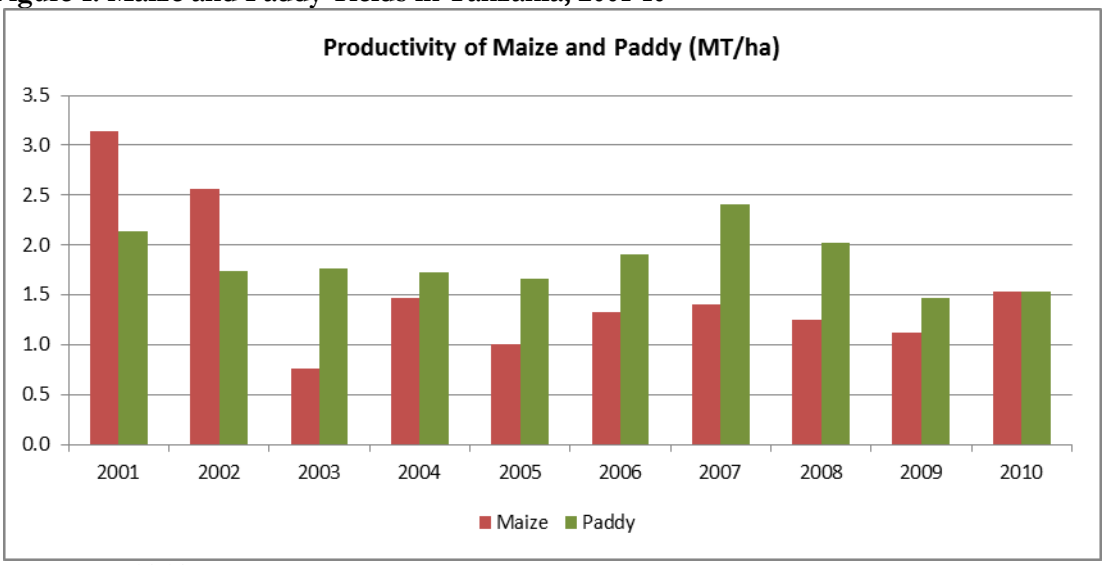
Note p=Provisional, Source: MAFC and Crop Boards, 2011.

Tanzania has been referred to lately by many reports as one of Africa's Sleeping Agricultural Giants. The country is rich with natural resources. It has twice as much unused agricultural land usable for cropping than that which is currently under use. In addition there are ample water resources both for gravity-fed and well-based irrigation. Tanzania has direct access to sea transport through the port of Dar and is strategically placed for market access, bordering six countries that have now started to grow rapidly, providing excellent new market opportunities (Binswanger-Mkhize and Gautam, 2010). It is also an East African Community (EAC) member, which comprises five countries with a combined population of 138 million.

Despite these natural endowments, the agriculture sector's potential still has not been harnessed and continues to operate at subsistence levels. Most of the arable land is used by smallholders cultivating less than 2 hectares of land. Agricultural productivity is low. Maize, a dominant staple crop that is

grown by more than 70 percent of rural households, has yields that are poor and are far below the potential (Figure 1). Most of the food crops are not planted in irrigated land and such poor performance is a result of erratic rainfall and low application of fertilizers and improved seeds due to high input prices (MAFC 2011). The National Agricultural Input Voucher Scheme (NAIVS), administered by the Ministry of Agriculture, Food and Cooperatives (MAFC) since 2008 provides farmers with subsidized fertilizer and seeds and was essentially designed in response to high input prices that peaked during the food crisis of 2008.

Figure 1: Maize and Paddy Yields in Tanzania, 2001-10



Source: FAOSTAT

In terms of the evolution of the agriculture sector, the liberalization policies of the 1990s encouraged the private sector to become engaged in food marketing. This led to the reductions in marketing costs and margins. Private sector trade became more competitive and the grain markets became more spatially integrated (Morissey and Leyaro 2007). These positive developments were then followed by improvements in trade policies that abolished direct taxes on agricultural exports, reduced local tax rates for hauling agriculture commodities to markets and zero rated duties on most agricultural inputs. Despite these efforts, there are still distortions in the market that work as disincentives for farmers. Periodic export bans restrict farmers and businesses from selling crops. Arbitrary local taxes that reduce producer prices including high transport costs have also been a constraint for the sector to commercialize and become competitive.

1.2 Context of the Agribusiness Indicators Initiative

The Agribusiness Indicators program is pilot testing an initial set of indicators on the ease (or difficulty) of operating agribusinesses in African countries. The indicators are used to assess whether the countries have an enabling environment that is conducive to agribusiness investment, competitiveness, and ultimately agriculture-led growth. The pilot field study is also designed to test the feasibility and practicality of the indicators, how to best use local consultants and what data source is reliable and where to typically find information to calculate the indicators.

The indicators were first pilot-tested in Ghana. The pilot exercise confirmed that modernization of the agriculture sector and agribusiness development cannot be enhanced without better access and

availability of certified seeds, improvement in fertilizer application rates, and provision of modern machinery. Agribusinesses enterprises require access to credit and other financial services to invest in inputs to increase yields or to scale up their business operations. Lack of good quality roads can raise the cost and affect the timely availability of inputs such as fertilizer. Similarly, without good road networks and transport services, farm produce will have fewer options to reach external output markets. The policy environment also needs to be conducive for private sector to do business. If there are ad hoc policy measures (e.g. export bans), farmers and businesses have less incentive to invest.

1.3 Agribusiness Indicators Methodology - Tanzania

The Agribusiness Indicators (ABI) team has developed a matrix with selected indicators to be used to assess the agribusiness environment in a country. The team is cognizant of the fact that other factors may be equally important, such as access to water, land, and even labor. Similarly, access to markets and availability of other types of infrastructure such as electricity and communications are not included in the indicators examined. Under the ongoing pilot, data for the indicators for the following areas were collected:

i. Availability of and access to fertilizer and seeds
ii. Access to farm machinery particularly tractor hire services for land preparation
iii. Access to agricultural production and agro-enterprise finance
iv. Cost and efficiency of transport, particularly trucking
v. Measures of policy certainty and the orientation of the enabling environment as perceived by the private sector

For the data collection effort, the matrix was supplemented by a checklist that was prepared for each area of investigation: seeds, fertilizer, mechanization, agriculture finance, and transport. In Tanzania, the ABI team conducted key informant interviews with Government agencies, private firms (fertilizer importers, seed companies, tractor importers and distributors, transporters), commercial banks, farmer-based organizations, donors, and NGOs. In addition to the interviews, data were collected from the Statistics Unit of MAFC, FAOSTAT, World Bank WDI indicators and from surveys undertaken by National Bureau of Statistics (NBS). The interviews and sourcing of secondary data were combined with literature reviews.

The indicators are classified in three ways: (i) Absolute value; (ii) Ordinal ranking (0-5); and (iii) Yes/No.

1.4 Organization of the report

This report consists of six chapters focusing on each of the indicator groups. Each chapter begins with a summary of findings, followed by data generated for the indicators under that specific category.

Chapter 2: ACCESS AND USE OF IMPROVED SEED IN TANZANIA

Access and use of improved seed is one of the critical inputs to increase crop yields and improve agriculture productivity. Barrier to access, availability and use is a key constraint to many agricultural smallholders in Africa, and Tanzania is no exception. Experiences in a few African countries and countries in other regions have shown that private sector can play an important role in the seed sector when the policy environment is conducive for private companies to operate businesses that have improved access to breeder seeds and are able to produce or import high quality certified seeds. This chapter summarizes information on the supply of improved seed for major cereals in Tanzania. It discusses the policy and legal framework for the seed sector, and then assesses private sector participation in production and distribution of seed, the status of trade in seed, and rates of seed adoption on the part of farmers.

Table 3: Summary Observations on Improved Seed in Tanzania

Success Factor	Indicators	Results of Indicators	Data Source
Improved Seed	% staple crop area planted to certified seed (maize, rice	Maize=27%; Rice=1%	MAFC Seed Unit; Author's own calculations
	Existence and implementation of national seed law & regulations (Y/N, 0-5 scale[9])	Rating=4; Seed Law exists and regulations are fully implemented. The law was developed based on the principles of regional harmonization and encourages private sector participation in the seed sector.	MAFC & Seed Companies
	Sales of imported seed as % total sales of certified seed (maize)	56% (2011); There are no restrictions on seed imports into Tanzania. Following liberalization of the market since mid-1990s, seed is imported primarily by the private sector. Over the five year period (2007-2011), imports averaged 48% of seed supplied in the country, and the ratio has substantially increased since 2008.	Tanzania Revenue Authority; MAFC & Author's own calculations
	Time required for registration, testing & obtaining approval for imported seed	Up to 3 years; For new varieties, 2 seasons of research data are required. In addition, the Certification Unit will undertake the National Performance Trial & DUS[10] testing for an additional season. Without irrigation facilities, it could take up to 3 yrs.	Tanzania Official Seed Multiplication Institute (TOSCI); Seed

[9] Ordinal scale: 0=no framework; 1=draft law or revision, 2=its passage/conforms with regional protocols, 3=development of bylaws or guidelines for implementation, 4=actual implementation & 5=effective implementation

[10] DUS stands for Distinctness, Uniformity and Stability. DUS test is used as main criteria for deciding the novelty of a variety.

			Companies
	% of foundation seed provided by government organizations	Data not available. The Seed Law allows the private sector to produce foundation seeds of private varieties, but still restricts production of foundation seeds of public varieties. However, recently a Government directive was issued which has lifted this restriction.	MAFC Seed Unit
	% of certified seed multiplied by private firms & farms vs. government entities	79%; Private sector plays a key role in multiplying improved seed and most of the seed they produce is hybrid. The rest are produced by Agriculture Seed Agency (ASA)[11], a Government entity that has been in operation since 2006 and multiplies Open Pollinated Varieties (OPVs).	MAFC Seed Unit; Author's own calculation
	Number of private firms operating in country	In 2011, there were 52 registered private companies, but not all were active. There are a few multinationals like Monsanto, Pannar, Pioneer but the rest are local companies.	MAFC Seed Unit, Tanzanian Seed Trade Association (TASTA)
	Seed to Grain Price Ratio (Maize)	7:1 (OPVs); 10:1 (Hybrids)	MITM; AMITSA
	ISTA accreditation (Y/N)	N; Without the International Seed Testing Association (ISTA) accreditation of the laboratories where the seed testing is done, Tanzania cannot export seeds. However, it is already a non-accredited member and is in the process of trying to get the accreditation for the Tanzania Official Seed Certification Institute (TOSCI) laboratory, which according to respondents has taken too long due to lack of attention paid by the Government to further improve its testing facility.	TOSCI
	Perception of stakeholders and private sector about government interventions and crowding out of private sector (0=complete Govt. control; 5=significant opportunities for the private sector to participate)	Rating=3.7; Private sector companies have a favorable perception of the policy environment. Government crowding out does not appear to be a problem. A recent directive now allows the private sector to produce foundation seeds from public varieties. Local companies consider this a positive step. This rating is better than what was found in Ethiopia and Mozambique, both of the countries that received lower ratings of 1.5 and 2 respectively.	Seed Companies

Source: Summary of indicators presented in the chapter.

[11] Govt. decided to establish ASA to produce and distribute foundation and certified seeds from public varieties, to help improve farmer adoption of seed, which had not experienced considerable improvements even after opening of the market to the private sector starting 1990s.

2.1 Legal and Regulatory Framework for Seed Production, Multiplication and Certification

Tanzania enacted a new Seeds Act in 2003, repealing the Seeds Regulation of Standards Act of 1973. The 2003 Act encourages private sector seed production and distribution in the country and has introduced measures to ensure that the seed produced and imported meet a set of required standards. Under the Act, a National Seed Committee functions as an advisory body to the Government. An official Seed Certification Institute (TOSCI) was also formed, with major functions relating to variety release and registration, seed certification, and training. Regulations associated with the new Act were introduced in 2006.

On a 0-5 ordinal scale, Tanzania is rated a 4 for having a seed law and regulations that have been under implementation for a number of years. The Act was developed based on the principles of regional harmonization. Tanzania has been part of several harmonization agreements with other countries in the East African Community and Southern African Development Community (EAC and SADC). The process of regional harmonization in the area of seeds remains incomplete in spite of a number of years of effort. As informed by the Seed Unit of MAFC within the EAC, while Tanzania's Seeds Act is in compliance with the harmonization agreement, Kenya and Uganda have still not adopted their laws to allow full implementation of the agreements. Under the Act, Tanzania established a public Agriculture Seed Agency (ASA) to produce and distribute foundation and certified seeds from public varieties. The Agency was established a decade and a half after the Government of Tanzania opened the seed markets to the private sector, but with lower-than-expected rates of adoption among farmers. ASA operations have thus far had little effect on the market, particularly with regards to seed multiplication, and a number of private companies question the rationale for the Government to establish such a public agency after having opened the market. The Act allows for a mechanism to promote on-farm seed production and multiplication of seeds. Smallholders are now able to produce "Quality Declared Seed (QDS)"[12] by following the formal certification process.

Even after the new Seeds Act, the certification and release of new seed varieties in Tanzania can take up to three years – a major constraint for companies interested in introducing new varieties. The regulations require private companies to provide TOSCI with two seasons of in-country seed adoption data. Without irrigation, this could take two years. Once TOSCI receives research data, it then undertakes a National Performance Trial (NPT) and Distinctness, Uniformity and Stability (DUS) test, which can take still an additional season. With the harmonization process, available research data on varieties which have already been released in similar agro-ecological environments in Kenya and Uganda should be sufficient to proceed directly to NPT in Tanzania. According to private sector sources however, this is not a widely-accepted practice and unexpected hurdles persist.

[12] Quality Declared Seeds (QDS) are those that are produced locally which usually follows an initial standard developed by FAO but is then adjusted to the situation of each country. QDS production is primarily undertaken by farmers, who control the quality of seed produced with random checking and field inspections undertaken by Government agencies.

2.2 Supply of Improved Seed for Major Cereals and Legumes

Seed production and supply in Tanzania is both a public and a private sector activity. In the public sector, plant breeders in the Agriculture Research Institutes (ARIs) continue to produce breeder (or pre-basic) seeds, which are then provided to ASA to produce foundation or basic seeds. (A recent directive allows private firms to produce foundation seeds of public varieties – a decision which has been greeted as an instance of positive government action by many in the private sector). Private companies can then access the foundation seeds to develop and multiply their own improved seed, especially when these companies are primarily multinationals or regional seed enterprises. Respondents indicate that the supply of breeder seeds for maize and rice are adequate in terms of quantity. In 2010-2011, the ASA purchased an estimated 1.9 metric tons of maize breeder seeds and 1.4 tons of rice breeder seeds (World Bank 2011). The problem lies on timely availability and access to foundation seeds. Some see public institutions such as the ASA in competition with the private sector, resulting in a bottleneck for private sector development in the seed sector. For its part, ASA points to problems with the timing and availability of supply as being the result of private companies and seed growers not planning ahead and informing ASA about their demand projections for seeds – as well as shortcomings in the operations of the ASA itself. The Agency admits that its capacity needs to be strengthened and current support from the World Bank financed Agriculture Food Security Project is expected to improve their production and processing facilities (Box 1).

Box 1: World Bank Supported Agriculture Food Security Project, 2010-2012

Under the subcomponent of the project that supports the national seed system; pre-basic seed production is being improved by providing support to three research stations: Selian–Arusha for 5 hectares of seed production; Ilonga–Morogoro for 15 hectares, and Uyole–Mbeya for 5 hectares. Research station facilities include irrigation, field equipment, cold storage facilities for seed, and seed cleaning equipment.

It is also financing two ASA seed farms—about 50 hectares on Arusha Farm and 150 hectares on Msimba Seed Farm. The seed farm at Msimba is being rehabilitated to increase the production of basic seed and contribute to certified seed production by private companies and QDS. The main investments include: (i) a complete processing line for basic seed, including a pre-cleaner, fine cleaner, indented cylinders, grader, gravity table, seed treatment equipment, and bagger-scale; (ii) new and rehabilitated seed storage facilities; (iii) farm implements and transport equipment; (iv) irrigation equipment sufficient for 200 hectares; and (v) seed testing equipment for internal quality control.

Source: World Bank 2011

According to the data from the Seed Unit of MAFC, availability of seed has increased over the years (Table 4). In the seed supply chain, commercialization of basic seeds is done through multiplication by private growers, companies, and ASA. Improved seed varieties that are multiplied and made available in Tanzania comprise mainly maize seeds. In 2010/11, 85 percent of the improved seed available was maize seed. Despite the increase in availability of improved seed, only 27 percent of

cropped area for maize is estimated to have used improved seed. For rice, this proportion is very low, with only 1 percent of cropped area estimated to be planted with improved seed (Table 5).

Table 4: Commercial Seed Availability (MT), 2007/08-2011/12

Crop	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012
Maize	13,908.46	10,545.20	13,323.51	17,780.90	25,007.90
Sorghum	2,170.00	319.7	1,346.06	1,507.40	2,374.40
Paddy	-	149.52	784.93	951	940
Wheat	-	73.41	27.25	251.2	101.2
Legume	-	80.04	111.8	219.87	40.87
Oilseeds	95.9	160.12	550.62	277.27	138.27
Total	**16,174.36**	**11,327.99**	**16,144.17**	**20,987.64**	***28,602.64**

Source: Seed Unit, MAFC; *=Seed available till Feb. 2012

Table 5: Certified Seed Supply & its potential coverage of cultivated area in 2010

Crop	Area Cultivated (Ha) 2010	Certified Seed availability (incl. imports) (Kg)	Seeding Rate (Kg)	Estimated area cropped with certified seed (Kg/Ha)	% Cropped Area that can be planted with Improved Seed
Maize	2,961,330	17,780,900	23	790,262	27%
Paddy	904,510	951,000	100	9,510	1%

Source: Seed Unit, MAFC

2.3 Private Sector Participation in Seed Production and Marketing of Improved Seed of Major Grains

Until the early 1990s, the Government had a monopoly in producing seeds in Tanzania. The Tanzania Seed Company, which was established in 1973, produced, distributed and marketed seeds. Following many years of poor performance, the company collapsed and the Government opened the market to the private sector. Cargill and some other international companies entered the market. As of now, there are about 52 companies, including Pannar, Pioneer, Sidco and Kibo (Kenyan company) that are registered. Apart from the local seed companies, other international companies only import seeds with the exception of Pannar, which has recently begun producing seed in Tanzania. Among local companies, most do not have the technical capacity or processing machinery and therefore have to rely on government-owned facilities.

During the 2010/2011 season, the private sector provided 20,866 metric tons of seeds for cereals, vegetables, potatoes, legumes, oil seeds etc., which is nearly 80 percent of the total commercial seed supply (Table 6). Most of the seeds supplied by the private sector were for hybrid maize.

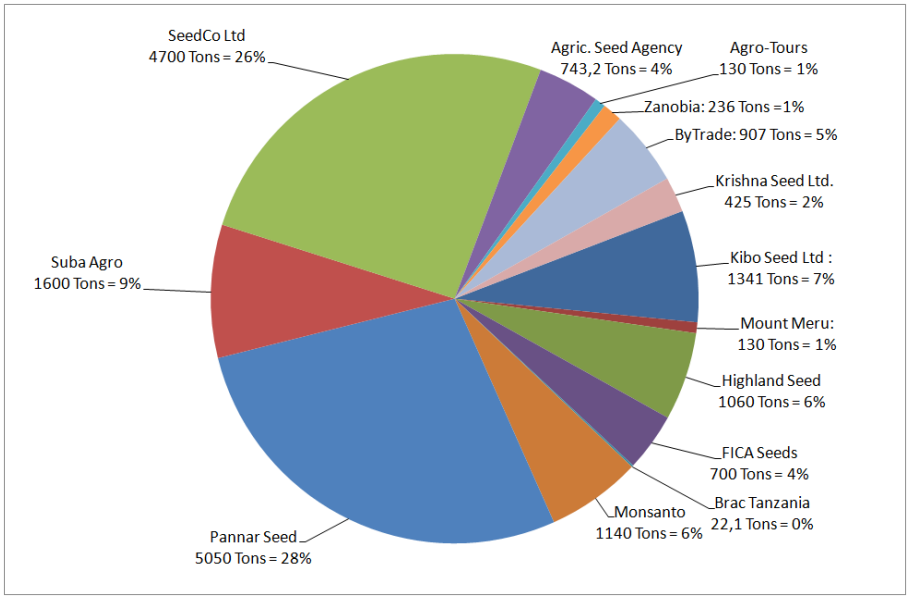
Table 6: Private vs. Public Provision of Seeds in Tanzania

Year	Private Sector	Public Sector	Total Seed (MT)	% private sector
2003/2004	4,280	357	4,637	92%
2004/2005	8,698	1,436	10,134	86%
2005/2006	8,748	1,728	10,476	84%
2006/2007	14,870	1,656	16,526	90%
2007/2008	16,174	217	16,391	99%
2008/2009	10,511	545	11,056	95%
2009/2010	14,536	1,608	16,144	90%
2010/2011	20,866	5,679	26,545	79%

Source: Seed Unit, MAFC

Figure 2 gives the names of private firms operating in the country for commercialization of improved seeds. Pannar Seed (South Africa) and SeedCo Ltd (Kenya) led the market with 28 percent and 26 percent of the market respectively – together about 50 percent of the total market share. The rest, which were mainly local Tanzanian companies, had no more than 6-7 percent of market share.

Figure 2: Market shares in the Maize Seeds Market (2010/11)



Source: Seed Unit, 2011.

Most of these seed companies are members of the Tanzania Association of Seed Traders (TASTA), which was started in the late 1990s but only registered in 2002. As of 2012, the association has 39 members. The head office is based in Arusha and is managed by an Executive Director. The operation is mainly funded by membership fees, though it has occasionally received support from donors. TASTA members indicate that seed regulation is still weak in Tanzania and that monitoring is inadequate; fake seeds can be found in the market. The other problem faced by local companies interested in investing in seed production in Tanzania relates to high taxes on imports of packaging materials. These include an excise duty of 50 percent and VAT of 18 percent. The input subsidy

program has been successful in reaching large numbers of farmers, but late payment by the Government in the past year to the participating bank that channel funds to agro dealers, has affected the effectiveness of the program. A lack of maintenance of breeder seeds also makes the quality of the public varieties a serious concern. Among smaller companies in particular, lack of access to finance and cumbersome loan application processes are another hurdle.

Despite these challenges, the private sector perception of the enabling environment received a rating of 3.7 out of 5. The private sector has a positive view of the Government's new directive that lifted restrictions on producing foundation seeds from public varieties. The process of importing seeds of varieties that are already approved is not a constraint for the private companies. The private seed sector is also receiving some grant support from AGRA to build their capacity. An African Seed Investment Fund with a total amount of $12 million has been set up that will offer loans and equity financing to seed companies.

Box 2: Doing Business in the Seed Sector constrained by higher taxes

Pannar is a South African company which has operations in Tanzania. It is one of the largest seed suppliers in Africa and in 2011, had nearly 30 percent of market share of the Tanzanian seed sector. The company is selling hybrid maize and sunflower seeds. Most of the seed sold in Tanzania are imported from South Africa. They have started producing small quantities in Tanzania but as the country is not ISTA accredited yet (which does not allow exports) and with the limited demand in the market, they have not invested in large-scale commercial production of seeds.

According to Pannar, the input subsidy program has helped improve seed adoption but farmers are still not buying hybrids and instead use Quality Declared Seed (QDS)[13]or save seeds from the previous planting season. Fake seeds and non-improved OPVs represented as seeds of improved hybrids are becoming an increasingly serious problem in the market – a result of the weak regulatory system.

Source: Author interview

2.4 Seed Import and Export

Most commercially-sold seeds in Tanzania are imported. In 2010, 89 percent of the seed available in Tanzania was imported from four major countries: Malawi, Kenya, Zambia and South Africa (Table 7). To import seeds for varieties that are already approved to be sold in Tanzania, companies need an import permit from the Seed Unit of the Ministry of Agriculture and Cooperatives. A phyto-sanitary certificate is also required. The overall process can take up to 10 days. The guidelines from the Ministry are as follows (MAFC 2012):

- The company should possess a business license and be registered as a company with the Ministry of Industries and Trade and submit a copy of the following documents (i) a Certificate of Incorporation/Registration and (ii) a Memorandum and Articles of Association of the company
- Submit a company's profile outlining company seed production strategies (short, medium and long term plans), location of the company, land area owned for seed production, the knowledge and skills of personnel on seed production and supply, information about the processing plant (self-owned or for hire), etc.

[13] Quality Declared Seeds (QDS) are those that are produced locally which usually follows an initial standard developed by FAO, but is then adjusted to the situation of each country. QDS production is primarily undertaken by farmers, who control the quality of seed produced with random checking and field inspections undertaken by Government agencies.

- Financial status of the organization
- Adherence to the rules, regulations and procedures for seed production, marketing, imports and exports as stipulated in the Seed Act.

For a country to be able to export seed, it requires ISTA accreditation of the laboratories where the seed testing is done. Tanzania is a non-accredited member of ISTA but is currently trying to get accreditation for the TOSCI laboratory. According to some respondents this process has already taken too long. To continue its ISTA accreditation, Tanzania will have to pay $40,000 per annum, which is not a small amount for Tanzania. In Africa, only Malawi, Kenya, Uganda, South Africa, Zambia and Zimbabwe so far have ISTA accredited laboratories.

Table 7: Sources of improved seeds (all crops) and volumes (MT) imported

Country of origin	2005	2006*	2007	2008	2009	2010**	2011**
Zambia	264	1,973	971.9	1,287	3,695		
Kenya	129.5	1,056		995.5	1,022		
Malawi		109		140	672		
South Africa	11.5	1,996	332.3	207.6	506.6		
Uganda	2,226	6,987	115	400.5	340		
Argentina			80.2	100.7	101		
India					18		
UAE	0.375	20.7	134	113.9	7.2		
US		10,695	50.5	52.6			
Andorra				25			
Zimbabwe		0.66	0.5				
Canada		1.2					
DRC		13					
Total seed imports	2631.4	22,851.6	1684.4	3322.8	6361.8	14,412.2	11,739.4
Total seed available	10,134	10,476	16,526	16,174.4	11,327.9	16,144.2	20,987.6
% imported	26%	*	10.2%	20.5%	62.2%	89.3%	55.9%

Source: Board of External Trade; TRA, MAFC; Note: * Total seed imports for 2006 is implausible as there seems to be an error with the US import data. **For 2010 and 2011; disaggregated data on imports were not available.

2.5 Farmer Seed Use

The 2010/11 National Panel Survey (NPS) found that just 16.8 percent of households used improved seeds. A large percentage of farmers retain seed from their prior year cereal or legume crop for planting and are less likely to buy new seed every year. To increase input use by small farmers, the Government introduced the National Agricultural Input Voucher Scheme (NAIVS) program, under which seed prices are subsidized by 50 percent. The NAIVS program has trained agro dealers, effectively increasing the number now selling seeds in and close to rural areas. Yet the program has faced a number of challenges. One has been the lack of awareness among many farmers about the use of improved seeds for higher yields. There is also skepticism among some farmers concerning the value of improved seed. In dry land areas, farmers have found that some improved varieties don't perform optimally, without an increased use of other inputs like water and fertilizer. Among farmers who want to use improved see, seed prices are often considered beyond their means, particularly given the uncertain market conditions in which they will eventually have to sell. This is confirmed by the baseline survey done by the World Bank (Table 8) and upon review of seed-to-grain price ratio. In Tanzania, the seed-to-grain price ratios for maize crop are: 7:1 (OPVs) and 10:1 (hybrids). These high ratios discourage farmers to use improved seeds. On the other hand, countries like Kenya and Ghana have lower ratios of 5:1 and 4:1 respectively for hybrid seeds. Further, there have been cases where fake seeds are found in the market that has undermined the trust of farmers in purchased seeds. Low germination rates for seeds have also been attributed to limited seed testing and storage facilities as well as shipping conditions in high heat regions.

Table 8: Reasons for Not Using Improved Inputs in Past

	Seeds	Fertilizer
Cost	69%	36%
Awareness	21%	18%
No need (land is fertile)	0%	16%
Low returns	1%	9%
Availability	3%	6%
Risk of loss	1%	2%
Other	6%	15%

Source: NAIVS Baseline Survey, 2011

Chapter 3: FERTILIZER USE IN TANZANIA

Along with improved seed, fertilizer application is a critical input to raise agriculture productivity. Fertilizer in many African countries is an imported commodity and large numbers of smallholders are not applying it at an optimal level even when some Governments are investing big percentage of their agriculture budgets for subsidies. This chapter summarizes information on fertilizer use in Tanzania and discusses the legal and regulatory framework for fertilizer imports and distribution. This is then followed by an assessment of the private sector participation in the fertilizer market, fertilizer prices and subsidy and fertilizer use by farmers.

Table 9: Summary Observations on Fertilizer Use in Tanzania

Success Factor	Indicators	Results of Indicators	Data Sources
Fertilizer Use	Total fertilizer use in past three years (in MT)	208,229 MT (2008/09); 263,390 MT (2009/10); 221,899 MT (2010/11)	MAFC, Tanzania Port Authority; Private Importers
	Fertilizer application rates (kg/ha)	19.3 kg/ha (2011); Fertilizer application rate is far below the Abuja Declaration's target of 50 kg/ha.	Tanzania Port Authority; FAOSTAT & author's own calculation
	Timeliness in the importation of fertilizer (proxy for timeliness in the application of fertilizer)	Timely imports are not a problem, but receiving vouchers on time for farmers and Govt payment to Banks participating in the subsidy has been problematic.	Private Importers
	Agro-dealers per 10,000 farmers	1.3 dealers; Despite efforts to build capacity and encourage expansion of agro dealers, there are far fewer dealers in rural areas (estimated to be 2,500) though there has been an increase in number since the introduction of the Government subsidy program.	MAFC, Agro-input dealers, CIA Factbook (calculation of labor force)
	Avg. price of 50 kg bag of major fertilizers	Urea=$48; DAP=$56.5; NPK 17-17-17=$48; NPK 20-10-10=$46.5; Urea, DAP, and NPK are the most commonly used fertilizers.	AMITSA
	Nutrient /Output Price Ratio{Pn/Po}	Urea/maize = 6.7	Ministry of Industry, Trade & Marketing (MITM), IFDC
	Fertilizer Subsidy (% of retail cost), 2011	Average 50%; Respondents stated that in instances where the prices for fertilizer have increased since the printing order for the vouchers (where the fertilizer prices are	MAFC, Agro-input dealers

		quotes), farmers have received less than a 50% subsidy.	
	Tariffs and taxes on fertilizer	0%	TRA
	Retail price of fertilizer (as a % of CIF price)	141%; Retail price equals the CIF price plus 41% of additional in-country costs. This is considered to be very high. Costs associated with transport, credit, distribution, and other charges may have contributed to this additional cost.	Author's own calculation based on data from AMITSA and TRA
	Ease of private sector participation in the fertilizer market (Scale: 0-5)	Rating=4; Private sector has a favorable view of the environment to do business in the fertilizer sector. Despite the existence of a Government owned fertilizer company that distributes fertilizer, there is no intervention or crowding out by the Government.	Private importers and agro-input dealers

Source: Summary of indicators presented in the chapter

3.1 Fertilizer Imports and Use

In Tanzania, fertilizer is mainly an imported commodity. In 2007, Tanzania imported 169,027 metric tons of fertilizer, an amount that increased to 318,060 tons in 2011 - a Compound Annual Growth Rate (CAGR) of 13.5 percent (Figure 3). Nearly half of the fertilizer that was imported in 2011 was handled by YARA, while two other major importers (Export Trading and Premium Agro) imported about a quarter each of the total amount. The complex fertilizers containing NPK and micronutrients are mainly sourced at world-scale plants in Western Europe (especially Finland and the Netherlands), while urea and phosphate fertilizers are procured from North America (the eastern seaboard), North Africa (Morocco and Egypt), the Middle East, and South Africa (Marine Logistics Ltd, 2007). Over the years, fertilizer imports have increased and can be attributed to the Government supported input subsidy program, the National Agricultural Input Voucher Scheme (NAIVS). The program was first started in 2007 and was then scaled up in 2009. As of June 2011, it had reached 2 million farmers in 74 districts in 20 regions (World Bank, 2011). The vouchers subsidize the purchase of urea and DAP. The fertilizer purchases and distributed by the private sector for the NAIVS program was 151,000 tons, or 57 percent of the total fertilizer use of 263,390 tons (IFDC 2012).

Table 10: Fertilizer Use and Type (by years)

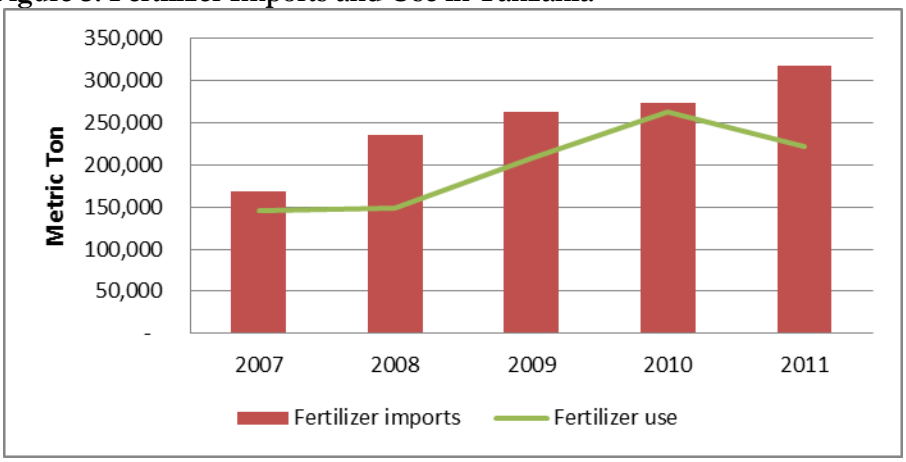
Fertilizer Type	Period					Share to the total
	2005/06	2006/07	2007/08	2008/09	2009/10	2009/10
CAN	15,460	25,589	12,079	12,079	23,438	8.9%
DAP	26,588	21,438	19,408	20,000	41,636	15.8%
MOP/OTHERS	1,283	2,638	460	460	1,907	0.7%
MRP	-	58	587	58,500	34,421	13.1%
NPK 17:17:17		126	5,560	3,000	11,686	4.4%
NPK 20:10:10	-	-	-	-	-	-
NPK 25:5:5	2,570	5,199	3,347	3,347	8,053	3.1%
NPK 4:17:15	17,477	23,847	23,150	23,150	23,786	9.0%

NPK 6:20:18/10:18:24	3,704	1,239	6,031	6,031	11,117	4.2%
Others	2,020	475	4,972	3,703	2,475	0.9%
S/A	1,554	4,877	4,620	4,620	13,351	5.1%
TSP	2,065	3,675	140	140	669	0.3%
UREA	46,570	56,822	69,133	73,200	90,851	34.5%
Grand Total	119,291	146,083	149,487	208,230	263,390	100.0%

Source: MAFC, 2011

Alongside imports, fertilizer use has also increased. Urea, DAP, CAN and NPK are the most commonly used fertilizers, comprising 71% of imported fertilizer in 2009/10. Small quantities of phosphate are produced in the northern part of the country. NPK blend is primarily used for tobacco, while other types of fertilizer are applied to staple and cash crops. In 2009/10, one-third of the total fertilizer imported was urea, followed by DAP (16 percent), MRP (13 percent) and CAN (9 percent) (MAFC 2011). From 2008 to 2010, there was a sharp increase in fertilizer use but despite this increase, fertilizer application rate of 19.3 kg/ha in Tanzania is still low. In comparison, Kenya and South Africa's fertilizer application rates are 100 kg/ha and 120 kg/ha respectively. On the other hand, there has been a 25% improvement in average yields for maize from 1.2 MT/ha in 2008 to 1.5 MT/ha in 2010. Yields may be even better in the regions such as the Southern highlands where fertilizer use has been more concentrated with the focus of the Government's subsidy program. Then again, yields of 1.5 MT/ha for maize is far below the potential, which is estimated at 6-7 MT/ha under good agronomic practices and using proper amounts of fertilizer. Meanwhile, in some cash crops such as sunflower, contract farming arrangements have facilitated oil processors to provide seed and fertilizer to farmers, which have resulted into increased use and availability of inputs. Unlike individual farmers or poorly organized farmer groups, companies often have the capacity to buy inputs in bulk and are able to get financing to pay for its purchases. Such arrangements have the potential to promote timely and appropriate use of fertilizer by the farmers.

Figure 3: Fertilizer Imports and Use in Tanzania



Source: TRA, ESRF 2011

3.2 Legal and Regulatory Framework for Fertilizer Imports and Distribution

The Agriculture Inputs Section of the Ministry of Food Security and Cooperatives (MAFC) functions as a regulatory body for the fertilizer sector. Fertilizer importers are registered and require a permit from this Unit. Fertilizer imported into the country arrives at the port of entry of Dar es

Salaam, where the Tanzania Board of Standards is mandated to check on the quality of the products that arrive. Monitoring the quality of fertilizer within the country falls under the jurisdiction of the MAFC.

Tanzania's fertilizer sector was broadly regulated under the Fertilizers and Animal Foodstuffs Act of 1962. That legislation has now been repealed and replaced with a new Fertilizer Act that was passed by the Parliament in 2009. The regulations of the Act are not yet in place. Under the new Act, a proposed Tanzania Fertilizer Regulatory Authority (TFRA) is to regulate the quality of both imported and domestically-manufactured fertilizer. TFRA will also register and license fertilizer dealers, issue import permits and undertake training of inspectors, as well as collect and maintain data on fertilizer imports and use. As of now, these functions still reside at the Ministry, though specific roles and responsibilities for some of the processes remain undefined. Some respondents state that regulations and testing are needed to address the problem of adulterated products in the market. Others question whether the regulation will be an impediment to the business environment, and whether registration and licensing processes will become more cumbersome and bureaucratic.

3.3 Private Sector Participation in the Fertilizer Market

Until the mid-1990s, the fertilizer sector was primarily in the hands of the public sector. Importation and distribution of fertilizer was done by a Government parastatal known as the Tanzania Fertilizer Company (TFC). The subsidy program was administered entirely by the Government. A fertilizer factory was also in operation in Tanga that undertook blending of phostphate inputs from Minjingu deposits in northern Tanzania. Since the liberalization of the market, private importers and distributors have entered the market, and fertilizer supply and distribution has become a private sector activity. Yara, Premium Agro Chemical, Export Trading Group (ETG), DRTC, Shival Tank & Company (STACO), and Mohammed Enterprises are the major players. The TFC still exists but its operations are limited to in-country distribution only. It currently works mainly as a trading company with Government as its major shareholder.

According to the respondents, the policy environment is quite conducive to doing business in the fertilizer sector. As a result, Tanzania received a rating of "4" on the indicator that assessed the ease of private sector participation in the fertilizer market. There are a good number of private companies involved and the importing process is not cumbersome. The only paper-work required is the import permit granted for each season. When companies are importing new fertilizer formulations, the product has to be tested for three cropping seasons administered by the local research institutions. Companies do not consider this a barrier.

In addition to importers and distributors, there has been an increase in the number of private agro dealers at the district levels (Box 3). With support from AGRA, agro-input dealer capacity building programs were initiated in 2007. CNFA, a US-based non-profit organization with offices in Tanzania, trained agro dealers in business management and policy advocacy and facilitated their access to financial services. The program certified over 2,600 agro-input dealers providing products and services to 1.5 million smallholder farmers. In parallel, the program was expanded with support from the MAFC and the World Bank to train 50 commercial trainers and 1,025 agro-input dealers in 39 districts on business management and technical skills. It also conducted agro dealer business clinics, established 140 demand creation demonstration plots and associated farmer field days, and promoted the development of nine district-level agro-input dealer associations. Through this

program, an additional 580,000 smallholder farmers were reached by services of the dealers (CNFA 2012). As of now, respondents estimate that there are approximately 2,500 agro dealers operating in the market in Tanzania though the numbers fluctuate from year to year.

Companies belong to a variety of associations which are active at various levels of the market. Importers and distributors are members of the Fertilizer Society of Tanzania, which consists of ten institutions. This association is consulted by the Government on policy and programs related to fertilizer, particularly with regards to the NAIVS program. Initiatives are also under way towards creating a national association of agro-input dealers. Various forms of association operate at the district level, though they tend to be fragmented and their overall impact is so far difficult to assess.

Box 3: Policy Environment is Favorable for the Fertilizer Business

The business started in 2004 and the retail store is located in Dumila village in Kilosa district of the Morogoro region. There are three other dealers in the village and competition is increasing. The agro dealer has benefitted from the capacity building programs offered by CNFA and is now a member of the Kilosa Agro Dealers Association. The products that the store sells are fertilizer (urea, DAP, NPK, CAN), seeds, herbicides, insecticides and agricultural implements like hoes. It buys fertilizer mainly from YARA, TFC, and from a few major wholesalers based in the district headquarters in Morogoro. The agro dealer supplies fertilizer to small and medium farmers. There are very few large farmers in the village.

Fertilizer availability has never been a problem for the business although access to credit is a constraint. The business participated in the NAIVS program, and business expanded during the last three years. In 2011 however, Government payments to the participating bank started coming late, and as a result the business is unable to redeem its vouchers from the bank, or repay a loan it has outstanding from that bank. Fertilizer prices, which were a serious issue for farmers prior to the subsidy program, have now become more affordable. According to the agro dealer, the policy environment for the fertilizer sector is favorable and as a result, he gives a rating of "4" to the indicator on ease of private sector participation in the fertilizer market.

Source: Field Interview

3.4 Fertilizer Prices and Subsidy

Fertilizer prices are high in Tanzania. In January 2012, the average retail price of urea cost $960 per metric ton, followed by DAP at $1,160 per ton, and NPK (17-17-17) at $960 per ton (AMITSA 2012). Within the past couple of years, the prices have escalated. In 2008, the average retail price of Urea was $469 a ton, which increased to an average of $683 in 2011. Because fertilizer is mainly an imported commodity, price fluctuations in Tanzania are based largely on international price variations. The geography of Tanzanian agriculture contributes to high shipping costs, and demand for fertilizer is insufficient to warrant booking large vessels (> 30,000 tons capacity) to transport material. Monthly average imports of 18,492 metric tons (2011 data) do not justify it. Further, in 2006, 16 vessels were used to import fertilizer into Tanzania through the port of Dar es Salaam. Most of this was carried in bulk form and nearly half of the vessels carried less than 10,000 tons. The fragmented nature of this trade prevents Tanzania from taking advantage of economies of scale and lower per-unit freight costs by carrying maximum cargo volumes in larger vessels (Marine Logistics Ltd, 2011). The Dar es Salaam port also lacks modern bulk handling facilities, which adds to the cost of port handling.

Aside from the costs referred to above, in-country cost is also a major factor contributing to the final retail price. In Tanzania, retail price equals the CIF price plus 41% of additional in-country costs. This means that the standard costs associated with transport, credit, distribution, and other charges are quite high. For the fertilizer prices to be affordable, efforts are needed to reduce these in-country costs. The Government's introduction of the NAIVS was intended in part to address high fertilizer costs. The aim of the program is to increase farmers' access to critical agricultural inputs to boost production of major crops like maize and rice. In 2011, Government spent $42.6 million on the program (MAFC 2012). The program offers a subsidy of 50 percent on chemical fertilizer and seeds purchases to targeted farmers through the redemption of vouchers. To improve the availability of and access to fertilizer, the program also offers a capacity building program for agro dealers at district levels. Despite the subsidy, fertilizer use appears to remain not profitable for Tanzanian farmers, unless the in-country costs that were referred above are reduced. The nutrient output ratio Pn/Po is a measure to assess the amount of grains in kilograms that is needed to purchase one kilogram of nutrient – in this case nitrogen. In Tanzania, this ratio is found to be quite high (Table 11). In the case of maize, the Pn/Po ratio is 6.7, which means that with the price of nitrogen at $1.65/kg, and wholesale price of maize at $0.25/kg, farmers are required to sell 6.7 kgs of maize to buy one kg of fertilizer nutrient. This implies that farmers may not necessarily have an incentive to use fertilizer owing to the combination of its high cost and the low returns. It is therefore critical for Tanzania to reduce the in-country costs of delivering fertilizer.

Table 11: Nutrient/Output Price Ratio{Pn/Po}; Price in Nov. 2011

	Price (TSh)	Price (USD)	Unit
Avg. wholesale price for maize (Nov 2011) (Po)	423.81	$0.25	Kg
Avg. Price for urea (Nov 2011)	1310	$0.76	Kg
Price of nitrogen (Pn)		$1.65	Kg
Pn/Po[14]		6.7	

Source: MITM, Government of Tanzania, IFDC

3.5 Fertilizer Use by Farmers

In Tanzania, very few farmers have access to fertilizer. The National Panel Survey (2008/09) found that only 12 percent of farmers had used chemical fertilizer that improved to 16.5 percent found on a repeat panel survey done in 2010/11. This is probably the result of the Government's large-scale NAIVS program that offered subsidy but despite the large investment that the Government made for this program, the increase is not very significant. Even with the subsidy, NAIVS program Baseline Survey (2010/11) found that significant numbers of farmers were having difficulty to pay the portion of the fertilizer cost not covered by the subsidy. Many did not trust the fertilizer that was sold in the market and had little information on how to use it.

[14] The nutrient output ratio is used to assess the amount of grains in kilograms that is needed to purchase one kilogram of fertilizer nutrient.

Table 12: Proportion of Households Using Fertilizer

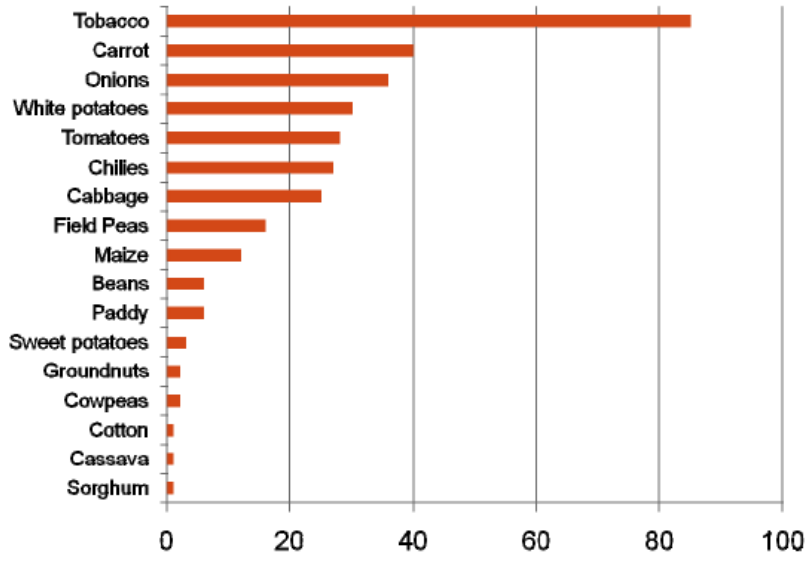
	NPS (2008/09)	NPS/(2010/11)
Any fertilizer	30.1	32.1
Using organic fertilizer	22.0	21.4
Using non-organic fertilizer	12.8	16.5
Using vouchers for non-organic fertilizers[15]	NA	50.0

Source: NPS 2008/09 & 2010/11

A recent study on fertilizer use in Tanzania (AGRA & IFPRI 2011) states that another reason for low usage is due to limited scientific information among stakeholders on the proper agronomic uses of fertilizer. Farmers use fertilizer of the same type and quantity that they used in the past and very little consideration is given to soil health as most of them do not have training in farming practices. This is a result of poor extension where the national extension service recommends rates that are outdated and prescribes blanket national recommendations per hectare which do not account for soil type differences or nutrient deficiencies, factors which require soil testing. Further, despite the increase in the number of agro-input dealers, many farmers still need to travel long distances to buy fertilizer because dealers are mainly based in district headquarters. Not all villages have agents or stockists with adequate supply of fertilizers. At the national level, there is one dealer providing services to ten thousand farmers, compared to eight dealers providing services to the same number of farmers in Ghana.

On a national level, fertilizer use by farmers on staple crops is much lower than for cash crops, such as tobacco. While 12 percent of farmers said that they used fertilizer on maize, more than 80 percent of farmers indicated fertilizer adoption on tobacco (Figure 4).

Figure 4: Percentage of Farmers using Fertilizer in Tanzania by crop



Sources: Tanzania Agricultural Sample Census 2002-03 in "Fertilizer policy and use in Tanzania" by Nicholas Minot[16].

[15] This refers to the vouchers provided under NAIVS. The southern highlands (Ruvuma, Mbeya and iringa) are the major focus of the program, where 50% of farmers used chemicals fertilizers and 65% of those using chemical fertilizers used a voucher to purchase their inputs.

Chapter 4: ACCESS TO FARM MACHINERY AND TRACTOR HIRE SERVICES IN TANZANIA

Mechanization plays a critical role in agriculture commercialization. One of the keys to success in Asia and Latin America has been agriculture mechanization. By contrast, the use of tractors in sub-Saharan Africa (SSA) has actually declined over the past 40 years, and compared with other world regions, their use in SSA today remains very limited. Tractor use over the same period in Asia has increased tenfold (FAO, 2011). This chapter summarizes information on use of tractors in land preparation as a proxy for agriculture mechanization in Tanzania. It discusses Government policy on mechanization, followed by an examination of the availability of and access to tractors, the costs of tractor use, and the ease of private sector participation in the domestic agriculture machinery market.

Table 13: Summary Observations on Agriculture Mechanization in Tanzania

Success Factor	Indicators	Results of Indicators	Data Sources
Mechaniz-ation	Total # of tractors per 100 sq km of arable land	7.4 tractors per 100 sq km; in 2010, it is estimated that Tanzania has 8,466 tractors in use. With an arable land area of 11.5 million hectares, there are about 7 tractors per '00 sq. km.	Mechanizati on Unit, MAFC
	Cost of plowing one hectare of land	$68/ha; Avg. rates based on data collected from Ruvuma, Iringa, Morogoro, Dodoma, Pwani and Dar es Salaam regions.	Match Makers Associates Ltd.
	Number of tractors imported by the private sector as a % of the total number of tractors imported into the country	10% (2011); Data for 2011 only covers 7 months so it is not representative of the whole year. 2011 was a unique year as GOT imported 1860 tractors upon negotiating a soft loan from the Government of India. In the previous years, private sector imports were a greater percentage of the total imports, but data were not available which allowed for disaggregation.	Mechanizati on Unit, MAFC
	Useful life of tractors	Avg. 10 years	Machinery Importers
	Tariff on tractor spare parts	Tractors (Zero import duty rate; VAT exempt); Spare parts (10% import duty; VAT exempt)	TRA
	Ease of private sector participation in the agricultural machinery market (Scale: 0-5)	Rating=3.6	Machinery importers

Source: Summary of Indicators presented in the chapter.

[16] Nicholas Minot, 2009. Fertilizer policy and use in Tanzania. Presented at the Fertilizer Policy Symposium of the COMESA African Agricultural Markets Program (AAMP) Livingstone, Zambia 15 June 2009. IFPRI. 12 p.

4.1 Government Policy on Mechanization

The Government of Tanzania has developed an Agricultural Sector Development Strategy (ASDS) that aims to achieve sustained agricultural growth by transforming the sector from subsistence to commercial agriculture. The strategy was prepared with a premise that private sector will play a leading role in providing a range of demand-driven support services to smallholders. Agriculture mechanization is included as one of the key priority areas of the strategy which proposes, among other things, to: (i) encourage private sector investments to set up mechanization centers that provide tractors and equipment hire services to smallholder farmers; (ii) provide financial incentives to the Institute of Rural Technology to design and develop appropriate farm tools and machinery suitable for Tanzanian farms; and (iii) provide training and demonstrations on the use of new agricultural technologies at the district level. The strategy has set a target of an annual agriculture growth rate of 5 percent and has been implemented through the Agriculture Sector Development Program supported by the Government and various donors. For the purpose of implementing the strategy, the Government directed that a more focused agricultural mechanization plan be prepared five years ago. No such plan has yet been prepared.

On the regulatory side, the Center for Agriculture Mechanization and Rural Technology (CAMARTEC) based in Arusha is assigned with testing imported tractors to determine the suitability of the machinery to soil conditions in Tanzania. The Center is also supposed to be involved in research and development of local technology, but owing to limited budget, is not yet active in this area. Private importers are required to get approval from CAMARTEC prior to introducing new tractors into the market. The process of field testing can take time, which some private machinery importers consider to be a bottleneck.

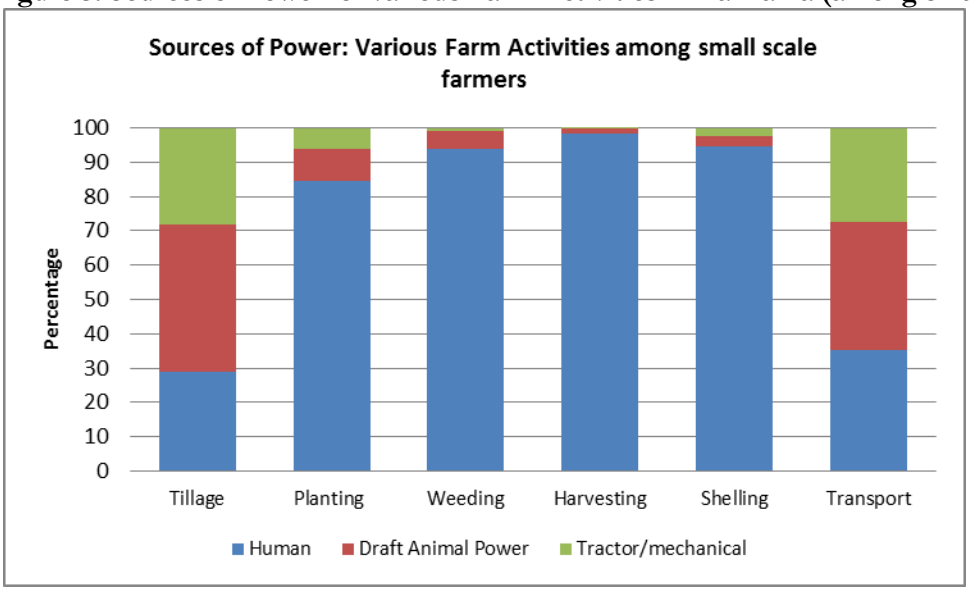
4.2 Public Sector Programs on Mechanization

Prior to the 1980s, the Government of Tanzania was active in the mechanization sector. Government imported tractors, managed state farms, implemented tractor hire schemes and provided credit to the farmer groups to purchase tractors. However, such increased intervention of the Government was not successful due to poor management, weak infrastructure, poor equipment maintenance, difficulty in obtaining spare parts etc. (MAFC, 2011). With the introduction of the structural adjustment programs of the 1980s, the Government then decided to disengage itself from direct commercial activities, opening doors for the private sector to operate and distribute tractors. Still, a few public programs did remain operational. Some focus on financing tractors, while others provide tractors through Government supported agriculture programs. Agriculture Inputs Trust Fund (AGITF) is one such example. AGITF is a facility that was created by the Government in 1994 to provide wholesale lending for input loans and equipment loans to cooperatives. Loans of up to TZS 35 million (≈US$22,000)are provided for the purchase of new tractors and implements at an interest rate of 10 percent over a 5 year period (MAFC 2006). In the past five years, AGITF has provided loans worth TZS 23.3 billion for the purchase of 671 tractors. Similarly, Tanzania Investment Bank, a wholly owned Government Bank, also has an agriculture window which has focused on subsidized loans to farmers' cooperatives for the purchase of tractors and power tillers. In addition, through the District Agriculture Sector Development Program implemented under the Agriculture Sector Development Program, 3,562 power tillers and 169 tractors were provided to farmers in 2009/10 and 2010/11. The program cost TZS 28.4 billion and was implemented with a cost sharing arrangement in which the groups contributed 20 percent.

4.3 Supply and Availability of Tractors and Tractor Spare Parts

Tanzania has the potential to increase agriculture productivity through improved technology that will help commercialize the sector. For this to occur however, mechanization is needed in combination with the use of fertilizers and improved seeds. Tractors and other farm machinery are required for both the necessary land preparation and subsequent farm operations such as planting, fertilizer application, and harvesting. Today, 92 percent of Tanzanian farmers still use hand hoes and farm a few acres of land, with just 5 percent of farm households using tractors (NPS 2010/11). Most farm activities such as planting, weeding, harvesting and shelling are done manually. Tractors are used for tillage, but the use of draught animal power is more (Figure 5). Even when tractors are in use, mechanical breakdowns are common. 85 percent of the tractors in use are 11 years or old and are operating beyond their useful economic life. Only 15 percent of the tractors used are ten years old or less (Figure 6; MAFC 2006). As for farming assets, it is estimated that there are about 14 million hand hoes in use, 585,244 animal drawn ploughs, and 1.3 million oxen (Shetto, 2008). Lack of access and availability of tractors could be one of the main constraints for agricultural intensification and at the same time, could be a hurdle for expansion of land under cultivation.

Figure 5: Sources of Power for various Farm Activities in Tanzania (among small-scale farmers)



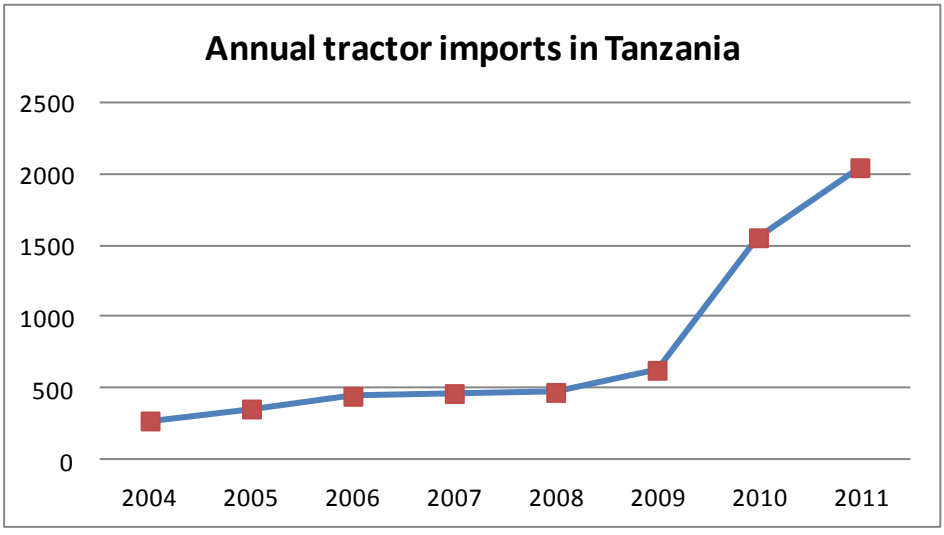
Source: Field Survey, 2005, Agriculture Mechanization Section, MAFC

Figure 6: Age of Tractor Populations in Tanzania

Source: Field Survey, 2005, Agriculture Mechanization Section, MAFC

The Mechanization Dept. of MAFC estimates that there were 8,466 tractors in use in 2010, in a country with 11.5 million hectares of arable land. . Based on this estimate, there are only 7 tractors per 100 sq km of arable land in Tanzania, while Kenya and South Africa have 27 tractors and 43 tractors per 100 sq km respectively. However, starting in 2009, there has been an upward trend in the number of tractors being imported. Between 2009 and 2010, the number of tractors imported more than doubled (Figure 7). In the absence of tractors, power tillers (hand-held two wheeled tractors) are becoming popular. National statistics show that there are 3,400 power tillers in the country and farmers indicate that using power tillers improve timeliness in ploughing and subsequent farm operations (ASDP Joint Aide Memoire, 2011). Power tillers cost much less than four-wheeled tractors and can be purchased for about US$ 5,000.

Figure 7: Annual Tractor Imports into Tanzania



Source: Mechanization Dept., MAFC. Note: 2011 data is for 7 months only.

For a tractor services market to work efficiently, it is critical that there are support services that are easily available for regular maintenance. In Tanzania, tractor distributors are mainly based in the capital and only a few have support services available close to the rural areas. In a survey conducted in 2005, inadequate tractor spare parts were considered as one of the major constraints in using tractors (40 percent). Spare parts are costly with import duties of 10 percent (though it is VAT exempt). High operating cost of tractors was also mentioned by 41 percent of tractor owners and users surveyed. Because of their expense, tractors are not affordable to small and medium scale farmers individually but might be accessed through service providers, lead farmer arrangements or farmer associations. In Tanzania, commercial tractor hire services are not common, but are on the rise in outgrower schemes.

Table 14: Constraints mentioned by tractor owners and users

Constraints	Count	%
Inadequate tractors & spare parts	89	36.9
High operation cost of tractors	100	41.5
Low purchasing power	17	7.1
Tractor operators not adequately trained	30	12.4
Lack of reliable produce markets	5	2.1
Total	**241**	**100**

Source: Field Survey 2005

4.4 Private sector participation in the agriculture machinery market in Tanzania

There are about 10-12 major importers of tractors in Tanzania. Since the sector opened up, private companies have set up distributorships of various tractor brands. In 2011, there were 47 registered distributors selling various brands such as Mahindra, New Holland, Swaraj, Massy Ferguson-Pakistan, John Deere etc. (Mech. Dept, MAFC). Most of the distributors are based in the capital, though a few have distribution centers in various districts. The large farms are their main clientele, in addition to farmer groups or savings and credit cooperatives that have access to subsidized financing from public banks or donor financed programs. Private companies foresee increased demand for 50-75 HP tractors in Tanzania, but consider access to finance as a major constraint to farmers interested in purchasing a tractor. There is a very limited rental market and not many examples of local businesses that provide tractor hire services. Instead, it is usually a large scale farmer, who may rent out his machinery after he has finished using his tractor on his own land.

On the ease of the private sector participation in the machinery market, Tanzania received an average rating of 3.6. The private sector expresses concern regarding the Government's current interest in re-entering the mechanization sector on a large scale. They pointed to the Government program whereby they imported 1,800 Farmtrac tractors and 400 power tillers in 2011 with a soft loan financed by the Government of India. There is very little information about this initiative though key informants aware of the program indicate that the Government is apparently having difficulty in distributing these tractors to farmers owing to poor planning and the ill-conceived design of the program.

Chapter 5: ACCESS TO AGRICULTURE AND AGRI-ENTERPRISE FINANCE IN TANZANIA

Agriculture is a dominant sector within Tanzania's macro economy, employing about 80 percent of the country's workforce. Capital investments are needed to promote the uptake of improved technologies such as hybrid seed, fertilizer, and machines to raise production and feed an expanding population. Investments are also required to finance storage, transport, and other post-harvest activities which are essential for transforming subsistence production into the commercial production of agricultural commodities. The limited access that many farmers and agribusinesses have to these financial resources is a serious constraint to agricultural development—as well as to economic development more generally—in Tanzania and throughout much of Africa. This chapter discusses the financial sector in Tanzania with particular focus on agricultural lending and financial products and services that are designed specifically for clients who operate in the agriculture sector and in the supply chains that connect producers with consumers. The review of agricultural lending is followed by findings from a number of surveys that corroborate the existence of various constraints in both the supply of and the demand for agricultural finance in the country. The chapter concludes by describing a number of programs that can address the risks which the sector faces.

Table 15: Summary Observations on Agriculture Finance in Tanzania

Success Factor	Indicators	Results of Indicators	Data Sources
Use and access to Agriculture Finance	% of commercial bank lending to agriculture	12.38% (2009); 14.97% (2010) and 15.4% (2011)	Bank of Tanzania
	% of HHs with access to credit	2.4% (2008' Nat'l Ag Census); 6.5% (2008; Nat'l Panel Survey[17]	National Agriculture Census 2008; National Panel Survey 2008
	% of agribusinesses with access to credit	11%; AgFiMS survey found that only 4 percent of businesses took loans from the bank, while 7 percent received loans from SACCOS (Savings and Credit Cooperative Societies) and MFIs (Micro Finance Institutions).	AgFiMS Tanzania Survey 2011
	Commercial Bank branches per 100,000 rural adult population	NA for rural areas; Overall penetration of banks is very low in Tanzania. On a national level, there are less than 2 branches of commercial banks per 100,000 adults in Tanzania, while in South Africa and Thailand, there are 10 and 11 branches respectively.	
Efficiency	Commercial bank	14-24%; inflation of 7.2% in 2010. The lower	Bank of

[17] National Panel Survey is a HH survey which has an agriculture module funded by the Gates Foundation.

and cost of agriculture finance	interest rate on loans to agriculture	band is for subsidized loans.	Tanzania
	Percent of non-performing loans (NPLs) for agriculture	58 percent; NPL for agriculture in Tanzania for 2011 was extremely high, but apparently is not representative of the years before. Agriculture loans were very hard hit due to the adverse impact of the global financial crisis. Drought was also a problem in some areas.	Bank of Tanzania
	Interest rate spread (Lending-deposit spread %)	8%; Ratio of 8% is high in comparison to South Africa (3.4%) and Thailand (4.9%), but it is lower than Zambia which has a spread of 13.5%.	IMF International Financial Statistics
Other financial services and regulations	Existence of a warehouse receipt system (0-5 scale)[18]	Y; Rating=4 The Warehouse Receipt System has been in place in Tanzania since 2007. The Government enacted the Warehouse Receipts Acts in 2005 and the regulations were passed in 2006. About 30 warehouses have been certified so far.	Interviews with the Banks, NGOs
	Availability of Loan Guarantee Programs (Y/N)	Y; Several guarantee schemes exist with varying degrees of success and most are found in the agriculture sector.	Interviews with Banks, NGOs
	Presence of a Credit Reference Bureau/service that lenders can access (Y/N, 0-5 scale)[19]	N; There is no Credit Reference Bureau in Tanzania but the Central Bank is committed to open one soon.	Bank of Tanzania
	Presence of a unified collateral registry (Y/N)	N; There is a registry for land and for motor vehicles but a unified registry with information on different types of assets are not yet in place.	Bank of Tanzania
	Existence of a law on leasing (Y/N)	Y; A Financial Leasing Act (2008) exists and the supporting regulation was passed in 2011.	Bank of Tanzania

Source: Summary of indicators presented in the chapter

5.1 Background of the Financial Sector Industry

Economic reforms initiated in the 1990s led to the liberalization of the financial sector in Tanzania. The reforms included liberalization of interest rates, the elimination of administrative credit allocations, the privatization of state-owned banks, and the strengthening of the Bank of Tanzania's

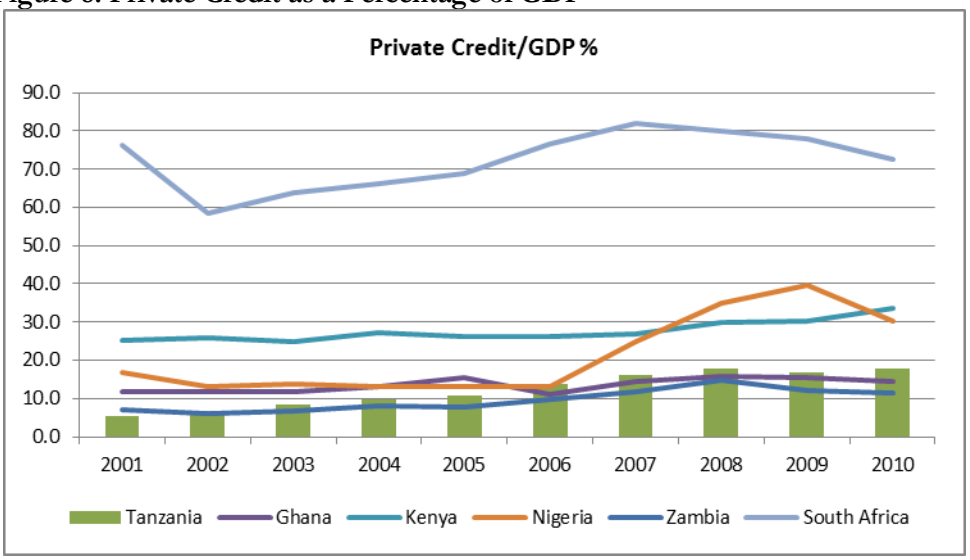
[18] 0 = no warehouse receipt system in place; 1 = warehouse receipt system under development; 2 = Warehouse receipts laws/regulations developed and passed/approved; 3 = Warehouse receipts laws/regulations implemented by commercial banks; 4 = Warehouse receipts accepted by commercial banks (farmers/traders able to use as collateral); 5 = WRS expands - increased number of banks and certified warehouses, increased grain stored in certified warehouse against receipts issued and used as collateral

[19] 0 = CRB does not exist; 1 = CRB planned, under design; 2 = CRB underway, but used by small number of FIs with limited number of farms/firms covered; 3 = most commercial banks participate; 4 = widespread use with POS additions (stores/suppliers that sell goods on credit); 5 = most commercial farms and firms covered in reporting system on bank credit histories and PO sales on credit

regulatory and supervisory role. Since that time, privately-owned financial institutions have been allowed to enter the market (RICA, World Bank, 2007). The sector has grown with the expansion of commercial banks, pension funds, insurance companies, and other financial intermediaries including microfinance institutions (MFIs) and savings and credit associations. Together these institutions have increased the availability of credit to the private sector. And because Tanzanian banks were reasonably well-capitalized, the country was not hit particularly hard by the global financial crisis. Among the exceptions however were agricultural exports and the tourism industry, where the financial crisis did wield some adverse impacts on bank portfolios.

As of February 2012, there were 47 commercial banks registered in Tanzania. Private credit as a percentage of GDP increased from 10.9 percent in 2005 to 17.8 percent in 2010 (Figure 8) (IMF 2010). The growth is noteworthy but the ratio remains relatively low compared to other African countries like South Africa, Kenya, and Nigeria. Tanzania's banking sector moreover remains highly concentrated in spite of the increase in the number of banks. The four largest banks account for about 55 percent of all financial assets and of all deposits in the banking sector. Overall, the sector is dominated by banking institutions which account for about 75 percent of the total assets in the financial system. The banking institutions are followed by pension funds, whose assets account for about 21 percent of total assets, and insurance firms whose assets account for 2 percent. The remaining financial intermediaries likewise hold about 2 percent of total assets (BOT 2011). The larger banks also have wider outreach through their branch networks. Despite their recent expansion, smaller banks remain very limited in their ability to compete with the large banks.

Figure 8: Private Credit as a Percentage of GDP



Source: IMF International Financial Statistics

The Government has been active in promoting the development of microfinance, a sector that was seen as being important in expanding financial services into rural areas and improving access to them. In May 2000, the National Microfinance Policy was approved and associated regulations were passed in 2005. The Government has also tried to revive the Savings and Credit Cooperatives Societies (SACCOS) with the enactment of the Cooperatives Societies Act 2003. In 2010, there were 5,344 SACCOS in the country with 911,873 members – although it warrants qualifying that a proportion of SACCO member are likely to be inactive (MAFC, 2011). Unlike the SACCOS which are regulated by the Ministry of Agriculture, Food and Cooperatives, microfinance institutions

(MFIs) are not regulated. As a result, there is limited information and data available about their programs or their outreach. With few exceptions, commercial banks and nonbank financial institutions in Tanzania focus strongly on services geared towards large corporate clients in urban and peri-urban areas.

5.2 Agriculture Lending in Tanzania

Tanzania's agriculture sector accounts to 28 percent of GDP and employs 80 percent of labor force. The sector is an important source of livelihood for the Tanzanian people and for the country's overall economy, including exports. During 2010/11, export of traditional commodities amounted to USD 693.2 million, which was an increase of 52 percent from the amount recorded in 2009/10 (BOT, 2011). However, despite its significance to the greater macro economy, agriculture is still operating at subsistence levels and has been unable to exploit its potential or attract the needed financing to commercialize and scale up the sector. In 2010, the sector grew only by 4.2 percent, while other sectors like services and construction grew by 8.2 percent and 10.2 percent respectively. In aggregate terms, the sector has been receiving a steady amount of lending from the private commercial banks and in 2011, agriculture consisted of 15.4 percent of the total commercial credit, an increase from 14.97 percent in 2009 (Table 16). This proportion of lending to agriculture is quite high as compared to other countries in the region.

Table 16: Commercial Bank Lending (TSh) to Key Sectors in Tanzania

SECTOR	2007		2008		2009		2010		2011	
	Lending Amt	%	Lending Amt	%	Lending Amt	%	Lending Amt	%	Lending Amt	%
Agriculture	327,906	12.97%	435,820	12.46%	463,395	12.38%	686,968	14.97%	912,300	15.40%
Fishing	18,216	0.72%	17,228	0.49%	15,660	0.42%	49,912	1.09%	75,275	1.27%
Forest	6,800	0.27%	7,183	0.21%	18,058	0.48%	15,558	0.34%	17,700	0.30%
Hunting	4,323	0.17%	242	0.01%	56	0.00%	2	0.00%	275	0.00%
Financial Int.	92,387	3.65%	122,001	3.49%	104,013	2.78%	142,488	3.11%	177,692	3.00%
Mining & quar.	41,278	1.63%	37,729	1.08%	18,925	0.51%	33,946	0.74%	42,323	0.71%
Manufacturing	566,404	22.41%	614,631	17.57%	563,100	15.04%	784,731	17.10%	928,226	15.66%
Building/Cons	104,444	4.13%	142,308	4.07%	142,677	3.81%	181,293	3.95%	320,141	5.40%
Real Estate	49,138	1.94%	73,706	2.11%	100,032	2.67%	170,634	3.72%	293,444	4.95%
Leasing	890	0.04%	11,906	0.34%	3,439	0.09%	12,948	0.28%	12,825	0.22%
Transport/Com	208,268	8.24%	320,601	9.17%	445,553	11.90%	534,101	11.64%	544,894	9.20%
Trade	511,565	20.24%	819,394	23.43%	912,611	24.38%	1,013,209	22.08%	1,523,376	25.71%
Tourism	15,919	0.63%	29,166	0.83%	27,098	0.72%	36,926	0.80%	49,605	0.84%
Hotels & rest.	112,779	4.46%	150,978	4.32%	185,245	4.95%	254,156	5.54%	360,654	6.09%
Warehousing/ storage	16,202	0.64%	4,020	0.11%	5,059	0.14%	140	0.00%	15,376	0.26%
Electricity	117,060	4.63%	183,487	5.25%	185,008	4.94%	156,608	3.41%	166,673	2.81%
Gas	12,130	0.48%	20,938	0.60%	34,855	0.93%	125,209	2.73%	169,609	2.86%
Water	1,454	0.06%	2,036	0.06%	1,430	0.04%	2,299	0.05%	2,196	0.04%
Education	33,515	1.33%	42,928	1.23%	69,639	1.86%	71,337	1.55%	107,292	1.81%
Health	10,385	0.41%	21,713	0.62%	20,816	0.56%	14,894	0.32%	18,375	0.31%
Other Services	276,890	10.95%	439,747	12.57%	426,644	11.40%	301,151	6.56%	187,695	3.17%
TOTAL	2,527,955	**100%**	3,497,762	**100%**	3,743,313	**100%**	4,588,510	**100%**	5,925,947	**100%**

Source: BOT, 2012

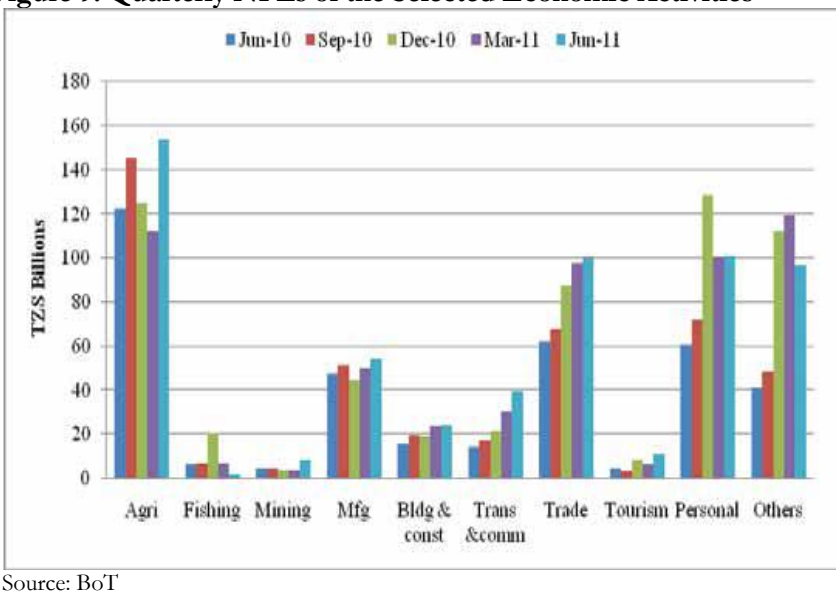
Of the 47 commercial banks operating in Tanzania, 9 have portfolios with no agricultural lending. Just 8 of the remaining 38 banks have portfolios in which agricultural lending accounts for more than 20 percent. The other 30 banks have lending portfolios in which agricultural loans average 4 percent – a very low proportion given the significance of agriculture to the country's economy. The cost of borrowing to agriculture is high. Interest rates offered by commercial banks towards agriculture lending ranges between 14 and 24 percent. The lower range is mainly for subsidized

loans, while on commercial terms it is above 18-20 percent. This means that financing higher investments in equipment that might require several years to pay off would be very costly. Because higher lending rates effectively reduce demand for financial products and services, the lending/deposit rate spread is also high. In 2010, this ratio was 8 percent in Tanzania, while in South Africa, it was as low as 3.4 percent. This shows that either the operating costs of these banks are very high or that they are making very good profits.

A review of the portfolio of commercial banks in 2011 found that agriculture loans in Tanzania have a very high percentage of Nonperforming Loans (NPLs) (Figure 9). In December 2010, the agriculture sector's NPL was 18 percent. Within one year, in December 2011, this percentage skyrocketed to 58 percent. The ratio of Gross Non-Performing Loans to Gross Loans for all sectors was also high at 9.3 percent. Though the agriculture sector does have a history of non- payments due to Government programs of subsidized loans during the pre-liberalization era, the current performance in regards to NPLs is widely attributed to the global financial sector crisis of 2008. According to respondents interviewed, the agriculture sector---- particularly the cotton exports----- were very hard hit by the crisis and as a result, default rates have sky rocketed. Drought was also a problem in some areas of the country.

The sector is taking time to recover. Despite the potential of the sector, financing agriculture in Tanzania is still considered a risky business. Most agriculture is still rain-fed and farmers have limited understanding of how to use inputs use or how marketing works. Agricultural production is often largely at subsistence level, with limited investments in inputs like seeds and fertilizer with minimal mechanization. This has led to low crop yields and to low agricultural productivity generally. Further, periodic export bans of the Government on cereal crops have adversely affected the sector from time to time as producers have less or no incentive to invest in the production of crops they are unable to sell later.

Figure 9: Quarterly NPLs of the Selected Economic Activities



Source: BoT

As for the major players in the agriculture sector, the financial sector respondents pointed to three banks, which were: (i) Cooperative and Rural Development Bank (CRDB); (ii) National Microfinance Bank (NMB) and (iii) Tanzania Investment Bank (TIB). Historically, all three banks were Government managed and operated in various forms but now have been privatized. CRDB and NMB have the largest coverage with 140 and 70 branches respectively in all regions of the country. In terms of outreach, they cover 40 percent of the total bank branches in Tanzania. Since the past five years, both the banks have been introducing new products that are tailored to agriculture and their portfolios consist of investments in cash crop sectors like sugar, coffee, sunflower, tobacco, cotton etc. These programs are extended either through 'out-grower schemes' or financed with 'warehouse receipts'. NMB, in particular, has reached over 500,000 individual small scale farmers with the Kilimo Account program (Annual Report 2010) (Box 4). The Bank has also been closely working with the National Agriculture Input Voucher Scheme (NAIVS), a fertilizer and seed subsidy program of the Government, whereby it is financing agro-input dealers in rural areas. CRDB has also formed a subsidiary company that provides micro finance services to small farmers and traders through its member SACCOS. Unlike NMB and CRDB, TIB is a wholly owned Government Development Bank which has started commercial lending since 2010. Currently, it manages a Government fund that was initially capitalized at TSh 20 billion to set up as an Agriculture Window. The facility has started financing agriculture and their customer base includes SACCOS, MFIs and agribusinesses. Some within the Government have been discussing the possibility that this agriculture window be converted into an Agriculture Development Bank.

Box 4: NMB's Kilimo Account

NMB Kilimo Account is a tailor made account that offer farmers bonus interest rate for savings realized from sale of their crop during harvest. NMB Kilimo Account also offers three times the current balance of the saving account as an input loan for crop production and increase in yields.

Benefits

- Security of your cash after harvest is guaranteed
- Interest rate of 6% p.a. (Min. interest of 3% p.a. plus Bonus interest rate of 3% p.a.). *Note*: Terms and Conditions apply.
- Three times the current balance of the saving account as input loan provided
- No maintenance fees
- Building a culture of saving
- Access to all NMB delivery channels i.e. Over 139 branches, 300 ATMS and NMB Mobile banking

Eligibility Requirement

- Farmer must be 18 years or older
- Farmer must have a farm producing non-perishable crops and harvest records for at least three (3) recent years
- Farmer must be from AMCOS/primary Cooperative Societies banking and operating with NMB only
- Guarantee and reference letter from the AMCOS/Primary Cooperative Society must be obtained
- Farmer needs to have ID card (i.e. voting registration card, cooperative society member ship card, Driving License or Passport)
- Two current passport size photographs with blue background

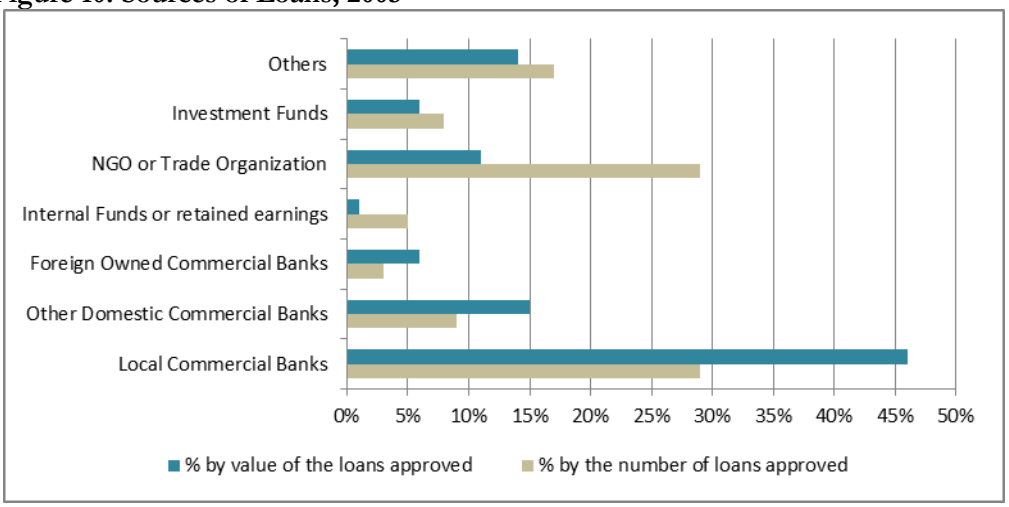
Source: NMB

5.3 Farmers (or Agribusiness) access to credit

Following the liberalization of the financial sector, while competition has driven some financial providers to be more efficient, supply of credit especially in rural areas is still limited. Commercial bank coverage is poor, with a total of 503 branches all across the country out of which 36 percent of the branches are in Dar es Salaam[20]. Data shows that Tanzania has less than 2 bank branches per 100,000 adult populations, while in South Africa, there are 10 bank branches providing services to the same number of people (IMF 2010). In rural areas, the density of bank branches is even lower. Other types of non-bank financial services are available but their operation is concentrated in areas with higher density of population (i.e. peri urban areas). Mobile banking services have the potential to expand and some financial institutions have already started to use this service, but it is still at an early stage.

A number of surveys have yielded similar findings corroborating that most of the people in Tanzania have limited access to credit. The National Agriculture Census (2009) found that only 2.4 percent of rural households in Tanzania had access to credit, while the National Panel Survey's (2008) results were slightly better at 6.5 percent. In Tanzania, absence of titles to land is one of the major hurdles for smallholders as they are unable to use it as collateral for bank loans. Alongside farming households, access to credit is also important for providers of agriculture inputs (seeds, fertilizer), enabling them to source the product and finance their working capital. But, in Tanzania, there are comparable constraints for small rural businesses. A national survey of rural entrepreneurs found that 61 percent rated financing as a major or severe constraint to business operations. 91 percent of the businesses surveyed had never applied for formal loan. Among enterprises based in rural areas, 27 percent of the respondents indicated that non-availability of a bank nearby was the reason for not applying for loans, while 16 percent indicated that the loan durations offered were too short. The same survey also found that commercial banks and NGOs were their main sources for loans. (Figure 10).

Figure 10: Sources of Loans, 2005



Source: RICA Survey, 2005

[20] Interview with Bank of Tanzania.

Additional evidence comes from recently conducted AgFiMS (Agricultural Finance Markets Scoping)[21] survey which further confirms that access and availability of finance is a constraint in the agriculture sector. The survey found that only 4 percent of businesses took loans from banks, 7 percent from SACCOS and MFIs, while 41 percent had approached and received credit informally and through family and friends. The summary findings are illustrated in Box 5.

Box 5: Access and Availability of agriculture finance in Tanzania

Commercial viability of agri-businesses

AgFiMS estimates that there are just over 500,000 agri-businesses (comprising farmers, processors and agri-service providers) in Tanzania which have potential commercial viability.

Business owners display entrepreneurship

Most of the identified business owners exhibit entrepreneurial flair, starting their enterprises after spotting a business opportunity. Keen to explore new markets and products, they are aware of and willing to take risks to improve their businesses.

Business owners are financially proficient

Business owners appear to have a significant degree of financial capability and they know the financial situation of their businesses at any given time. They keep financial records and the criteria they use to select financial institutions or sources of credit demonstrate financial understanding.

1. One in three is banked
2. They are willing to take credit to grow their businesses
3. They re-invest profit into their businesses

Need for credit

There is a need for credit along the value chain

1. Business owners perceive that the banks are not likely to lend to them - some have applied and been turned down.
2. From the supply-side point of view, financial institutions seem suspicious. AgFiMS confirms this assessment: businesses are not insured, and therefore not protected against the inherent risks in agri-business. Most business owners do not have any coping mechanisms in place to deal with risks that may affect them.
3. Most credit is sourced from family and friends.
4. Though the value chain provides opportunities for credit provision to agri-businesses, AgFiMS findings indicate that this is not a major source of credit.

Business enabling factors

AgFiMS findings illustrate that addressing financial inclusion for the agricultural sector demands a holistic approach. While it is necessary to bring services closer to the people, and financial institutions need to design appropriate products, it is also essential to educate their clients. AgFiMS also demnonstrates that there are other factors which influence a business' ability to grow. These include access to land, water, information, advice, infrastructure and markets.

Source: AgFiMS Survey, 2011

[21] AgFiMS was developed by the Gatsby Charitable Foundation and the Financial Sector Deepening Trust Tanzania (FSDT), with co-funding from the Rockefeller Foundation and technical support from FinMark Trust. The first AgFiMS study was undertaken in Tanzania between April and July 2011. For the demand side component representative at urban-rural and zonal levels, 4,094 respondents were interviewed. The supply side component of the study made a qualitative assessment of lending to the agricultural sector. Interviews were conducted with formal and informal financial institutions, agricultural input providers/buyers, equity providers, donors, NGOs and telecommunications companies.

5.4 Special Mechanisms for promoting agriculture financing that addresses risks

Warehouse Receipt System

Warehouse receipt system (WRS) allows commodities to be deposited in a designated and reliable warehouse that enables farmers to access credit, using stored commodities as collateral. The system can also safeguard farmers from selling their commodities at harvest when the prices are the lowest. In Tanzania, the Warehouse Receipt System has been in place since 2007. The Government enacted the Warehouse Receipts Acts in 2005 and associated regulations were passed in the following year. The legislation included the establishment of a Warehouse Receipt Licensing Board and so far, about 30 warehouses are certified. Several banks have been participating in the program. Initially, cash crops (coffee, cotton, cashew, and sunflower) were benefiting from this system, but lately staple crops like maize and paddy are also taking advantage of the system. In spite of this progress, an informal Government ban on exports, maize in particular, is a disincentive for producers from using this system.

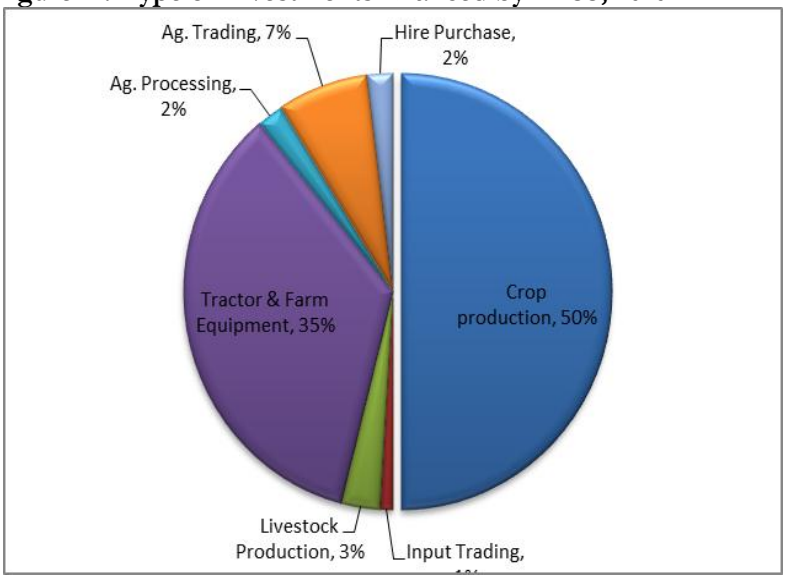
According to some reports and interview with respondents, Tanzania's experience so far with WRS has been mixed. In the case of cash crops, a small group of buyers, the apex cooperative societies, and the boards tend to negotiate the process. In these cases, the warehouse program does not seem to have affected the prices positively. However, with some staple crops where Government intervention has been less, such as rice, anecdotal evidence suggests that the program has been a benefit (Booz Allen, 2010). The other issues that have been of concern for the program are the cumbersome application process and the management of the warehouses. The procedures to obtain a license are known to be extremely slow. Further, some warehouses are more professionally run with technical assistance from NGOs and SACCOS, while others have low capacity and weak management. Managing a warehouse is also not cheap and some are struggling to pay for operating costs like annual license application fees, fumigation and insurance costs and high interest rates on loans.

Credit Guarantee Schemes

Tanzania has various credit guarantee schemes. Some are financed by the Government while a few are supported by external agencies. The Bank of Tanzania is managing the Export Credit Guarantee Fund (ECGS) and SME Credit Guarantee Scheme (SMECGS) that are under the Ministry of Finance and Economic Affairs. Both the guarantee schemes have been in operation since the mid-2000s but these schemes have not operated optimally and have only minimally supported the private sector. The schemes include high fees on export credits and there are just a few financial institutions participating in the program. The application process to get the guarantee is bureaucratic and slow and do not usually meet the needs of the customers in terms of their capital requirements. The Tanzania Exports Association report points out that most of the successful state-owned Credit Guarantee Schemes in the world are independently run as separate legal entities. Placement of the guarantee schemes under a government agency, with an involvement of a particular Ministry, has created conflict of interest (TANEXA, 2010).

Another facility is the Agriculture Credit Guarantee Program financed as a public/ private/ donor facility that was completed recently. Under the program, NMB was to provide a total of $5 million for loans to be made available to agro-input dealers in five pilot districts while the Government agency, Financial Sector Development Trust and AGRA were to provide $1.1 million in a guarantee fund to help reduce the risk of lending by NMB to agro-input dealers. Similarly, Stanbic Bank is currently implementing a program supported by AGRA by offering first loss loan and risk share guarantee to smallholders and there are a few other banks that are introducing similar facilities. In terms of scale and impact, Private Agricultural Sector Support (PASS) program should be mentioned. The program was established in 2000 by the Govt of Tanzania with the financial support from the Danish Government with an objective to promote and facilitate investments in the primary agricultural sector and agribusinesses in Tanzania. The program has been in operation since 2002 and so far, PASS has worked with seven banks, helping facilitate credit to clients who are unable to fulfill the collateral requirements of the Banks[22]. PASS's role is to guarantee the loan amount to fulfill the security gap. In addition to loan guarantees, PASS also offers business development services, helping possible borrowers with feasibility studies and business plans. The fee for providing this service ranges from 0.5-2.0 percent of the requested loan amount. Since its operation, PASS in collaboration with Banks has mobilized investment worth TZS 70 billion in the agricultural sector and supported over approximately 30,000 farmers all over Tanzania (PASS 2011). Their portfolio consists of guarantees in crops production (50%), followed by guarantees for tractor and farm equipment (35%), agriculture trading (7%), agriculture processing (2%), livestock production (3%), hire purchase (2%) and input trading (1%).

Figure 11: Type of Investments financed by PASS, 2010



Source: PASS, 2011

Other Institutional Mechanisms (e.g. Credit Reference Bureau, Unified Collateral Registry)

Credit Reference Bureaus play a key role in managing credit risks. The lack of reliable credit information adds to the cost of credit for the Banks as they have to put in additional resources to undertake due diligence to ensure that the borrowers are credit worthy. This will also lead to increase

[22] Bank of Tanzania's rules require borrowers to put in as security 125% of requested loan amount

in number of procedures required by Banks for loan applications that adds to the lead time in loan approvals. As of now, there is no public or private entity in Tanzania that shares credit information. However, the Central Bank has just recently announced its plan to establish a Credit Reference Bureau that will be operational by October 2012[23]. Similarly, a unified and electronic Collateral Registry will also help banks and other financial service providers to search for collaterals that have been pledged as security. In Tanzania, the Ministry of Lands has a registry for land titles. For movable assets, there is a registry for motor vehicles. Respondents indicated, however, that the process to get information from the Land registry is very slow, cumbersome and that the data that are generated are not even accurate.

[23] http://thinkafricapress.com/tanzania/credit-reference-bureau

Chapter 6: COST AND EFFICIENCY OF TRANSPORT (i.e. ROADS) IN TANZANIA

This chapter begins with an examination of the policies and investments related to transport (i.e. roads), followed by an assessment of the degree of regulation and deregulation that has promoted competitiveness in the private trucking industry. It further explains the factors that affect high transport prices in Tanzania, and then concludes with a discussion of roads access as measured by the Rural Access Index and refers to the results of the Logistics Performance Index that measures quality of infrastructure in Tanzania. Summary findings of the transport indicators are shown in Table 17.

Table 17: Summary Observations on Transport in Tanzania

Success Factor	Indicators	Results of Indicators	Data Source
Cost of transport	Transport prices	Regional avg. rates for regions (Dar @ $0.09/ MT/km; Ruvuma @ $0.14/MT/km; Mbeya @$0.19 MT/km; Mwanza @$0.23 MT/km). Major trunk roads (Dodoma-Dar ($0.10 MT/km); Arusha-Dar ($0.13/MT/km); Dar-Iringa ($0.10 MT/km); Back haul rates in the major trunk roads would be cheaper and sometimes benefits agriculture commodities.	SUMATRA Survey 2011
	Cost to ship a 20' and 40' container load of inputs and outputs ($ per ton)	Exports for 20' container to: -US: $2048 -Europe:$1150 -India/ Pakistan:$414 -South Africa:$450	Surface and Maritime Transport Regulatory Authority (SUMATRA)
Regulatory environ-ment	Number of days required to (a) register a truck for hauling agriculture products and (b) to obtain a license for hauling agriculture products	Avg. 6 days	Transporters interview
	Government interventions in setting transport prices	None	
	Tariffs and tax rates on imported vehicles and spare parts	Trucks (5-18.5 tons): 10% (import duty); 18% (VAT); Trucks (above 18.5 tons): 0% (import duty) and 18% (VAT). New trucks are VAT exempted as an incentive to import new vehicles. Spare parts: 10% (import duty) & 18% (VAT). Rates are relaxed from year to year. In 2010, several countries within the	Tanzania Revenue Authority

		East African Community (incl. Tanzania) decided to reduce the import duty from 25% to 10% (for trucks of 5-18.5 MT) and from 25% to 0% for trucks with a carrying capacity of over 18.5.	
Private Sector Perceptions	Perceptions of truckers on ease of entry into trucking of foodstuffs (0-5 scale) 0 = Disagree strongly 5 = Agree strongly	Rating=3.6; transporters do not find the regulatory environment to be constraining. Entry is relatively easy and the procedures to register and obtain a license take no more than 6 working days.	Transporters and traders interview
	Perceptions of truckers on the competitiveness of transport services (0-5 scale); 0=Disagree strongly; 5 = Agree strongly	Rating=4	
Transport infrastruc-ture	Logistics Performance Index (LPI) Score Quality of Infrastructure Score[24]	2.65 out of 5; 2.41 out of 5	World Bank
	Rural Access Index (RAI) - % of people within two kilometers of a road	38% (HH survey 2006); 24% (GIS)	Africa Infrastructure Core Diagnostics Database

Source: Summary of Indicators presented in the chapter

6.1 Transport Policy and Investments in Tanzania

Tanzania is the largest country in East Africa. Roads play an important role in its economy, accounting for over 80 percent of passenger traffic and over 70 percent of freight traffic. Railway infrastructure, which was the focus of large investments during the 1990s, has deteriorated since, with reliable service often not available. The sector is guided by an overall Transport Sector Investment Plan (2007-2012) which allocated US$6.2 billion for the sector, of which 69 percent was earmarked for roads (both national and local), 15 percent for railways, 7 percent for ports, and 5 percent for airports. The remaining balance was allocated for institutional support and cross cutting issues. Actual expenditures over this period is estimated to be only about half of the original plan (Shelling 2011). Still, the road sector investments for the past few years have been increasing (Figure 12). More than 50 percent of the road sector budget is financed by external donors, and directed largely towards national (trunk and regional) roads. Financing for local roads seems to get much less attention with less than 1 percent of the total budget allocated for 2011/12. (Table 18).

Table 18: Transport Sector Budget, 2011/12 (TSh Billions)

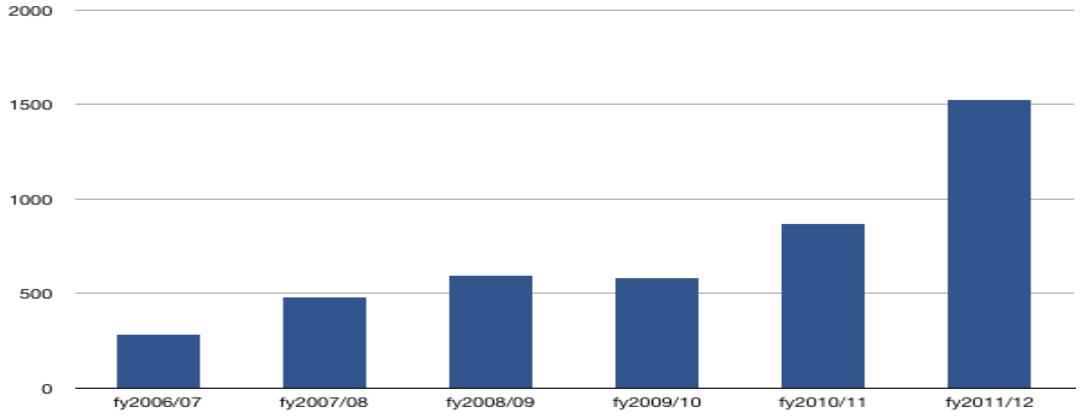
	Local	%	Foreign	%	Total
National Roads	621	49.6%	630	50.4%	1,251
Local Roads	14	100%		0%	14
Rail	101	100%		0%	101

[24] Quality of the Infrastructure Score is a sub-indicator of LPI.

Air	44	39.6%	67	60.4%	111
Ports	6	100%		0%	6
Others	38	90.5%	4	9.5%	42
Total	824	54%	701	46%	1,525

Source: MOW, 2011

Figure 12: Transport Development Budget Trends over recent years (TSh Billions)



Source: MOW, 2011

The major policy framework is the Roads Act of 2007, which lays out roles and responsibilities within the sector. According to the Tanzania Infrastructure Diagnostic Study, Tanzania is one of the best performers on road sector institutional reform. Its road fund is among the 20 percent of funds that meet all seven criteria of good design specified by the 35 member Sub-Saharan Africa Transport Policy Program.[25] The Road Fund has increased its revenue from around $60 million per annum in 2005 to above $200 million in 2009, one of the largest in Sub-Saharan Africa (CAS, World Bank 2011). In Tanzania, the Ministry of Works (MOW) has the overall responsibility for roads and develops the roads plan with the Prime Minister's Office – Regional and Local Governments (PMO-RALG). Tanzania's road network consists of trunk roads, regional roads and the remaining that is categorized as district, urban and feeder toads. Only about 43 percent of trunk roads are paved, while less than 2 percent of district and feeder roads are paved (Table 19). The trunk and regional roads are managed by TANROADS, an implementing agency formed under the Ministry of Works, while the district, feeder and urban roads are under the jurisdiction of local governments.

Table 19: Road Network in Tanzania (km)

Road Class	Paved	Unpaved	Total	% Paved
Trunk Roads	5,478	7,308	12,786	42.8
Regional Roads	840	20,265	21,105	3.9
Others (District, Urban & Feeder Roads)	774	51,807	52,581	1.5
Total	7,092	79,380	86,472	8.2

Source: MOW, 2011

[25] The criteria are a clear legal foundation, separation of functions, application of road user charges, direct transfer of funds, and representation of road users on the board, clear revenue allocation rules, and independent auditing of accounts.

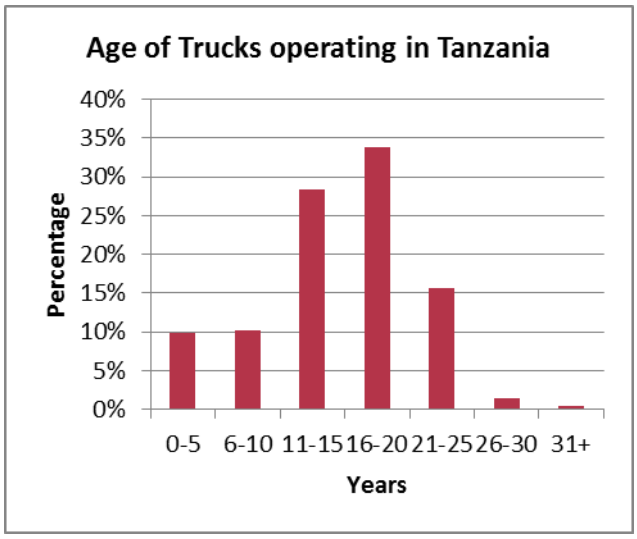
6.2 Private sector participation in the transport sector

Transporters that haul agriculture commodities in Tanzania operate mainly in the informal sector. They usually operate 3-5 ton trucks or pick-up vans that haul goods from wholesale markets in rural areas to secondary towns, or that collect produce from collection points along road sides of secondary or rural roads.[26] A small proportion of much larger, 30 ton trucks, transport grain from big wholesale markets like Kibaigwa both within Tanzania and with neighboring countries. Based on a survey of transporters in 2011, there are 60,000 trucks (between 3 and 50 ton) operating in Tanzania and the average ages of these trucks are above 15 years old (Table 20). 77 percent of the trucks have smaller carrying capacity of between 3 and 15 tons. Most of the trucking companies are domestic, though there are a few international companies operating from Dar es Salaam that transport goods to neighboring landlocked countries. The main brand of trucks found in Tanzania are Scania (Sweden), followed by TATA (India) and Fusu (Japan). There are some new brands of Chinese trucks that have started to operate in the market. The sector is growing at an annual rate of 18 percent (SUMATRA 2011).

Table 20: Distribution of Trucks by age groups

Age (Years	Count	Percent
0-5	5,903	10%
6-10	6,091	10%
11-15	16,958	28%
16-20	20,195	34%
21-25	9,402	16%
26-30	903	2%
31+	312	1%
Total	59,764	100%

Source: SUMATRA, 2011



According to the transporters interviewed, all most all of the trucks operating in the Tanzanian roads are "used."[27] New trucks are expensive, typically costing about three times more than used trucks. In the absence of affordable financing, businesses are unable to purchase new trucks. Spare parts for trucks are available but are expensive. High fuel costs also add to the cost of doing business. Despite the good prospects for the sector, transporters find cost of credit to be one of the major constraints for their businesses. As a result, they tend to informally borrow from friends and families when they have problems with cash flows and do not make bigger investments to expand their businesses.

[26] Any trucks above 3 MT are required to have an operating license. Smaller trucks are exempted from this regulation.
[27] There is a tax incentive offered by the Government on importation of new trucks. New trucks are exempted from VAT (18%).

Entry into the transport business is relatively easy and respondents gave a rating of 3.6 out of a 5 point scale. Registering a truck is simple. In order to apply for an operating permit, owners are required to submit a request to SUMATRA. There are no additional permits needed to haul agricultural goods. As part of the application process for an operating permit, the following documents are needed: (i) vehicle inspection report; (ii) insurance card; (iii) registration form; and (iv) an agreement letter between drivers and the company. The last document is a recently added requirement to ensure that drivers have proper contracts with the owners and are paid the minimum wage. Operating licenses are provided on a one year renewable basis. The transport sector is an open market in Tanzania, and there is no government intervention in operation of transport businesses or in setting of prices. The sector is quite competitive with a sizeable number of companies operating businesses. The sector is also represented by an association, TATOA (Tanzania Truck Owners Association) that operates as a platform for dialogue between the private sector and the Government.

6.3 Transport Prices and Costs

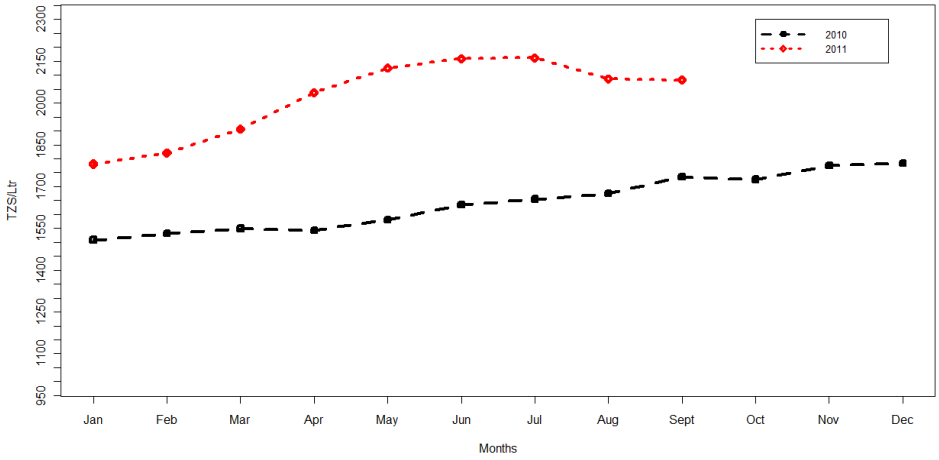
Despite a positive policy and regulatory environment for transport businesses, the sector is still not operating optimally. Traders and businesses that use truckers complain that trucking services are not always reliable and they charge arbitrary rates. Due to the old trucks operating in the market, breakdowns are common. These add to high maintenance costs for the operators, which in turn translate into higher transport prices to the users. Other factors that increase operating costs include delays resulting from road blocks, waiting times at weigh bridges, and outdated scales that produce inaccurate results. The need to pay bribes is another factor. A study carried out by the Centre for Economic Prosperity[28] shows that on average a truck gets stopped six times on the road from Dar es Salaam to Mbeya, needs to pay a total bribe of about TSh 7,000 - not a lot in monetary terms- but loses about half an hour of time. In proportion to the total marketing cost and transport price, this amount may not be high, but when various fees are added at each stage of the chain, it can affect the total price. Another factor for delay is the growing congestion in Dar es Salaam.[29] Trucks can take up to a full day to get access to the port through Morogoro road, Ubungo junction, and Nelson Mandela Road.

Increases in fuel prices and depreciation of the Tanzanian Shilling have also contributed to high transport costs in Tanzania. From 2008-2011, fuel prices fluctuated significantly and as a result, crude oil per barrel in Dubai market that stood at US$40.46 in December 2008 went up nearly three times to US$109.99 in July 2011. Such changes in world prices are immediately realized in the Tanzanian market, leading to the rise in operating costs of the trucking industry, which is then passed on to the customers. The figure below depicts changes in price of diesel in Tanzania between 2010 and 2011.

[28] See study of "Center for Economic Prosperity": Road blocks on Tanzania's main truck routes, 2010

[29] Dar es Salaam is predicted to grow from its current 4 million inhabitants to 6 million by 2030. At the same time the number of vehicles will likely triple from 200,000 to 600,000.

Figure 13: Price (in TZS) per litre of Diesel



Source: SUMATRA, 2011

Transport prices along major trunk and regional roads range from $0.09 per ton per kilometer $0.21 (Annex 1). These prices seem to be comparable with prices charged in neighboring countries in East Africa. But, for agricultural commodities (inputs and outputs), transport prices charged to haul goods along rural roads from farm-gate to primary markets (in rural towns) and secondary markets (regional capital towns) are more critical. Based on data collected from a field survey in the Iringa region of Tanzania, 83 percent of the marketing cost for maize accounted for payment of transport charges. Out of the total marketing costs, only 12 percent of the cost was incurred from farm-gate to primary markets (on rural roads). But, in relative terms, per ton per km, costs measured in US dollars were larger from farm-gate to secondary markets than from secondary markets to wholesale markets due to poorer quality of roads and the low volumes of trade at the first stages of the supply chain (World Bank. 2009).

Table 21: Marketing Costs at various stages of the supply chain (US$ per ton)

Market Segment	Cost Element	Tanzania
Farm-gate-to-primary market	Storage/rental fee	0.80
	Transportation charges	6.40
	Hired labor loading/ unloading	1.92
	Council cess	1.60
	Total Segment 1	**10.72**
Primary-to-Secondary market	Storage/rental fee	1.20
	Transportation charges	27.00
	Hired labor loading/ unloading	4.00
	Council cess	1.60
	Drying tent/empty bags	0.5
	Total Segment 2	**34.30**
Secondary-to-wholesale market/miller	Storage/rental fee	0.11
	Transportation charges	41.40
	Hired labor loading/ unloading	4.00
	Council cess	0.0
	Total Segment 3	**45.51**
	Total Costs	**90.53**

Source: Field Survey, World Bank 2009

According to the same World Bank Survey (2009), common mode of transportation between the farm and primary markets in Tanzania were hired trucks though carts and public buses were also used. 70 percent of small scale farms used hired trucks, while 18 percent used carts and the remaining 12 percent used buses. Among the large-scale farms, 67 percent used hired trucks, followed by 33 percent that used carts for hauling goods from the farms. Transportation onwards from the primary to secondary and to wholesale markets was commonly carried by 10 MT trucks. Despite the longer distances between secondary to wholesale markets, transport prices went down with improved access to better quality national roads and with larger volumes of cereals traded (Table 22).

Table 22: Distances and transportation prices at various segments of the supply chains

Category of market	Mode of transportation	Average distance, km	Transport prices, US$/MT-km	Transport prices, US$/MT
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

Source: Field Survey, World Bank 2009

6.4 Rural Access and Quality of Roads

Despite the low road density in Tanzania, the country seems to have performed well in terms of having adequate road networks connecting the capital to the various regions and to neighboring countries, particularly considering the country's size. 91 percent of the major trunk roads are in good to fair condition. A gap does however become noticeable in rural areas. In 2010, only 24 percent of rural people had access to an all season road (Table 23). Respondents interviewed indicated that there is poor connectivity of rural roads to regional and trunk roads and even when there are rural road networks, they are often not well maintained or passable most of the year. 44 percent of rural roads are in poor condition (Table 24). For agriculture and agribusinesses to move goods between the market and rural areas, the quality of roads and peoples' access to them are critical. Otherwise, farm inputs such as fertilizer and seeds will not reach the farms and when they do, will be expensive. Similarly, farmers will have limited incentive to transport their agriculture produce for sale in local and regional markets. With 74 percent of the Tanzanian people residing in rural areas and 80 percent employed in agriculture, accessibility to good quality roads in rural areas will contribute to increased agriculture growth.

Table 23: Benchmarking Road Indicators

	Unit	Low Income Countries	Tanzania	Medium Income Countries
Paved Road Density	Km/1000 km² of arable land	86.6	47.1	507.4
Unpaved Road Density	Km/1000 km² of arable land	504.7	482.6	1,038.3
GIS Rural Accessibility	% of rural pop within 2 km from all-season road	21.7	24	59.9
Paved Road Traffic	Average Annual Daily Traffic	1,049.6	1,797	2,786
Unpaved Road Traffic	Average Annual Daily Traffic			
Perceived Transport	% of firms identifying	23	14.1	10.7

Quality	transport as major business constraint			

Source: Africa Infrastructure Country Diagnostic

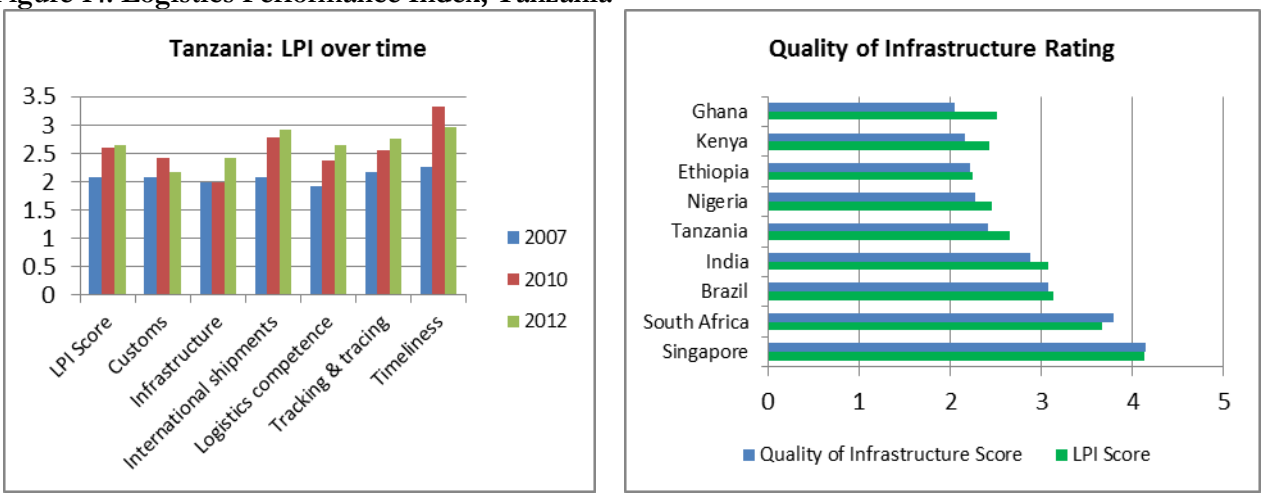
Table 24: Quality of roads

	2009			2010			2011		
Trunk & regional roads	% good	% fair	% poor	% good	% fair	% poor	% good	% fair	% poor
	67%	25%	8%	56%	33%	11%	65%	26%	9%
Rural roads	58%		42%	56%		44%	56%		44%

Source: MOW, 2011

In further assessing the quality of roads, the World Bank uses a Logistics Performance Index (LPI) based on data collected from a global survey of transporters and clearing agents. The Index measures: (i) quality of infrastructure, (ii) cost and efficiency; and (iii) ease of procedures. Tanzania scored poorly in the overall LPI, having scored 2.65 out of 5 and ranked 88 out of 155 countries that were included in the 2011 survey. Over the years however, Tanzania has improved its overall rating, especially on the "quality of roads" rating. In comparison to quite a few numbers of other countries in the region, Tanzania is found to be performing better (Figure 14).

Figure 14: Logistics Performance Index, Tanzania



Source: World Bank, 2012

Chapter 7: POLICY AND ENABLING ENVIRONMENT FOR AGRIBUSINESS DEVELOPMENT

Public policy plays a significant role in fostering a favorable business environment that encourages the private investment that is needed to support agricultural development, and the development of related agribusinesses. Poorly conceived, poorly implemented public policy can also play a significant role in undermining the business environment, discouraging needed private investment and undercutting development. Agriculture in Tanzania has historically been seriously hurt by policies such as high taxes on export crops and numerous Government regulations and interventions that have generally diminished the contributions the sector has been able to make in reducing poverty. A number of past studies have documented the negative effects which these policies have had on incentives, including incentives for agribusinesses to invest in their development. Since the early 2000s however the policy environment has to some extent improved through the Government's adoption of an Agriculture Sector Development Strategy (ASDS), followed by the implementation of the sector-wide Agriculture Sector Development Program (ASDP). These have involved combined investments by the Government and a number of development agencies. This chapter discusses the views and perception of the private sector about the policy environment as well as on consistency of policies for agribusiness. It highlights the role and influence of private sector advocacy groups in the agriculture sector and assesses the commitment of the Government through its allocation of public expenditure to agriculture.

In late 2010, the Government introduced the Kilimo Kwanza or Agriculture First initiative. Kilimo Kwanza aims to stimulate a private sector-led Tanzanian Green Revolution through market led growth. It is based on a strategy known as the Kilimo Kwanza Implementation Framework which involves ten pillars. These pillars are (i) political will to push agricultural transformation, (ii) enhanced financing for agriculture, (iii) institutional reorganization and management of agriculture, (iv) a paradigm shift to strategic agricultural production, (v) land availability for agriculture, (vi) incentives to stimulate investments in agriculture, (vii) industrialization for agricultural transformation, (viii) science, technology and human resources, (ix) infrastructure development and, finally and essentially, (x) the mobilization of Tanzanians to actively support and participate in the initiative's implementation (SAGCOT Concept Note, 2010). Kilimo Kwanza was further pursued through the development of the South Agriculture Growth Corridor of Tanzania (SAGCOT) program, which is a joint public-private initiative to encourage private sector investments and boost agricultural output in Tanzania's prime agricultural zones.

Table 25: Summary Observations on Enabling Environment for Agribusinesses

Success Factor	Indicators	Results of Indicators	Data Source
Private Sector Perception	Private sector perception of agribusiness enabling environment (0-5 scale)	Rating=3.6; Managers of private firms representing the fertilizer, seed, mechanization, and transport sectors and	Interview with private sector firms

of Policy Environ-ment & Advocacy Role		representatives of business associations have a favorable perception of the enabling environment. However, concerns were raised about high taxes, implementation modalities of the subsidy program and intervention in the grain market in various forms from time to time.	
	Policy Consistency: 0-5 scale as perceived by private sector (frequent, unexpected or arbitrary changes in policy, regulations & rules that affect operations and profitability of businesses).	Rating=2.5; they are concerned about Government's ad hoc decisions leading to policy changes that are pursued with little or no consultation with the private sector stakeholders. As a result, they give a lower rating of 2.5 out of a 5 point scale.	Interviews with private sector firms
	Private sector advocacy group for agribusiness: existence & effectiveness[30]	Rating=3.3; Tanzania has several advocacy groups that have been active since the early 1990s. The private firms interviewed rated their existence and effectiveness to be 3.3, meaning they have at times been successful in influencing policies, but their capacity and resources are an issue and that they need to further build recognition for the important work that they do.	Interviews with private sector firms
Governmt Commit-ment to Agriculture	Federal government budget outlays on agriculture as % total budget	6.83% (2010/11). The ratio is below the 10% target set by CAADP.	MAFC

Source: Summary of Indicators presented in the chapter

7.1 Private Sector Perception of the policy environment for Agribusiness

The private sector generally has a favorable perception of the policy environment for agribusiness in Tanzania. Despite the constraints identified by the informants, they believe that the Government has taken efforts to improve the environment to do business and give an overall rating of 3.6 out of a 5 point scale. In the seed sector, the private companies are optimistic and have a positive view of the Government's new directive that lifted restrictions which had earlier prohibited private investors from producing foundation seeds from public varieties. Though the Government remains active in the production of seeds, informants report that this activity has become more limited, and the quantities produced by the Government are not large enough to crowd out private investment. There does however appear to be a need to streamline the approval and release of new seed varieties. Informants also express concerns about high taxes, especially excise duties on packaging materials, and express dissatisfaction with what they see as the minimal efforts Government has made to discourage marketing of fake seeds.

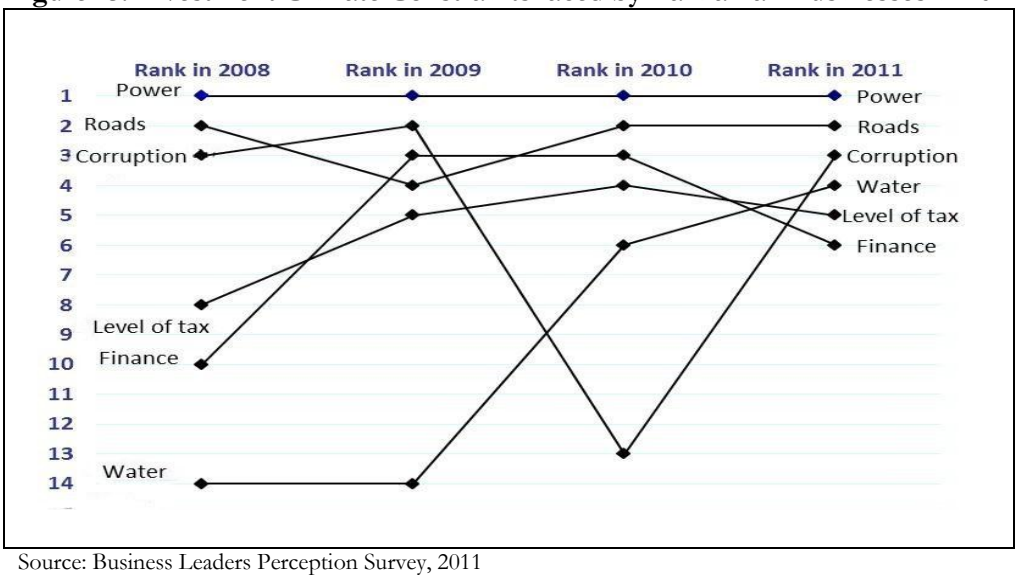
[30] Scale: (0) no such group; (1) just established; met 1-2 times w/key Gov. policymakers; (2) underway for several years w/at least annual meetings w/policymakers; (3) at least one policy/regulatory victory; (4) several victories; (5) highly respected entity often consulted by Gov. Yet beware danger of elite capture/cronyism.

Similar to the seeds sector, private companies have positive views and find the policy environment for the fertilizer sector to be quite conducive to doing business. Almost all companies (mainly importers) are participating in the Government's subsidy program and the process to import is not found to be cumbersome. Some however raised serious concerns about the implementation of the subsidy program and report that weak planning has resulted in large amounts of fertilizer stocks in their warehouses. Late payments by the Government to participating banks to redeem vouchers have had adverse impacts on demand and may be discouraging agro input dealers from continuing to participate in the program.

In the machinery sector, the private sector seems to be less favorable about the current policy environment in which the Government directly imports tractors on a large scale. Other than this however, the Government's role has been fairly minimal for many years, and private sector informants express relative indifference. On the policy environment for support services like transport, respondents indicated that it is an open market and there is no Government intervention in operation of transport businesses or Government interference in setting prices. The sector is quite competitive with a sizeable number of companies operating businesses. Overall, the private firms said that incentives for agriculture investors that include zero-rated duty on all farm inputs including fertilizer, pesticides and herbicides and zero rated VAT on agricultural exports are welcome – but that a good deal more can be done.

To supplement the findings of ABI, the figure below highlights investment climate constraints faced by all Tanzanian businesses in 2011; this survey is targeted at urban-based enterprise, but it is still highly instructive. Power is considered to be a key constraint and is ranked as number one for the past four years. Roads, corruption, water, taxes and financing are the top constraints for the year 2011.

Figure 15: Investment Climate Constraints faced by Tanzanian Businesses in 2011



Source: Business Leaders Perception Survey, 2011

7.2 Policy Consistency and the Role of Private Sector Advocacy

While the private sector considers the enabling environment for agribusinesses to be favorable, they are concerned that ad hoc decisions may lead to policy changes with little or no consultation with the private sector stakeholders. As a result, they give a lower rating of 2.5 on a 5 point scale. In the agriculture sector, periodic export bans on a number of crops, chiefly maize, leads to major disincentives for producers and businesses. By restricting the transport of crops between regions, these formal bans open space for smuggling which in turn results in producers receiving very low prices even when market prices are high. The Government continues to insist that these bans are only imposed in situations in which food security in certain regions needs to be safeguarded. Another source of policy inconsistency relates to taxes and in particular the sometime arbitrary nature of local taxes. The Local Government Finance Act allows districts to levy 5 percent of the farm gate price on any sale of crops produced. The 2009/10 budget speech announced that the cap was reduced from 5 percent to 3 percent and a Government directive was issued accordingly. However, the rates are not consistently charged and vary from one local government to another. This creates significant uncertainty among farmers, traders and other businesses. Duties on imports and exports that affect the agriculture sector also change from time to time, with inadequate information that is available to private firms. Often, there is lack of communication between the Ministry of Finance and the Customs Department, so even when there are changes in import/export duty rates based on annual budget speeches, this does not get communicated and firms are charged the inaccurate duties.

There are several lobby groups, but not that many that advocates for reforms in the agriculture sector in Tanzania. The Agriculture Council of Tanzania (ACT) and Tanzania Horticulture Association (TAHA) are particularly active advocacy organizations. Other national level business associations with a wider focus and network include the Tanzania Chambers of Commerce, Industry and Agriculture (TCCIA), Confederation of Tanzanian Industries (CTI) and Tanzania Private Sector Foundation. On secondary levels, there are associations for specific value chains or functional groupws within a value chain (farmers, processors, traders, transporters, marketers etc.). One does not find a lot of trade associations and if there are any, they are generally weak. The groups take pride in what they do and believe that they have been successful from time to time in influencing favorable policies. They claim substantial credit for the renewed interest shown by the Government towards the agriculture sector through adoption of the Kilimo Kwanza and SAGCOT. They believe that their influence led to the Government's action to increase budgetary allocation to agriculture. The groups indicate that they played a key role in influencing the reduction of local tax on produce from 5 percent to 3 percent. On the indicator for the existence and effectiveness of such groups, private firms gave a rating of 3.3. This means that they have at times been successful in influencing policies, but a lot more can be done to develop their capacity on policy advocacy based on high-quality, evidence-based analytical work.

7.3 Government Expenditure on Agriculture[31]

Tanzania is a signatory of the CAADP compact that calls for the Government to allocate at least 10 percent of the total annual budget to agricultural development. Tanzania has not met this target so far. CAADP signatory countries are moreover engaged in ongoing discussions to define what constitutes "agricultural spending." Since 2009, Ghana has started including "feeder roads" under their agricultural budget. In Tanzania, if the public expenditure on rural roads (executed by Local Government Agency (LGA)) and the rural safety net programs were included in the agricultural budget, the total sector allocation would have been 8 percent of the total budget (Zorya and Francken, 2011). The agriculture budget for Tanzania has been growing in nominal and real terms for the past few years. In 2008/09, the approved budget amounted to Tsh 353.2 billion, which increased to Tsh 635.5 billion in 2009/10 and Tsh 738.9 billion in 2010/11. Agriculture budget as a share of the total budget increased significantly between 2008/09 and 2009/10 and this increase was mainly attributed to the expansion the National Input Voucher Scheme (NAIVS). In 2010/11, the share of agriculture spending had declined but is higher than the 2008/09 budget.

Table 26: Agriculture sector spending as a share of total expenditure and GDP, 2008/09-2010/11

	2008/09	2009/10	2010/11
Agriculture spending as a share of total expenditure	5.01%	7.10%	6.83%
Agriculture spending as a share of GDP	1.33%	1.94%	1.84%
Agriculture spending as a share of agricultural GDP	5.29%	7.87%	7.66%

Note: Total Budget was 7,055 billion in 2008/09, TSh 8,956 billion in 2009/10 and TSh 10,812 billion in 2010/11.

In assessing the composition of the agriculture budget, Table 27 presents a line item budget that categorizes spending as either private or public goods. In doing so, it is found that more than 60 percent of the 2010/11 budget was allocated for private goods. Private goods are defined as those that are best provided by the private sector responding to supply constraints and effective demand (Zorya and Franscken, 2011). Over the years, there has been an increased attention towards crop development and increased funding has gone towards NAIVS providing subsidized inputs (fertilizer and seeds) to farmers. Despite the importance of subsidized input, the program's burden on public funds is high and sustainability of such a large scale program is questionable.

The increase in the budget line item for rural finance is also noteworthy. There was a nearly 100 percent increase from 2009/10 to 2010/11. In 2009/10, agricultural exports were hit quite hard by the global financial crisis and the Government intervened to help the sector recover losses of its nonperforming loans. Further, in 2010/11, Government decided to allocate funds for the 'Agriculture Window'- an instrument designed to increase public financing for agriculture, at the Tanzania Investment Bank and to establish an Agriculture Development Bank. The Agriculture Window was opened but the Agriculture Development Bank has yet to start operations. On the other hand, some key public goods like research and irrigation are underfunded.

Table 27: Functional Composition of the Agriculture Sector Budget (TSh million)

	2008/09	2009/10	2010/11
Private Goods	**160,827**	**344,096**	**454,908**
Crop development/inputs	123,089	252,979	309,222

[31] This section is largely drawn from the Rapid Budget Analysis for Annual Review 2010/11 undertaken by Sergiy Zorya (World Bank) and Nathalie Francken (Irish Aid).

-Fertilizers	73,000	88,410	120,292
-Seeds	20	13,601	16,739
Rural Finance	1,782	52,896	100,845
Mechanization	1,613	5,000	4,402
Animal production, pastoral development and identification	7,169	5,550	7,193
Fisheries and aquaculture	15,408	17,778	16,676
Commodity marketing	11,766	9,893	16,570
Public Goods	**192,363**	**291,438**	**283,977**
Research and training	27,885	49,745	51,622
Grain Reserve	20,486	21,186	20,572
Irrigation	14,879	27,073	21,051
LGA transfers	99,866	110,054	128,515
Cooperatives	5,393	5,912	6,665
Seeds Breeding	660	5,232	5,196
Policy and planning	9,178	7,604	7,314
Administration and communication	7,532	34,152	10,233
Animal disease and control	6,009	20,355	14,353
Land use and planning	475	10,125	18,456
Total	**353,190**	**635,534**	**738,885**

Source: Zorya & Francken, 2011

Annex 1: Supporting Tables

Table 28: Average Price ($/kg) of Maize Seeds (Hybrid and OPV), 2011

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Maize-Hybrid	2.67	2.32	2.50	3.50	2.37	2.42	2.45	2.32	2.44	2.21	2.54	2.50
Maize-OPV	2.00		1.60	2.00	1.47	1.58	1.46	1.33	1.45	1.37	1.64	1.50

Source: AMITSA, IFDC 2011

Table 29: Reasons for Non-redemption of Vouchers

	2009/10 N=125	2010/11 N=28
Vouchers arrived too late	36.8%	7.1%
Could not afford top-up	25.6%	25.0%
Risk of investment	0.8%	3.6%
Do not trust fertilizer/seeds	3.2%	17.9%
Do not know how to use fertilizer/seeds	8.0%	17.9%
Could make more money otherwise	1.6%	3.6%

Source: NAIVS Baseline Survey, 2011

Table 30: Transport prices in major trunk and regional roads, Jan-June 2012

From	To	Price/MT (US$)	Distance (km)	Cost ($/MT/km)
Dar es Salaam	Arusha	60	646	0.09
Dar es Salaam	Dodoma	50	451	0.11
Dar es Salaam	Iringa	50	492	0.10
Dar es Salaam	Mwanza	105	1152	0.09
Dar es Salaam	Kigoma	145	1539	0.09
Dodoma	Arusha	72	425	0.17
Dodoma	Dar es Salaam	45	451	0.10
Dodoma	Kigoma	127	1088	0.12
Dodoma	Mwanza	90	701	0.13
Arusha	Dar es Salaam	84	646	0.13
Arusha	Dodoma	86	425	0.20
Arusha	Shinyanga	110	624	0.18
Arusha	Singida	70	331	0.21

Source: WFP, 2012

Table 31: Mean Domestic Freight Rates in various regions in Tanzania

	Region	Rates ($/ton/km
1	Mwanza	$0.23
2	Mbeya	$0.19
3	Tanga	$0.16
4	Ruvuma	$0.14
5	Lindi	$0.14
6	Tabora	$0.13
7	Rukwa	$0.13
8	Mtwara	$0.11
9	Kilimanjaro	$0.11
10	Arusha	$0.10
11	Dar es Salaam	$0.09
12	Kigoma	$0.08
13	Kagera	$0.08
14	Mara	$0.07
15	Dodoma	$0.05

Source: SUMATRA Transporter Survey, 2011

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