Integrated Industrial Development Strategy

2025

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Ministry of Industry and Trade

United Republic of Tanzania

FOREWORD

Tanzania's Integrated Industrial Development Strategy 2025 has been adopted at the time when the nation is celebrating 50 years of independence. Some of the MDGs are on the road to being achieved but poverty reduction remains a major challenge and the primary national goal. Stimulating and sustaining double digit rates of economic growth remains the only route for achievement of this core objective within the coming 15 years in line with the National Development Vision 2025. Delivering double digit broad-based growth in Tanzania within the 2nd decade of the 21st Century depends on transformation of agriculture to raise productivity to global levels and kick-start a dynamic process of agriculture-led and resource-based industrialization.

Domestic and international responses to the Kilimo Kwanza campaign have set in motion the strategy through which the country can use its abundant land, water and climatic conditions endowments, in an environment of increasing food security concerns, to turn Tanzania into a regional bread-basket. National mineral resources endowment, including natural gas and phosphate deposits, makes it possible to develop a robust fertilizer and chemical industry to produce critical agricultural inputs within Tanzania and to surmount the cost-competitive power and energy supply constraint.

The Southern Agricultural Growth Corridor program is already showing the way forward, taking advantage of the Tanzania-Zambia Railway (TAZARA) which passes through Tanzania's leading three agricultural regions i.e. Morogoro, Iringa and Mbeya and provides international access to the other two i.e. Ruvuma and Sumbawanga. The strategy is to develop integrated agricultural production systems that include modern and commercialized agricultural production, backward linkages to production and supply of inputs and forward linkages to agro-processing, packaging and marketing. Stakeholders include domestic smallholder producers linked with large international firms through contract farming procedures that ensure access to state of the art production technologies, integration of domestic markets and linkages to international markets.

It is in this context that, the IIDS responds to the need for a dynamic strategy to guide the process of resource-based industrialization. IIDS reflects the difficulties faced by Sub-Sahara African countries in attracting and retaining labor intensive industries as a growth strategy given higher labor costs and lower skills levels compared to those prevailing in competing Asian economies. Measures to change this adverse situation are in place but they will take time to bear fruit. For instance, Tanzania is implementing initiatives for extending the outreach and raising the quality of social services in the education and health sectors. Other initiatives include investments to facilitate the delivery of cost-effective and reliable infrastructural services in transportation, power and energy sectors with a view to building a conducive investment climate. Major reforms are also underway to transform the business environment through a wide range of regulatory reforms to ensure quick business start-up and smooth operations through better Government services in key sectors such as access to land, finance, skilled labor and timely resolution of disputes. Tanzania is also rebuilding the efficacy of the Central Corridor as the transport hub and gateway for its neighbors to the world through modernization of infrastructure and overhauling of rules, regulations and procedures in the ports, inland transport and border posts.

With respect to the industrial sector itself, the IIDS reviews its current performance status and analyses its potential in the context of natural resources endowment and location. The strategy identifies and provides the direction of policy instruments available to steer the process of industrialization in the desired direction. Major instruments include the accumulation and concentration of industrial firms through cluster development, supported by Special Economic Zones (SEZ). Three waterfront SEZs are planned: one for Dar es Salaam linked with the Central Railway Line to constitute the “Logistics Corridor” and TAZARA to constitute the “Agricultural Corridor”; Mtwara SEZ which is being developed as the “Minerals Corridor” and the Tanga corridor to serve the areas of northern and north-western Tanzania up to and including Rwanda. At the regional and district level, these corridors will link Regional SEZs and Micro Industrial Parks at the district level with the domestic and regional markets.

Early realization of the strategy includes the identification of a few priority sub-sectors to serve as the nucleus of industrialization. The objective is to build world class agricultural production and processing facilities that attain and retain the competitive edge within the region. As the first wave of priority sub-sectors achieve prominence a new wave of priorities identified by stakeholders and reflecting national comparative advantages will be brought into the mainstream of the industrialization process. The first line of priorities includes the fertilizer and chemicals industry, agro-processing (edible oil, cashew nuts, fruits, milk and dairy products), the textile industry subsector, leather and leather goods industry, light industry manufacturing, iron and steel industry and promotion of tourism backward linkages.

To support this dynamic process of agriculture-led and resource-based industrialization, the Government is also adopting other best practice instruments including the establishment of equity and venture capital funds and matching grant schemes for ready access to finance, provision of business development services, targeted human resources development to bridge the skills gap and industrial and trade data collection and dissemination to support informed policy and investment decisions.

There is strong determination and commitment to transform this strategic plan into an actionable program. A total of 50 actionable plans have been identified, through which implementation will take-off. The 50 activities range from action plans for improving efficiency in service delivery by the Ministry of Industry and Trade and its agencies, measures for improving the business environment and investment climate, initiatives to stimulate and support cluster formation, and finally support to priority subsectors starting with cooperation with SAGCOT.

The IIDS is the strategy that will enable Tanzania to use her ample natural and human resources to address prevailing challenges and achieve the noble goals of Vision 2025 and make it possible to realize the dream of a better life for all Tanzanians within this period. This goal is achievable. However, this will only materialize if all Tanzanians, in the public and private sector, respond to these opportunities. Success depends in achieving and sustaining higher productivity and lower costs in agricultural production as well as adoption of good agricultural practices. Success depends even more on

achieving good manufacturing practices in agro-processing and industrial activities in general. Success depends largely on better government interventions for the development of a robust and competitive private sector.

Hon. Dr. Cyril Chami (MP)

MINISTER FOR INDUSTRY AND TRADE

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DEVELOPMENT FRAMEWORK

ACTION PLANS

ABBREVIATIONS

ADLI	**Agricultural Development Led industrialization**
BEST	**Business Environment Strengthening for Tanzania**
BRELA	**Business Registration and Licensing Agency**
CTI	**Confederation of Tanzania Industries**
EAC	**East African Community**
EPZA	**Export Processing Zone Authority**
FDI	**Foreign Direct Investment**
FYDP	**Five Year Development Plan**
GDP	**Gross Domestic Products**
HS	**Harmonized System (Trade Classification Code)**
ICT	**Information and Communication Technology**
IIDS	**Integrated Industrial Strategy**
ISIC	**International Standard for Industrial Classification**
LNG	**Liquefied Natural Gas**
MDC	**Mtwara Development Corridor**
MIT	**Ministry of Industry and Trade**
MKUKUTA	**National Strategy for Growth and Reduction of Poverty**
MME(s)	**Micro Manufacturing Enterprise(s)**
MVA	**Manufacturing Value Addition**
NBS	**National Bureau of Statistics**
NDC	**National Development Corporation**
ODOP	**One District One Product**
PMO-RALG	**Prime Minister's Office-Rural Administration and Local Government**
POPC	**President Office Planning Commission**
PPP	**Public Private Partnership**
SAGCOT	**Southern Agriculture Corridor of Tanzania**
SEZ	**Special Economic Zone**
SIDO	**Small Industries Development Organization**
SIDP	**Sustainable Industrial Development Policy**
SITC	**Standard International Trade Classification**
SME(s)	**Small and Medium scale Enterprise(s)**
TANESCO	**Tanzania National Electricity Supply Company**
TANZAM	**Tanzania-Zambia**
TAZARA	**Tanzania-Zambia Railway**
TBS	**Tanzania Bureau of Standards**
TCCIA	**Tanzania Chamber of Commerce, Industry and Agriculture**
TDC	**Tanga Development Corridor**
TDV	**Tanzania Development Vision**
TIC	**Tanzania Investment Center**
TPA	**Tanzania Ports Authority**
TPDC	**Tanzania Petroleum Development Corporation**
TRA	**Tanzania Revenue Authority**
UNIDO	**United Nations Industrial Development Organization**
VETA	**Vocational Education and Training Authority**

EXECUTIVE SUMMARY

Vision

- Build-up an internationally competitive business environment through development of industrial clusters formation, institutional support and concentrated infrastructure development, and promote internationally competitive industries and enterprises to make the industrial sector the real engine of economic growth.
- Make Tanzania the industrial and logistics hub of East and Central Africa, through extension and improvement of the existing development corridors and provision of an export and import platform at the waterfront.
- Promote rural industrialization through an "Agricultural Development Led Industrialization" strategy, to support the successful implementation of ***Kilimo Kwanza*** and enhance equitable regional growth.
- Provide growth opportunities to all growth-oriented micro, small and medium scale enterprises and entrepreneurs through provision of attentive supporting measures appropriate to each of the specific developmental stages that local enterprises and industries pass through as they up-grade and graduate from the bottom upwards.

Targets

Through the implementation of the strategy, IIDS targets the manufacturing sector[1] to grow by 15 % per annum on average, to attain a gross manufacturing value of 16 billion US Dollars and 23%share in GDP composition by 2025[2].

PART I INTRODUCTION

Back Ground[1]

The National Development Vision 2025 (VISION 2025) recognizes the leading role of the industrial sector in the process of transforming Tanzania's economy from a weather and market dependent agricultural economy to a self-sustainable semi-industrial one by 2025. ***Sustainable Industrial Development Policy 1996-2020 (SIDP)*** declared the government's decision to phase the public sector out of productive activities and allow the private sector to become the principal vehicle for economic growth. Though the shift from the public to private sector has been successfully accomplished under SIDP, Tanzania's industrial sector is still in the infancy stage

1 The term "manufacturing" in this paper follows the international widely accepted definition of the International Standard Industrial Classification (ISIC) rev.3 category "D" and covers all the activities identified by ISIC code 15111 to 39999.

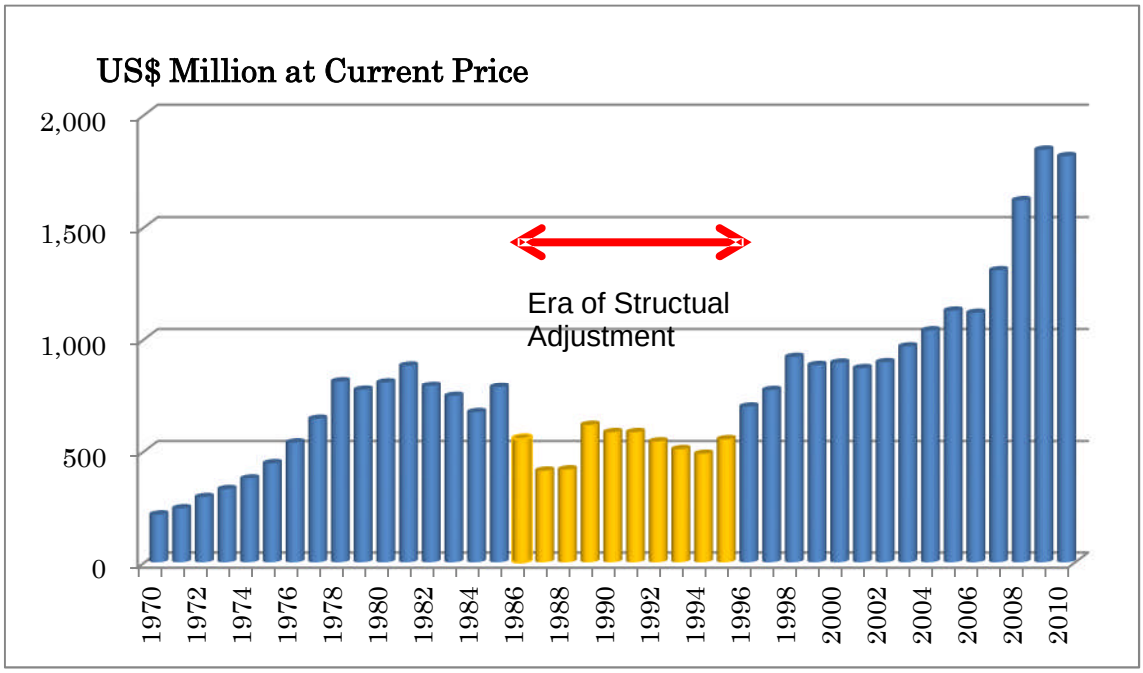
2 The estimation is made on the assumption of average GDP growth at 8.0% and population growth at 2.5% p.a.

and has not played the key role in leading the economy towards self-sustaining growth. Since 2000, the economy has shifted to a steady growth path, made possible through massive inflow of foreign direct investment while local industrial capital has yet to reach the level of playing a lead role in contributing to growth. The ***Integrated Industrial Development Strategy 2025 (IIDS 2025)*** reviews the policies of **SIDP** in the context of the emerging economic environment and prepares a road map for implementation of the SIDP strategies so as to achieve the objectives of the industrial sector as mandated under **VISION 2025** targets.

Historical View and Current Status of the Sector

Tanzania's manufacturing sector started from a base of near zero when the country attained its independence. Since independence in 1961, the sector has grown steadily with massive Government investments made in the 1960's and 1970's reaching its peak when the economy was beset by a series of crises resulting from a set of external and internal shocks during the late 1970's. Although the government adopted financial tightening policies to address the crisis at that time, it was only after conversion of the economic system from a planned to a market economy in 1986, with the support of IMF and World Bank, that the economy turned to a recovery path.

Figure 1 Manufacturing Value Addition (1970-2010)



Source: United Nations Statistics Division, 2011

Through the process of economic adjustment during late 1980's and 1990's, macro-economic indicators bottomed-out in 1994, moving back to the stable growth path. However, being

affected by the inflow of imported industrial products under unilateral trade liberalization measures, the manufacturing sector suffered a catastrophic damage. For instance, the textile industry, which had been the leading industrial sector under the socialist economy, led to shut down of nearly all existing twenty two textile mills by 1993, with the bare exception of two mills that remained in operation.

Nevertheless, recovery of the manufacturing sector since the late 1990's has been remarkable in both speed and stability. Moreover, recent statistics show that, since 2007, the value of manufactured goods exports has grown to become the second largest item only after the mining sector, leaving traditional agricultural exports behind. This growth has been brought about by FDI which entered the country after the remnants of socialism had been wiped out by the structural adjustment policies. However, local industrial capital is yet to mature and link FDI into the local economy or take the leading role in industrial growth.

Asian Miracle will not happen in Africa

After the lost twenty years of the 1980s and 1990s, Tanzania has put a foot on the radar of economic growth as did the Asian economies in 1980's. However, the economic environment surrounding Tanzania today is very much different from that of the Asian economies when they attained hyper growth, and moreover the Tanzanian government has committed to a liberalized trading system and cannot go back to the protective trade era.

When Japanese manufacturers started to shift their production base from Japan to China in 1980's, the pay gap between Japan and China was in the range of 30 to 40 times. In other words, it had been more economical to have had the production base in Japan rather than in China until the pay gap reached the 30-40 times due to: scale economies, economic concentration, economic infrastructure, supporting industries, access to skilled labor and favorable business culture, all of which Japan had but China did not have at that time. Nevertheless, finally the factory of the world has now shifted to China and India who, together, have one third of the world's population. Huge industrial concentrations and business infrastructure have been established in China and India today. Under such circumstances, the optimistic sight of the same Asian miracle recurring in Africa as had happened in Asia is not going to happen, even in the long run, unless the pay gap against China and India opens up 30 to 40 times in favor of Africa. Africa has to make up its mind to pursue an African model of economic growth while competing with the Asian giants in the global market on equal footing. There is no other way than for each of the Sub-Sahara African countries to establish its own development strategy and to make every possible effort towards improvement of industrial efficiency.

Kilimo Kwanza and Industrialization

Aside from very few exceptions like Singapore and Hong Kong, improvement of agricultural productivity has provided the ignition for the economic growth in all economic eras. Poor and low agricultural production yield has prevented industrialization in Tanzania in many ways. For instance, unstable supply and inferior quality of agricultural products has prevented the growth of sound and competitive agro-processing and food processing industries. The high cost of agricultural products and imported food-stuffs has pushed up the cost of living for urban dwellers and forces employers to carry high labor costs. Farmers barely sustain their lives through their poor yields and cannot provide the market or workforce for industries. The weak agro-processing industrial sub-sector does not provide the market and motivation for farmers to invest in improved farming. Agricultural development and industrialization have to be promoted simultaneously and in unison.

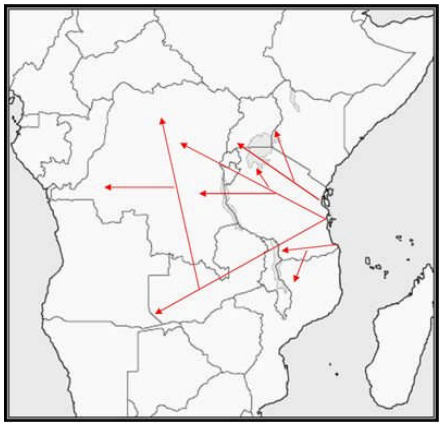
Tanzania has initiated **Kilimo Kwanza** as a national resolution and movement. The investment environment for launching positive industrialization policies has matured. Taking this opportunity, **IIDS 2025** proposes an aggressive industrial investment program to create challenging industrial bases in Tanzania to pursue the mandate given to the sector by **VISION 2025**.

PART II HORIZONTAL FRAMEWORK

Gateway Port for Regional Growth

Tanzania is situated at a highly strategic location in East Africa with six hinterland countries to the west and an 800 km coastal line to the east. Dar es Salaam port is not only for Tanzania, but also for all East and Central African states. In fact, Dar es Salaam port serves as the main port for Zambia, Malawi and Burundi and also undertakes a major portion of the cargo for DR Congo, Rwanda and Uganda. Tanzania is the doorway for the six countries' exports and imports. Tanzania can provide the best and most efficient export and import platform for these six countries.

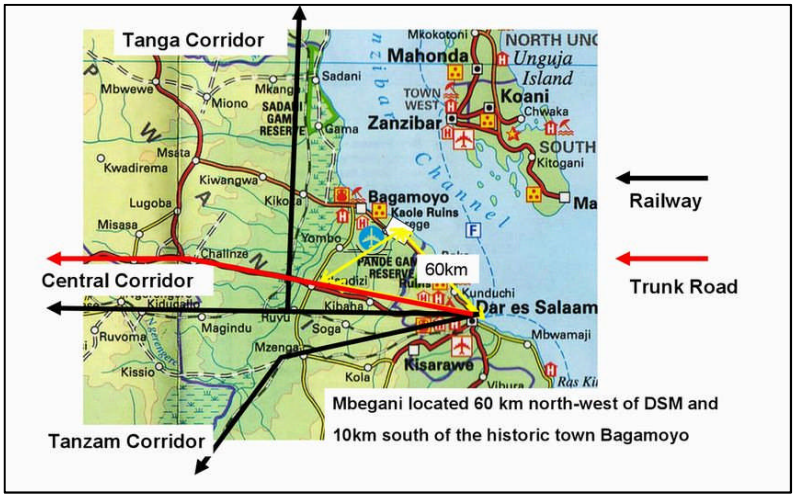
Figure-2 Logistics Advantage



In order to respond to the growing demand for cargo handling, which has been growing at 13.1 % per annum over the last 10 years, i.e. at twice the speed of the region's GDP growth, a proposal

to open a new regional hub port to supplement the limited capacity of Dar es Salaam port is made. Tanzania Ports Authority (TPA) conducted a site survey in 2008 and concluded that Mbegani at Bagamoyo is the best locationI for the construction of such a supplemental port and the Port Master Plan 2008 financed by the World Bank recommended the new port at Bagamoyo to be ready for operations by 2018 under a high cargo growth scenario and by 2023 under a low cargo growth scenario.

Figure-3 Location of Bagamoyo



Bagamoyo, being situated 60km north of Dar es Salaam, can be connected easily to both the Central Corridor and the Uhuru (TAZARA) Corridor by both railway and road systems. Through by-passing the congested Morogoro Road, through which all road traffic exiting Dar es Salaam has to pass, the congestion of the commercial capital would be eased tremendously.

Clustering of Industries

One of the weaknesses of Tanzania's industrial scene is the geographical spread or dispersion of industries and factories. An industrial cluster is generally designed as a geographic concentration of interconnected firms in a particular field with links to related institutions. It may include financial providers, service vendors, R&D and training institutes. Clustering offers unique opportunities for firms not only to take advantage of a wide array of domestic links but also to create both competition and collaboration which stimulates the potential for learning and innovation.

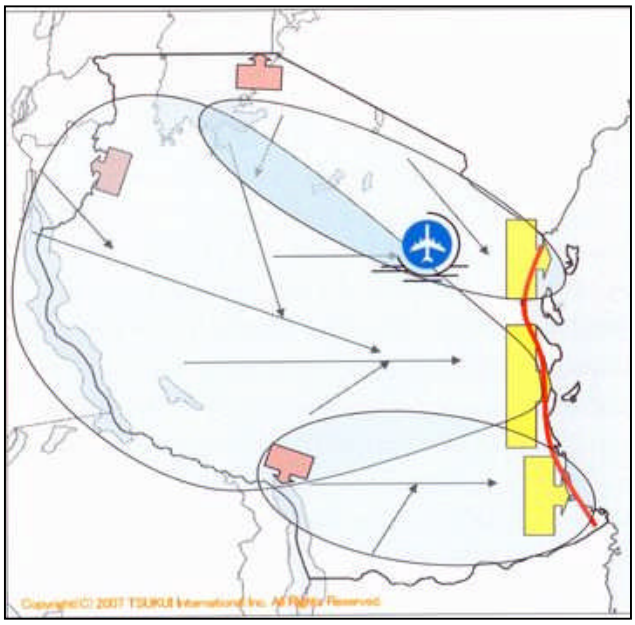
For Asian countries, in many cases the clusters were deliberately advocated through cooperation between the government and the private sector. In this strategy, clustering is expected and recommended at the following geographical stages;

- Waterfront Special Economic Zones (SEZs) at ocean outlet of each of the development corridors.
- Agricultural SEZs at key locations of the Southern Agricultural Growth Corridor (SAGCOT).
- Cross-border SEZs at borders with neighboring economies.
- Specialized Industrial Clusters at regional level.
- Small and Medium-scale Enterprises (SME) Parks at regional level, and
- Micro Manufacturing Enterprises (MME) Parks at district level.

Economic Zone Development at Waterfront

The economic zone approach is a well proven and widely accepted policy measure for industrial development. It is especially effective for countries whose infrastructure is poor while funds for investment and development are limited.

Figure-4 Waterfront SEZs



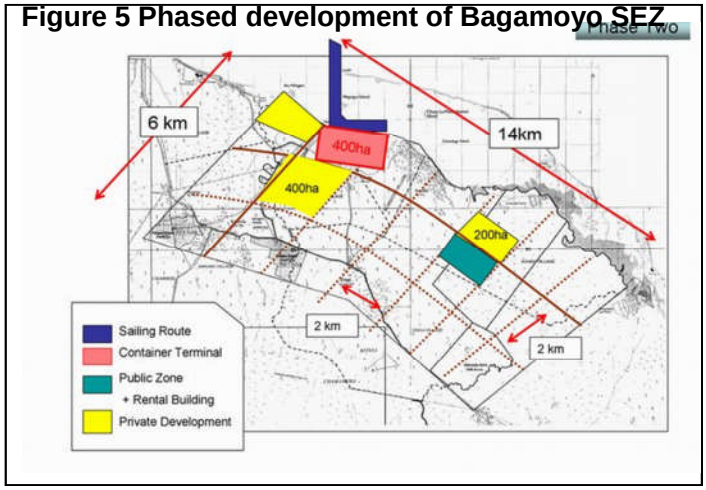
Learning from the lessons emerging from Asia, where industrial development started from industrial complexes at the waterfront, the IIDS proposes multi-function large scale Special Economic Zones (SEZs) to be developed at the water front in each of Tanzania's development corridors, namely ***Bagamoyo***, ***Mtwara*** and ***Tanga.*** These are called ***Waterfront SEZs.*** Each of the Waterfront SEZ is designed to comprise of between 2,000 to 8,000 hectares as development sites, equipped with systemized port facilities of international standards. Logistic functions and easy access from inland is the key factor in Waterfront SEZs. Each Waterfront SEZ is directly linked with respective development corridor and fully supported by basic infrastructure of port, power, water and sewerage. These are manufacturing bases with accumulated industrial formations, simultaneously serving as logistic centers for national geographical areas covered by each corridor, as well as all hinterland countries connected with the outside world by these corridors.

Bagamoyo Waterfront SEZ

Being situated at an outlet of the Central and Uhuru (TAZARA) Development Corridors to the Indian ocean, ***Bagamoyo SEZ*** is expected to become the centre-piece of Tanzania's industrialization vision for the 21st Century. This SEZ is located 60km north of Dar es Salaam and 10km south of the historic Bagamoyo town. The area covers approximately 8,400 hectares and, according to the Port Master Plan of Tanzania Port Authority (TPA), the next generation modern port shall be developed by 2020. The water is shallow and needs dredging work but is well protected by natural water-breaks. The port and SEZ shall be connected to Dar es Salaam, the Central Corridor, the Southern Agricultural Growth Corridor and Tanga by double carriage roads. It will be connected to TRL and TAZARA railways systems through a 20 km extension. The port shall be designed to accommodate Panamax class vessels with provision for extension to Post-Panamax standards as demand increases.

The SEZ contains a residential area, export processing zones (EPZs), specialized industrial clusters, SME parks, exhibition facilities, commercial zones, tourist zones and is to be developed in phases. The area can be blocked by 2km interval roads, creating 21 development blocks of 400ha each. One half of each block, comprising of 200 ha, is an adequate size for development undertaken by private developers. Each block can be developed either by a public body or assigned private developers. However, the governing authority, tentatively called Bagamoyo SEZ Authority, will control the overall development concept under a carefully prepared master plan. One block may be offered to each of the hinterland countries for their own development as a deposit center or export-processing / import-assembling facility, with complete off-shore status. Theme zones like, Cotton Textile Zone or Chinese Manufacturing and Trading Zone is another possibility. The government will provide the plots and basic infrastructure, and developers, regardless of whether private or public, will undertake in-block development as well as its marketing to investors.

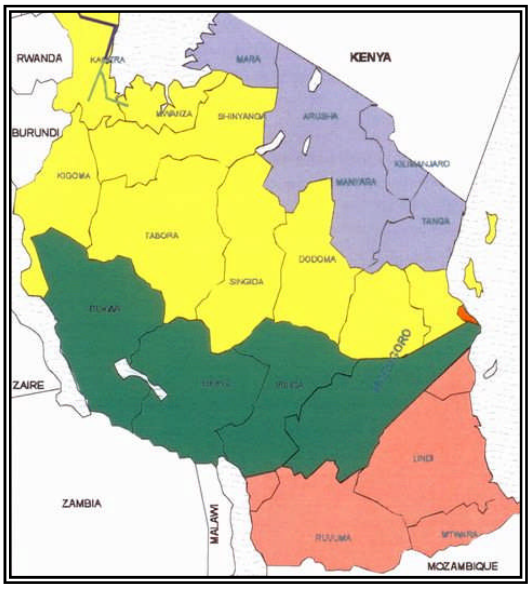
Figure 5 Phased development of Bagamoyo SEZ



Growth Corridor Development

The development experience of advanced countries and newly industrialized economies has shown that industrialization is the only way through which the general level of standards of living can be continuously improved upon, and concentrated investment into core growth sector would produce the maximum results at the macro level. However, it is also observed that such growth would inevitably lead to regional disparities and income disparities among the regions and the people. As a counter measure against regional disparities, integration of the regions through linkage based on corridor development strategies and strategic promotion of rural industrialization are to be encouraged.

Figure 6 Corridor Mapping



Central Development Corridor (CDC) is the obvious aorta of East African economic zone and crucial for integration of the region. It is, as well, the trunk line linking the land-locked countries of Rwanda, Burundi, Uganda and DRC Congo. Within Tanzanian territory it passes through nine regions serves 11 regions, and the total population to be reached inclusive that of hinterland countries is well above fifty million people.

The East Africa Corridor Diagnostic Study executed by East African Community (EAC) pointed out inferiorities of the corridor including the poor performance of Dar es Salaam Port and recommends comprehensive corridor improvement projects amounting to US$.2,100 million with the aim of reducing road transportation costs by 9-11 percent, rail/lake transportation costs by 30-36 percent and reduction of transportation time in the region by 40-50 percent by 2015.

Uhuru (TANZAM) Development Corridor runs through the rich agricultural land in the four Tanzanian regions of Morogoro, Iringa, Mbeya and Rukwa, along the Tanzania-Zambia Railway (TAZARA) and Tanzania-Zambia (TANZAM) highway. The corridor has recently attracted investor's attention as a targeted area under the ***Southern Agricultural Growth Corridor of Tanzania (SAGCOT)*** project, which designates the area as the potential bread basket for the Eastern and Central African region. SAGCOT proposes to develop commercial agriculture over an area of 350,000 hectares of farm land involving more than US$ 1.2 billion annual turnover worth of production activities creating 420,000 new jobs in the agricultural value chain through coordinated US$ 2.1 private investment and US$ 1.2 billion public investment.

Mtwara Development Corridor (MDC) is known as Minerals Corridor. At the head of Mtwara Corridor, a large natural gas reserve is under development. A nitrogen fertilizer plant and other gas related chemical industries are expected to grow in Mtwara industrial zone. Having limestone, red clay and gypsum, Mikindani is ready for cement production. Iron making and coal production at Liganga and Mchuchuma are about to take off. Reserves of base and rare metals such as nickel, copper, niobium, vanadium, titanium and others are known to exist along the corridor. Recent drilling tests confirmed the presence of high grade zones of sandstone-hosted uranium in Mkuju River.

Regions along Mtwara corridor have remained the least developed in Tanzania due to poor infrastructure including lack of railway system and poor road conditions. A corridor development plan should be formulated and implemented to take advantage of the opportunity of building an iron making mill at Liganga and coal mine development at Mchuchuma.

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Tanga Development Corridor (TDC) was originally designed to link Tanga port and the Great

Lake Zones and to provide logistics services to Great Lake zone countries. TDC has considerable potential for creating an economic growth area extending beyond Tanzanian borders. With Kilimanjaro International Airport providing international transportation links, the northern highlands regions of Kilimanjaro and Arusha have great potential for export oriented horticulture and development of agro-related industries as well as hospitality industries on the basis of tourism. Thanks to moderate climate and logistics, the highlands are considered as providing an excellent destination for foreign direct investment. The corridor should develop a cold chain transport and storage facilities for horticulture and perishable food industries including meat, milk, dairy products, cut-flowers, highland vegetables and fruits industries.

PART III VERTICAL FRAMEWORK

SME promotion and bottom-up graduation of local industries

The Business Survey of 2007/2008 conducted by the National Bureau of Statistics, counted Tanzanian manufacturing enterprises operating throughout the year at that time, at 9,354 in Dar es Salaam and 15,625 in the other regions. Amongst the grand total of 24,979 enterprises, 88.0 % were categorized as ***Micro Manufacturing Enterprises (MMEs***) with less than 5 workers. This ratio rises to as high as 96.9 % when small scale manufacturers with less than 10 workers are included in the figure.

Table 1 Number and Percentage of Manufacturing Enterprises by size of workers

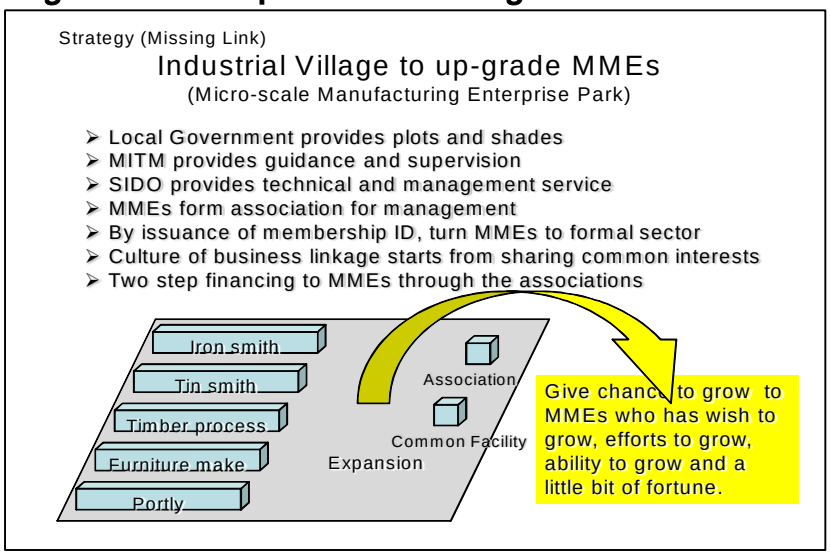
No. of Workers	1-2	3-4	5-9	10-19	20-49	50-99	100-499	500+	Total
No. of Manufacturers	15066	6921	2216	411	215	62	70	18	24979
Percentage	60.3%	27.7%	8.9%	1.6%	0.8%	0.2%	0.3%	0.1%	100%
Definition in SME Policy	Micro scale manufacturers		Small scale manufacturers			Medium manu'rers	Large manufacturers		

. **Source: Business Survey 2007-08, NBS**

On the other hand, only 5,520 enterprises had been registered at BRELA as of June 2008 for manufacturing activities. This means that nearly 90% of the manufacturing enterprises in Tanzania are MMEs, and most of them are in informal sector. Although a number of SME promotion programmes have been executed, these may not have reached out to those enterprises in the informal sector. Since 96.9% of manufacturing enterprises are micro and small enterprises with less than 10 workers and there is a very limited number of medium scale enterprises, the bottom-up strategy to push micro enterprises to small, small enterprises to medium, and medium enterprises to large is vital for the industrialization of Tanzania.

One of the proposed measures is to establish ***Micro Manufacturing Enterprise (MME) Park***s in rural urban centres to accommodate micro and small scale manufacturing enterprises forming industrial clusters. Many of the SMEs have their workplace in the backyards of residential premises in residential areas. An effective solution for creating growth opportunities for these enterprises is to provide working premises in industrial areas and support the enterprises to form clusters for business efficiency and co-working.

Figure-7 Concept of Industrial Village



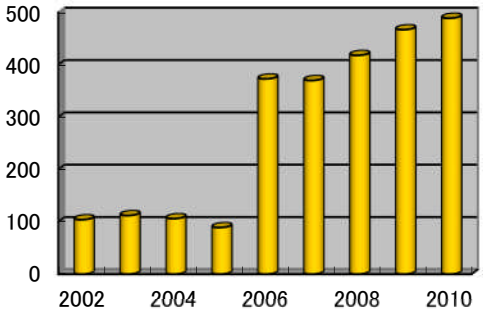
Precedent models can be found in Kenya as Jua-Kali associations, given permanent working premises and opportunities for business concentration. Following the on-going implementation of regulatory reforms initiated under BEST (Business Environment Strengthening in Tanzania) program, IIDS proposes to grant formal sector identities to MMEs upon their enrolment in MME Parks.

AGRICULTURAL DEVELOPMENT LED INDUSTRIALIZATION

Recent recovery of sun-flower seed production and revival of local oil industry provides a good example of **Agricultural Development Led Industrialization (ADLI)**.

Thanks to the joint efforts of MAFS and NGOs who have introduced Quality Declared Sunflower seeds (QDS), the production sharply increased since 2006 and afterwards. A remarkable phenomenon has happened after the increase in production. That is the revival of the sun-flower oil processing industry. A number of micro scale entrepreneurs have entered into the oil extracting business which can be started with relatively small capital and low technology. Currently they are producing filtered crude oil for villagers. However, with increasing production, the need to develop the larger

Figure-8 Production of Sunflower Seeds



Source: The Economic Survey

distant market has been born. Raw sunflower oil is good for human consumption if it is used immediately after extraction but needs to be refined if it is to be marketed and consumed at a distant market. Investing in a refinery needs a considerable amount of capital. Therefor oil processors in sunflower producing areas have initiated several attempts for joint establishment of small scale oil refineries. A series of movement for rise and growth of sunflower oil industry starting with improvement of sunflower yields has been identified by MIT as a model of Agriculture Development Led Industrialization (ADLI). MIT plans to apply this model to other parts of the country as a means of promoting rural industrialization at the grass roots level.

Resource based Industrialization

Having the heavy metal resources bearing Great Lift Valley on the western border, Tanzania is endowed with rich natural mineral resources. Mineral resources such as nickel, iron, copper, gold, uranium, titanium, vanadium and others have been confirmed, but due to requirement of huge capital for infrastructure development, very little of these resources have been developed.

With increasing demand for commodities in global market, mineral resources will become an important foreign exchange earner for Tanzania. Nevertheless, the government should establish a policy to condition domestic value addition, ie smelting, refining and processing in Tanzanian territory before mineral are exported. Such policy may, somewhat, slow the speed of FDI inflow for mineral development. However, it does not slow the growth speed of transformation of the Tanzanian economy which has achieved sustainable growth throughout the last decade without recourses in resource exports. Instead, the growing demand in the world market would result in handing over more valued assets to the next generation of Tanzanians and development of the processing industry would integrate the mining industry deeply to the national economy.

The unfolding industrialization process should always utilize natural resources as raw materials in value adding activities. Iron making using locally produced iron ore and coal, fertilizer production using locally produced natural gas, aluminum smelting processing locally available bauxite, food industry processing using locally available agro and fishery products, gemstone cutting, pharmaceutical production and so on are the potential envisaged industries.

At the same time, we should not under-estimate risk emanating from mineral exports that will eventually bear on other export industries. A situation where inflows of foreign currency from massive mineral exports pushes up the exchange rate of the local currency and weakens the price competitiveness of export industries has been observed in several mineral-export inclined countries. This phenomenon is well known among economists as “Dutch Disease”. To avoid

plunging the economy back to the mono-culture structure, as was the case during the colonial era, mineral exports should be undertaken with as much value addition as possible and resulting foreign exchange earnings spent in ways that contribute to national productivity improvement such as investment in infrastructure development.

Creating Competitive Labor Force

In 2008, Tanzanian formal sector manufacturing enterprises paid TZS 2,550,000 per person per annum as average wages per worker. The equivalent figure of US$ 2,135.00 (1.0 USD = TZS1,196.3) is almost equal to the standard of the Chinese wage level, whose manufacturing sector paid US$ 2,016.00 per person in 2008 (according to ILO Labor Statistics) while China has six times higher per capita GDP compared to that of Tanzania. It is also considerably higher than that of Vietnam and Bangladesh. The higher wage level has come from higher living costs for town dwellers, rather than from strong labor union actions. A middle income group town dweller in Tanzania spends 60 % to 70 % of his income on foodstuffs, with food prices in Tanzania being considerably higher than those in Asian countries. The high prices of food items come from low agricultural productivity and a weak food processing industry in Tanzania which allows importation of processed foods.

Unless the high wage structure is eliminated, the growth of labor intensive industries cannot be expected, employment of workers will not grow and competitiveness of industries will not improve. In addition to efforts to improve agricultural productivity and to promote agro-processing and food-processing industries, a series of counter measures for the labor market are to be taken, such as relaxation of labor regulations, relaxation of company registration, and decentralization of factories to regions. Now the improvement of agricultural productivity is an integral part of the industrial development strategy, and abundant workforce being liberated from the agricultural sector would generate the motive force for full scale industrialization.

PART IV SUPPORTING FRAMEWORK

Coordinated Infrastructure Investment under Five Year Development Plan

In order to provide competitive business environment to the existing industries and to attract fresh foreign and domestic investment into local industries, the improvement of infrastructure is critical. Given circumstances under which available financial resources are so limited while land is an abundant resource, a reasonable option for investment in infrastructure development entails the adoption of the principle of “selection and concentration” under a well-coordinated planning and execution strategy.

Infrastructure facilities under reference here includes: ports, airports, railways, roads, power supply, water supply, sewerage and ICT. Development of this infrastructural system has been undertaken by respective ministries, public agencies, local government authorities and appointed private operators. Development has been executed under respective ministries' development programs which is not necessarily well coordinated. A strategic public expenditure mobilization program has to be prepared in the form of Five Year Development Plans (FYDPs) and be coordinated and monitored by a super-ceding agency.

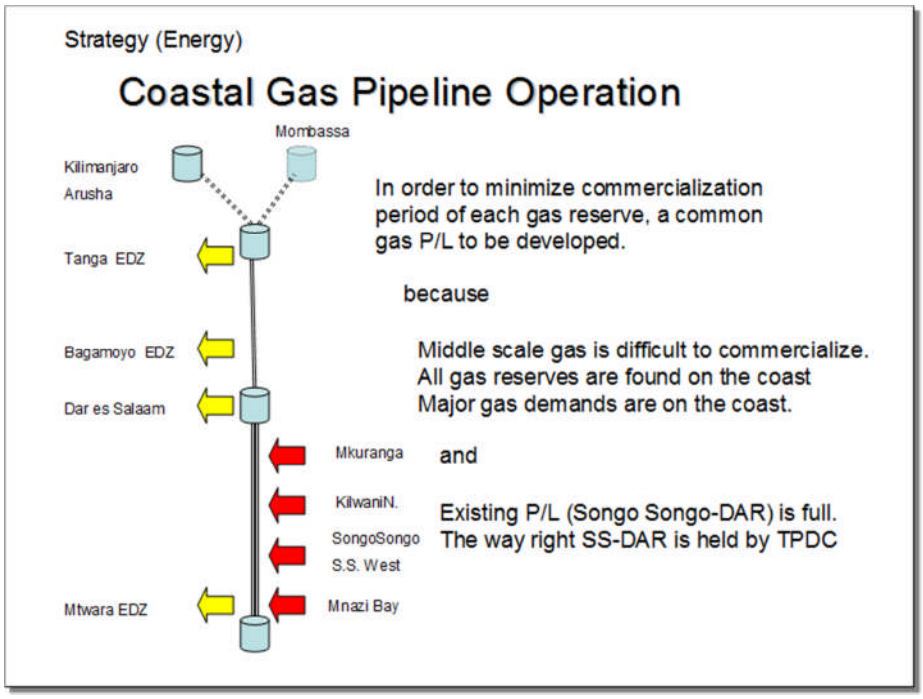
Power Supply

Although peak power demand in Tanzania as of the end of 2010 was estimated at around 833 MW, actual stable power supply remains at around 600 MW. due to several reasons. Shortage of power supply and its unreliability has been a most crucial factor to strain industrial growth of the country. The Tanzanian economy has been growing at 7.1% on average for last 10 years and the Industrial power purchase has been growing at 10.1% per annum. The growth of industrial power demand is expected to accelerate because of (i) increased power consumption associated with industrial advances inclusive of shift from manual work to mechanized work and (ii) expansion of electricity distribution network which connects isolated self-power generating workshops to the national grid. TANESCO Power Master Plan 2009 underestimates the growth trend of industrial power demand. IIDS requests MOEM and TANESCO to revise upwards the demand forecast and take measures to ensure stable power supply to industries.

Gas Development

Despite the presence of abundant natural gas and a series of finding of gas reserves since the 1990s, commercialization of gas has been suffering from a noticeable amount of time. ***Natural Gas*** has a number of qualities that make it superior to liquid oil. However, the heavy initial investment outlays requirement in transportation systems often prevents quick mobilization of the resources of medium size gas reserves. In fact, it took 13 years to commercialize Songo Songo gas after its finding in 1992. Mnazi Bay gas got its development license in 2006 and is yet to be fully developed. It is not only in Tanzania that medium scale gas fields take time to find a way for commercialization. However, in the case of Tanzania, all the discovered medium scale gas reserves and the major gas consuming spots are all situated along the coastal line. Once a common gas pipe line is constructed along the coast, all the gas reserves can be developed for commercial operation quickly. Quick commercialization would reduce the operational costs of gas producers and also prompt competition among them.

Figure 9: Image og Coastal Gas Pipeline for Medium scale Gas fields



Source: Illustrated by MIT team

On top of commercialization of medium size gas reserves which are mainly for domestic and regional use, finding of gas reserve in deep sea oil and gas concessions off southern coast may have bring a huge impact on altering the economic structure of the country. Full scale exploration started after 2010 has reported symptoms indicating the presence of large gas reserve which exceeds a benchmark scale of LNG (Liquefied Natural Gas) development of 5 trillion cubic feet. Once the implementation of an LNG project starts, the structure of Tanzania's trade pattern would change overnight. The exports would fill up country's trade deficit and, thanks to a fair production sharing agreement established in this business, may add billion dollar revenue to the government revenue. Nevertheless the revenue does not guarantee prosperity of the country and happiness of people. It would be, rather, a serious challenge to industrialization which has to maintain competitiveness against over-evaluated local currency at that time. The revenue has to be spend for country's welfare and infrastructure development wisely in order to maintain competitiveness of export industries overcoming so called curse of resources.

Penetration to district economy

Along consensus of decentralization and the needs of local industrialization, the Ministry is required to enhance access to local government and local businesses. To support local enterprises in regions for up-grading and to accelerate local industrialization, MIT has to extend

its reach to districts. Industrial office at districts are supposed to convey MIT's policies, strategies and plans to Local Government Authorities (LGAs) and work to reflect them on district development programs, and industrial extension officers provides local business societies and enterprises up-to date market information and supporting services for business promotion. LGAs active support is essential to promote local industrialization therefor a kind of benefitting measures for LGAs should be designed.

Budgeting for Industrialization

Vision 2025 expects the manufacturing sector to play the role of growth and transformation engine for building a semi-industrialized economy. IIDS assumes that the manufacturing sector would contribute 23 % share of GDP by 2025 in order to perform the vision. Though manufacturing activities should be undertaken by the private sector, the government has decided to take proactive measures for their promotion as was done in Asian countries. Proper budgeting for the sector has to be seriously considered.

The Government budget to for the manufacturing sector represented 0.4 percent throughout the 1st decade of 2000's. MIT's poor budgetary status restricted its performance due resource confrontation for implementing policies. To accelerate the growth of the manufacturing as the lead of the economic sector as foreseen in Vision 2025, it is necessary to allocate an adequate budget of not less than two percent to the ministry. MIT should establish an Industrial Development Fund to promote the growth of strategic key business sub-sectors.

PART V TARGETED SUB-SECTORS

From the view points of (i) size of the market, (ii) length of value chain, (iii) availability of resources and (iv) Tanzania's comparative advantages; the following sub-sectors have been selected as the targeted sub-sectors through a process that included screening of potential market size, magnitude of value addition and impact on poverty reduction. The selected sub-sectors are to be monitored closely by MIT through quantitative measures, and MIT will intervene in the production and/or marketing spheres when it is considered as being required.

The sub-sectors identified are:

Fertilizer and Chemical Sub-sector

- To support Kilimo Kwanza and productivity of land of Tanzania, Nitrogen fertilizer, i.e. Ammonia/Urea is mostly required. Ammonia/Urea is produced by air and natural gas, and Tanzania has natural gas for production, therefore establishment of Ammonia/Urea plant is

anticipated. Ammonia/Urea production needs scale to make the product competitive and requires over a billion dollar initial investment and large market well beyond domestic needs. Having Mnazi-bay Gas, the gas producing consortium together with TPDC are conducting a comprehensive study and IIDS plans to develop Mtwara SEZ to support the investment and to develop petrochemical industries there.

Iron and Steel Sub-sector

- The Mchuchuma coal mine and Liganga iron ore mines have been earmarked by the Government as key expansion sub-sectors. NDC signed a JVA with Chinese consortium to jointly develop the mines for East Africa's first iron making plant and large scale coal power station. The project has to fight with a number of challenges, and IIDS extends full support for the successful completion of the project.
- With the completion of the iron making project, metal related industries such as steel processing and metal fabrication are expected to be developed. To support internationally competitive manufacturing sector, formulation of a metal industry cluster should be prioritized.

Textile Sub-sector

- Textile sub-sector is highly labor intensive industry and has long value chain with 500 % to 600 % value addition. Tanzania is one of the largest cotton producers in Africa, with around 500,000 farmers growing cotton in farmlands of 412,000 hectares in 13 regions. Nevertheless, it is estimated that 70 % of the cotton produced is currently exported as cotton lint without processing.
- With a single coordination center under MIT, the strategy proposes to organize the sub-sector with the participation and collaboration of textile and apparel manufacturers, and with MIT establishing a system to oversee and drive the expansion of the sector.
- The strategy targets investment in not less than ten large scale textile or apparel factories with more than 500 workers each by 2015 and another twenty by 2025 creating an industrial accumulation of textile, apparel and fashion industries in the newly designed economic zones.

Agro-processing sub-sector

- The Tanzam Development Corridor is to be redesigned as the **Agricultural Growth Corridor,** and Agricultural SEZs are to be developed along this Corridor, as the location for all kinds of agro-processing and agro-supporting industry which are expected to thrive. The Big Four regions will be promoted as the breadbasket for the whole East African Region.

<Edible Oil Sub-sector>

- The edible oil market in Tanzania is estimated as being worth around 200,000 ton per annum. Though it was self-sufficient until 1980s, imported palm oil from Asia has taken over 80 % of the domestic market. Foreign exchange paid for these imports reached TShs. 190,386 million (US$ 146 million) in 2008.
- Through the spread of scientific agriculture and contract farming with oil processors, IIDS supports the revival of the local oil industry as the starting point of a process of rural industrialization.

<Cashew-nuts Processing Sub-sector>

- Cashew nuts production is well suited to the Tanzanian environment and is the main source of cash income for 250,000 small farmers in the poorest southern regions. Though Tanzanian cashew nuts are considered of high value in the international market, more than 70% of cashew-nuts are exported without processing.
- IIDS supports local processing including extension of institutional and financial support to processing firms.

<Fruits Processing Sub-sector>

- It is reported that post harvest losses in the horticultural sector (fruits) is as high as 60% due to lack of proper collection and storage systems and processing, packing and preservation facilities.
- IIDS proposes low interest financing support to processors for fruits collection and storage facility construction in villages.

<Milk and Milk Products Sub-sector>

- Though having the 3rd largest livestock population in Africa, annual consumption of milk in Tanzania counts only at the low level of 40 litters per capita, which is half of Kenya and one fifth that of FAO's recommendation for a healthy life. Moreover, only 4% of local milk produced is properly processed and marketed. The market is dominated by imported products from 37 countries.
- Enlargement of the domestic market through a buy Tanzanian campaign and school lunches with low interest financing for cooling tanks at collection points are the key intervention measures.

Leather and Leather Products Sub-sector

- Having the 3rd largest livestock population, Tanzania has tremendous potential of building afresh the leather and leather goods industry. The sector is also one of the high labor intensive industries. There is a huge investment opportunity especially in tanning and leather products manufacturing, while currently more than 80 % of hides and skins are

exported without processing.

- MIT together with the Ministry of Livestock Development has formulated an integrated hides, skins and leather sector development strategy.

Light Machinery Sub-sector

- Promotion of the light machinery industry is necessary to support mechanized agriculture, without which horizontal expansion of agriculture cannot be pursued.
- In order to introduce mechanized agriculture, IIDS proposes to develop agricultural machinery hiring centers in hub and spokes style along the **Agricultural Growth Corridor**.

Hospitality Industry Sub-sector

- Tanzania has one of the most unique set of nature attractions for tourism in the world. This ranges from the Serengeti National Park, Ngoro Ngoro Conservation Area and a list of other national parks to Mount Kilimanjaro, highest in Africa with snow at the equator.
- Tourism has forward and backward linkages to agriculture, industry, mining and the performances / fine arts and entertainment industries with huge growth potential.
- Tourism visitors also constitute a large “export market” for Tanzanian goods on Tanzanian soil, that can be used to nurture high quality low cost production for export.

PART I

Chapter One: INTRODUCTION

1.1 Purpose

TANZANIA Development Vision 2025 (TDV 2025) aims to transform the nation from a least developed country to a middle income country by 2025 through transformation from a weather and market dependent agricultural economy to a self-sustaining semi-industrialized economy. **The Sustainable Industrial Development Policy (SIDP) 1996** was adopted with the objective of implementing the government's decision of withdrawing the public sector from engagement in production activities and enabling the private sector to become the principal vehicle for economic growth. Under the guidance of this policy, shifting the engine of growth from public to private sector has been successfully accomplished. An enabling environment, including the provision of fiscal incentives, transparency, stable and simple regularly framework is being created. Consequently, the industrial sector started growing steadily from the end of 1990's with accelerated growth being achieved in the 2000's. **The Integrated Industrial Development Strategy 2025 (IIDS 2025)** has been prepared with the aim of providing concrete strategies to carry forward the SIDP objectives under the newly emerging economic environment and contribute to the realization of targets stipulated in Tanzania Development Vision (TDV) 2025.

1.2 Vision

1. To build an internationally competitive business environment through the formation of an industrial infrastructure supported by efficient physical facilities and institutional back up , and to promote internationally competitive industries and enterprises to make up the industrial sector the real engine of economic growth.
2. To transform Tanzania into the industrial and logistics hub of East and Central Africa, through expansion and extension of existing development corridors and the creation of an export-import platform at the waterfront. .
3. To promote rural industrialization through an agriculture-development led industrialization strategy, support for successful implementation of Kilimo Kwanza and focus on equitable regional growth.
4. To provide growth opportunities for all growth-oriented Micro, Small and Medium scale enterprises and entrepreneurs through provision of attentive supporting measures responding to all development stages so as to up-grade and scale-up local industries.

1.3 Targets

Manufacturing Sector[1] Growth:	Average annual growth at 15 %.
Manufacturing Sector contribution to GDP:	From 9.0 % in 2010 to 23 % by 2025 (*).
Manufacturing Value Addition:	From US$ 1.8 billion in 2010 to US$16.8 billion by 2025 (*)
Manufactured Goods Export:	From US$ 707 million in 2010 to US$ 6.7 billion by 2025

* Figures are computed on the assumption of GDP growth at 8 per cent and population growth at 2.5 per cent.

1.4 Background

Performance Today The manufacturing sector of Tanzania, which had received intensive invested in the 1960's and 1970's, was dismantled by the structural adjustment policies and severely damaged by the massive influx of imported products in the 1980's and 90's as a result of the trade liberalization. However, through acquisition of productive facilities by the private sector and inflow of foreign direct investment, the sector has since shifted onto a recovery track and has experienced gradual but steady growth during the 2000's. Yet the majority of agricultural products and natural resources are exported in raw form without substantial value addition in the territory while none of the light machinery, intermediate goods industries or light capital goods industries has experienced significant growth. Traditional exports such as cotton, sisal and cashew-nuts are still being exported to China, India and other Asian countries for processing and re-export to consuming countries. The colonial style trade structure of exporting raw materials and importing final products remains intact and is yet to be overhauled.

Stagnation The stagnation of the manufacturing sector in 1980's and 90's was not caused solely by factors internal to the sector. Trends of declining agricultural yields and product quality have resulted in both yield and quality remaining at the lowest levels even by Sub-Saharan Africa (SSA) standards. Tanzanian cotton, once popularly known as white gold is now subjected to discounts in the international market due to inferior quality. Hence the agriculture sector has failed to supply adequate raw materials, in terms of quality and quantity, to local processing industries. Power supply has not been able to cope with demand for stable and reliable energy to industry. The transportation system has failed in supporting delivery of products on time and at competitive cost consequent to the collapse of the railway system. Industry competitiveness

[1] **The wards "Manufacturing" and "Industry" sometime invite confusion. In this paper, we follow internationally widely accepted definition of International Standard Industrial Classification (ISIC) Code Rev4. i.e. "Industry" means generic term of ISIC Code (C), Mining, (D) Manufacturing, (E) Utility Service and (F) Construction, and "Manufacturing" means ISIC Code (D) Manufacturing alone.**

cannot be supported and sustained by ports whose ship dwell-time exceeds 30 days. Further, under the liberalized trade system, the inflow of price competitive products from emerging Asian economies precipitated the still-birth of embryonic light industries in Tanzania. The adverse impact of deregulation of trade and monetary reforms has been much more intense than forecasted under the SIDP.

Nevertheless, there are signs of bright prospects. The growth speed of the manufacturing sector has been improving steadily and successively over the decade of 2000's. Export of manufactured goods has doubled in the short period of three consecutive years. Perhaps the time for the sector to grow has come.

Asian Tigers Among the Asian countries that have accomplished more rapid rates of economic growth than forecasted by anyone, there is not a single one that executed textbook trade liberalization policies. Both China and India protected their infant industries for quite a long time, under closed trade regimes, until the last moment when they decided it was opportune to open up their economies to the rest of the world. They relied on top-down approaches in which government agencies took the lead in selected industries. However, when one examines the processes of policy making in detail, one finds highly detailed measures taken by governments in response to small signs of changes in the respective industry under consideration. When it came to modeling and observation in any industry, Tanzania looked for and adopted solutions from macro-economic policies, while the Asians looked for solutions from within the specific individual industry or sector. Furthermore, in the case of Asian countries, achievement of rapid growth was triggered or promoted by Japanese industries that were looking for cheaper production sites for their products, under the pressure of an over-valued Japanese Yen and rising domestic labor costs.

Miracle will not happen in Africa The current environment in which Tanzania is located is quite different from that in which Asian countries operated at that time. Tanzania government has committed itself to a liberalized trading system or regime and has little room for reversing this position. When the Asian miracles took place, the pay gap between Japan and China was 30 to 40 times. In other words, industrialists did not move their factories to China until the pay gap had grown 30 times higher. China and India who have become the world's factory floors share between them one third of the world's population in their own land. Tanzania cannot wait for "that time to come". Tanzanians have to make up their minds not to wait for the right time to come, but to compete with the Asian giants on equal footing now. Tanzania has no other option than to establish its own development strategy and extend all efforts necessary to meet the

fundamental two-word challenge function of “efficiency improvement”.

Strength According to the latest issue of the World Bank’s report on business climate, Tanzania was ranked at 128th place out of 184 economies. The report states that infrastructure is inadequate and governmental red-tape increases the cost and time to acquire permits and licenses. It also says that skilled labor is scarce and workers are poorly trained if at all trained. Yes, there are a number of weaknesses that impose major challenges. At the same time there are a number of strengths which any other economy could utilize to overcome the challenges of prevailing weaknesses. The political and social stability of the country is incomparable. Tanzania has six landlocked countries to the west and 800 kilometers of coastal line to the east. Along the coast a series of natural gas reserves have been found and are in ready position to feed clean and cheap energy to industry. There is vast arable land area of up to 44 million hectares with moderate climate suitable for agriculture. How many African countries can boast of similar comparative strength in terms of resources and location?

It is Tanzania’s Turn Through the national movement of ***Kilimo Kwanza***, agricultural output is supposed to increase significantly. However, without growth of agribusiness and agro-processing industry, the country cannot be freed from the syndrome of a weather and market dependent economy. Tanzania’s manufacturing sector has been transformed through consistent economic reforms and has started growing. Tanzanian industrialists show growing confidence in the emerging trend of economic development. International societies and foreign investors are impressed by the stable economic foundation that is in place in the country. Tanzanian people as well as private enterprises are motivated by the prospects of economic prosperity. The economies of the hinterland countries are also emerging and are integrated into the global market and remain dependent on development corridors running through Tanzanian territory. The huge natural gas reserves found in the last decade are ready to feed clean energy to Tanzanian industries. Although several serious problems may persist, none of them are insurmountable. To position Tanzania as an emerging economy in the 21st century, the Ministry of Industry and Trade (MIT) proposes an aggressive industrial investment strategy to create a challenging industrial base in Tanzania. Tanzania has to step forward to take and steer the rudder of growth dynamism today and not tomorrow or another time in the future.

1.5 Policy measures

- Develop a new port at Bagamoyo to supplement Dar es Salaam port to respond to increasing cargo demand in the East African Region as well as to meet current maritime requirement of mass transportation. The new port has to embrace the concept of

multi-modal transportation to ensure seamless operations of an efficient transport hub for the region.

- Establish a realistic phased development master plan for economic zones over the country. It should not pursue a scattered rosy dream but should plan on the principle of "selection and concentration"
- Coordinate concentrated infrastructure development under a superseding authority along the development corridors responding to the requirement of development stage of industrial clusters.
- Promote resource based industrialization to add value to the assets of Tanzanian nationals before exporting in raw form.
- Locate industrial extension officers at the regional level to support rural industrialization and promote micro, small and medium scale enterprises.
- Select targeted industrial sub-sectors and extend to them intensive support for their transformation to leading industries.
- Organize enterprises, both sectorial and regional, and promote business linkage and cluster formation..

1.6 Implementation Plans

To-date, a number of development strategies and recommendations have been produced and considered for implementation. However, most of these have not been successfully implemented because of physical limitations or financial constraints. Action Plans annexed to this strategy do not require or call for all of them to be implemented in parallel at the same time. On one hand, these strategies will still have an effective impact in the relevant areas to the extent that some of them can be implemented on the basis of available physical and financial resources. On the other hand, most of the strategies touch on multi sectorial issues and cannot be implemented by the ministry responsible for industry alone. Close collaboration and harmonization with other central and sectorial economic authorities, parties and national planning agencies remains vital.

The philosophy underlying the project proposals identified under the IIDS Master Plan hereto attached calls for each proposal to be examined and developed so as to reflect the medium and long-term development vision and objective of the planning process currently undertaken by the Planning Commission in the President's Office and related sector master plans by respective authorities. This is a task that has to be undertaken in a professional manner with persistent dedication and full commitment to success by the respective authorities.

1.7 Structure of the Strategy Paper

To create and build the consensus necessary for effective implementation of IIDS, this introductory chapter presents, in summary, the essence of the strategy, the underlying drivers, implementation instruments and strategies for their effective application.

Chapter 2 builds on this background with a situation analysis that delves into the history of the manufacturing sector and its development up to the adoption of SIDP in 1996, as well as its current performance. Attention is drawn to the paradox of comparatively high wages of Tanzanian labor, which eliminates one of the fundamental drivers of industrial competitiveness in lower income developing economies. For instance, current cost of Tanzanian industrial labor today is at par with that faced by Chinese manufacturing enterprises today. This reality undermines Tanzania's potential competitiveness in the manufacturing sector.

Chapter 3 narrates Tanzania's geographical advantages as the natural strategic hub for the Eastern and Central African region. It reviews current trends in the shipping industry and their influence on the future of the Central Corridor as the regional bloodline, together with responsive developments that must take place in the twin ports of Dar es Salaam and Mbegani to create a powerful and competitive import/export platform. The future of this platform also depends on the development of Bagamoyo waterfront SEZ as the manufacturing platform for Tanzania and its hinterland countries and the heart of the hub.

Subsequent chapters 4 through 6 present a series of the instruments for horizontal development of the manufacturing sector, radiating from the Bagamoyo waterfront SEZ inland along the rich agricultural land around TAZARA under the SAGCOT scheme, featuring regional SEZs or industrial parks and appropriate district level micro-industrial parks. Other developments revolve around the Mineral or Mtwara Corridor to the South and Tanga corridor, both featuring waterfront SEZ with inland railway and road links to the rich mineral resources in the Southern Tanzania and the rich agricultural and tourism zones of Northern Tanzania. Two instruments of choice for industrialization within the SEZ and industrial parks is selection of target industrial sub-sectors and concentration of investments activities starting from existing informal enterprises with measures to promote their growth and graduation. Selection and concentration of sub-sectorial investments is the tool for creating and nurturing industrial clusters through a combination of synergies and intra-industry competition that leads to adoption of better technologies and industrial skills at lower costs.

Chapters 7 through 9 present the vertical approach to industrialization based on prioritization of

high potential sub-sectors and products while giving due emphasis to rural industrialization through agro-processing and local production for local consumption. The 3 chapters underscore the potential approach to agriculture led industrialization through unfolding evidence in the edible oils sub-sector and the leather goods sub-sector with existing entrepreneurs considering integrating oil pressing to refining and leather tanning with production of leather goods respectively. The chapters conclude with a resume of extensive raw-material based high energy consuming sub-sectors, whose potential is guaranteed through access to rich natural resources endowment in the region and proximity to high capacity power generation sources. The prime targets include the fertilizer and chemicals industry and the iron and coal subsectors, whose potential is based on findings of natural gas, iron ore and coal as inputs and sources of energy in processes that are energy intensive.

Part IV concludes the strategy with a presentation of the supporting framework with chapter 10 looking at the issues of development of the requisite transportation infrastructure and utilities respectively. In this regard, chapter 11 winds up the strategy paper with a review of the institutional framework necessary for effective implementation. The challenges of implementation are the theme of a separate Volume II, presenting a series of brief and to the point chapters of the IIDS Development Framework with a total of fifty (50) Action Plans.

Chapter Two: PERFORMANCE OF THE MANUFACTURING SECTOR

2.1 Performance of the Sector

The manufacturing sector in Tanzania is one of the least developed in Africa. However, strong and positive signs of recovery and growth have been observed over the last decade.

Table 2-1 shows the comparative gap between Tanzania and a number of selected Asian economies expressed in terms of the sector's contribution to GDP and per capita manufacturing value addition (MVA). Tanzania's figures are far less than those of the selected Asian economies. Even when compared with similar countries drawn from Sub-Sahara African community, such as Zambia and Kenya, it is clear that the per capita MVA of Tanzania is far from satisfactory.

Table 2-1: Comparison of Manufacturing Sector Contribution to GDP and Per Capita Manufacturing Value Addition for 2008 in US$ Current Prices

	Tanzania Mainland	Myanmar	India	Vietnam	Philippines	China
Share in GDP	8.5%	10.5%	16.1%	21.1%	22.6%	42.8%
MVA per capita	$39	$60	$159	$219	$422	$1365

	Burundi	Rwanda	Uganda	Kenya	Zambia	RSA
Share in GDP	13.3%	6.2%	7.4%	11.3%	10.5%	18.8%
MVA per capita	$16	$27	$34	$80	$116	$940

Source: UN Statistics Division, 2010

Nevertheless, Tanzania's manufacturing sector shows signs of having overcome the difficult years of the1980's and 90's and there is evidence of accelerating growth during the 2000's. Table 2-2 shows the growth rate of the manufacturing sector for East African Countries for the past 6 years. As is seen in the table, Tanzania's growth is remarkable, in terms of growth rate and stability (see Table 2-2).

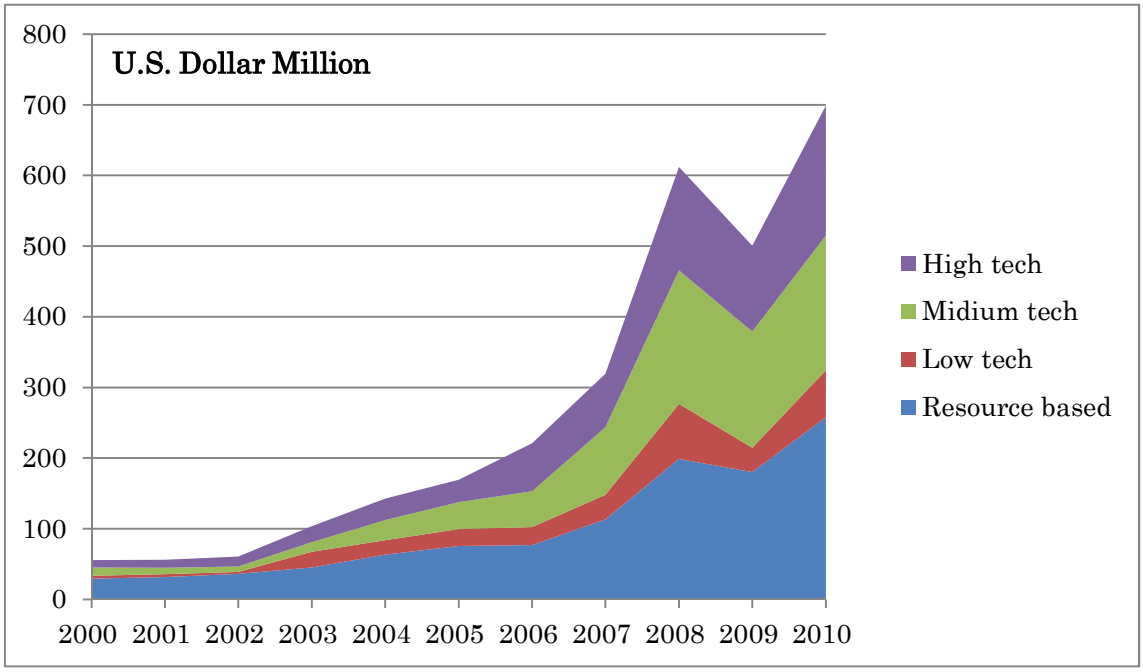
Table 2-2 Manufacturing Sector growth of Tanzania/Kenya/Uganda at constant price

Growth Rate (Year)	2004	2005	2006	2007	2008	2009
Tanzania	9.4%	9.6%	8.5%	8.7%	9.9%	8.0%
Kenya	4.5%	5.0%	6.3%	6.5%	3.8%	n.a.
Uganda	9.5%	7.3%	5.6%	7.6%	7.2%	n.a.

Source: Tanzania National Bureau of Statistics, Kenya National Bureau of Statistics, Uganda Bureau of Statistics

Manufactured goods export of Tanzania shows hyper growth with annual growth rate of 28.3 percent over last 10 years jumping from U.S.Dollar 58.4 million in 2001 to U.S.Dollar 707.5 million in 2010. The manufactured goods exports, which had played a minor position in terms of foreign currency earning, started to grow sharply since 2003 when a considerable number of ex-state owned factories resumed operation after completing privatization and re-investment process.

Figure 2-1 Manufactured Goods Export of Tanzania



Source: UNCTADstat, 2011

In the year of 2007, for the first time in the history of Tanzania, the amount manufactured goods earned from exports exceeded that of traditional agricultural export standing at U.S.Dollar 325.3

million. The momentum of the growth did not stop and keep increasing with accelerated speed. Although the amount decreased 19.3 percent in 2008 affected by world finance crisis, it recovered quickly and resumed growth trend.

Moreover, the technology classification of exports according to SITC Rev.3 classification shows that not only resource based and low technology manufactured goods but also high and medium technology exports keeps hyper growth. Major exporting items classified by the technology classification of exports based on SITC Rev. 3 are as follows:

Table 2-3 Major Items of Manufactured Exports **Unit: US Dollar Million**

	2000	2005	2010
High Technology Exports	***10.5***	***31.7***	***184.2***
Fertilizers	0.0	3.0	94.5
Plastic products	0.3	1.4	26.5
Soap, cleansing and polishing preparations	1.1	6.2	12.8
Medium Technology Exports	***12.1***	***37.8***	***190.6***
Articles of plastics	1.4	4.8	35.8
Household type equipment	0.0	0.1	33.9
Civil engineering & contractor's equipment	0.3	2.6	23.5
Low Technology Exports	***3.8***	***24.4***	***66.4***
Tubes, pipes, profiles, fittings, iron, steel	0.2	2.5	14.5
Iron & steel bars, rods, angles, shapes	0.2	1.5	11.4
Labor Intensive and Resource-based Exports	***29.6***	***75.5***	***257.8***
Made-up articles of textile materials	1.7	13.5	63.8
Lime, cement, fabricated const. materials	2.1	2.2	39.8
Paper and paperboard	1.3	2.4	31.3

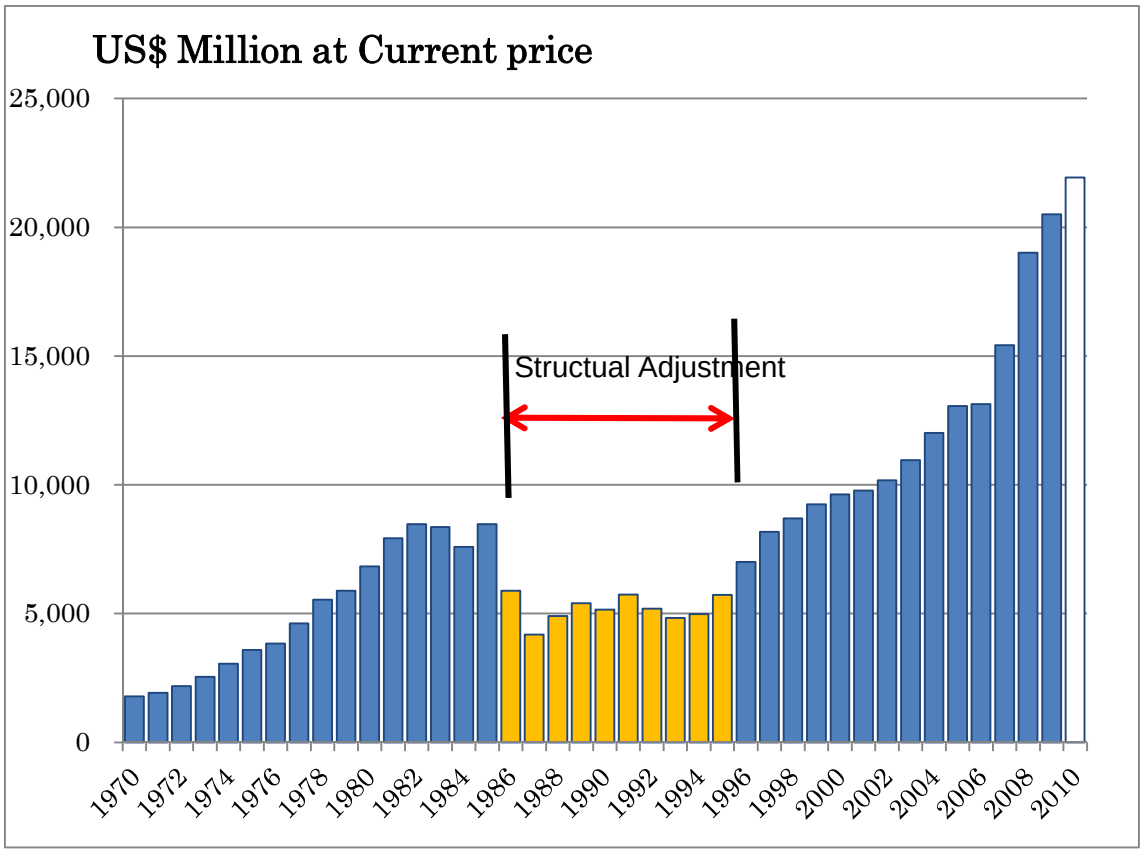
Source: UNCTADstat, 2011

2.2 Historic View of the sector

The manufacturing sector in Tanzania started from the low state of near zero existence during the colonial era. Since independence in 1961, with massive government investment, the sector grew smoothly in the 1960's and 1970's until this trend was halted by serious economic crisis caused by external shocks and internal constraints during the late 1970's. Although the government adopted tightening policy measures to address the crisis during the early 1980's, it

was only after the conversion of economic system from a planned economy to a market economy guided by IMF and World Bank in 1986 that the economy returned to a recovery path.

Figure 2-2 **GDP Growth 1970-2010**



Source: United Nations Statistic Division

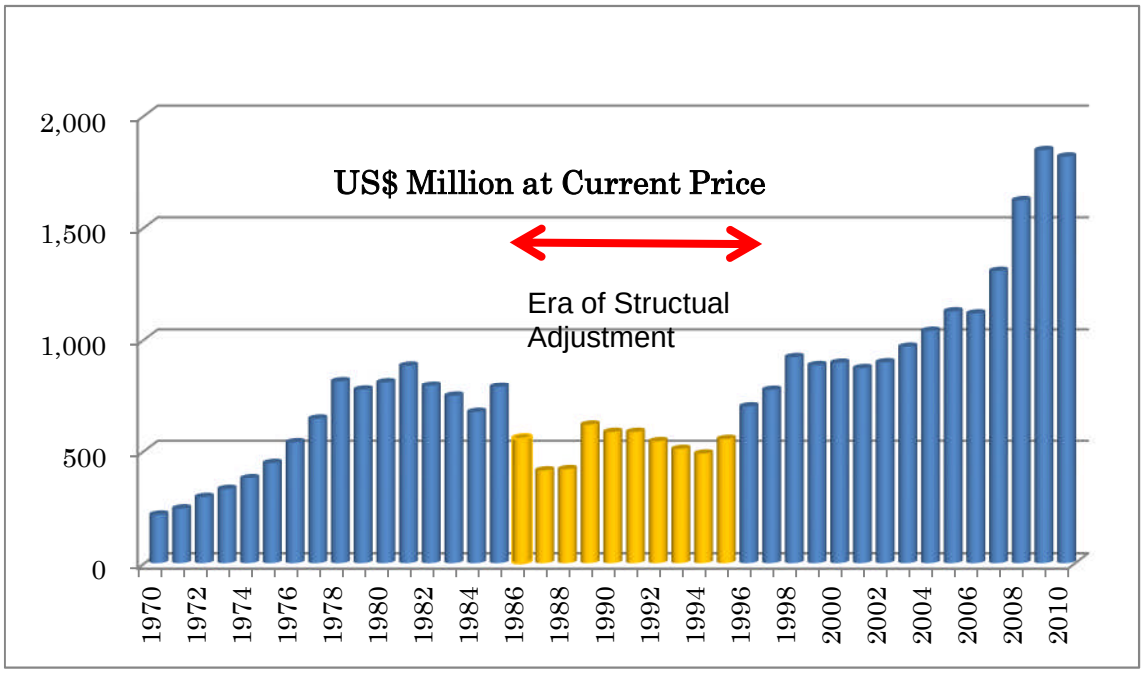
Tanzania embarked on structural adjustment since fiscal year 1986. As a result of commitment to reforms and the associated support from donor community, the macroeconomic indicators started to improve. Real GDP growth has substantially picked up, inflation rate has been controlled and foreign exchange rate has become stable. Tanzania was one of the beneficiaries of the IMF-World Bank debt relief program and the write-off of multilateral debt, both of which contributed a lot to the normalization of international business practices.

Yet, at the same time, Tanzania's manufacturing sector was thrown into the whirlwind of the global economy naked and without any protection. All and every kind of public support to the sector was dismantled and the sector was forced to face direct and unnecessary competition

with Asian products flown into the country under measures of liberalization of trade. During the 1980's there were 20 textile mills in the country, of which 15 were publicly owned, but all of these, except two, ceased operation by 1996 and Tanzania lost the largest industrial sector providing 25% of the sector's employment. Similarly, local processing of cashew nuts had declined from 200,000 tons in 1980's to less than one tenth in the 1990's. The manufacturing sector recorded decline to its lowest point in the mid 1990's, after which some manufacturing sub-sectors returned to up-ward growth. Some industries have achieved sharp recovery and rapid growth, while others have fully disappeared from the economy.

It is only during the middle of 2000's that manufacturing value addition, expressed in US Dollar terms, recovered to production levels that had been achieved before the crisis. However, the growth experienced since then has made the sector's performance remarkable in terms of speed and stability.

Figure 2-3 Manufacturing Value Addition (1970-2010)



Source: United Nations Statistic Division 2011

2.3 Sustainable Industrial Development Policy 1996-2020 (SIDP)

The Sustainable Industrial Development Policy 1996-2020 (SIDP) was launched during the second half of the 1990s, replacing the Basic Industry Strategy (BIS) which had expired in 1995. The purpose of SIDP was not only simply to replace the expired BIS but also to accomplish the

decision of the government to phase out its involvement in direct investment in productive activities, while letting the private sector become the main player in the economy. To achieve these policy objectives, the SIDP was to be implemented in three phases.

Phase I. Short Term Priority Programme 1996 – 2000

Concentrated on the rehabilitation and consolidation of existing industrial capacities through financial, capital and management restructuring

The strategies for implementing this phase included:

- Privatization of then existing industries – This has been accomplished by liquidating 250 public corporations and enterprises by 2007. Currently, 97% of all operating industries are under private ownership.
- Attracting Foreign Direct Investment – Tanzania Investment Center (TIC, formerly Investment Promotion Center) and Export Processing Zone Authority (EPZA) have developed incentive packages to attract both foreign and local investors. Investment flow into the manufacturing sector has been satisfactory with approved industrial projects by TIC and EPZA increasing substantially during the period.
- Promotion of the private sector – Private sector development is key as it plays a central role in the realization of SIDP objectives. Measures to promote private sector development include the establishment of the Tanzania National Business Council (TNBC) which provides a platform and opportunity for dialogue between the private sector and the government.
- Promotion of SMEs – The SME Policy was formulated in 2003 to address the challenges facing SMEs and stimulate their development and growth.
- Promotion of Trade – The National Trade Policy (NTP) was launched in 2003 to provide strategies to enable Tanzania make use of opportunities resulting from trade liberalization and globalization while enhancing domestic productivity, efficiency as well as stimulating quality improvement and price competitiveness.
- Creating a Competitive Business Environment - The Government established the Fair Competition Commission (FCC), and adopted the implementation of the program for Business Environment Strengthening for Tanzania (BEST) to reduce transaction costs. The implementation of BEST has, included among other measures, the introduction of a simplified business formalization tool through the enactment of the Business Activities Registration Act, 2007, (BARA).

Phase II. Medium Term Priority Programme 2000-2010

Creation of new capacity in activities with competitive advantage for export.

The Export Processing Zones (EPZs) Program was established in 2002 to attract and promote export oriented industries. To-date, six industrial parks have been developed and 44 licensed factories are operating under EPZ status.

Promotion of Light capital goods Industries

Efforts by the government have resulted in the increase of the number of smelting industries from 5 in 2005 to 22 in 2009, that are producing intermediate goods. Others are production of packaging materials such as boxes and bottles manufactured by Kioo Ltd for the brewing and soft drinks industry and production of craft liner for packaging industries by Mufindi Paper Mills.

Carrying out techno-economic preparations for heavy capita industries.

Efforts to conduct drilling work at Liganga iron ore and Mchuchuma coal depositories during the period have resulted in successful nomination of a strategic investor or partner to undertake the development of a one million ton capacity iron mill and 600 MW coal power generation facility. Successful implementation shall signal the commencement of the third phase of SIDP.

Industrial Performance 1996-2010

A review of the implementation of SIDP confirms that:

i. GDP at current market prices expressed in Tanzanian Shillings has increased from 3.5 trillion Shillings in 1996 to 32.3 trillion Shillings in 2010. In US Dollar terms, this was GDP growth from US$ 7.3 billion in 1996 to US$22.9 billion in 2010.
ii. Manufacturing activities at current prices has increased from 254 billion Shillings in 1996 to 2,899 billion Shillings in 2010, which is equivalent to US$ 738 million in 1996 to US$ 2,057 million in 2010.
iii. The annual growth rate of manufacturing activities has shown a remarkable improvement, from 4.8 % in 1996 to 7.9% in 2010, despite the world financial crisis in the preceding year.
iv. Employment in the manufacturing sector has risen from 63,317 in 1999 to 109,545 in 2010 for formal sector enterprises with over 10 workers.
v. Exporting value of manufactured goods has remarkably increased from US$ 30.1 million in 1999 to US$707 million in 2010 (UNCTAD statistic based SITC code).
vi. Contribution of manufacturing sector to GDP has not increased much and rose from

7.4% in 1996 to 9.0% in 2010. This is due to a well balanced growth process of the Tanzanian economy achieved through diversification in favor of other sectors including tourism, mining, construction, telecommunications, transportation and the estate sectors.

Fifteen years have elapsed since the launching of **SIDP 1996** and the business environment has considerably changed. The Integrated Industrial Development Strategy and Master Plan is intended to deepen the implementation of the **SIDP** policy strategy directives under prevailing circumstances and to enable the realization of the aims and targets stipulated in **TDV 2025.**
Towards this end, the main message of **IIDS 2025** is:

- To build an internationally competitive business environment, through formation of and industrial stock accumulation, strengthening the back-up institutional framework, bringing about concentrated infrastructure development, and promoting internationally competitive industries and enterprises, all of which, together, will make the industrial sector the real engine of economic growth;
- To make Tanzania the industrial and logistics hub of the Eastern and Central African region, through extension and improvement of existing development corridors and establishment of an export and import platform at the waterfront, and
- To promote rural industrialization, through an agricultural-development led industrialization approach.

The main output of IIDS will be the construction of an industrial foundation in Tanzania, that will provide a proper business base for foreign and local investors to establish an export oriented manufacturing sector, create a “Made in Tanzania” brand and promote local manufacturing enterprises that are tightly linked with international firms and enterprises that bring in foreign capital resources and technology.

Table 2-4

Tanzanian Exports by Region of Destination, 2002-2010 (Value in Million US$)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total Europe	**479**	**644**	**654**	**619**	**755**	**800**	**995**	**909**	**1151**
Kenya	35	78	83	76	97	101	235	177	297
Uganda	5	10	11	20	20	19	41	48	47
Rwanda						11	21	15	55
Burundi						41	20	24	51
Total EAC	**40**	**88**	**95**	**96**	**117**	**173**	**316**	**264**	**450**
South Africa	16	37	114	275	688	176	233	171	417
Zambia	17	17	6	8	18	22	37	44	54
Swaziland			2	0	2	1	1	21	0
Zimbabwe			1	2	1	1	1	6	0
Mozambique	2	2	3	6	11	19	31	20	18
DRC	16	23	10	13	18	59	124	80	137
Other SADC countries	20	25	14	17	22	24	17	32	0
Total SADC	**72**	**95**	**152**	**322**	**341**	**301**	**443**	**374**	**625**
USA	14	11	14	17	21	34	55	40	47
Canada	1	2	5	39	6	2	4	6	5
Other American	1	3	3	4	1	6	5	0	0
Total America	**16**	**13**	**21**	**56**	**28**	**37**	**64**	**48**	**51**
China						141	224	364	634
India	64	70	101	63	64	77	172	184	219
Japan	96	88	64	69	82	57	137	165	210
U.A.E.	14	15	18	34	47	88	65	67	55
Hong Kong	11	10	12	10	8	14	13	86	13
Total Asia	**186**	**183**	**195**	**328**	**328**	**447**	**674**	**930**	**1200**
Other Countries	85	80	198	242	317	388	990	771	814
Grand Total	**903**	**1126**	**1335**	**1702**	**1917**	**2227**	**3579**	**3294**	**4297**

Source: Computed by MITM from TRA and BOT data.

Chapter Three : SECTOR WORK FORCE

Mission:

- To strengthen the competitiveness of enterprises particularly labor intensive ones through more flexible labor policies.
- To reduce living costs particularly for foods and processed foods to ease workers' livelihood. To attract labor intensive industries through improved labor competitiveness.
- To add value to labor through technical trainings and incentives for skill-up.

Policy Measures:

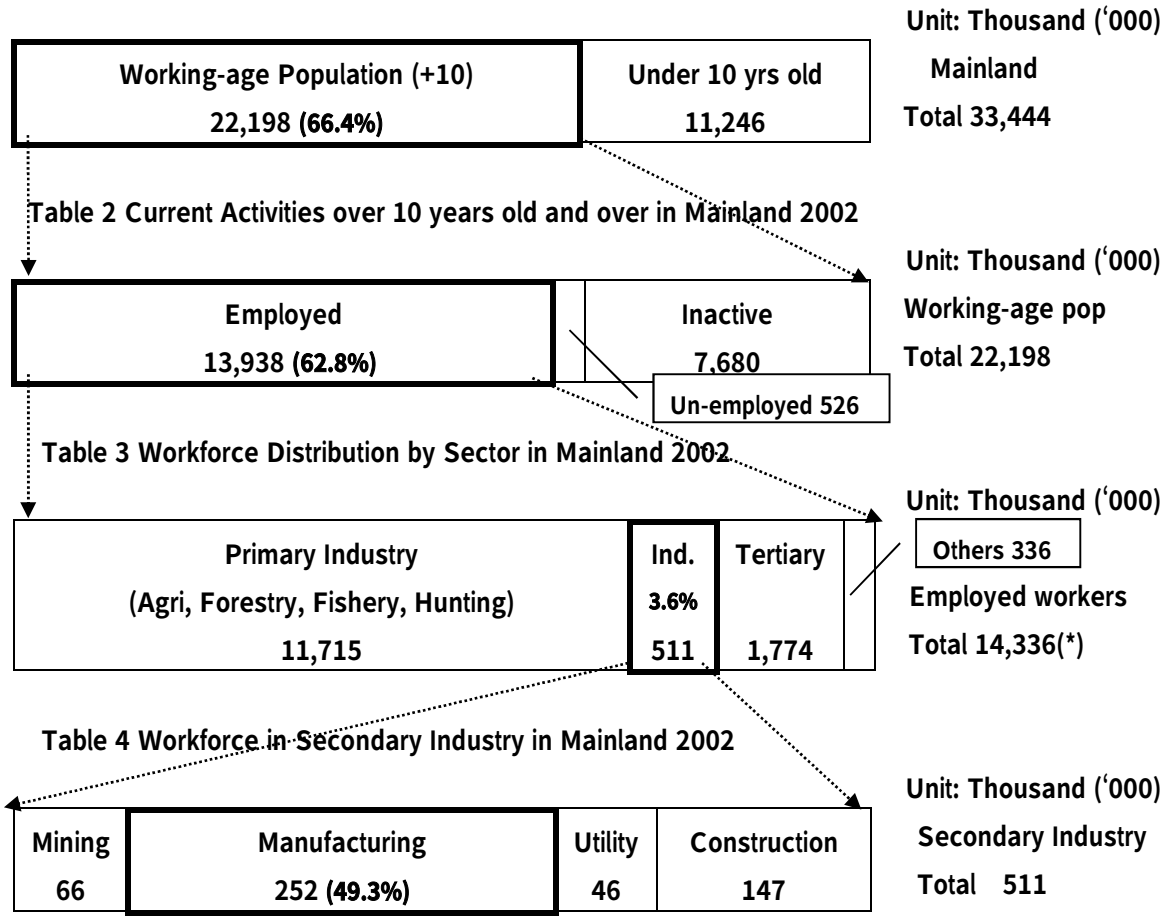
- Improvement of yields in agricultural production and promotion of agribusiness and agro-processing industries in order to reduce food cost for city dwellers.
- Opening of industrial zones in regions to attract labor intensive enterprises through its abundant local workers.
- Flexible application of labor regulations to meet changing demand of business

3.1 Workforce of the Manufacturing Sector

In Tanzania, where the informal sector undertakes a considerable proportion of economic activity, the official data recorded at the company registration office hardly provides the total picture of workforce in the industrial sector. The most reliable data for estimating the employment structure of the manufacturing sector is the Population and Housing Census which is carried out every ten years, and the most recent one was in 2002.

Table 3-1 below presents the workforce distribution for sub-sectors based on 2002 census, which shows the key role that the manufacturing sector plays in non-firm employment. The industrial survey under the 2002 census reported the total employment of registered manufacturers at 91,385 workers, whereas the formal sector coverage of the manufacturing sector was estimated as being as high as 36.3 % of total manufacturing sector workers.

Table 3-1 Working-age Population over 10 years old in Mainland 2002



Source: MITM analysis based on Population and Housing Census 2002

3.2 HIGH WAGE STRUCTURE OF THE MANUFACTURING SECTOR

The manufacturing sector in Tanzania (formal sector) employs 0.7% of total work force at a high wage level, distributing 39.7% of its net manufacturing value addition after depreciation to workers as wages. The average annual payroll of the sector employees was estimated at TShs. 2,550,000/= or US$ 2,135.00 per person in 2008. This figure is lower than that for China but almost equals that of Vietnam and is probably higher than the figure for Bangladesh.

Table 3-2 Wage and MVA distribution to Labor in Manufacturing Sector in 2008

ISIC	Sub-sector	Number of Workers	Wage (Tsh. million)	Average Wage (Tsh.)	MVA (Tsh. million)	after depre-ciation	Raito to Workers	Average Wage (US$)
151-154	Food	44,842	75,137	1,675,594	232,512	198,627	38%	1,401
155	Beverage	4,192	39,421	9,403,865	180,789	152,847	26%	7,861
160	Tobacco	7,061	21,423	3,033,990	63,967	47,282	45%	2,536
171-181	Textile	10,377	13,052	1,257,782	64,298	58,649	22%	1,051
191	Leather	23	6	260,870	64	64	9%	218
192	Shoes	1,187	884	744,735	1,599	1,007	88%	623
201-202	Timber	2,696	5,518	2,046,736	3,994	3,315	168%	1,711
210-222	Paper, Print	4,540	31,805	7,005,507	55,895	37,441	85%	5,856
241-242	Chemical	5,004	8,042	1,607,114	16,446	9,844	82%	1,343
251	Rubber	531	971	1,828,625	3,745	3,215	30%	1,529
252	Plastic	2,328	3,352	1,439,863	13,470	8,400	40%	1,204
261-269	Non-metal	1,754	14,591	8,318,700	81,170	18,984	77%	6,954
271-369	Others	7,480	20,779	2,777,941	58,935	52,066	40%	2,322
	Total	**92,015**	**234,982**	**2,553,736**	**776,884**	**591,740**	**40%**	**$2,135**

Source: Computed by MITM using the data from Economic Survey 2008

The high wages in the formal sector is not necessarily coming from pressures by a strong labor union but also from the fact of high living costs in Tanzania which is a result of low productivity in agriculture and a highly appreciated local currency due to massive inflow of financial resources, from ODA, into the country. Under circumstances where only highly profitable companies able to pay high wages can survive, it is not realistic to invite labor intensive industries which compensate low productivity by cheaper wages. The Asian growth model which started with labor intensive industries cannot work here. ODA is needed to improve the state of poor infrastructure and make the economy competitive. However, it is known that it is necessary to be careful so as not to invite ODA for unnecessary or highly non-feasible investments. On one hand, the essence of development policy does not lie in what we want but in what is bearable. On the other hand, it is obvious that one cannot get rid of poverty unless one starts with improvement of the lives of farmers.

Low yield agriculture makes the labor force in Tanzania become comparatively disadvantageous, which prevents Tanzania from getting on the ladder of the Asian style growth model of starting

with labor intensive industries. The improvement of agricultural productivity is essential and forms an integral part of the industrial development strategy. Tanzania needs an integrated long term planning perspective for transformation of agriculture and for industrialization that have to be implemented at the same time.

Table 3-3 Minimum and Average Wage of Asian Countries in 2009

		Indonesia (Jakarta)	Bangladesh (Dacca)	Vietnam (Hanoi)	China (Shanghai)
Minimum Wage		$1,104	$240	$816	$1,692
Average Wage					
	Management Staff	$8,472	$5,556	$9,576	$11,604
	Engineer	$3,084	$2,184	$3,240	$7,320
	General Worker	$1,572	$684	$1,152	$2,989

* The above does not include social security that is borne by the company.

Source: Bank of Tokyo Mitsubishi UFJ, 2009

3.3 High Labor Cost in Sub-Sahara Africa

Labor costs in sub-Sahara Africa, including Tanzania, are not low. The Asian growth model which started with accumulation of labor intensive industries is not applicable to countries where the cost of labor is high. For resource-rich countries such as Tanzania, it may be possible to take a different approach such as the promotion of processing industries utilizing its rich natural resources. However, we cannot be optimistic to prospect highly sophisticated industries on the extended line of the processing industries and also to absorb large volume of labor force with such processing industries alone. In other words, addressing the challenge of high labor cost structure is imperative for the realization of a truly sustainable industrial economy in the future. This chapter analyses this dilemma as the starting point for development of a tenable long term solution.

3.4 Why labor cost is high in sub-Sahara Africa

Profit distribution to the labor force in formal sector manufacturing enterprises is much higher than what is required by the Minimum Wage Act. This means that the cause for high labor costs is not due to the Minimum Wage Act requirements or pressure from labor unions. The reason is that employers in formal sector manufacturing think it is a necessary expenditure to retain quality

labor force.

Labor costs expressed in US dollars at US$ 2,000/year sound very high in comparison to rates in Asian countries. However, Tanzanian Shilling TZS3.0 million/year or TZS 250,000/month does not look so high, when the cost of living in Tanzania, such as levels of house rent, educational costs for children and prices of food stuffs, are taken into consideration. It might be a necessary cost for factory owners to pay to maintain their workers living standards at a reasonable level.

3.5 Why are living costs in Sub-Sahara Africa so high?

There are three reasons:

High cost of food items

Cost of food, which occupies a major portion of household expenditure, is very high in comparison to the situation in Asian countries. This is largely due to low agricultural productivity and poor performance of agribusiness and agro-processing industries. Super-market shelves displaying edible oil, processed foods, juices and canned foods have quite high price tags. City dwellers in Tanzania consume a lot of imported food stuff whose raw materials are produced in Tanzania. Improvement of agricultural production and promotion of agribusiness and agro-processing industries comprise the relevant counter measures for this situation.

Table 3-4 Consumer food prices in selected countries in 2008

Commodity	Rice(1kg)		Bread(500g)		Sugar(1kg)		Beef(1kg)		Onion(1kg)	
	US$	TZ=100	US$	TZ=100	US$	TZ=100	US$	TZ=100	US$	TZ=100
Tanzania	$0.70	100	$0.98	100	$0.86	100	$3.88	100	$0.86	100
India	$0.55	79	$0.37	38	$0.48	56	-		$0.30	35
Indonesia	$0.79	113	$0.77	79	$0.67	78	$6.26	161	$1.03	120
Bangladesh	$0.70	100	$0.34	35	$0.48	56	$2.65	68	$0.40	47

Source; Statistics Bureau of Japan, 2010 (web: http://www.stat.go.jp/data/sekai/13.htm)

Rigid structure of labor force;

Tanzania's Labor market is divided into two segments. One segment constitutes of protected high wage workers in the formal sector and the other segment comprises of a large number of low-wage workers in the informal sector. In-between, there is a growing, though limited,

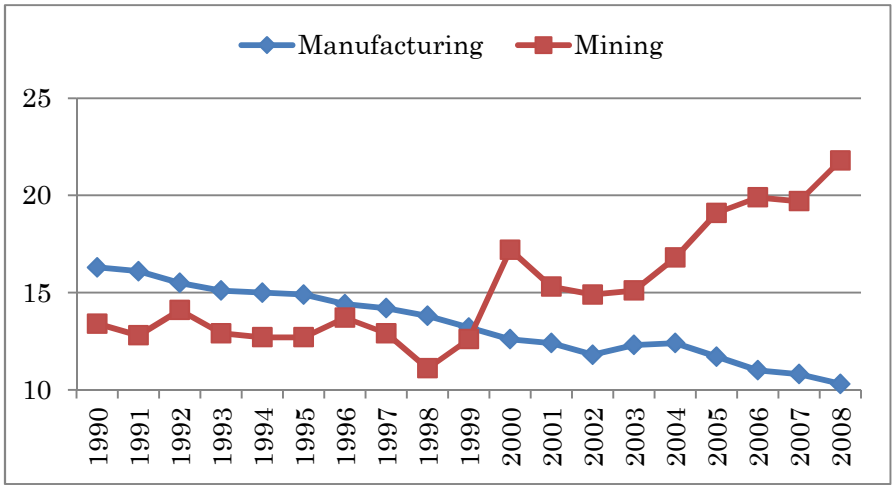
number of grass roots enterprises. These enterprises sometimes employ a considerable number of low-wage workers as temporary employees on contracts of less than three months duration to avoid breaching the minimum wage law. In this case, lowering of barriers between the formal sector and the informal sector and easing or relaxing the minimum wage law is the appropriate counter measure.

Signs of Dutch disease:

The Dutch disease is a phenomenon or issue related to the foreign currency exchange market. The phenomenon becomes serious when large scale mineral exports take off and their foreign exchange earning jumps. The disease is a result of massive inflow of acquired foreign currency pushing up the exchange rate of the local currency consequently undermining the export competitiveness of domestic manufacturing enterprises.

Over-evaluated exchange rate of local currency pushes up labor costs expressed in foreign currency weakens the price competitiveness of exporting industries. If such a situation persists for a long time, export industries other than mineral exports can be destroyed. This is a phenomenon that has actually happened in a number of African countries that are heavily dependent on natural resources exports. Figure 3-1 shows declining trend of manufacturing sector contribution to GDP in Su-Sahara African countries with increasing mining industry.

Figure 3-1 Negative impact of growing Mining sector on manufacturing activities in Sub-Sahara 48 countries 1990-2008 (Figures are percentage against GDP composition)



Source：Computed by MIT from UN Statistical Department data.

（Web: http://unstats.un.org/unsd/snaama/selCountry.asp ）

3.6 Measures to make labor costs competitive

Measures derived from the above observations are:

i) **Improvement of yields in agricultural production** and **promotion of food industries. Improvement of agricultural products and food production will reduce the living cost of urban dwellers. Food cost occupies more than 60% of the middle income group households in Dar es Salaam.**

ii) **Linkage of SMEs: Production sharing amongst SMEs which usually have lower labor cost would reduce the total production cost.**

iii) **Growth of SMEs: The SMEs which have emerged here and there would stimulate a break-through from the current rigid structure of the labor market.**

iv) **Shift of production base to regions: In rural areas, the living costs and consequently labor costs are considerably lower than in urban areas. Depending on the nature of industries, appropriate locations should be selected to stimulate formation of industrial clusters.**

v) **Reduction of donor dependency: Taking note of the negative effects of donor funding, grant aid should be limited to really needed programs. At the same time, the government should embark on careful preparations for addressing the negative impact that large scale mineral exports is bound to create.**

PART II HORIZONTAL FRAMWORK

Chapter Four : GATEWAY PORT FOR GROWTH

Mission Statement

- Build Bagamoyo port as a supplementary port to Dar by 2020, and promote the twin ports as the gateway port for East and Central Africa with next generation facilities.
- Adopt the multi-modal transport model to reduce transportation cost and time from Dar/Bagamoyo ports to inland countries through improvement of ports, roads and railways services under the Central and Uhuru Corridors
- Introduce One Stop Border System at all border posts along the Corridors and develop the twin port system as the main port for Uganda, Rwanda, Burundi, DRC, Malawi and Zambia.

Policy Issues

- Recognize this concept plan as the top priority national project for the purpose of mobilization of all resources for implementation.
- Coordinate logistical support (extension and improvement of roads and railways) to make the new port function as a hub for the Region.
- Provide for more than two port operators to maintain competition in port services.
- Restructure the two railway companies to reduce transportation cost and time.

4.1 Strategic Location

Tanzania's geographical location with six hinterland countries to the west and 800 km coastal line to the east is a natural gift from heaven. The six hinterland countries are Uganda, Rwanda, Burundi, Malawi, Zambia and the Democratic Republic of Congo, all of which are experiencing high rates of economic growth in recent years. Dar es Salaam port is strategically located, not only to serve Tanzania, but also to serve the whole region of East Africa. In fact, Dar es Salaam port undertakes 43% of DRC Congo's trade, 32 % of Zambia, 11% of Rwandan, 8% of Burundi and 3% each of the Ugandan and Malawi trade. Tanzania is the doorway for the six countries' exports and imports. Tanzania can

Table 4-1 GDP Growth in the region

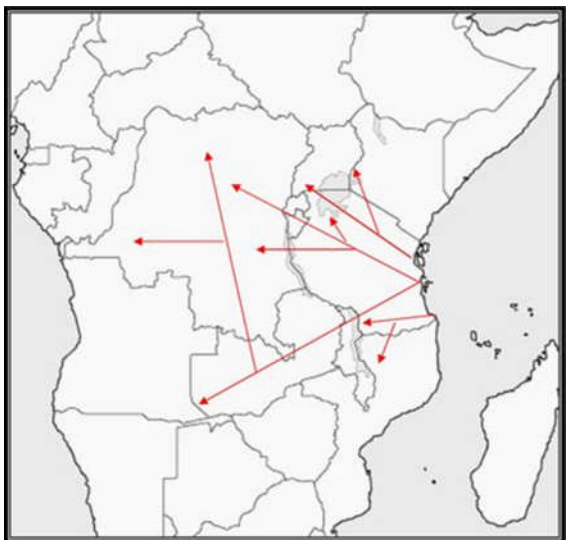
	Pop. million	GDP US$ bill (Nominal)	GDP Growth 2008
Tanzania	39.7	20.7	7.4%
Uganda	32.0	14.5	9.5%
Rwanda	9.6	4.5	11.2%
Burundi	8.0	1.1	4.5%
Malawi	13.7	4.3	9.7%
Zambia	12.4	14.3	6.0%
DRC	62.9	11.6	6.2%
Total	178.3	71.0	7.1%.

Source: IMF World Economic Outlook, Apr, 2009

provide a cost-effective functional export and import platform as well as storage and distribution base for these countries. Tanzania's main port is expected to play the leading role as the gateway port for these countries.

4.2 Making the most use of the Strategic Position

Figure 4-1 Regional Corridors



Dar es Salaam port is the door and window for the six landlocked countries of Uganda, Burundi, Rwanda, DRC, Zambia and Malawi, through which they can open-up to the outside world. Situated at the middle of East Africa, where the economies are emerging, Dar es Salaam port has a significant role to play. With the growth of the regional economy, the demand for efficient cargo logistic services for the region is growing rapidly. However, due to congestion resulting in delayed clearance of cargo at the port and unreliable services by the two railways systems linking the port with the hinterland, cargo handling volume at Dar es Salaam port has been squeezed to half that of Mombasa port, its main competitor, in spite of the location disadvantages of the later.

Logistics is not only big business itself but also creates new business opportunities when goods move. New business opportunities emerge to stimulate the movement of people and financial resources towards the activities involved. For Tanzania to transform itself from a subsistence farming nation to a semi-industrialized country with a powerful industrial base, there is a need to consolidate its strong position on regional location and the expectations of growth driven by regional demand based on the belief that the pursuit of the interests of the entire region also leads to its own advantage.

4.3 Generation Shift in Maritime Service

Table 4-2 shows a generation shift in the container shipping sector. In the 1970's when the container service started, container carriers were designed to load 700 - 1500 units of TEUs (Twenty feet Equivalent Unit). In order to save on fuel costs, over 2000 TEU carriers became popular in 1980's. Carriers capable of 4000 TEUs became the main stream vessel in 1990's

and today over 6,000 TEU carriers have become main stream vessels. Today even carriers with over 15,000 TEUs loading capacity are operational.

Ocean freight trends vary very much depending on loading capacity of carriers and oil price hikes tends to accelerate this trend.

Table 4-2 Generation change in container carriers

Generation		Capacity (TEU)	Length	Beam	Draft	Number of Rows (On Deck)
I	1960~	700~1500	110~210	17~31	~11	9
II Dar es Salaam	1970~	1800~2300	210~270	32	11~12.5	12
III	1970~80	2000~2500	210~270	32	11~12.5	13
IV Mombasa	Late of 1980s (Panamax)	2500~4400	270~290	32	11~12.5	13
V	Early 1990s (Over Panamax)	4400~5400	260~	32~40	12~	16
VI	Late of 1990s (Ultra Super Panamax)	6000~	300~	40~	14~	17~

Source: NYK Maritime Report 2006

Table 4-3 Port Matrix for East African Region

Comparative Cargo Throughput for Dar es Salaam and Mombasa

Dar Es Salaam Port	100%	70%	30%	0%	Mombasa Port
	Zambia Malawi	DRC Burundi	Rwanda	Uganda	
	0%	30%	70%	100%	

4.4 Constraints of Dar es Salaam Port

Along with Tanzania's accelerated economic growth since year 2000 and economic recovery of the hinterland countries, the demand for cargo handling services at Dar es Salaam port has increased steadily and sharply. It exceeded the physical handling capacity by 2007 and kept growing in 2008. As a result, unloaded cargo started accumulating in the port area and vessel

dwelling time reached the unimaginable level of over 30 days. Eventually, Tanzania's hyper economic growth rate has been slowed down and industrialists are being charged additional shipping surcharges called "Dar es Salaam Premium". The impact includes decrease in industrial capacity utilization and increased inventories, which have pushed up production costs.

In exporting business it was, as well, difficult for industrialists to meet deadlines set by overseas buyers due to the delays caused by high dwell times for ships. Thus, Tanzanian industrialists were faced with additional transport-related constraints on top of many already existing constraints in the production, finance and marketing areas.

Naturally, in any survey conducted on industrialists and investors, port logistics issues had become the most serious concern over other traditional matters such as high labor cost, taxation or unstable power and water supply.

Table 4-4 Total Container Flows at Dar es Salaam Port Unit: 000 TEU

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
TEU	110	108	125	138	166	204	227	258	279	334	Avg.
Growth		-3%	15.2%	11.0%	20.1%	23.0%	11.0%	13.7%	8.1%	19.3%	13.4%

Source: TPA, Port Master Plan 2009

Of course, there remains considerable room for improvement of operational efficiency while cargo handling capacity can be expanded through facility expansion. However, Dar es Salaam port has fatal limitations against the possibility of becoming a major sea-port in the next maritime generation that include:

i) A refracted sailing route that limits the length of any vessel entering the port to a maximum length of 234 metres. This means that carriers with capacity for more than 2,500TEUs cannot call at Dar es Salaam port. This eliminates Dar es Salaam port from participating in generational change of vessels, and may, in some cases, force Dar es Salaam Port to be contented with the positioning of a feeder port.

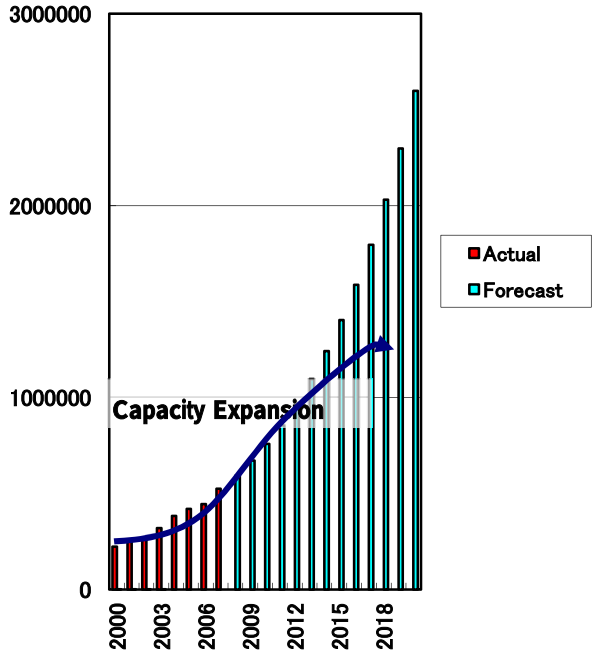
Figure 4-2 Entry of DSM Port

ii) Narrow container back yard of less than 150m width makes handling operations very

complicated and time consuming. In Dar es Salaam port, containers are sometime stacked up to six stories high making the handling operations difficult. While the preferable container back yard of 500m width should be secured for easy operation, this is not to be in Dar es Salaam where the residential area is very close to the Port.

Figure 4-3 Narrow Back yard of DSM Port

Figure 4-4 Cargo Volume at DAR



iii) Heavy reliance on Morogoro Road makes Ubungo the Achilles heel of the Central Corridor. The most serious transportation related weakness of Dar es Salaam is the unduly heavy reliance on Morogoro Road. Eighty per cent (80%) of the traffic to and from Dar es Salaam passes through Morogoro Road, which causes chronic congestion along this road, especially at the Ubungo junction. As seen in the preceding section, 50 % of cargo unloaded at Dar es Salaam port passes through Ubungo, of which 30% is destined to neighboring countries and the remaining 20% is for the Northern and Central parts of Tanzania. Physical expansion of loading and unloading capacity at Dar es Salaam port is possible but it will not improve the efficiency of port operations unless the existing heavy

reliance on Morogoro road is eased.

Through improvement efforts for operational efficiency, increasing traffic flows in the port and dwell time reduction, port efficiency can be improved. Further expansion work such as construction of berths No. 13 and 14, relocation of the Kurasini Oil Jetty and development of large scale ICD in Kisarawe would expand the Port handling capacity. However, even with the above measures, TPA Port Master Plan 2009 concludes that Dar es Salaam Port would be full by 2016 under a high cargo volume forecast scenario or by 2020 under a low volume forecast scenario. Hence the report concluded that a new port supplementing Dar es Salaam should be ready for operations by 2018 under the high forecast scenario or by 2023 under the low forecast case.

4.5 New Gateway Port

The Port Master Plan compares three candidate locations of Kigamboni, Mwambani in Tanga and Mbegani in Bagamoyo as the green-field locations to supplement Dar es Salaam port and selected Mbegani as the new port taking into consideration its easy access to the central corridor. This conclusion is supported by several other reasons from the view-point of industrial promotion.

First, as was argued in the Port Master Plan, being located 60 km north-west of Dar es Salaam, Mbegani can easily be connected to the existing Central Corridor network, whose catchment area is the largest and reaches out to all of the six hinterland countries. Upgrading of roads which connect Bagamoyo with Dar es Salaam and the road links to Tanga and Morogoro has already been started or designed. A 20km extension of the railway to link the new port with the Central Corridor road and rail networks would considerably ease the burden of traffic in Dar es Salaam subject to diversification of certain functions away from the economic capital city.

Second, as seen in Chapter 2, manufacturing activities in Dar es Salaam have stagnated due to short supply of and price hikes in land for industrial development. To activate the existing economic zone in Dar es Salaam, adequate new supply of industrial land, preferably supported by port infrastructure, is required. Such land should be within one hour's driving distance from Dar es Salaam so as to secure business linkages with industries in Dar es Salaam and also to ensure good access to the largest market in the country.

Third, in order to establish a large scale economic development zone with multi-functions, the

new port should be located in the central part of the country. The corresponding development concept is the subject of discussion under the next chapter.

Table 4-5 Phasing of Bagamoyo Port Development by Traffic Forecast

UNIT: Thousand TEU

	2018	2020	2022	2026	2030
High Forecast	200	400	585	1,524	2,831
Base Forecast	n.a.	200	400	975	1,939
Low Forecast	n.a.	n.a.	200	426	1,045

Source: TPA, Mbegani-Bagamoyo Port F/S Final Draft, 2010

Chapter Five : CLUSTERING AND WATERFRONT DEVELOPMENT

Mission Statement

- Promote clustering of industries at every level and every location in order to accelerate growth dynamism and to improve efficiency of industries.
- Provide internationally competitive business environment at Waterfront SEZs with port facilities, natural gas feeder lines, and link them to the four development corridors running through the country to neighboring inland countries.
- Develop linkage amongst all levels of clusters to form a unified organic structure of a strong Tanzanian industrial hierarchy.

Policy Issues

- Develop Waterfront SEZs at the outlets of the three development corridors with next generation port facilities and infrastructure support for rail, road, gas and water supplies.
- Develop Special Purpose SEZs at logistical locations, such as agribusiness SEZs or cross-border SEZs to meet strategic advantages of each location.
- Encourage and support industrial cluster formation by private sector organizations in major cities.
- Release 142 undeveloped plots of SIDO to MSME for their own development. Guide them to form industrial clusters through their own investment and management.
- Promote cluster style development having a few selected enterprises as the anchor company.

5.1 Cluster Development

One of the weak points of Tanzania's industrial scene is the geographical spread or dispersion of industries and factories. An industrial cluster is generally designed as a geographic concentration of interconnected firms in a particular field with links to related institutions. It may include, though not necessarily, financial providers, R&D and training institutes. Clustering offers unique opportunities for firms to take advantage of a wide array of domestic links but also competition and collaboration which stimulates the potential for learning and innovation. Industrial clusters have been naturally formulated seeking improvement of productivity through collaboration and competition among companies sharing common facilities and service venders supporting the particular industry or subsector. Clusters are sometimes spontaneously formed. However, in the industrial development of Asian countries, in many cases the clusters were deliberately advocated through cooperation between the government and the private sector.

Today, the cluster development initiative is considered as being one of the most effective policy instruments for accelerating industrialization.

In this strategy, the following clusters are recommended for development in accordance with the nature and geographical advantages of respective locations.

- Waterfront SEZs at outlets of development corridors i.e. Bagamoyo, Tanga, Mtwara and Kilimanjaro;
- Agribusiness SEZs at key SAGCOT (Southern Agricultural Growth Corridor of Tanzania) location area;
- Cross-border SEZs at key locations with links to hinterland countries such as Mwanza, Kigoma and Tunduma;
- Specialized Industrial Clusters at regional level such as Morogoro Engineering cluster and Tanga Woodworks cluster, and
- SME Parks at district level mainly for micro scale manufacturers.

5.2 Economic Zone Approach

The economic zone approach is a well proven and widely accepted policy measure for economic development. It is deployed worldwide in over 116 countries and has created 40 million direct jobs by today.

It is especially effective for countries whose infrastructure is poor while funding for development is limited. As was seen in Chapter 2, poor performance in infrastructure is the most serious issue that is killing the efficiency and competitiveness of Tanzanian manufacturers. Since the budget is limited, Tanzania has to develop a competitive business environment by the most effective manner possible. Selection and concentration are the key words. It is impossible to provide satisfactory infrastructure development across the whole country, while there is need for an internationally competitive business environment comparative to that of neighboring and Asian competitors. Hence, there is no other choice than to invest in an identified limited location. That is the industrial zone in general terms and the economic zone when supported by institutional arrangements.

The economic zone business model has evolved in response to the progress of globalization and diversification of business activities. In addition to the traditional Export Processing Zones (EPZs), the Special Economic Zones (SEZ) with different features has been born. Some of the emerging developing economies in Asia, such as Vietnam, the Philippines, Malaysia and

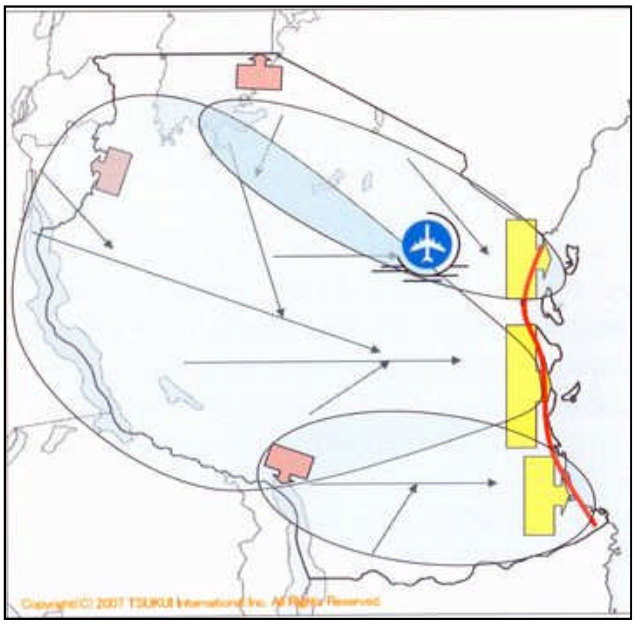
China, have proven that large scale integrated economic zones with logistics support are a more efficient and effective measure for the provision of a competitive industrial base. In fact, in those countries, 70 to 80 % of manufactured goods exports are produced in the economic zones (in the case of China the figure reaches to 88%).

In the Philippines, 86% of her manufacturing exports, amounting to US$ 36.9 billion, were produced in Economic Zones in 2007. In Vietnam, manufacturing production amounting to US$ 28 billion, equivalent to 31.2% of the country's GDP, was accounted to its economic zones with an area of 43,000 ha. Through industrial accumulation and infrastructure support, the economic zone, over and above other investment incentives, makes manufacturing activities more competitive.

5.3. Waterfront SEZs

Learning from the lessons in Asia, where industrial development started from industrial complexes at the waterfront, IIDS proposes a multi-function large scale Special Economic Zones (SEZ) to be developed at the water front of each of the development corridors in Tanzania, namely at ***Bagamoyo***, ***Mtwara*** and ***Tanga. These are called Waterfront SEZs*** and each of Waterfront SEZ is designed to have an average area of between 2,000 and 8,000 hectares as the development area, equipped with systemized port facilities meeting international standards. Logistic functions and easy access from inland is the key factor in the Waterfront SEZs.

Figure 5-1 Waterfront SEZs



Each Waterfront SEZ is directly linked with its respective development corridor and fully supported by basic infrastructure including facilities for a port, power, water and sewerage. These are manufacturing bases with industrial accumulation that, at the same time, play the role of logistic centers for each development corridor i.e.: Bagamoyo SEZ for the Central

and Southern Agriculture (TAZARA) Corridors, Mtwara SEZ is for Mtwara corridor and Tanga SEZ is for Tanga Corridor. Arusha SEZ would be modeled on a different style of economic zone connected to the external market by air.

Waterfront SEZs have multi-purpose functions including: serving as a platform for export processing and assembling; logistics center for import distribution, storage, exhibition; and Free Trade Zone to be designed in accordance with the characteristics of the location or corridor. However, Waterfront SEZs would have the following as common facilities:

- Gas pipeline extended from southern coastal gas reserves as the source of energy;
- Clean and abundant water supply either from undercurrent water or river water;
- Optic cable link for a broad-band communication service;
- Seaport or airport services;
- Single window service post for cargo and customs clearance;
- Export Processing Zone with current EPZ incentives package; and
- Free Trade Zone for domestic firms and visitors from hinterland countries.

Waterfront SEZs are plotted as export platforms to stop raw material export and adding value to them prior to export. At present, 75 percent of cotton lint, 80 percent of cashew nuts and another 80 percent of skins and hides are exported without processing or with very preliminary processing only. Exported value of these raw materials were recorded in 2007 as US$ 80 million for cotton lint, US$ 50 million for raw cashew nuts and US$ 8 million for hides and skins. If these items were properly processed, Tanzania could create 250,000 jobs and earn additional foreign exchange amounting to US$ 820 million. In other words, Tanzania is exporting 250,000 job opportunities to the outside world together with its raw materials. Waterfront SEZs aims at stopping this flow of raw materials at the waterfront and export them only after value addition.

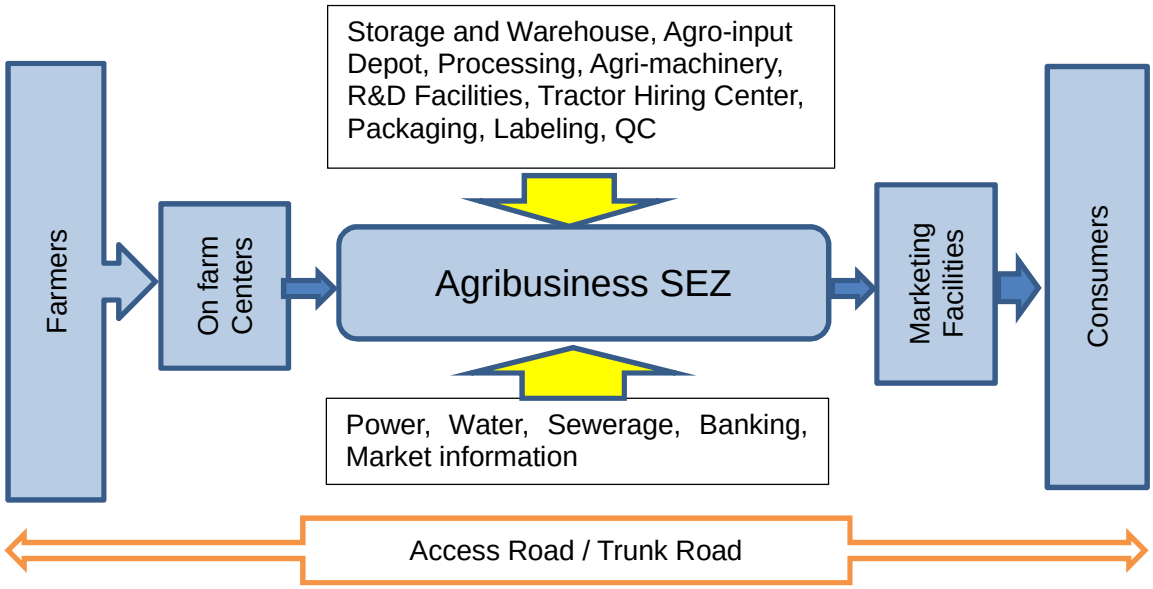
The export platform is a concept that seeks to capture the flow of raw material exports at the water front, where foreign and domestic investment is invited to form an industrial accumulation to process these materials for export. Theses platforms are situated at the outlet to the sea of each development corridor, and may work for several other purposes such as logistic centers for import assembling, collection cum storage and exhibition center of merchandise not only from Tanzania but also for inland countries served by these corridors.

5.4. Agribusiness SEZs

Linked to the movement of **Kilimo-Kwanza (Agriculture First)** and its derived project of **SAGCOT (Southern Agricultural Growth Corridor of Tanzania)**, SEZs specialized for agriculture-related businesses shall be deployed at key locations along SAGCOT's targeted area. These are Morogoro, Iringa, Mbeya, Sumbawanga and Ruvuma regions along the Southern Agricultural Growth Corridor and Mara and Dodoma regions covered by the Feed the Future Programme.

All business concerning agricultural production and corresponding post-harvesting processing shall be given preferential treatment in agribusiness SEZs, which include agro-processing, deposit and distribution of agricultural inputs, manufacturing and/or hiring of agro-machinery and tools, storage, packing and transportation of agricultural products.

Figure 5-2 Conceptual Image of Agribusiness SEZ



5.5 Cross-Border SEZs

Cross-border SEZs are to be developed in response to rapidly expanding cross-border trade resulting from progress in regional integration schemes in Africa, as well as the need to contribute to the growth of land-locked neighboring countries. Intended locations are Mwanza, Kigoma and Musoma. Cross-Border SEZs may have bonded cargo transactions,

duty free market and export processing facilities.

Tanzanian exports to inland countries have increased from US$ 146.2 million in 2004 to US$ 320.5 million. Tanzanian imports from the same countries have increased from US$ 115.7 million to US$ 408.2 million during the same period, excluding the increase of transit cargo for third counties. If we include non-declared trade which could not be caught due to malfunctioning in border management systems, the volume of business is envisaged to be far larger than this scale.

In order to introduce proper control and monitoring system, cross-border SEZs are to be introduced at border towns in proximity with those neighbors.

5.6. Other Industrial Clusters

Specialized Industrial Cluster

In early 2000's efforts were made under guidance of UNIDO in collaboration with TCCIA to establish industrial clusters at the regional level. Some have been successfully developed and some have been abandoned. A successful one such as the Morogoro Engineering Cluster started in 2005 with 9 workshops and 20 non-registered working groups have developed to-date with 60 registered metal companies and 38 woodworking enterprises. Through learning from the lessons of successful cases and abandoned cases, the implementation of the clustering approach has to be improved.

Some of the member companies do not have adequate working premises at proper locations which restricts expansion of the business. Supporting land acquisition for active manufacturing enterprises is another measure through which the government can promote industrial concentrations. Where workplaces of manufacturing enterprises are scattered, this does not only mean that infrastructural support cannot be provided, but also leads to inability to contain serious environmental constraints such as noise control and waste disposal.

SIDO SME Parks

Land acquisition is always one of the most difficult and time-consuming job in the development of industrial parks. Efforts and negotiations should be continued while the economy is alive as business opportunities move quickly. SIDO has a considerable number of plots all over the country allocated by local governments that have not been developed due to

lack of financial resources. IIDS proposes to develop these sites without injecting much public money, while instead earning money from them through quick sub-leasing of sectioned premises. Development should be done by incoming SME firms while SIDO should prepare a land use master plan and put in place a transparent letting policy.

Construction of SME parks by SIDO should be linked to the movement of industrial cluster formation by local industrial societies. Once again, forming industrial concentration would enable infrastructure support agencies provide preferential services, such as power distribution and quick power connections, to industrial firms and at the same time make it easier to handle environmental arrangements, such as waste disposal, efficiently.

MME (Micro Manufacturing Enterprises) Parks

According to the Business Survey 2007/2008, eighty eight percent of identified 25,000 manufacturing enterprises over the country had less than 5 workers and it is also estimated that a majority of them are informal sector enterprises operating from the backyard of their houses in residential areas. Up-grading of such micro enterprises to the next stage is vital to the process of bottom-up local industrialization. The merits of business concentration would also support this level of industry as well. In short, the concept of MME (Micro Manufacturing Enterprises) parks, in summary, is that local governments provide the land, MIT provides shade, and SIDO extends technical assistance, thus granting them a permanent address, access to public services including registration, and so migrating them to the formal sector. Proposals on the MME parks concept shall be referred to in a later part of this paper.

Chapter Six : Bagamoyo Waterfront SEZ

Mission Statement

- Develop Bagamoyo SEZ as an ideal multi-purpose off-shore business zone for East Africa with full infrastructure support, industrial concentration, port facilities and assurance of free business activities.
- Attract FDI and develop internationally competitive regional industries producing more than one third of manufacturing value addition of Tanzania and make Bagamoyo the industrial and logistics hub of East Africa.

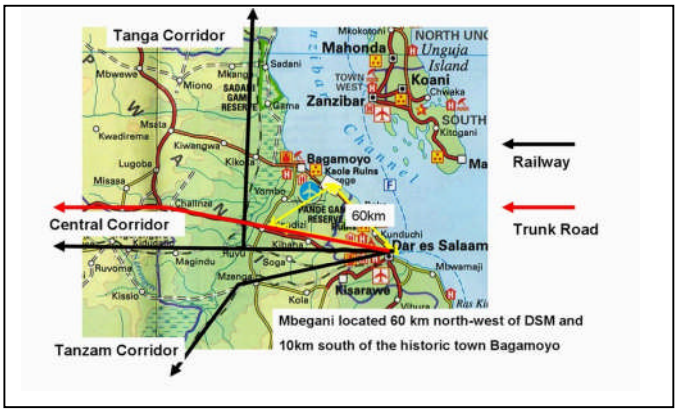
Policy Issues

- Bagamoyo Port and SEZ is the flagship project of Tanzania's industrialization. The relevant Ministries and Agencies are to prepare and coordinate to ensure Bagamoyo ort is operational by 2020 as planned without delay.
- EPZA is to establish a long term development design of Bagamoyo SEZ and build up the capacity to execute it.
- Develop and coordinate supporting infrastructures to enable the EDZ to become physically workable as the industrial and logistics hub for the East African Region.
- Study legal implication and economic impact of releasing several development blocks to the landlocked countries for their development.
- Expand and Improve road and railway links to the landlocked countries along Central and Uhuru Corridors.

6.1 Supplementary Port to DAR

The Port Master Plan by Tanzania Ports Authority (TPA) concluded that due to increasing cargo demand and physical limitation of Dar es Salaam port, a supplemental port has to be operational by 2018 under a high demand forecast scenario and by 2023 under a low demand forecast scenario. The recommended Bagamoyo port provides the best ideal industrial development site for foreign and local industrial investors.

Figure 6-1 Location of Bagamoyo Port

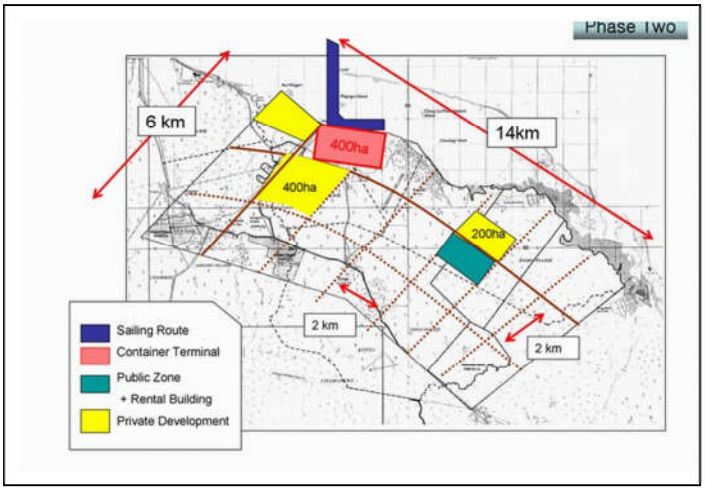


Bagamoyo port will provide modern maritime port facilities, located 60 kilometers from the largest commercial and industrial metropolitan city of Dar es Salaam, 20 kilometers from the existing railway and road network which connects the two ports with six landlocked countries and a huge flat area for multi-purpose development.

6.2 Phased Development and Demand-led Phasing

The development area, ear-marked for industrial development, has approximately 8,400 hectares. That is almost double that of Tianjin Economic Development Area. Although water depth is shallow, the proposed port area is well protected by natural water-breaks and therefore selected as the best among other candidate spots. The zone shall be connected to Dar es Salaam, Central Corridor and Tanga EDZ by double carriage roads. It will be connected to both the TRL and TAZARA railway by a 20 km extension. The port shall be designed to accommodate Panamax class vessels with provision for expansion to Post-Panamax standards as the demand increases.

Figure 6-2 Bagamoyo SEZ



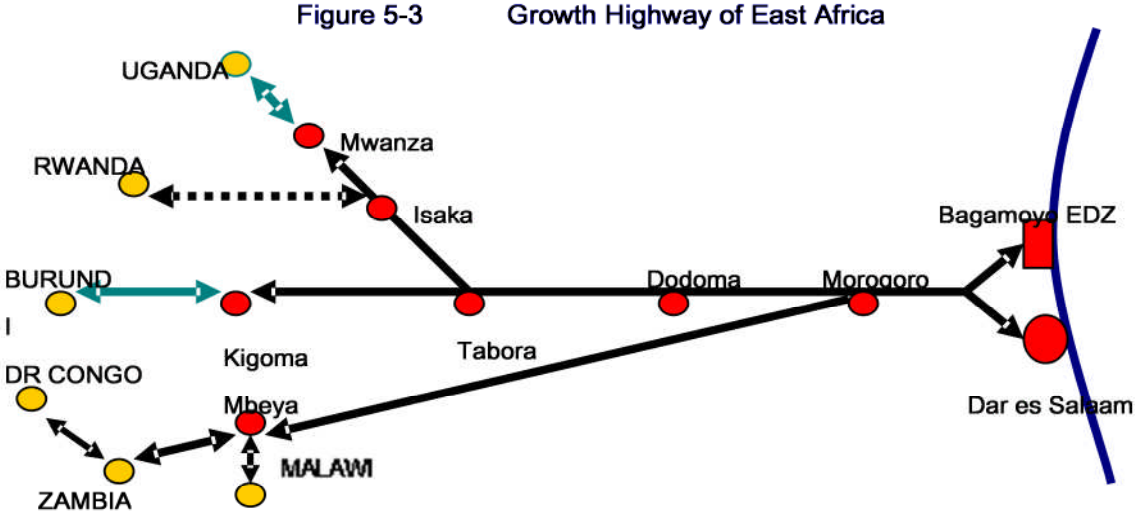
The zone's area covering over 8,400 ha is apparently too large and non-feasible for immediate development. Therefore its development shall be undertaken in phases. The area can be separated by a 2km interval road which creates 21 blocks of 400 ha each. A half block unit measuring 200 ha, would be an adequate size for development by private developers. Each block can be developed by either a public body or assigned to private developers. However, the governing authority, tentatively called Economic Development Zone Authority, will control the overall development concept under a carefully studied master plan.

The least cost solution for industrial zone development is to utilize land developers' method. That is to limit the public sector's role to the preparation of the master plan and assign a private developer the role of selling out or leasing each developed site to an industrialist for use. Blocks of 200 ha each can be offered to landlocked/hinterland countries, with complete off-shore

status, for development of their own deposit, center or export-processing/ import-assembling facilities. Thematic zones like, cotton textile zone or Chinese manufacturing and trading zone is another idea for development. The government provides the plots and basic infrastructure, and developers, regardless of being private or public, undertakes in-block development and its marketing to individual investors.

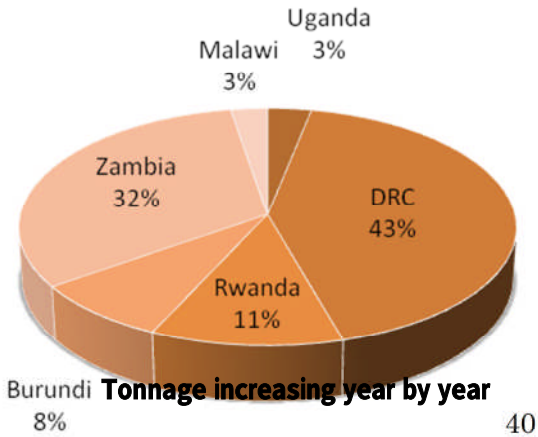
6.3 Growth Highway of East Africa

Figure 5-3 Growth Highway of East Africa



The Dar es Salaam port is currently handling cargo volumes of approximately 8.1 million tons per annum, as of 2009, for third countries and the volume is growing at 13.1% annually. Thanks to the economic growth of East Africa as a whole, the transport sector in Tanzania has recorded steady growth and, according to BOT statistics, it has become the fourth largest source of foreign exchange earnings following tourism, gold exports and manufactured goods export.

Figure 6-4 Cargo Passing Dar es Salaam Port



Tonnage increasing year by year

Needless to say for the hinterland countries securing stable transportation route to and from a sea port would be a decisive condition to keep their economies on steady growth, and at the same time, for Tanzania, it is a clear international responsibility in the development of Africa. It is also a function that boosts

profits for the economy. Logistics is not only big business itself but also creates additional business opportunities when goods move. When and where people and money gather, a new business would evolve or occurs, and when and where a new business evolves or occurs, the money and the people would create further businesses. Together with the growth of the landlocked countries, the Central Corridor would appear and emerge as the growth highway of East Africa.

6.4 Trade Projections for Hinterland Countries

Despite the economic downturn in 2009, the region as a whole has attained quick recovery and realized sustainable economic growth. East Africa Corridor Diagnostic Study 2010 forecasts high growth rates in the exports and imports of the region over the period between 2009 and 2015.

Table 6-1 Trade Volume Forecast of Hinterland Countries

Country	Import			Export		
	2009 ('000ton)	Forecast 2009-2015	Forecast 2015-2030	2009 ('000ton)	Forecast 2009-2015	Forecast 2015-2030
Burundi	335	16.5%	3.2%	59	19.6%	6.6%
Rwanda	550	14.4%	6.1%	41	23.3%	12.2%
Uganda	3,730	10.6%	4.1%	299	13.6%	5.5%
Eastern DRC	834	16.0%	7.2%	145	13.6%	13.4%
Total	**5,449**	**12.1%**	**5.8%**	**544**	**14.1%**	**7.2%**

Source: Central Corridor Diagnostic Study, EAC 2010

According to the study, during the period 2005 to 2009, the average growth rate of imports for Central Corridor hinterland countries was 13.3% while exports have grown at 5.6%. As a result, trade volume measured in tons in 2009 was 5,449,000 tons for imports, which was 10 times the volume of exports amounting to 544,000 tons. However, the study forecasts that from 2009 onwards the growth rate of exports would exceed the growth rate of imports. Though figures for Zambia and Malawi are missing here, trade volume of hinterland countries is forecasted to grow at over 10% per annum.

Bagamoyo Waterfront SEZ shall function as: (1) an export platform to process locally and regionally produced raw materials and export value added products to overseas markets; (2) an import platform to assemble or distribute imported products to local and regional markets; (3) a depot and distribution center for both exporting and importing bulky cargo; (4) a free trade and

exhibition center for both import and export goods for the region; (5) an industrial cluster having international outlets open to the Indian Ocean; and (6) an SEZ for specialized industries. The function of Bagamoyo SEZ shall be designed in a chain of business activities which start from the rural areas.

Chapter Seven : CORRIDOR DEVELOPMENT FOR GROWTH

Mission Statement

- Through development of national corridors, Tanzanian inland regions, districts and towns shall be linked with the national economy and overseas markets.
- Through development of international corridors with gateway ports, Tanzania shall contribute to growth of economies of hinterland countries in the Region.

Policy Issues

- Review corridor mappings of resources and logistics flow and locate industrial settings such as Economic Zones, SME parks and MME parks to be networked through the corridor.
- Promote ODOP (One District One Product) programmes to enhance broad-based logistics over East and Central Africa.
- Establish an integrated sector corridor planning mechanism involving manufacturing, agriculture and power sector participation.

7.1. Balanced Growth in Tanzania

One of the core focus areas of Tanzanian economic policies since independence has been and continues to be the balancing of growth between urban and rural areas. The development experience of advanced countries and newly industrializing economies has shown that industrialization is the only way through which the general level of standards of living can be continuously improved upon, and concentrated investment into core growth sectors would produce the maximum results at the macro level. However, it is well observed that such growth would inevitably lead to regional disparities and income disparities among the regions and the people, and therefore measures to stimulate rural industrialization are to be encouraged.

The table below shows GDP distribution by regions and their share in the national economy for the year 1998, 2002 and 2007. As can be seen from the regional GDP, the Dar es Salaam Region GDP has nearly tripled in the last 9 years but its average annual growth rate of 12 % is lower than the national average, and its GDP share has dropped from 17.9% in 1998 to 15.6% in 2007. The relatively high growth of the other regions in Tanzania could be explained by the rapid growth of Mining and Tourism sectors mainly observed in up-country regions. The manufacturing sector also contributed to push up the performance of Tanga, Mbeya and Kigoma regions based on the recovery of the Textile industry and Cement industry. On the other hand,

the GDP share of Singida and Mtwara dropped considerably.

In this context, it can be said that in Tanzania the growth balance and income balance among the regions has been considerably well managed and the gap has not become a serious threat to social stability. However, the above just explains the growth balance between the regions and do not necessarily mean that Tanzania is free from the imbalances between urban and rural growth patterns.

Table 7-1 Regional Composition of GDP

Zones	Regions	TZS. Million			Share In 1998	Share In 2007	Annual Growth Rate
		1998	2002	2007			
EAST	Dar es Salaam	1,048,290	1,649,345	2,960,866	17.9%	15.6%	*12%*
	Pwani	127,351	194,875	358,995	2.2%	1.9%	*12%*
NORTH	Arusha/Manyara	439,202	750,218	1,509,375	7.5%	7.9%	*15%*
	Kilimanjaro	248,543	394,407	894,322	4.2%	4.7%	*15%*
	Tanga	239,626	427,773	1,059,917	4.1%	5.6%	*18%*
LAKE	Mwanza	452,171	948,526	1,642,748	7.7%	8.7%	*15%*
	Kagera	220,244	366,819	764,918	3.8%	4.0%	*15%*
	Mara	198,554	323,537	731,897	3.4%	3.9%	*16%*
WEST	Shinyanga	423,131	758,560	1,138,517	7.2%	6.0%	*11%*
	Kigoma	143,649	238,396	576,831	2.4%	3.0%	*17%*
	Tabora	223,202	332,051	779,961	3.8%	4.1%	*15%*
CENTRAL	Morogoro	268,173	463,368	1,027,118	4.6%	5.4%	*16%*
	Dodoma	204,728	340,235	572,475	3.5%	3.0%	*12%*
	Singida	175,473	252,039	348,715	3.0%	1.8%	*8%*
SOUTH	Lindi	130,316	199,652	367,974	2.2%	1.9%	*12%*
	Mtwara	220,601	373,531	459,811	3.8%	2.4%	*8%*
	Ruvuma	220,134	306,509	760,981	3.8%	4.05	*15%*
SOUTHERN HIGHLANDS	Iringa	325,538	544,202	1,018,294	5.6%	5.4%	*14%*
	Mbeya	335,205	561,478	1,359,110	5.7%	7.2%	*17%*
	Rukwa	219,598	314,411	657,018	3.7%	3.5%	*13%*
Total and Average		5,863,729	9,739,933	18,989,844	100%	100%	*14%*

Source: Computed by MIT from the data of National Account Dept., NBS

7.2 Corridor Mapping

The National Transport Policy 2003 emphasizes on the importance of corridor development approach as the multi-sectorial backbone linking the regions with the gateway. In this Chapter, we look for the development possibilities tracing the corridors.

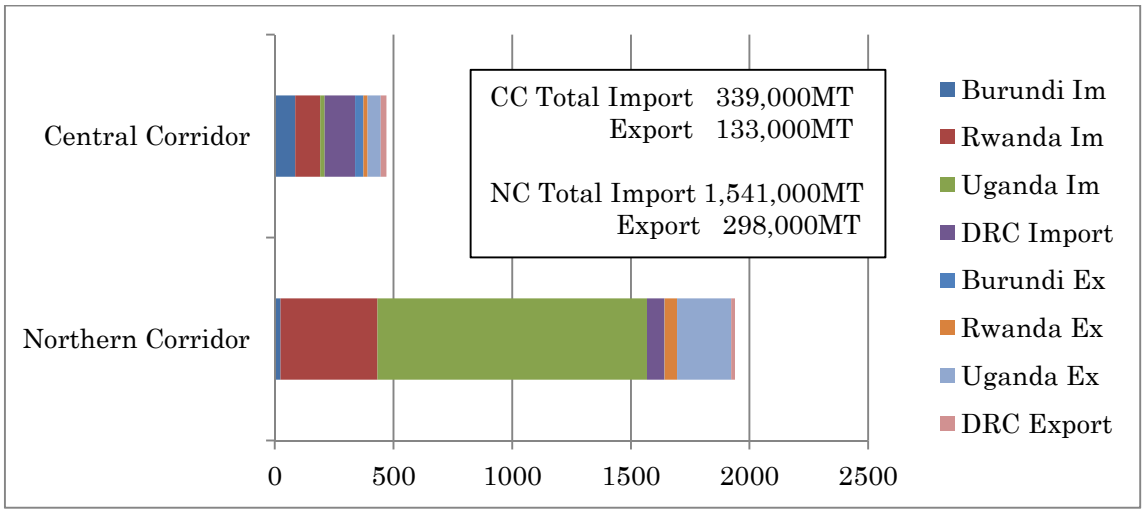
Tanzania is a large country unable to be developed at a once. Development spreads from points to lines and lines to surfaces, while production in rural shall seep out to cities and international markets through the corridors and export platforms at the waterfront.

7.3 Central Logistic Corridor

The Central Corridor connects the port of Dar es Salaam to all of central and northern-western Tanzania with extensions to Burundi, Rwanda, Uganda and DRC. Several road sections have been paved within the last five years, making it a recent option for competitive cross border trade, with neighboring countries, using the Dar es Salaam Port. The rail network is also extensive, though in need of major rehabilitation. The railway goes to Mwanza where rail ferries make an 18 hour connection to Port Bell and nearby Kampala. The railway also connects to Lake Tanganyika at Kigoma Port for vessel connection to Bujumbura port in Burundi and Kalemie and Uvira ports in the DRC.

For transportation to the neighboring countries of Burundi, Rwanda, Uganda and DRC, it competes with the Northern Corridor of Kenya. Tonnage of transport volumes for 2009 using each corridor from the four neighboring countries is shown in Figure 6-1. Overall transported tonnage in 2009 for the four inland countries amounted to 472,000 metric tons through the Central corridor, while 1,839,000 metric tons were handled through the Northern corridor. With the two exceptions of Burundi imports and DRC imports, exporters and importers in those countries choose the Northern corridor rather than the Central corridor.

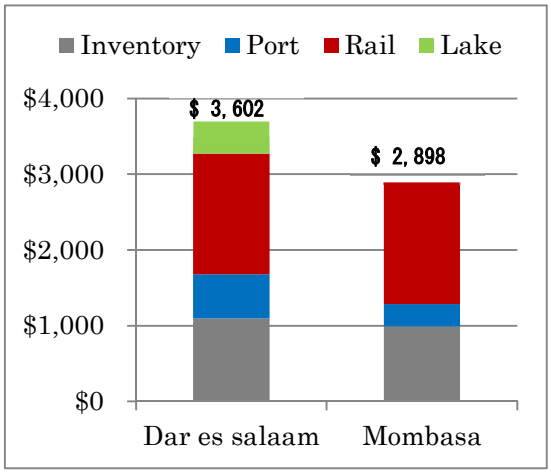
Figure 7-1 Cargo Volume of Four countries passing through Central and Northern Corridor

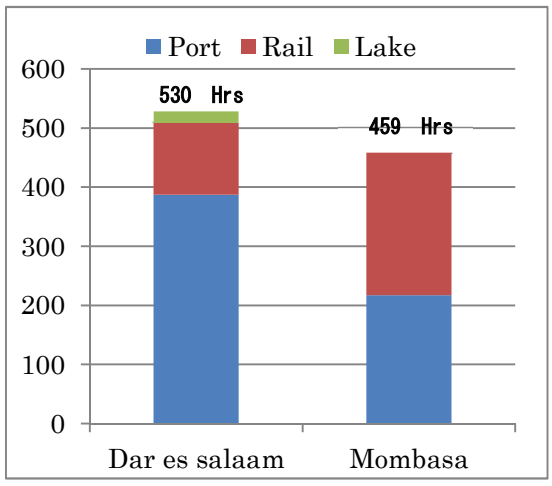


Source: East Africa Corridor Diagnostic Study, 2011

The East Africa Corridor Diagnostic Study executed by the EAC Infrastructure Department (CDS) analyses rail transporting costs and time for the two corridors to each destination. The basic result from the analysis is that transportation through the Northern Corridor is superior in both cost and time, which leads to more popular use of the Northern corridor over the Central corridor.

Figure 7-2 Transport Cost and Time to Kampala (Import of light containers)





Source: East Africa Corridor Diagnostic Study, 2011

Apparent weaknesses of the Central corridor include the poor performance of Dar es Salaam

port. In comparison to Mombasa port, it takes 96% higher costs and 78% longer time for cargo clearance through Dar es Salaam, compared to Mombasa port. Poor port services in Dar es Salaam has undermined and killed the competitiveness of transit transactions to inland countries. Largely, because of this reason, Tanzania cannot meet requests by Ugandan government to shift at least one third of its cargo transportation through the Central Corridor. Failure of privatization of the service-delivery function under the Tanzania Railways Ltd through concession arrangements is the other major reason contributing to making the Central corridor less attractive.

Table 7-2 Proposed Central Corridor Improvement

Proposed Improvement	Cost in million US$
Port	
Short-term Container Handling Capacity	26
Container Berth No.13 and 14	500
Dry Bulk and Bulk Facilities	5
Single Point Mooring	68
Rail	
Rehabilitation of rail and rolling stock	185
Truck rehabilitation	150
Road	
Capacity Upgrading	62
Road Rehabilitation	331
Pavement	544

The CDS report identified infrastructure improvement projects for the coming ten years and called for collaboration and contribution by related governments and the international community. Successful implementation would provide significant impact on the economy. The study insists that successful implementation of the projects would reduce the road transportation costs by 9 – 11 percent and for destinations served by rail or rail/lake the estimated cost would be reduced by 30 – 36 percent. The estimated reduction in time could generally be in the region between 40 – 50 percent.

7.4 Southern Agricultural Growth Corridor

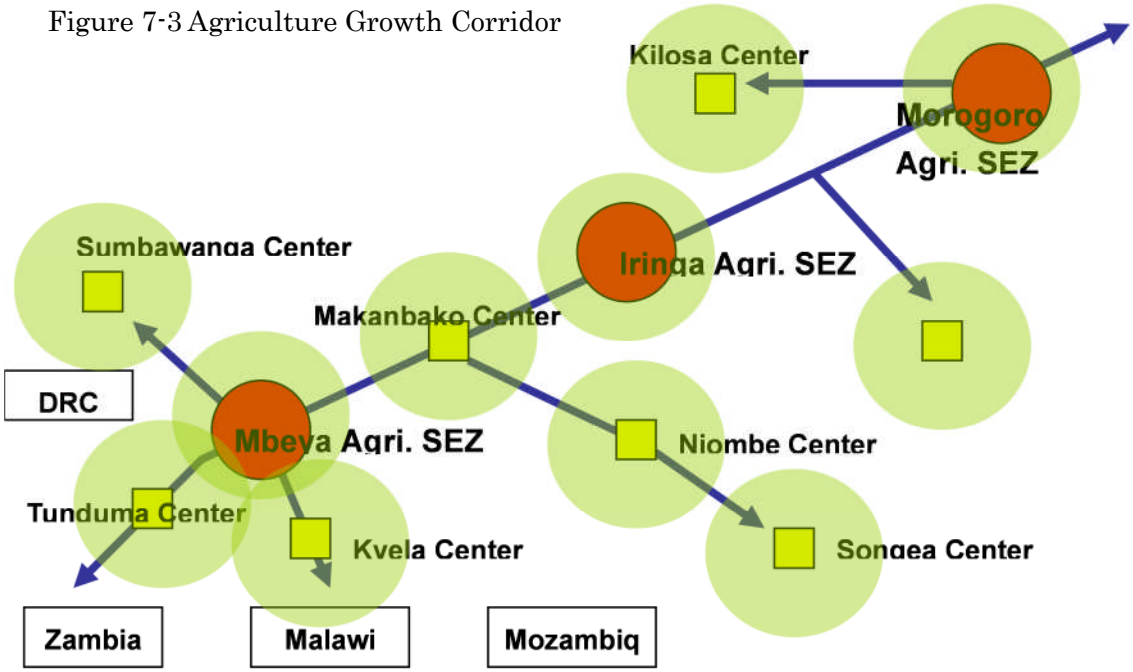
The Uhuru (Tanzam) corridor runs through the breadbasket of the country, the so called "Big Four" regions of Morogoro, Iringa, Mbeya and Rukwa regions and extends to Ruvuma region. The corridor is served by Tanzania - Zambia Railway (TAZARA) and Dar es Salaam-Mbeya highway which links to Zambia, Malawi and Mozambique. The Big Four and its extension to the big five has the potential to feed the whole East African region. In 2009, the government proposed a new complementary strategy called **Kilimo Kwanza** (Agriculture First) initiative. A year later, the private sector responded by establishing the **Southern Agriculture Growth Corridor of Tanzania (SAGCOT)** initiative as a means to implement Kilimo Kwanza utilizing the fertile

lands in the Big Five.

The SAGCOT is a public-private partnership explicitly designed to achieve higher rates of income growth and job creation through development of competitive agribusiness value chains across the Southern Corridor. The initiative initially intends to improve transportation infrastructure both in rail and road from Dar es Salaam to Morogoro, Iringa, Mbeya and Sumbawanga. It invites US$ 2.1 billion investment from the private sector alongside with public sector investment of US$ 1.3 billion to bring 350,000 hectares of farmlands to fields of commercial agriculture production with at least US$ 1.2 billion annual turnover creating 420,000 new jobs in the agricultural value chain.

The mission of IIDS in the SAGCOT initiative is to invite private investment for post-harvesting processes and its value chains and to promote local investment in this value adding process. In particular, IIDS has to prepare promotional measures for local capital investment in post harvesting value chains to be developed in harmony with foreign commercial capital investment and to deploy plans for the agricultural processing industry such as agribusiness SEZ, industrial clusters and SME parks as well as establishment of a competitive business environment.

Figure 7-3 Agriculture Growth Corridor



- Development Plans-

- Set up a team to collaborate with SAGCOT secretariat to jointly produce a development plan of industrial set up such as agribusiness special economic zones, small and medium industrial parks, micro manufacturing enterprise parks as well as a development plan for collection and storage facilities of perishable items at village level.
- Develop industrial clusters at Morogoro, Iringa and Mbeya as Agribusiness SEZs.
- Deploy SME parks at key locations of regional centers along the corridor.
- Develop MME parks at identified location of district centers along the corridor.
- Deploy industrial extension officers to SAGCOT objective regions to develop contract farming model, warehouse receipt system, and preparation of sites for collection and storage facilities at village level.
- Prepare financial support program to promote local investment for agribusiness such as interest subsidized loan.
- Prepare financial support program for growth oriented micro and small enterprises linked with technical assistance package.

7.5 Tanga "Rapid Growth Corridor"

Tanga Development Corridor (TDC) was originally designed to link Tanga port and the Great Lakes Zone and to provide logistics to Uganda and Kenya. TDC has great potential to create an economic growth area through stimulation beyond the borders. TDC covers the regions of Tanga, Kilimanjaro, Arusha, Manyara and Mara inside Tanzanian territory.

Kilimanjaro and **Arusha** Regions have good moderate climate. The mean annual rainfall varies from 250mm in the lowlands to 2000mm in the highlands. Climate in the highland is suited to growing of coffee, cut-flowers and vegetables. With Kilimanjaro airport, the regions have great potential for export-oriented agriculture and related agro-industries. Thanks to the regions' moderate climate and logistics, the number of foreign investors is increasing. Introduction and promotion of market oriented agriculture and agricultural technology through foreign investment would be the key for development. The corridor is also known as being a mineral rich area. Fertilizer production using rock phosphates and its composite fertilizer blending provides another possibility for development. Coupled with the planned Nitrogen Fertilizer production in Mtwara, Tanzania may emerge as the base of fertilizer supply in the Eastern African region. Gemstone cutting and polishing is another growth opportunity. Light industries such as manufacturing of agricultural machinery like power tillers, oil expellers, and agricultural tools have potential for

development. Having a large cattle population, dairy processing, meat processing and leather industries provide another possibility of development in this region.

Tanga region enjoys the fastest growth speed in regional GDP growth among the 21 regions of Tanzania Mainland, with impressive accumulation of factories such as textile mills, food processing, leather goods, handcrafts, cosmetics and construction materials. The Corridor has the second largest seaport (Tanga Port) and two airports (Kilimanjaro International Airport and Arusha airport).

Development Plans

Develop cold chain for horticulture industry and perishable food industries such as meat, milk and dairy industries. Prepare low interest loan for agro-processors to install agro-products collection, storage and transport facilities as well as common air-conditioned storage facility at Kilimanjaro International Airport.

- Invite foreign agro-allied industries and develop skills of local manufacturers to up-grade domestic agro-processing industries and stimulate the production of farmers in the area to generate effective demand for industrial products.
- Develop the gemstone cutting and polishing cluster at Arusha EDZ and make Arusha the gemstone processing center of East Africa.
- Rehabilitate Tanga – Arusha railway line and extend it to Lake Natron, Musoma and Mwanza passing through Serengeti National Park to strengthen Tanga link to the Great Lakes countries.
- Examine the possibility of Geo-thermal power generation in the northern Rift Valley.
- Develop Tanga Waterfront Special Economic Zone connected to Tanga Port.
- Development of Mwambani Port is required in the long run to replace the shallow port of Tanga. However, the timing of development has to wait for a large scale development project.

Development Plans

- Expand the cargo handling capacity of Dar es Salaam port both vertically and horizontally including, construction of new container berths, inland container terminals, relocation of oil jetty, introduction of IT tag system and introduction of second container handling operator at Dar es Salaam port to compete with TICTS.
- In order to respond to growing demand, construct a supplemental port at Mbegani, Bagamoyo and make it operational by 2020 at the latest. However, without waiting for the opening of the port, phased development of Bagamoyo EDZ should proceed to respond to

the growing demand for industrial sites in the Dar es Salaam economic zone.

- An inter-ministerial committee is to be formed to coordinate back-up infrastructure support to the new port and Bagamoyo SEZ as well as deepening of the corridor development strategy.
- Upgrade lake ports at Kigoma and Mwanza and introduce one stop border point (OSBP) function at the border.
- Complete the paving of trunk roads along the corridor.

7.6 Mtwara "Promised Mineral Rich Corridor"

Mtwara corridor is an international corridor linking four countries of Tanzania, Mozambique, Malawi and Zambia and has been identified as the strategic corridor for the Southern African Development Community (SADC). The corridor is known to be rich in minerals. However, due to non-existence of a railway line and poor road connection, it has remained as one of the least developed areas.

At the front of Mtwara corridor, a large natural gas reserve is under development at Mnazi Bay. A nitrogen fertilizer plant and other gas related industries are expected to grow in the Mtwara industrial zone. Having limestone, red clay and gypsum, Mikindani is ready for cement production. Evaluation of Mtwara corridor shows that development of 536 million tons of coal reserves at Mchuchuma and estimated 1.3 billion tons of iron ore at Liganga are at an advanced stage for take-off. Development is spearheaded by the National Development Corporation (NDC). Reserves of rare metals such as nickel, copper, niobium, vanadium, titanium and others are known to exist, though detailed studies have not been completed. Recent drilling tests confirmed the presence of high grade zones of sandstone-hosted uranium in the Mkuju River.

Although there are plenty of business opportunities, development has not taken off yet. Under such circumstances, Mchuchuma coal and Liganga iron ore exploration would be the centerpiece for infrastructure development. Once iron making starts at Liganga, a metal fabrication industry would be developed at Mtwara. Mtwara has the possibility of being developed as an SEZ for heavy industries led by chemical and iron industries.

- Development Plans -

- Complete paving the trunk road from Mtwara to Mbambabay on Lake Nyasa.
- Complete Lindi – Mtwara power link under power transmission and distribution

arrangements.

- Establish chemical and fertilizer industries at Mtwara as the natural gas consuming industry.
- Initiate coal power generation at Mchuchuma and iron ore exploratory drilling at Liganga.
- Design the rail line from Mtwara to Liganga in accordance with progress of Liganga iron ore development.
- Expand Mtwara port facility in accordance with the progress of Mtwara industrialization packages including fertilizer manufacturing, agro-processing, iron and coal mining projects as well as iron making.

PART III VERTICAL FRAMEWORK

Chapter Eight : BOTTOM UP STRATEGY FOR GROWTH

Mission Statement

- Grow manufacturing enterprises from the bottom up i.e. from micro to small, small to medium and medium to large, through provision of concrete policy measures.
- Provide a chance for all growth oriented enterprises at every growing stage and any locations to grow.
- Promote rural industrialization through promotion of SMEs and up-grading of rural enterprises.

Policy Issues

- Create and implement financial support programs for growth oriented MSMEs to invest in up-grading.
- Establish credit guarantee program for MSMEs to access financial markets.
- Develop SME parks and MME parks at key locations in the regions for MSMEs to acquire proper working premises.
- Expand SIDO's function to lead initiatives for rural industrialization and MME promotion.
- Improve business environment for local and grass-root industries and provide growth opportunities to all local enterprises.

8.1 Structure of the Manufacturing Sector

The number of manufacturing enterprises operating in Tanzania in 2007/08, with permanent premises, were 9,354 in Dar es Salaam and 15,625 in other regions, adding up to a total of 24,979 (Business Survey 2007/08 NBS). Among the total of 24,979 as many as 88.0 % are categorized as ***Micro Manufacturing Enterprises (MMEs***) with less than 5 workers. This ratio reaches as high as 96.9 % when small scale manufactures with less than 10 workers are included (see Table 8-1). On the other hand, only 5,520 enterprises had been registered at BRELA as of June 2008 for manufacturing activities. In other words, the majority of the manufacturing enterprises in Tanzania are MMEs operating in the informal sector.

The data indicates that there are very few medium scale manufacturing enterprises that would support large enterprises and at the same time which would have to grow to become medium and large enterprises. On the other hand, there is a huge number of micro scale enterprises that are facing a number of difficulties against their growth. The growth dynamism of the

manufacturing sector will be attained through up-grading local industries.

Table 8-1 Number and Percentage of Manufacturing Enterprises by size of workers

No. of Workers	1-2	3-4	5-9	10-19	20-49	50-99	100-499	500+	Total
No. of Manufactures	15066	6921	2216	411	215	62	70	18	24979
Percentage	60.3%	27.7%	8.9%	1.6%	0.8%	0.2%	0.3%	0.1%	100%
Definition in SME Policy	Micro scale manufacturers		Small scale manufacturers			Med manu –facturers	Large manufacturers		

. **Source: Business Survey 2007-08, NBS**

Most of the SME promotion measures undertaken in Tanzania did not pay enough attention to informal sector MMEs which occupy 80% of operating manufacturing enterprises. In other words, the majority of manufacturing enterprises in the country have been kept outside the public support arena although the SME Policy was formulated so as to address the prevailing constraints and to tap the full potential of the sector.

8.2 Bottom-up of Micro Manufacturing Enterprise (MME) <Industrial Village>

Micro Manufacturing Enterprises (MMEs) are the bottom line of industries in the country. MMEs are operating everywhere, and nearly half of them do not have proper working premises but are operating at residential houses backyards. Industrial villages or MME parks can provide a potential solution for organizing and relocating scattered MMEs in one place so as to form a cluster and at the same time promote their shift from the informal to the formal sector.

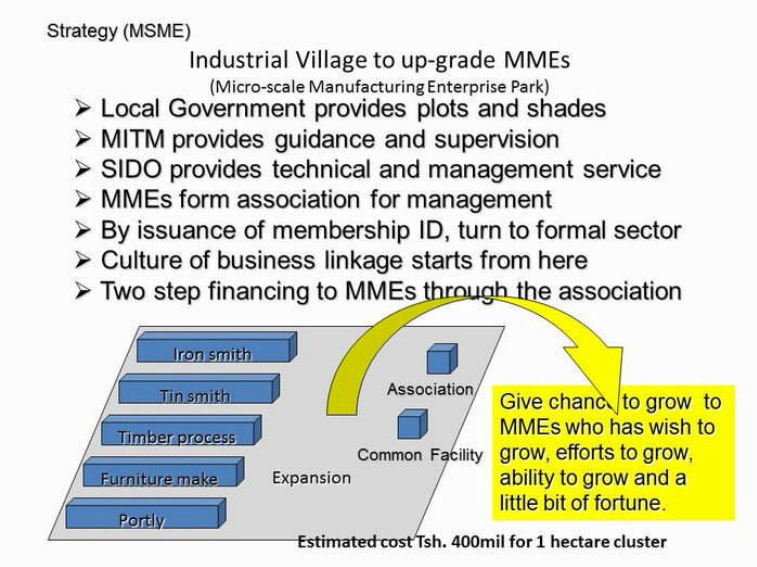
KILIMO KWANZA would certainly bring abundant new jobs and employment opportunities through drastic improvement of agricultural yields. A part of the fresh and unskilled labor force has to be absorbed by agribusiness and agro-processing industries in the rural economy and switch on the key of dynamism of manufacturing sector growth. Rural industrialization is vital to attain balanced growth across the country as well as to forestall the effects of urban decay and slums.

<Outline of the Plan>

- MIT establishes “the Guideline for Development of MME Industrial Parks” and calls on local governments authorities (LGAs) to collaborate.
- LGAs provide 2 to 5 acres plots, depending on their needs so that 30m^2 to 50 m^2 working premise can be availed to each individual MME with very basic infrastructure such as water, sewerage system and simple shade. Invite MMEs to develop their own workshops at their own expenses and set nominal rental charges.
- MMEs to be invited are self-employed business owners engaged in either

manufacturing or manufacturing support enterprises preferably operating in the same or related sub-sector. Members may have, in addition to the owners/manager, a few employees. School leavers and retired officials can be accepted as trainees.

Figure 8-1 Concept Image of MME Park



- Moving to the parks should be based on free will, and occupants will form self-autonomous associations to run the Park. The association shall undertake management of the Parks including site allocation to members.
- An association with more than 25 members shall be registered and members shall be granted an MME membership certificate upon the enrollment. The certificate proves their address and entitlements and is the document by which they become recognized as formal sector enterprises.
- The associations may be able to finance members receiving loans from commercial banks registered at the SME Guarantee Scheme. However, the lending conditions to members have to adhere to conditions agreed with the bank and the association has to carry the repayment responsibility (Group Lending).
- By receiving the MME certificate, members are now deemed to be formalized enterprises, and therefore are entitled and encouraged to enter into business deals with medium or large scale business enterprises in the formal sector and to supply products to local and/or central government.
- MIT together with other public and non-governmental bodies to prepare a graduation scenario providing training and learning opportunities with candidates who graduate moving from a lower level to an upper grade in business fields.

<Expected types of business>

- Blacksmiths, Tinsmiths, Metal Processors
- Machinery mechanics, Automobile repairers, Bicycle, Tricycle makers,
- Electricians, Plumbers, Home appliance repairers
- Carpenters, Wood Producers, Furniture makers,
- Shoe Makers, Leather processors
- Food processors, Millers, Seed oil expellers.

< Background for the Planning >

1. Informal sector enterprises cannot issue an official invoice and/or receipt, by which they lose business chance to sub-contract to larger enterprises and therefore business linkages cannot be formed. A World Bank report (Rural investment Climate Assessment 2007) says that half of non-farm enterprises in the regions do not have their own workshops. Acquisition of proper working place is major constraint for MMEs.
2. Even at the level of micro enterprises, the benefits of forming an industrial concentration are numerous:
   - To be able to get a large order by sharing one job among several members.
   - To be able to collaborate on the job (a blacksmith supplies iron materials to stove assemblers)
   - To share space taking and/or acquisition of expensive tools and equipment by members.
   - To be able to save on transportation costs for intermediate inputs.
   - To make possible a rapid spread out or outreach of new design, business trends and technology.
   - To attract clients through the chance of selecting from a large choice of manufacturers.
   - To have easier waste control and environmental protection.
   - To facilitate reduced price purchases through bulky purchases
3. For micro sector up-grading, we have to deal with large numbers or a mass of enterprises. Sending fresh labor force to MMEs as trainees is one of the answers to this requirement. The on-the-job-training to be conducted at the thousands of MMEs would cover not only technical aspects but also other business skills such as how to differentiate one set of goods from others, how to attract clients, how to negotiate settlement of claims. Hence training has to be practical and quick.

8.3 Grass-roots Industry Liberalization Operation

In Tanzania, especially around large cities, there are a number of hidden accumulations of grass-roots industries. Many of these were born at the outskirt of the cities, in the process of transferring from a socialist economy to a market economy. Enterprises of similar nature tended to gather, naturally for common interests like attracting clients and easy access to raw materials. However, this naturally born accumulation of micro or small scale enterprises has sometimes been treated unwisely by the city and municipal councils thereby causing uncertainty to them.

An example taken up here is an accumulation of existing track body builders in Tabata district of Ilala Municipal, Dar es Salaam. The small corner of 58.07 acres area known as Tabata Dump used to be a dry garbage dumping site for the Dar es Salaam metropolis. In 1998, 300 car garages were relocated at Tabata Dump by the City Council after being expelled from various places around the city under a Dar es Salaam city clean-up campaign. The number of business, which was in the region of 380 at that time, has now grown to more than 3,000 enterprises, mainly engaged in the track and bus body-building business. Some are able to build tankers which require high skills. Thanks to the growing business in the area, entrepreneurship is thriving and orders are coming, not only from Tanzania, but also from DRC Congo, Malawi and Zambia.

Garages in Tabata Dump receive orders to build bodies on the bare chassis unloaded at Dar es Salaam port and would be self-propelled to the respective countries after the body building. In this sense they are unmistakable exporters though their value addition can hardly be found in trade statistics. However, since no land title or any legal documentation to confirm their occupancy has been issued, they cannot offer collateral to get loans from financial institutions. Instead, they are now afraid of another possible relocation order.

The story of Tabata is evidence of a clear case that the administrative authorities are hindering the growth of domestic industry. To the contrary, they should be providing solutions that would ease problems that hinder the growth of local industries. In this case, by granting an official land title, business owners can access financial resources and invest on their premises without worrying about a relocation order. What the government should be doing seems to be quite clear.

< Box 1 > Tabata Dump – The Story of an Informal MME Park

Mr. Saidi, 47 years old is the owner and manager of one of the track body builders in Tabata Dump. He completed elementary school in 1975 and joined a body building workshop owned by an Asian in Kibaha. After working there for eight years, he attended a VETA training course for one year.

In 1984 he started working at Kidongo Chekunde as an independent mechanic and eventually managed to open his own garage there. When he was relocated to Tabata Dump in 1998, he had 6 employees. Now he has 21 employees and continues with his business. Under the guidance of TRA (Tanzania Revenue Authority), he registered his own company and opened his tax file in 2005. However, all the business he makes has been done under the name of Kidongo-Chekundu Engineering Society Company (KCESC) and he pays them a small percent as commission on every deal. KCESC was formed by the settlers from Kidongo Chekundu when relocated to represent their interests in negotiation with the city council, and has played a vital role such as land preparation on the dumping site, negotiation with agencies to bring water and power and in recent years invitation of a community bank to the area in collaboration with CCM Tabata district committee.

The business is booming and he finds no difficulty to get further orders but he cannot expand the business due to limitations of working space. Though demand is firm, his profitability is low due to his financial capability as he earns only on labor charges and materials are supplied by clients. The story of Saidi is the common story of micro and small manufacturing entrepreneurs in Dar es Salaam City.

A second hand SCANIA engine on sale at a parts shop in Tabata at Tsh 6 mill. A garage owner may buy this engine to mount on TATA's truck chassis and build up MERCEDES logo body on it.

Chapter Nine: AGRICULTURE BASED INDUSTRIALIZATION

Mission Statement

- Ensure success of Kilimo Kwanza by development of agribusiness and agro-processing industries, and make agro-processing internationally competitive through Kilimo Kwanza.
- Encourage private sector investment in agribusiness and agro-processing industries by making the investment less risky and more profitable.
- Activate rural economy through agricultural development led industrialization, making more local people participate in agricultural value chain.
- Absorb abundant labor force coming out of the rural economy into the formal economy through rural industrialization so as to sustain balanced growth of national economy.

Policy issues

- Create enabling environment for sustainable development in agribusiness value chains.
- Develop and allocate industrial extension officers to regions to support rural industrialization and organize local enterprises by district and by sector to create business linkages.
- Establish financial support programs to improve financial access for SMEs.
- Expand institutional support to agro-allied industries on R&D, human resource development and financing.

9.1 Potential of Agriculture

Tanzania mainland has approximately 40 million people and 88 million hectares of land out of which 50% or 44 million hectares is arable land and suitable for agriculture. The agriculture sector is highly labor intensive and employs 71.5 percent of the work force (2002 Census) and produces 24.1 percent of GDP (Economic Survey 2009). The productivity of the sector is very low even by Sub-Saharan Africa standards, but the sector remains the nation's backbone and a priority sector of the economy. Since the sector is dominated by smallholders farming who do not apply modern agricultural technologies and inputs, yields are extremely low and very much dependent on climatic fluctuations. Post-harvest losses are reported as being very high at around 40 percent while cultivated land is only 20 percent of total arable land in the country.

However, there are several symptoms of positive changes that have happened in the sector such as drastic improvement of yields for sunflower and tobacco leaves through introduction of quality seeds and Contract-farming (CF). A national resolution known as KILIMO KWANZA (Agriculture First) initiated in June 2009 confirms Government commitment to significant budget

allocation to initiate a green revolution.

9.2 Kilimo Kwanza and 3ADI

KILIMO KWANZA is a national resolution to initiate a green revolution in Tanzania and introduce large scale commercial agriculture in the sector. KILIMO KWANZA serves as the central pillar in achieving the country's Vision 2025 and setting the direction of socio economic development during the intervening period.

Five undertakings constitute the KILIMO KWANZA resolution and these are;

(i) KILIMO KWANZA shall be the tool for bringing about a green revolution in Tanzania hence modernize and commercialize agriculture;

(ii) KILIMO KWANZA shall be mainstreamed into the government planning process so as to ensure its successful implementation;

(iii) Sufficient resources shall be allocated to ensure implementation of KILIMO KWANZA;

(iv) The private sector shall be mobilized so as to increase investment in agriculture; and

(v) Implementation of KILIMO KWANZA shall be guided by ten pillars: (a) Political will, (b) Financing, (c) Institutional re-organization, (d) Paradigm shift to strategic framework, (e) Land, (f) Incentives, (g) Industrialization, (h) Science, technology and human resources, (i) Infrastructure development and (j) Mobilization of Tanzanians.

African Agriculture and Agro-industries Development Initiative (3ADI) is an outcome of the High-level Conference on Development of Agribusiness and Agro-industries in Africa held in 2010 under the umbrella of African Union Commission (AUC) and its New Partnership for African Development (NEPAD). The initiative is a pathway to increasing economic growth and food security on the continent by focusing on agribusiness and agro-industries with strategic orientation that prioritizes the African market where there is high demand for value added agro-products.

An inter-institutional technical committee was constituted in Tanzania under the leadership of the Ministry for Industry and Trade to formulate strategies for implementing the program in Tanzania. The Tanzanian strategies focused on complementing the existing initiatives by identifying key result areas including: interventions to reduce post-harvest losses; supporting innovative technologies and services; reinforcing financial support program for agro-processing projects; enabling policies; and provision of public goods.

9.3 Agro-processing Industries

Value Addition in the agro-processing sub-sector registered 55.6% of the total for the whole manufacturing sector in the country in 2008. Registered business enterprises in this category amounted to 5,153 entities constituting 20.6 % of all registered business in Tanzania in the same year. The figure (Table 8-1) was compiled from Industrial Survey 2007-08 data which covered all registered manufacturers employing more than 10 workers. If micro enterprises having less than 10 workers and informal sector enterprises are taken into consideration, the ratio would be higher though the accurate figure is hardly obtainable. At any rate, the agro-processing industry is the dominant industry in Tanzania and spreads across the country.

Table 9-1 Gross Value Addition in Agro-processing Sub-sector

T. Shilling Millions at 2001 constant price

Gross value add at 2001 constant price	ISIC Rev3	2004	2005	2006	2007	2008P
Meat, Fish, Vegetables	151	89	95	99	102	103
Milk, Dairy products	152	7	7	7	8	9
Grain Mill	153	106	103	105	107	106
Bakery, Coffee, Biscuit	154	83	90	85	100	134
Beverages	155	180	190	214	247	227
Tobacco	160	53	76	71	90	95
Sub-total, Agro-process		518	561	581	654	674
Total, Manufacturing		956	1016	1066	1151	1212

Source: National Bureau of Statistics

Economic growth based on market mechanism would inevitably result in income gaps between the urban and rural population. In the interest of social justice and political stability, this imbalance should be eased in such a manner that rural residents would positively participate in growth dynamism through their own economic activities. The agricultural sector accounts only for 25.8 percent of GDP in spite of the fact that 71 percent of working age population is engaged in the sector. Local industrialization through promotion of agribusiness and agro-processing activities would contribute directly to poverty reduction by providing jobs to low-income workforce in the rural economy as well as by adding value to agricultural products. Creation of a local market and stimulation of domestic demand would support infant agro-processing industries in Tanzania, providing stable demand through the domestic market.

A particular feature of agro-processing industry is the locality. Processing materials that are highly perishable and transport costs should be reduced through transformation within producing sites. This feature reveals a higher possibility for agro-processing industry to contribute to pro-poor growth, because agro-processing industry would create job opportunities in places where the raw material is produced. Another feature of agro-processing industry is the relatively low requirement of capital investment, easily acquired skills for processing works and lower energy input. These structural features make agro-industry easier to establish in any rural place where agriculture plays a major role. However, at the same time, easy entry into the industry may lead to relatively little value addition in activity which makes the business less profitable and with constant easy exit for entrepreneurs.

9.4 Rural Industrialization led by Agricultural Development

Case of Sunflower Oil sub-sector

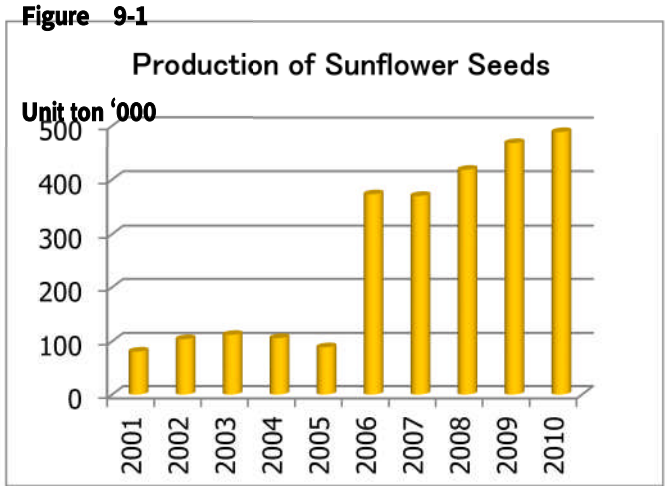
The increase of sunflower seed production and the revival of sunflower oil industry in recent years provides a good example of how industrialization has been led by agricultural development.

The environment for the edible oil industry in Tanzania was seriously damaged by oil imports from Asia resulting from trade liberalization. Before the economic reforms, Tanzania was self-sufficient in domestic supply of edible oil of various kinds including ground-nut oil, sunflower oil, coconut oil, cotton seed oil, soya beans oil and palm oil based on the variety of oil seeds produced in respective regions. After trade liberalization during the early 1990's, imported palm oil from Malaysia and Indonesia started to dominate the market and production of local seeds oil significantly declined to about twenty percent of national demand. A government owned oil refinery in Morogoro was shut down and sold to a private owner in the late 1990's, but revival of the refinery has failed due to the worsening business environment in spite of serious efforts made towards that end. In early 2000's, the capacity utilization rate for mills processing local oils seeds was reported as being in the region of 20 – 25 per cent of existing capacity (Wangwe, 2002).

To the contrary, four large oil refinery plants designed to refine imported palm oil were constructed in Dar es Salaam in the late 1990's and early 2000's and their total refining capacity has jumped over the scale of the domestic market, with a view to exporting to neighboring markets. Palm oil importation has kept increasing since then, with its imported value for 2008 reaching 168 billion Tanzanian Shillings, the second largest import item after petroleum (TRA External Trade Statistics 2008).

While the market for edible oil was dominated by the imported palm oil, an opposite phenomenon was developing in the field of sunflower production. According to crop production statistics by the Ministry of Agriculture, Food Security and Cooperatives (MAFSC), the annual production of sunflower seeds which had reached the 100,000 tons level in the first half of 2000's suddenly jumped to 400,000 tons level starting from the 2005/06 cropping season. Although improvement of data collection should be taken into consideration, an apparent sharp increase of the seeds production was well observed in several regions in the central corridor over the last few years. With increased production of sunflower, entry of fresh small scale oil processors into the market happened and has continued. Since the oil contents of sunflower seeds is 20-35 % in weight, production of sunflower oil could have reached the 100,000 tons per year level. This is almost half of the national demand of edible oil, which may be worth about Tsh 100 billion (US$ 67mil) if the whole production lot was marketed.

Figure 9-1



Source 2001-08 MAFS,
2009-10 The Economic Survey

Dodoma Model of Sunflower Oil Cluster

This sharp increase since the 2005/06 crop season was achieved largely thanks to the promotion and mass-production of quality seeds. The effect of high quality seeds had been known to farmers but was not popular due to limited quantity and its high price. Steady joint efforts of pro-poor NGOs and the Ministry of Agriculture broke this barrier by mass-production of quanlity seeds through contract farming with small famers. Sunflower seeds production sharply increased during the 2004/05 cropping season in Dodoma, and a number of entrepreneurs, such as retired officers or ex-taxi owners, entered the sunflower oil processing business which could be started with relatively little capital. A group of oil expellers in Dodoma formed an association in 2006 and systematically introduced a contract farming model, where each of the oil processors has 300 to 700 contracted farmers and provides high quality seeds and tractor tilling services in return for guaranteed procurement of harvested sunflower.

New entry into the processing business is relatively easy. It requires only 15 - 20 million T. Shillings as the initial capital. With a single unit of Chinese made oil extracting machine, an

entrepreneur can process 40 bags of 65kg sunflower seeds a day and produce 80 liters of oil. Thanks to the increased yield of quality seeds and favorable market environment in subsequent years, business for the association has grown year by year. In 2009 the association had 11 member oil processors and was producing 1,500 tons of sunflower oil and 4,500 tons of oil cake for animal feed per annum. Formation of associations was also reported in Singida and Manyara. Sunflower oil processing has been identified as one of the growing industries in more than ten regions.

Table 9-3 Contract Farming by Central Zone Sunflower Oil Processing Association in 2006

Companies	**Processing Capacity**	**Contract farmers**
1. Oil Processor A	1200 tons of seeds	300 farmers
2. Oil Processor B	1600 tons of seeds	700 farmers
3. Oil Processor C	1350 tons of seeds	700 farmers
4. Oil Processor D	1200 tons of seeds	700 farmers
5. Oil Processor E	1200 tons of seeds	500 farmers
6. Oil Processor F	1350 tons of seeds	700 farmers
7. Oil Processor G	800 tons of seeds	675 farmers
8. Oil Processor H	800 tons of seeds	545 farmers
Total	**9500 tons of seeds**	**4820 farmers**

Source: CEZOSOPA Leaflet 2006

Table 9-4 Business Plan of Central Zone Sunflower Processors Association in 2009

Members	**Sunflower to be processed (ton)**	**Acreage For cultivation (acre)**	**Quality Seed Required (kg)**	**Cost of Q.Seeds ('000 Sh)**	**Cost of Tilling ('000 Sh)**
Processor A	650 tons	833 acres	2917 kgs	8,750	16,666
Processor B	780 tons	1000acres	3500 kgs	10,500	20,000
……	**…**	**…**	**…**	**…**	**…**
Processor X	400 tons	513 acres	1795kgs	5,384	10,265
Processor Y	400 tons	513 acres	1795kgs	5,384	10,265
Total	**6,180 ton**	**7,923acres**	**27,730kg**	**83,191**	**158,456**

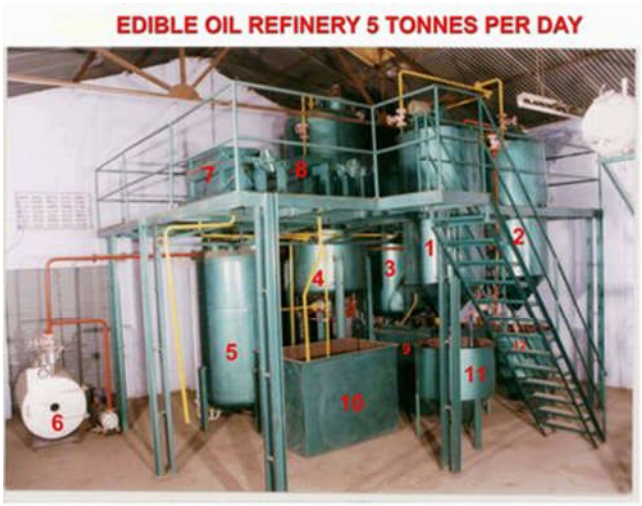
The plan shows that 11 association members jointly procure 27,730 kgs of Quality Seeds and extend tilling services covering 7,923 acres for contracted farmers to supply 6,180 tons of sunflower seeds for processing.

Source; CEZOSOPA Business Plan 2009

From Oil Extracting to Refining

Following increase in sunflower seed production, a number of entrepreneurs have entered the sunflower oil extraction business and turned the sunflower oil industry, into a growing one in more than ten regions. As of 2011, the Ministry estimated that approximately 500 small scale oil extractors are operating in the country but none of them has oil refining facilities, and most of their products are sold and consumed by villagers in their proximity. Raw sunflower oil has no harm on human health if it is consumed shortly after the extraction. However, it needs to go through a refining process to increase its shelf-life and facilitate sales for consumption in a distant market. Naturally, following the increase of oil production, some oil processors have started planning investment in oil refining units individually or jointly. The oil refinery business is generally undertaken by large scale enterprises as it requires larger capital investment. But some entrepreneurs have focused on small capacity refining units which fit into the local production for local consumption model. There are a number of hurdles that remain, but serious attempts have been initiated in several regions.

Figure 9-2 Indian made Small Refinery



The whole process starting from agricultural development and the resultant up-grading to simple processing industries and then on to sophisticated refining industry is called ***Agricultural Development led Industrialization.*** Tanzania needs to pay attention to what is going on in Dodoma for the sunflower oil industry as a possible model of rural industrialization. The Dodoma model provides a good example of how agricultural development initiated small processing businesses, and how an association was formed and how collaboration between farms and industrialists started leading to the result of industry up-grading. Tanzania needs to find out germinating seeds of this kind and provide the nurturing environment to protect and support them till they reach the self-sustaining growth stage.

Chapter Ten : RESOURCE BASED INDUSTRIALIZATION

Mission Statement

- Construct the first fertilizer plant in East Africa at Mtwara SEZ.
- Construct the first iron making plant at Liganga.
- Maintain the policy that priority use of gas is for domestic use.

Policy issues

- Strengthen linkage of the development of the mining sector with the rest of the economy, increase local participation in production, process products locally and provide related services by local entities.
- Raise TRA capacity to monitor the mining company activities to raise more contribution to Governmental revenue.
- Prepare petrochemical SEZ at Mtwara for fertilizer and chemical cluster.
- Metal industrial cluster shall be prepared either in Bagamoyo or in Mtwara depends on development.

10.1 Mineral Wealth and National Economy

Tanzania is endowed with a vast and very valuable extractive resources industry. Some report rank Tanzania at fourth in Africa in terms of diversity and richness only after South Africa, DRC Congo and Nigeria with metallic deposits, gemstones, industrial minerals and hydrocarbons.

Although Tanzania's wealth of minerals was well known for decades, it was tapped only after the adoption of Mineral Policy in 1997 and Mining Act in 1998. Since then the mining sector has grown at a tremendous speed, and mineral exports led by gold has risen from US$ 27.6 million in 1997 to US$ 1,560.2 million in 2010, i.e. 55times in 13 years. The mineral exports in 2010 occupy 36.3% of the nation's total exports, and earn the foreign exchange three times higher than from traditional agricultural exports where eighty percent of Tanzanians are engaged. Nevertheless, the sector's contribution to GDP remained relatively small at 3.3% in 2010 and its contribution to the Government revenue (inclusive of royalty and income tax) in 2009 was reported at US$ 53.3 million against its exported revenue of US$ 1,229.5 million of the same year.

In this context, Tanzania has successfully developed the mining sector but failed to link its development to the national economy and people's life. We may receive criticism from the next generation that the country has handed the un-renewable national resources to foreign capital without making enough return.

We have to develop the natural resources in a manner that strengthens linkage of the sector with the rest of the economy, increases local participation both in production, processing and provision of related services, add value and minimize soil and environmental impacts of pollution.

10.2 Natural Gas

10.2.1 Oil and Gas Potential

Tanzania has remarkable potential to produce oil and gas. Although all of four natural gas reserves so far identified in Tanzania along the coast are medium size gas reserves, a series of deep sea oil and gas exploration activities which aims at larger scale oil and gas findings has been proceeded.. The first deep sea reserve was found south of Mafia island in October 2010, which was reported to have shown positive signs for sustaining a Liquefied Natural Gas (LNG) project. Further exploration at off Ruvma in April 2011 made MOEM to estimate gas potential of the country to 12 TCF (Trillion Cubic Feet).

When these figures get reality, natural gas development of Tanzania would provide tremendous impact to the national economy. The project is to liquefy the gas to suit long-range transport requirements. Gas volume shall be reduced to 1/600 when liquefied when its temperature is lowered to minus 160 degrees centigrade. The project needs a liquefaction plant in the gas producing country, an evaporation plant in the recipient country and several units of specialized ships to transport the gas, keeping temperature at less than minus 160 degrees, and thus project cost would easily reach up to ten billion dollars. Feasibility line of LNG project development is often reported to be 3 – 5 TCF line of gas reserve. 12 TCF may allow to run 2 train (5 million ton x 2 train) LNG project. LNG annual export of 10 million ton would produce CIF Value of 3,050 million dollar a year (at US$ 250 per 1000m3) and may bring over billion dollars as gas revenue to the country pocket thanks to fairly designed Production Sharing Agreement (PSA).

However, history teaches us that a huge oil/gas revenue sometime kills country's other exporting business by "Dutch disease" seriously affecting currency exchange rate and productivity of the other industries expressed in foreign currency. Such situation may arise 10 years later at the earliest case, so that at this moment it is enough to know that we may have such possibility.

10.2.2 Fertilizer and Chemical industries

To establishment a Nitrogen (Ammonia/Urea) fertilizer plant is one of the most strategically important projects to the Tanzanian economy. If realized, it would be the first nitrogen fertilizer plant in East Africa, and would cover the fertilizer demand of the region and its supply cost would be much lower than that from imported ones due to the logistic advantages. It will definitely

contribute a lot to modernization of agriculture in East Africa where the majority of the people depend on agriculture for their livelihood.

Raw materials required for the nitrogen fertilizer production are natural gas and air only. However, nitrogen fertilizer production is one of highly sophisticated petrochemical industries which African countries do not have. Moreover, the plant has particular difficulties for its project formation as such (1) a huge amount of initial investment of over a billion dollar required for the development, (2) volatile market fluctuation of gas prices and fertilizer prices and (3) the difficulty to fix gas price over 20 years between the two investors of different nature. A number of ideas and proposals have been made to overcome these difficulties. It may still take some time but it will be (and has to be) sorted out in the near future because of increasing demand in world market as well as rapid increase of consumption in African countries. In addition to Ammonia/Urea production, several bi-products or co-products are under discussion for production, such as Ammonium Nitrate (explosive to be used for mining industry), Methanol (liquid fuel) and others.
Once Ammonia is produced, it can be diversified to various fertilizers and. through combination and blending with other elements such as phosphate, various fertilizers such as DAP (Die-Ammonium Phosphate), CAN (Calcium Ammonium Nitrate), SA (Sulphate Ammonium) and varieties of NPK compound can be produced.

A specialized industrial zone for petro chemical industries should be designed in the long term view to attract related investments there to form a chemical industrial cluster. Due to the nature of the cluster which will be exposed to severe international competition and to be operated without idle time, very strong back up of infrastructure arrangement is critically required.

10.2.3 Gas Use for Industry

In addition to gas supply to power generating units, currently 35 large factories in Dar es Salaam have been connected to the gas distribution pipeline owned by Songas ltd. Since the Natural Gas has several superiorities in industrial use, the distribution network should be expanded and preferably combined with that of other gas suppliers. An independent gas distributor to undertake marketing of gas from several sources would be an economical solution. Conversion of energy source from diesel to CNG shall benefit energy consuming industries through cost saving, easy handling and less pollution.

Since huge reserves of industry friendly gas has been confirmed, quick commercialization should be encouraged to replace the use of imported oil and oil products. Further acceleration of economic growth in Tanzania will very much depend on the handling skills of the government on

natural gas development.

10.3 Metal Resources based Industries

The development potential in Tanzania is high. Reserves of variety of metallic minerals including Gold, Silver, Platinum, Nickel, Iron, Copper, Tin, Tungsten, Titanium, Vanadium, Zinc, Cobalt have been identified. However, only Gold has been systematically explored and produced in scale.

10.3.1 Gold Refining

Estimates of gold reserves in the country are said to be over 2,000 tons, with only a small part of it currently being mined. Total investments in the country's gold mines amounted to $2.5 billion during 1997 – 2007, and the country's official gold exports rose in value from $121 million in 2000 to $1,516 million or 36.3 % of country's total export in 2010. However, as was discussed in Art 10.1, its linkage and contribution to local economy is very limited, and we are faced with the challenges of strengthening linkage of the sector with the rest of the economy, increasing local participation both in production, processing and provision of related services. Currently whole the lot of produced gold is exported in raw form. Establishing a refinery in the territory is apparently one of the linkages to the local economy. Several plans to strengthen its linkage to local economy are under study.

10.3.2 Iron Making

Spending enormous time and efforts, a dream of Tanzania since the independence is now ready for take off. In January 2011, National Development Corporation (NDC) announced reaching an agreement to for a joint venture with a Chinese metal company to construct a one million ton capacity Iron making plant at Liganga, in two phases from 2012. The Liganga iron project is located in Ludewa district, Iringa region. Estimated iron reserves in the Liganga rocks are 1,218 million ton. The investment cost may reach three billion US Dollars including coal mine development and coal power generation at Mchuchuma. It is requested that the technology of coal based iron deduction will be applied.

Once realized, the plant will be the first iron making plant in east Africa, and will contribute a lot to the metal industries in the region where iron demand is sharply increasing with the growth speed of over 10 % annually. .

10.3.3 Nickel Smelting

Kabanga Nickel Project is located in Ngara district, Kagera region and is a 50-50 joint venture

between Xstrata and Barrick Gold Corporation. The project is expected to cost more than US$ 2 billion, and when production starts, Kabanga will be one of the largest nickel mines in the world. Pre-feasibility study was prepared but the project was suspended due to the financial crisis and fall of metal prices in 2008. However, along with recovery of metal prices, the project is expected to revive. Nickel smelting requires a huge volume of energy, and project projections calls for electricity requirements of 40MW to produce nickel concentrates and 800MW to process the concentrates in the country. The project also creates the base cargo for connection to road and rail access along the Central Corridor.

The other developments are nickel projects in Dutwa in Kagera region and Nachingwea in Lindi region. Nachingwea nickel may be realized faster being located close to Mtwara port.

When a nickel project moves, it will provide a considerable impact to transportation sector and power sector, due to its heavy transportation needs and smelting process which requires huge power demand. Tanzania should not overlook such industrialization chances when natural resources are being developed.

10.4 Non-metal Resources Based Industries

Uranium Production

Deposits of Uranium are known at several locations such as Mkuju River, Manyoni, Mbamba bay, Mkuju, Mtonya, Mbinga and Ruvuma.

Among these, development of Mkuju River, by Australian Mantra Resources may come shortly having relatively short access to Mtwara Port. To explore uranium, a very tight control of mining, processing, transportation and shipping under IAEA is required. A yellow cake processing plant at the production site and port facility improvement at Mtwara port shall be required.

Gemstones Cutting and Polishing

A wide variety of gemstones are mined in Tanzania including Diamond, Tanzaniate, Rubies, Garnets, Tourmaline, Sapphires, topaz and emeralds. Gemstone cutting and polishing industries are to be developed to add value to exports of gem stones.

Other Industrial Minerals

Clays, Glass, Sand, Kaolin and limestone are some of the industrial minerals found in Tanzania. The development of these minerals is still at infancy stages. However, limestone, clay and gypsum are consumed in local industries.

PART IV SUPPORTING FRAMEWORK

Chapter Eleven : INFRASTURUCTURE SUPPORT

Mission Statement

- **Concentrate infrastructure investment to identified industrial zones and corridors, to draw out the maximum effect at the least cost.**
- **Ensure power and energy supply to the industries. Improve both in quantity and quality.**
- **Establish a good practice of PPP to attract private capital and management skill to the social capital formation.**
- **Policy issues**
- **Strengthen coordination mechanism among related agencies to harmonize the development planning process.**
- **Review and rebuild the power sector master plan which under-estimate the growing speed of the private business activities.**
- **Prepare a nation-wide logistics master plan to grasp the latest and upcoming trends in cargo movement.**

11.1 Infrastructure Development for Industry

In order to provide a competitive business environment to existing industries and to attract fresh foreign and domestic investment into industries, the improvement of infrastructure is critical. Under the circumstances that available resources are limited and the geographical area of Tanzania is large, a reasonable option for investment in infrastructure development would be adoption of the principle of "selection and concentration" under well-coordinated planning and execution.

The infrastructure facilities here under reference includes: Ports, Airports, Railways, Roads, Power supply, Water supply, Sewerage and ICT. Development of this infrastructural system has been undertaken by respective public agencies, local government, appointed private operators and respective supervising ministries. Development has been executed under respective ministries' development programs which is not necessarily well coordinated. A strategic public expenditure mobilization program has to be prepared in the form of Five Year Plans and be coordinated and monitored by a super-ceding agency like the Planning Commission.

In the past Tanzania adopted a long term planning vision approach spanning the twenty years timeframe and established medium term plans for five years. Though the methodology was

abandoned in 1980 when the country was faced with financial crisis, it is time to revive this approach to coordinate sector programs for harmonized planning. Tanzania is losing the chance for benefiting fully from its geographical superiority in the region due to poor arrangement of infrastructural support.

11.2 Transportation Services

The transportation infrastructure is critical for economic activities especially for a large country like Tanzania. The government adopted a comprehensive **National Transport Policy (NTP)** in 2003 and its implementation plan namely, the **Transport Sector Investment Programme (TSIP)** as a roadmap under the Policy. Under the policy, maintenance of existing roads is given priority. Implementation of TSIP is to be executed paying special attention to complementarity of different transport models, connectivity and linkage with the development corridors and inter-linkages with growth sectors.

11.2.1 Ports

Table 11-1 Cargo Volumes ('000 tons) of three sea ports in 2007

Port	Liquid bulk	Dry bulk	Break bulk	Container	Total	'000 TEU
Dar es Salaam	2,189	1,161	515	3,259	7,124	334
Tanga	97	56	194	98	445	10
Mtwara	6	-	63	21	90	5
Total	2,292	1,217	772	3,378	7,659	349

Source: Tanzania Port Master Plan 2009

Tanzania Ports Master Plan (TPMP) prepared by **Tanzania Port Authority (TPA)** in 2009 predicted that cargo volume for Dar es Salaam port would increase 5 times from 2007 to 2028 under a low growth case and 7 times under a high growth case. Expansion of Dar es Salaam port cannot sustain growing demand by 2018 under a high growth case and by 2023 under a low growth case. Development of a supplemental port to Dar es Salaam is the most serious development required, not only for the Tanzanian economy but also for hinterland and landlocked countries. TPMP identified the location for the supplemental port at Mbegani in Bagamoyo, so that the development of Mbegani port has to be given the first priority in the industrial development strategy. **Mbegani port** is expected to function as a twin port with Dar es Salaam and has to be developed and become operational by 2020 as the gateway port of East Africa.

Current cargo demand for **Mtwara port** is low, and therefore the proposed expansion should be undertaken in conjunction with the proposed large scale development projects in the region such as the Fertilizer plant, Methanol plant, the Cement plant, the Uranium plant and Iron making plant along the Mtwara Corridor. Each of these planned projects along Mtwara Corridor are large scale developments with estimated costs exceeding the USD 1.0 billion dollar threshold. The development design should follow the requirement of the individual projects and the development cost should be factored into the development projects. Mtwara bay is deep and large enough to respond to any port requirement arising from the afore-mentioned projects.

The Northern zone, which covers Tanga, Kilimanjaro and Arusha regions, is one of the most rapidly growing regions. At present, Tanga port is constrained by shallow waters and operates on the basis of offloading cargo at high seas and reshipment through barges. It is for this reason that the green field construction of Mwambani bay has been proposed. However, the priority investment initiative goes to Mbegani (Bagamoyo) port since cargo loaded and unloaded at Tanga port covers local demand for the Northern zone area alone for the time being.

11.2.2 Roads

Table 11-2 Comparison of Road Density and Pavement in Kenya and Tanzania

	Total Area (sq.km)	Road network (km)	Paved road (km)	Road density (m/km2)	Paved road density
Tanzania	881,000	85,000 km	4,430 km	96 m/km2	5 m/km2
Kenya	582,650	152,600 km	8,850 km	262 m/km2	15 m/km2

Source: Infrastructure Survey 2009, EAC

Tanzania's main roads are classified as trunk roads of 10,300 km and regional roads of 24,700 km, both managed by TANROADS. Other roads are district roads, feeder roads and urban roads which are managed by local governments. The road density of 96.5 km per square kilometer or the pavement percentage of 37.2% of trunk roads is considerably low in comparison with neighboring countries. However, this is because Tanzania has a large mass of 888,000 sq. km of land, which makes these statistics, in a sense, unavoidable.

Nevertheless, roads represent a major means of transportation in Tanzania, accounting for 70% of cargo traffic and 90% of passenger traffic. For any kind of business, cost and time for transportation always causes a significant impact on efficiency and competitiveness. Although the condition of the primary road network has improved remarkably over the last few years, with

increase of percentage of primary roads in good and fair condition from 51% in 2000 to 80 % in 2008, further improvement is vital to make economic activities internationally competitive and to accelerate the growth of the sector.

- A major problem on hand has been that of maintenance for roads, especially district and feeder roads, which has been constantly underfunded. The feeder road network is vital for linking farmers to markets. Particular attention is drawn to resources allocation by the government and development partners to support the KILIMO KWANZA resolution on infrastructure for agriculture.
- Cross boarder roads and bridges to Kenya, Mozambique, Burundi, Rwanda and Zambia have been funded through the Roads Fund or supported by development partners. It is recommended to focus future development on a broad-based view that is inclusive of cross-border trade, construction of "one stop border posts" and the corridor approach.
- Provide a link connecting the TAZARA corridor to the Central Corridor along the western border of Tanzania, connecting Mbeya region with Kagera region and passing through Rukuwa and Kigoma regions.

11.2.3 Railways

The whole world, with exception of Tanzania, believes that the mode for railway is the cheapest, fastest and most punctual transportation of heavy and bulky cargo over long distance. However, such universal common sense is not applicable to Tanzania. For economic growth, Tanzania definitely needs cheap, fast and punctual railway transport system. Construction, reconstruction or even improvement of the railways costs a lot. In a country like Tanzania, which has a large land area, it would cost billions of dollars for a single railway line. Tanzania should stop talking of several dream projects at the same time. This is the very fields where the principle of "selection and concentration" has to be applied strictly.

We have to stop talking many stories at one time. Among the railways which exist and one people are dreaming, there is no room to argue that most critical one is the Central Railway Line which connects the national main port to the backland countries running through the central part of Tanzania. Without waiting for successful revival of the Central Line, any other railway projects has value more than a fancy chattering.

Tanzania's railway network has a total length of 3,676 km managed by two railway companies : **Tanzania Railways Company Limited (TRL)** and Tanzania–Zambia Railways (TAZARA). TRL operates the 2,710 km line from Dar es Salaam to Kigoma, Mwanza and Mpanda passing

through the Central Corridor, and linking the landlocked countries of Uganda, Burundi and Rwanda to the Indian Ocean. TRL operates a second line connecting Arusha , Tanga and Dar es Salaam. **TAZARA** stretches straight from Dar es Salaam to Zambia passing through the rich agricultural land in Iringa and Mbeya regions.

Table 11-3 Transport Performance of Tanzanian Railways

		1988-1997	1998-2007	Growth rate
TRL	Cargo Freight (ton/year)	1,102.7	1,122.1	1.8%
	Passengers ('000/year)	1,640.9	603.5	-63.2%
TAZARA	Cargo Freight (ton/year)	845.1	517.0	-38.8%
	Passengers ('000/year)	1,723.0	1,043.0	-39.5%

Source: Economic Survey 2007

It is regrettable that the performance of the two railways is far from satisfactory and both cargo freight and passengers traffic have not shown any growth in the last 20 years. The causes of this poor performance are, apparently, poor management and lack of planned replacement of facilities and equipment. Considering the huge amount of investment required for rehabilitation and the strategic importance of railway services, the operational concession model retaining basic railway infrastructure under government ownership would be the appropriate PPP structure for both railways.

The government signed a concession agreement for Tanzania Railways with an Indian railway operator in 2007. However the contract was terminated in 2011 due to various reasons whose blame has to be shared by both parties. Immediate re-arrangement of the PPP is anxiously awaited. The Ministry of Transport has to study the reasons behind the failure and pursue a successful arrangement with a fresh operator. The government should not intervene with the management once a contract has been signed under conditions that are mutually acceptable to both parties.

Some studies recommend changing the gauge system from the current gauge (1000 mm for TRL and 1067 mm for TAZARA) to the American standard of 2,000 mm emphasizing its superiority in high speed and heavy cargo transportation capacity. This is a good example of how the railway people underestimate economic efficiency and convenience of users, and seek easy solutions in new technology without consideration of efficient management. The supporters of this recommendation emphasize the superiority of support for "heavy cargo transportation at higher speed". However, the 1,020 mm narrow gauge of Tokaido Line under Japan Railway,

which was constructed 135 years ago, carries 3.7 million passengers a day (1,350 million passengers a year) and 19 million tons of cargo a year at the maximum speed of 130 km per hour. This is 2,000 times the volume of passenger traffic and 17 times that of cargo for Tanzania Railways. The supporters of gauge up-grading also use the argument of its connection to world railways network. However, there is no 2,000 mm gauge railway that exists in Eastern and Southern Africa. 1000 mm gauge is applied in Kenya and Uganda and the 1,067 mm gauge is applied in RSA, Mozambique and Zambia. Replacement of gauge system requires tremendously high costs, almost equal to half that of a new rail line construction and total replacement of existing locomotives, coaches and cargo carriers. It should be understood that the railway line is not for railway employees and workers or the people who are making those recommendations but for the Tanzanian public and industry.

TAZARA railway has the capacity to carry 2.5 million tons per year, while current annual haulage capacity remains at 600,000 tons. It is reported that the main challenge to improved performance for TAZARA is not the infrastructure but repair and replacement of the existing rolling stock and management. TAZARA is owned by the two governments of Zambia and Tanzania, and managed by executives appointed by the two governments. It is high time that the governments assigns the management of TAZARA to the private sector to pursue economically viable operations.

11.3 Electric Power Supply

Power generation in Tanzania has been growing at an annual average rate of 4.2% for the period of 2000 to 2009 (Table 6-1), while the Tanzanian economy has grown at 7.1% and power sales for industrial use has been growing at 10.1% for the same period (Table 6-2). Inevitably power supply cannot catch up with the growth of power demand and has made power shortage for civilian life more serious and is virtually threatening industrial activity.

The peak power demand for Tanzania as at the end of 2010 is estimated at around 833 MW. Although installed capacity equals 1003 MW, actual stable supply remains at around 600 MW due to dependence of the system on hydro-power generation and the seasonal fluctuation of hydro power supply. Thermal generation has increased its share of the total, while the amount of electricity generated by hydro has fluctuated between 1,439 GWh and 2,722 GWh. Utilization of natural gas for power generation started in 2004, while only 15 years have elapsed since the discovery of gas at Songo Songo. After Songo Songo three new gas fields have been found but none of them has been commercially fully developed todate due to the high initial cost of pipeline

installation to bring gas to urban markets.

Table- 11-4 Electricity Supply in Tanzania 2000-2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Power demand (MW)	430	465	475	506	509	552	603	653	694	755
Installed capacity (MW)	785	885	885	885	861	953	958	1,226	905	1,051
Generation (GWh)	2,539	2,797	2,912	3,207	3,390	3,665	3,588	4,212	4,422	3,834
Of which hydro	2,148	2,605	2,722	2,551,	2,013	1,781	1,439	2,524	2,649	2,242
Of which thermal	391	192	190	656	1,376	1,884	2,149	1,688	1,773	1,592

Source: TANESCO Power System Master Plan and MEM Joint Energy Sector Review

TANESCO power sales record for industrial use, the sum of Low Voltage Supply Tariff 2 (T2) and High Voltage Supply Tariff 3 (T3), has recorded average annual growth of 10.1 % in the last 10 years. It is generally observed that industrial demand for electricity has tended to grow at a higher pace than ever due to (i) increased power consumption associated with industrial advances inclusive of shifting from manual work to mechanized work; and (ii) expansion of electricity distribution network which connects isolated self-power generating industries to the national grid. As a result power shortage will become an even more serious constraint suppressing industrial growth, unless expansion of power generation is accelerated considerably.

Table 11-5 Electricity Sales in Tanzania 2000-2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Sales (GWh)	1,857	2,031	2,186	2,326	2,466	2,628	2,769	3,187	3,370	3,589
Of which domestic	1,026	1,064	1,108	1,061	1,064	1,145	1,177	1,367	1,413	1,486
Of which Industrial	699	840	945	1,120	1,241	1,297	1,388	1,589	1,728	1,845
Of which Zanzibar	132	127	133	145	161	186	204	231	229	258

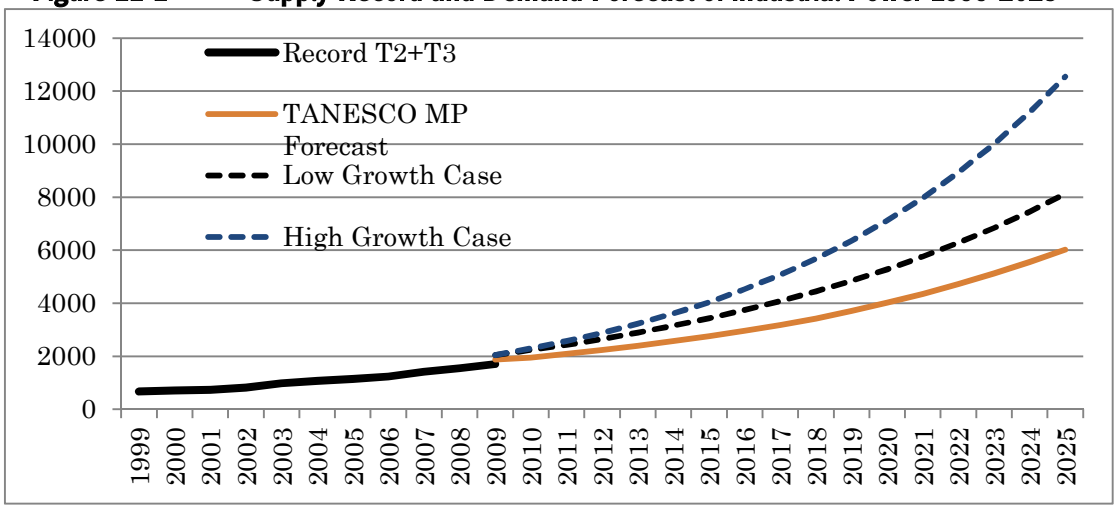
Notes: Domestic Sales for Domestic low usage (D1) and General Use (T1)
Industrial Sales for Low Voltage Supply (T2) and High Voltage Supply (T3)
Source: TANESCO Power Sales Department, 2010

However, to the contrary, power demand forecasts adopted in TANESCO's Power System Master Plan (PSMP) 2009 which sets out a plan for power generation expansion and transmission for 2010-2033, underestimates industrial demand. The plan estimates power demand growth for the industrial sector (T2: low voltage demand and T3: high voltage demand) at 7.2 – 7.6 % growth in 2010-2018 and 8.3 – 8.4% growth in 2019-2025, while actual sales of the industrial power (T2 + T3) recorded 10.1% average growth for the last 10 years, which is supported by a steady industrial sector GDP growth of 9.4% for the same period. PSMP 2009

does not explain why the forecast was set lower than the actual sales record for the last 10 years.

Figure 11-1 shows the growing gap of power demand forecasts under IIDS 2020 and TPSM 2009. IIDS supposes annual growth rate at 12% under the high demand case and 9% under the low demand case based on actual growth of 10.1% for the last 10 years. Power demand for forthcoming large scale investments such as Liganga Iron, Kabanga Nickel and Mtwara Fertilizer are excluded from this estimate since separate arrangements will be required for these mega projects. The results show possible power deficit of 4,781 GWH in 2020 and 6,533 GWH in 2025 under the high growth case, and 1,264 GWH in 2020 and 2,111 GWH in 2025 under the low growth case (demand in 2009 was estimated at 2,047 GWH, 20% higher than recorded sales).

Figure 11-1 Supply Record and Demand Forecast of Industrial Power 1999-2025



Source: MIT Team

<Box 3> Daily job of a factory manager in Tanzania

A factory manager's job in Tanzania may start with checking public utilities conditions for the day. He may have a power rationing schedule always with him in his pocket. He has to caution factory departments to prepare their facilities ready for operation upon power resumption. But regrettably, the power does not come punctually as scheduled, and then he has to re-schedule operator's working shifts constantly. Possible delay of raw materials imported through the port may force him to arrange another irregular operation and change the working shift. He may decide to increase the stock of raw materials or even enlarge the stock yard for materials due to repeated delay of cargo delivery, both of which have an impact on production costs. It is wastage of time, money and resources to compel or force a factory manager to be pre-occupied with this kind of issues rather than enabling him to focus on the primary responsibility of running the factory with emphasis on improvement of product quality, productivity and competitiveness.

11.4 Natural Gas Supply

11.4.1 Natural Gas for Industrial Use

Energy is the source of any economic activities. It is required for power generation, transportation, production and processing of manufacturing goods and household. Through the recent discoveries of natural gas, Tanzania has proved to have rich hydro-carbon potential. It would make a significant impact on the growth scenarios for Tanzania if developed smoothly and appropriately.

Natural gas has a number of superiorities in comparison to liquid fuel as mentioned below. Therefore promotion of gas use would significantly improve the competitiveness of industries.

a) ***Less Maintenance***: It does not need complicated combustion device and therefore easy for maintenance.
b) ***Less pollution***: It does not produce nitrogen and sulphur oxides (NOx and Sox) and therefore does not cause pollution.
c) ***Less facility***: Simple combustion device does not require large facility.
d) ***Less corrosive***: It does not corrode plant materials such as pipe and devices.
e) ***Less cost:*** Retail price of gas is usually indicated at 50% of CIF price of Heavy Fuel Oil.

Though the gas market has not been established in Tanzania yet, internationally the practice is to set the price of gas by linking it to the unit price of Heavy Fuel Oil (HFO) at

One Giga Joule of gas = 26 litters of HFO

When HFO is available at $ 0.3/liter at CIF Dar es Salaam, one Giga Joule of Gas may be priced

at $7.80. This means natural gas is able to feed energy to industries at a cost that is 50% less compared liquid fuel at equivalent calorific value.

Energy demand in Tanzania is increasing at 8 to 13 % annually, and the stable and less costly supply would apparently strengthen industrial competitiveness a great deal and also attract foreign investors to pick Tanzania as their production base for the East and Central African region.

11.4.2 Quick Commercialization of Medium scale Gas Reserve

Tanzania has not utilized its rich natural resources for national growth. The natural gas industry is not an exceptional case. It took 13 years to commercialize Songo Songo gas after its finding in 1992. Mnazi Bay gas, whose development license was granted in 2007, has not taken off as of 2011. It is true in general that medium scale gas fields take time to find a way for commercialization. Unlike a large gas field of over 3 trillion cubic feet (TCF) which can easily justify the construction cost of long distance pipeline or LNG (Liquefied Natural Gas) base for the distant customer, medium size gas fields may have difficulty to absorb the transportation cost to the market. However, this would be just an excuse when energy prices continue to rise and the domestic industries are suffering from serious short supply of power as in Tanzania.

All of natural gas reserves so far confirmed in Tanzania are lined along the coast. A simple solution for the Tanzanian case is possible given that all the found gas reserves as well as prospective gas reserves are lined along the coast, and industrialization is growing. One of the most effective measures to mobilize them for operation within a short time and also to fully utilize their potential would be the construction of a common gas pipeline owned and operated by a third party to provide feeding line to the major consumption areas. It is also necessary to introduce market competition among gas producers if gas pricing is liberated.

In the case of Tanzania, it would be efficient and effective since all of the gas fields (Mtwara, Kilwani, Songo Songo, Mkuranga) and major gas consuming areas (Dar es Salaam and three proposed Waterfront EDZs and probably Mombasa) are situated on a single coastal line. Each gas reserve has different gas composition, and so that gas is to be sent to the pipeline after been processed to remove water and other hydrocarbon condensates. The pipe line monitors the inlets and outlets to charge gas companies in accordance with the quantity and distance of their use. There are a number of examples of such pipeline operating company in North America and in Europe, and necessary management techniques and technology has been well established.

Figure 11-2 Mideum size Gas Reserves

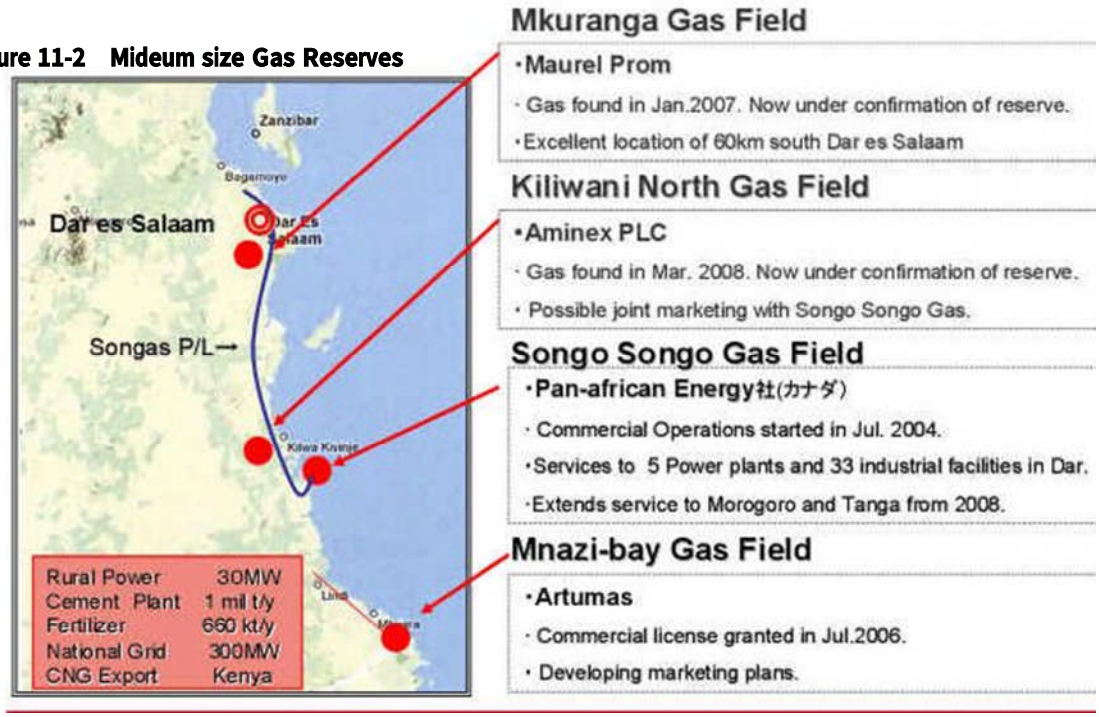
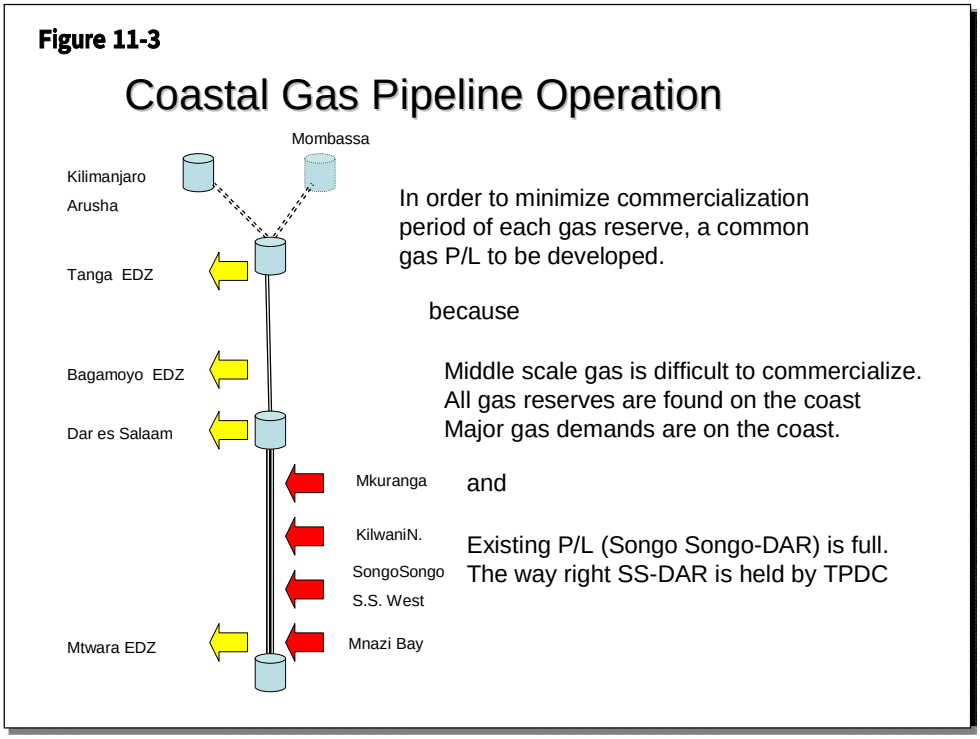


Figure 11-3



The existing 232 km pipeline between Songo Songo and Dar es Salaam was constructed and is owned by SONGAS on a way right held by Tanzania Petroleum Development Corporation (TPDC). The pipeline carries 70 mmcf of gas per day by 16 inch pipeline. It is reported that

Songo Songo Gas fields can produce 200 mmcf per day as maximum while further exploration at Songo Songo West in the same concession area is on-going. A new pipeline has to be constructed to enjoy this additional production. Instead of constructing additional 16' pipeline, 64 inches pipeline should be constructed through a governmental initiative from Mtwara to Dar es Salaam to be connected to a 32 inches pipeline from Dar es Salaam to Tanga.

Each gas producer will sign a gas supply contract with any user along the pipeline and pay to the pipeline company in accordance with the mileage and quantity of usage. Pipeline can be extended to Mombasa, if supply exceeds local demand. Through this project, Tanzania can save time and costs of preparation for commercialization. The producers can compete with each other and the price of gas would be formed through market mechanism.

11.5 Public Private Partnerships

11.5.1 PPP in Tanzania

In 1996, the Government adopted the milestone decision of including utilities and infrastructure ventures in the privatization agenda. Following this decision, Tanzania has become a fully privatized economy where private operations of public infrastructure and public private partnerships (PPP) are encouraged. However, achievements have been quite limited due to insufficient supporting regulatory, institutional and financial framework. For example, the legal right over investment property by private developers and its mortgage value and transferability is not well secured under the Tanzanian legal framework. The laws and regulations governing public properties prevent private developers from developing their own business models based on particular projects.

In June 2010, the PPP Act, No 18, was enacted by Parliament, providing the legal framework for the operation of Public Private Partnerships in development of infrastructure and delivery of socio-economic services or infrastructural facilities. PPP implementation regulations were published in June 2011 while guidelines were still under preparation.

PPP refers to a contractual agreement formed between a government agency that allows for greater private sector participation in the delivery of public infrastructure projects where the skills and assets of the private sector and public sector contribute to delivering a service or facility for the use of the general public. In addition to contribution to resources, each party shares in the potential risks and rewards resulting from the delivery of the service and/or facility. It is important to note that PPP is not privatization. Under PPPs, the public sector retains some regulatory control and remain accountable to the general public for the service being delivered.

PPP participation in infrastructure development has several superior features as compared to public sector operations due to the nature of its intensive capital requirements, technology and human capital deployments. Government agencies should encourage more public private joint operations in the area of infrastructure development including railways, roads, ports, airports, power, water and ICT.

11.5.2 PPP Models

PPPs cannot fully replace the traditional government budget financing and development of infrastructure, but offers several benefits to governments in addressing infrastructure expansion and efficiency improvement needs. In general, PPPs provide the following advantages:

- Provides capital investment resources (reduce public capital investment gaps);
- Reduces development risks;
- Mobilizes excess or underutilized assets;
- Improves efficiencies in service delivery operations;
- Facilitates quicker completion of projects;
- Provides better environmental compliance and management;
- Improves cost effectiveness;
- Shares and allocates risks between the public and private parties; and
- Provides mutual rewards to the parties involved.

In implementing PPPs, several modules are available for adoption depending on the nature of projects under consideration and the degree of achievement desired by the government for targeted services. The most popular models are;

- Management concession;
- Build, Operate and Transfer (BOT);
- Build, Own and Operate (BOO);
- Build, Own, Operate and Transfer (BOOT);
- Outright sales; and
- (Public Private) Joint ventures.

11.5.3. PPP Threats and Deficiencies

Although PPPs are encouraged for infrastructure development, they are faced with several deficiencies and threats, which, if not addressed during the PPP design and contracting stage, may result in negative impact or impairment of efficiency in implementation.

- Where no competition exists, it is probable that public monopoly will turn into private monopoly. Room for competition has to be secured even in an indirect manner.

- **Private operators/investors will seek profit maximization and cost cutting. They may be inclined to abandon facilities and services which are socially required but are not commercially viable.**
- **Conditions to protect public interests have to be made clear during the process of invitation of bids and negotiation of contracts. Interventions after conclusion of the contract would affect the operator's performance.**
- **A division of risk and responsibilities between the public and the private sector may hamper the necessary coordination of investments in complementary parts of the transport chain.**

Chapter Twelve: INSTITUTIONAL SUPPORT FOR GROWTH

Mission Statement

- Accelerate Public Sector development through coordinated public support.

Policy Issues

- Utilize the Five Years Development Plan as a signpost for infrastructure construction, and establish monitoring system for coordination.
- Establish financial support programs for promotion of local investment in identified sub-sectors.
- Create Investment Matching Fund to promote private sector investment in national strategic projects.
- Ensure sound budget support for affiliated institutions enabling them to take full advantage of their functions to support industrialization.
- Create and deploy industrial extension officers to support industries outside Dar es Salaam.
- Organize manufacturing enterprises by sector as well as by region. Establish periodical public private policy dialogue at the central and regional levels.
- Establish industrial information centers for easy access by industrialists and investors.

12.1 Government Roadmap for Improvement of the Business Environment in Tanzania

According to research undertaken by MKURABITA (Property and Business Formalization Program) program, more than 90% of all businesses in Tanzania operate extra-legally due to insurmountable regulatory and administrative obstacles that impede micro and small firms from operational in the legal system.

These obstacles prevail at four levels of the business life cycle: start-up; operations and reporting; import/export procedures; and closing down/exit. The Government Roadmap for Improving the Business Environment and its fore-runner, the Program for Business Environment Strengthening for Tanzania (BEST) is an instrument for coordination of reforms to improve governmental service delivery in these areas.

First, business start-up, normally a record keeping process only, is complicated by the need to

obtain a variety of pre-conditional approvals and sector-related annual licences, which serve the dual purpose of regulation of business activities and revenue generation, thereby imposing costly and time-consuming constraints on entrepreneurs. The objective in this area is to ensure that business entry and exit nationwide is low cost, fast and efficient through the establishment of a one-stop, simplified business registration system, as an integral part of a modern national identification database interfaced with core civil registries. Other reforms in this area include streamlining of the regulatory licensing regime targeting effective regulation..

Second, smooth business operations are influenced by access to land, labour and financial resources as business assets through the development of competitive markets. An effective land market serves to guarantee security of tenure and property rights, ensuring access to finance while good industrial relations enhances entrepreneurship and competitiveness. Access to finance also depends on the improved efficiency of capital markets. Payment of taxes is a civic obligation that can be a source of impediment to business growth in an environment characterised by a large unofficial informal sector and high incidence of tax evasion, leading to a few tax payers carrying the national tax burden. Reforms seek to improve the legal framework and build efficient institutions for implementation by harnessing ICT.

Third, in a global marketing environment, efficiency in cross border trade and import/export operations is critical for access to inputs and markets for final products. Impediments in border posts, ports and inland transport systems is a major factor on the competitiveness of domestic industry in all markets, domestic, regional and global. The Roadmap seeks to establish a one window Single Port Community Users system in the ports and corresponding One Stop Border Posts and the concept of multi-modal door-to-door transportation networks.

Fourth, business exit is a factor of efficient Judicial services for effective and rapid resolution of commercial disputes and streamlined winding up of operations that facilitates releasing of assets and capital for more effective use by other investors and alternative investment opportunities. Reform of the rules and institutions for resolving disputes outside and inside the courts is a major element of BEST and its successor the Roadmap for Improving the Business Environment. The objective here is timely, efficient, accessible and cost effective resolution of commercial disputes and winding up procedures that release investible assets for alternative opportunities quickly. Reforms include modernizing the civil procedure system and introduction of electronic case management systems in the courts.

12.2 Five Year Development Plan and Monitoring Agency

Since Tanzania abandoned the implementation of the 4th Five Year Plan in 1980, the development agenda has been left to dedicated sector development programs prepared by each respective ministry or agency. Though sector development programs are drafted under the philosophy and guidance of national guidelines such as Vision 2025 and MKUKUTA, the implementation of the programs and their execution time frames have not been well coordinated. The proposed new Five Year Development Plan (FYDP), commissioned through the 2011/2012 budgeting process by the Planning Commission, will solve the disharmony of plans and also support the function of monitoring for harmonized implementation.

Tanzania's national resources are limited while there are so many challenges to be tackled for the realization of national goals. In order to utilize these limited resources in a more effective manner, the government should resume the function of establishing national strategic development programs or public investment plans. With clear national planning, the private sector will find it easier to set up their investment and business development plans.

12.3 Industrial Finance

The banking sector in Tanzania has grown tremendously since financial liberalization started in 1992. Tanzania now has a diversified banking system and a small but growing capital market. Bank supervision standards meet international norms, and the banking sector is considered sound. By end 2010, 28 commercial banks, 7 regional unit banks, and 5 financial institutions had become operational. As many as 36 NGOs conducting micro finance and 1,635 Savings and Credit Cooperative Societies (SACCOS) had also been established. By 2008, the total amount of savings and loans reached the figure of 7.5 trillion Shillings and 4.8 trillion Shillings respectively.

Sorry, No Title No Loan

Nevertheless, despite rapid growth in recent years, financial access and high interest rates are major constraints against manufacturing industries and expansion of business. Expanding access to financial services is critical for both economic growth and poverty reduction. Major bottlenecks lie in the legal framework, particularly land ownership and land titles. Commercial Bank's collateral policy requires 125% cover of credit amount by legal collateral represented by land title. However, 89% of land in Tanzania is not yet surveyed, and therefore entrepreneurs in the regions have little chance of access to finance. The Ministries responsible for land registration (Ministry of Lands, Housing and Human Settlements Development and the Prime

Minister's Office, Regional Administration and Local Government) should speed up the surveying and mapping of land utilizing ICT technology and GPS land information systems. On the other hand, Banks have to develop business assessment capacity while at the same time reducing dependence on landed property as collateral and include utilization of other security instruments such as inventories and receivables.

Establishment of a Credit Reference Bureau is another measure to activate access to finance for the private sector. It would reduce the time and cost for loan assessment, default risks and therefore interest rates.

Financial programs for industrialization

A major MIT weakness lies in the fact that the Ministry does not have any financial tools or incentives for leading the private enterprises in a chosen policy-guided direction. The Ministry also does not have any means to encourage financial institutions to expand lending to local investments for industrial development. Due to the nature of manufacturing businesses which require longer gestation periods for capital investment recovery, the sector needs long term finance for entrepreneurial expansion. On one hand, the Ministry should consider use of incentives to encourage banks to undertake longer term financing. On the other hand, the Ministry has to develop and equip financial programs such as partial subsidies on interest for loans to be extended to target investments. Establishment of an industrial bank for such a purpose is an option that was used by several Asian countries. However, due to the complexity of operations and duplication of functions with other organizations, it would be more realistic and practical to utilize existing banks as the executing agencies on contract basis.

SME Credit Guarantee

In order to support SMEs that have difficulties in producing legal collateral, a Credit Guarantee scheme has to be established. In Tanzania' case, the Small Industries Development Organization (SIDO) would be one of the most appropriate agencies for extending credit to SMEs since SIDO is in the closest working position with SMEs and has the ability to assess borrower's credibility and business viability. The system should be run together with technical assistance programs for loan applicants to ensure financial viability and minimize non-repayment risks. The BOT Credit Guarantee Scheme (SME-CGS) introduced in 2005 does not function and remains unworkable it is subject to fundamental changes in design.

12.4 Investment Matching Fund

In order to accelerate the transformation of the industrial structure and also to serve national interests, the government should consider public financing for strategic investments in the targeted sub-sectors. The idea is to establish a government owned equity fund to act as a venture capital or catalyst for encouraging private investment in national strategic businesses extending equity or subordinate loans as a minor equity holder of such projects. Due to the nature of businesses, the fund will sell out its equity once projects become profitable and re-invest capital gains into the next line of strategic investments. The fund has to be managed by a professional fund manager and be financial and run by its earnings and capital gain. The model for such a fund would be a Tanzania version of the image and role of the International Finance Corporation (IFC) within the World Bank Group.

The National Development Corporation (NDC) performs some of the functions of a venture capital. However, NDC's venture capital operations are hampered by government policies in that NDC requires approval from the parent Ministry for each transaction. A better option is to give NDC the mandate to undertake this function autonomously. In this case, the NDC will have to be split into two separate establishments: one serving as a cost center acting on behalf of the government and the second acting as a totally autonomous entity playing the role of an independent equity fund or venture capital fund.

12.5 Technical Support Institutions

In order to execute its mandate and core functions, the Ministry has a number of support organizations and agencies as listed below:

i) Industrial Support Organizations

- National Development Corporation (NDC)
- Tanzania Industrial Research Development Organization (TIRDO)
- Tanzania Engineering and Manufacturing Design Organization (TEMDO)
- Center for Agricultural Mechanization and Rural Technology (CAMARTEC)
- Export Processing Zones Authority (EPZA)
- Small Industries Development Organization (SIDO)

ii) Business Support Organizations

- Tanzania Trade Development Authority (TANTRADE)
- College of Business Education (CBE)
- Tanzania Bureau of Standards (TBS)
- Copyright Society of Tanzania (COSOTA)
- Fair Competition Commission (FCC)
- Tanzania London Trade Center (TLTC)

- Tanzania Dubai Trade Center (TDTC)
- Tanzania Warehouse Licensing Board (TWLB)

iii) Agencies

- Business Registration and Licensing Agency (BRELA)
- Weights and Measures Agency (WMA)

These organizations are manned by professionals with expertise in their respective fields but their capacities are not fully utilized due to budget limitations. Commercialization of their services is not the wrong direction but this should not be applicable to all services. Proper budgeting is required to ensure maximum utilization of these supporting services.

12.6 Extending Industrial Arms to Districts

The industrial support wing outside Dar es Salaam is very weak. In order to support rural industrialization and promote MSME (Micro, Small and Medium Enterprises) activities, the Ministry should deploy industrial extension officers to the regional and district levels. As seen in previous chapters, gross production in regions is growing much faster than the growth of the agricultural sector, which means there is a growing population living on non-farm activities. Rural industrialization is required, in a sense, to support the KILIMO KWANZA resolution and at the same time to provide opportunities for MSMEs to grow.

Although a number of measures are being taken to promote SME activities, the policies and measures of the Ministry as well as supporting measures by other various central organizations are not well known in the regions and by rural entrepreneurs. Services by the Ministry's and its affiliated institutions have to be extended to rural business circles through workshops held at the regional or district level and through field-visits as in the case of agricultural extension officers. Rich institutional, financial, technical and market information as well as information on policy measures taken by the government should be compiled by the extension officers and conveyed to rural industrialists. The Ministry should also keep itself informed of developments in the industrial dimension in the regions, through close communication, and set up adequate policy measures or adopt appropriate interventions for rural industries.

12.7 Organizing Industries by Sector and by Region

Tanzania has established an institutional framework to cater for private sector led industrialization. Nationwide institutions such as the Tanzanian National Business Council (TNBC), Confederation of Tanzania Industries (CTI), Tanzania Chamber of Commerce,

Industries and Agriculture (TCCIA) and Tanzania Private Sector Foundation (TPSF) have been established. Through these organizations, channels of public/private dialogue have been secured to share views and understanding on common concerns including policy directions.

In order to expand the outreach of public/private dialogue to regional level and to promote rural industrialization, it is recommended to promote establishment of private sector organizations or associations in every region and even at the district level where applicable. These organizations may be constituted as a substructure of national level organizations with the autonomy to engage in direct dialogue with local governments in their jurisdictions as well as the regional unit of central government agencies at regional level.

In the same manner, it is recommended that sector organizations are formed for every industrial sub-sector to organize public/private dialogue to enable the public sector to take necessary actions and the sub-sector enterprises to adopt effective counter measures by themselves or to improve the sectorial efficiency and competitiveness through deepening business linkages.

12.8 Industrial Data Collection and Publication

Although industrial statistics are the basic information necessary for making policy or assessing risks for policy makers as well as for investors, the volume and quality of data collected and disclosed in Tanzania is very poor. Available industrial statistics are not continuous and therefore not very much reliable. There is a wide range of industrial information, which government agencies disseminate to the public, including legislation, regulations, standards, annual reports, monthly bulletins and trade statistics. MIT should first collect and preserve available published information in its documentation center cum library and make them publicly available to stakeholders. This requires a major transformation of the documentation center into a store of the art facility.

It is recommended that MIT with assistance of the National Bureau of Statistics (NBS) re-designs the collection, analysis, and disclosure of industrial statistics modeled on International Recommendations for Industrial Statistics by the UN.

At the same time, the Ministry should open Industrial Information Centers in major cities for public use and collection of basic economic and industrial statistics and publications.

12.9 Human Resources Development

Investment in human resources development is one of the agenda given priority in SIDP. This

involves technical training of workforce required by individual industries, development of business management, and development of industrial capability to plan and implement business strategies. Scarcity of middle level management and skilled labor is one of the most serious constraints and at the same time the factor which pushes up the operational costs for Tanzanian industries.

One of the major human resources development instruments that could be adopted by manufacturing firms is in-house training programmes. It should be considered an integral part of corporate and technology policies for manufacturers. Regrettably, in Tanzania, only a few enterprises provide structured training for their employees. In-house training programmes are not widely adopted in Tanzania. Even in the case of emerging manufacturers interviewed by MIT (MIT Manufacturers Study 2010), only 23% of the manufacturers responded that they conduct some in-house training.

For vocational training, the Vocational Education and Training Authority (VETA) provides a wide range of courses and also regulates over 800 public and private vocational training centers. The role of VETA in Tanzania is vital, since only a very limited number of manufacturers have in-house training courses while private training centers do not offer blue color skill courses due to the heavy initial investments involved. The National Trade Test System or its replacement, the Competence Based Education and Training (CBET) test would benefit both industries and workers, by squeezing recruitment time for employers and certifying the skills for job seekers. In addition, CBET would motivate employees to work for higher certificates and employers to put in place incentives to support employees' self-development initiatives.

Chapter Thirteen: TARGETED SUB-SECTORS

13.1 Fertilizers and Chemicals Sub-sector

13.1.1. Reasons for Targeting Fertilizers and Chemicals

(a) Improvement of agricultural productivity has been identified as the ignition key for economic growth for any economy in any era. Agricultural yield in Tanzania is extremely low, and as discussed in preceding chapters, this low yield has hindered or slowed down the growth of Tanzanian industries and the economy in many ways.

(b) In Tanzania, maize yields range from 1.3 – 1.7 tons per hectare as compared to 2.5 – 4.0 tons per hectare under average farm management practices (MAFS, 2007-08). Rice yields range from 1.2 – 2.0 tons per hectare against the potential 4.0 – 5.0 tons per hectare.

(c) As warned by many reports on the subject, extremely low input of fertilizers is one of the major reasons for Tanzania's agricultural productivity being the lowest in the world. A positive correlation is widely observed between fertilizer input and agricultural productivity. In the case of Sub-Sahara Africa where soil nutrients are poor, improvement of productivity cannot be expected without fertilizer nutrient supply.

(d) Under the national resolution of Kilimo Kwanza, 10 % annual growth is targeted for the agriculture sector, and this cannot be realized without adopting modern agronomic practices in agriculture, including fertilizer application.

(e) Recent finding of natural gas reserves has turned Tanzania into the only country in East Africa, with the potential of developing a nitrogen fertilizer industry, and the government has given priority of gas use for fertilizer production.

(f) The basic raw materials required to manufacture DAP/NPK are ammonia, rock phosphate and potash. In addition to natural gas found at Mnazi Bay, Mtwara, several phosphate reserves have been identified at Panda Hill, Mbalizi, Songwe escarpment, Ngaulla, Mbili and Ileje in Mbeya Region. Panda hill alone, about 25 km from Mbeya city, is reported to have 480 million tons of phosphate reserves.

13.1.2. Status of the Sub-sector.

The Ministry of Agriculture and Food Security (MAFS) reported that actual consumption of fertilizer in 2007 was 284,925 tons for 9,500,000 hectares of cropping land compared to 111,530 tons in 2008. Putting aside the very special year of 2008, where everybody was tossed back and forth by soaring fertilizer prices, the annual usage of fertilizer in Tanzania is very low. While Tanzanian farmers use an average of 9 kg/ha annually of nitrogen fertilizer, Malawi farmers use 27 kg/ha annually, and in Vietnam the average is 365 kg/ha per year (MAFS, 2007).

Table 13-1 Fertilizer Usage in Selected Countries

	Tanzania	Malawi	South Africa	Vietanam
Nutrients/hectare	9 kg /h.a.	27 kg/h.a.	53 kg/h.a.	365 kg/ h.a.

Source: FAO Statistic Data Book 2008

(a) The Tanzania Fertilizer Company (TFC) factory in Tanga, the only fertilizer plant in the country with 105,000 MT capacity, was officially closed in 1991 after collapse of the stack chimney largely due to corrosion and wear as a result of limited capital reinvestment and renewal.

(b) The Minjingu Phosphate mines was privatized to a private firm to produce phosphate fertilizers. The company started production of powdered rock phosphate in 2006 with an annual production capacity of 75,000 tons. Initially local farmers' preference on the fertilizer was low and therefore a large portion was exported. But currently local consumption has increased thanks to the efforts to sensitize people to use.

(c) With soaring prices of food and fertilizers in 2008, several fertilizer investors have expressed interest in production of Nitrogen fertilizers (Urea and Ammonia) using natural gas as raw material.

13.1.3. Challenges

(a) The facility for production of Nitrogen fertilizers is a very sophisticated chemical plant, which needs scale economies to become competitive in the world market. The economic size of an Ammonia plant is said to be a minimum of 2,000 MT per day production capacity (660,000 MT per annum), and its construction cost is close to one billion US Dollars.

(b) Very competitive gas supply pricing is required for the domestically produced Nitrogen fertilizers to compete with Middle East fertilizer producers, for which close collaboration between the government, gas producer and fertilizer investor is required.

(c) Once Ammonia is produced, it can be diversified to various fertilizers. Through combination and blending with other elements such as phosphate. Various fertilizers such as DAP (Die-Ammonium Phosphate), CAN (Calcium Ammonium Nitrate), SA (Sulphate Ammonium) and varieties of NPK compound can be produced.

(d) An efficient distribution system and network has to be designed and developed if the country is to benefit from the maximum advantages of domestic production of fertilizers apart from measures for promoting proper fertilizer use by farmers.

13.1.4. Targets

(a) To facilitate investment in the first Nitrogen fertilizer facility in Tanzania by 2013 and target

commissioning commercial production by 2016.

(b) To support Phosphate fertilizer production in Minjungu to reach 100,000 tons a year.

(c) To fulfill 95 % of total national fertilizer demand from local production and make Tanzania the prominent fertilizer supplier in the Eastern Africa region.

(d) To develop an accumulation of fertilizer industries or fertilizer cluster to produce a variety of fertilizers to meet national needs for every crop.

13.1.5 Strategies

(a) Invite an Ammonia/Urea plant as an anchor project at Mtwara Waterfront SEZ and develop a chemical industrial complex in the zone. Expansion of the complex should be encouraged to reach a globally competitive level of economies of scale in line with further gas reserve exploration and finding. The best investment incentive should be granted to this first fertilizer plant as a strategic investment. This should include minority share holding by the Government through TFC (Tanzania Fertilizer Company) to reflect the national demand in the factory's production plan.

(b) Develop Mtwara SEZ as a concentration of fertilizer and chemical industries utilizing byproducts of the fertilizer plant and Natural Gas as the raw materials.

(c) Guide farmers on how to use Minjingu rock phosphate fertilizers. The rock powder does not easily dissolve in water, but has high performance if properly used. Phosphate fertilizer should be another core fertilizer industry in Tanzania.

(d) The best location for development of fertilizer blending business would be Tanga SEZ. By blending nitrogen fertilizers from Mtwara and phosphates from Minjungu, Tanzania will become a supplier of a wide variety of fertilizers to the East African region.

13.1.6 Quantitative Target and Monitoring Index

a) **Production:**

Quarterly index of industrial production, National Bureau of Statistics

items	(Unit)	2010	2017	2025
24110 Compound Fertilizer	(MT)		100,000	400,000
21421 Ammonia, Phosphate Fert.	(MT)		700,000	1,000,000

b) **Exports:**

External Trade Statistics, Tanzania Revenue Authority

HS Code	(Unit)	2010	2017	2025
31 Fertilizers	(MT)		600,000	1,000,000
	(USD)		180,000,000	400,000,000

13.2 Textile Sub-sector

13.2.1. Reasons for targeting Textiles

(a) Today's developed countries had built their industrial foundation by developing the textiles, particularly cotton textiles, industry. Evidently, the textiles industry supported the industrialization of Europe, subsequently doing the same for America and then moving on to accomplish the same feat in Asia. The wave now seems to be approaching Africa. The textile sub-sector is a highly labor intensive industry and has a long value chain with 500 % to 600 % value addition potential. Hence, it is deemed as being one of the most suitable industry for a cotton producing country like Tanzania.

(b) Tanzania is one of the largest cotton producers in Africa. Between 400,000 to 500,000 farmers, mostly smallholders, grow cotton on farmland with an area of 412,000 hectares in 13 regions. Cotton yields are one of the lowest in the world and very unstable. The textile industry was Tanzania's core industry until it collapsed in the process of the economic reforms of the 1990s. Since 2000, the industry has shown gradual recovery and now employs 69,000 workers (13 % of manufacturing sector workers) and produced 25 % of manufacturing sector GDP in 2008, but remains in a fragile condition.

13.2.2. Historical view of the sub-sector

(a) The textiles and apparel manufacturing industry developed in the 1960s and 1970s with massive investment as Tanzania's core industry. The decision to develop the industry was influenced by the fact that Tanzania had a significant cotton crop and by the belief that a local textile industry would have space to develop by supplying local demand.

(b) By the late 1980s, total investment in the textiles sector had reached US$ 500 million and it became the single largest industry counting 35 operating mills and 37,000 employees. It was the third largest contributor to government revenue and was the largest exporter of manufactured goods.

(c) However, as a result of economic reform and trade liberalization during the 1990s, the sector received a catastrophic blow and most mills except two (Friendship Textiles and Sunflag Tanzania) had closed or ceased operation by 1996. Thereafter, experiencing a process of privatization and fresh flow of foreign investment, the industry has started on a course of gradual recovery but production still remains in a very fragile state.

13.2.3. Current Situation

(a) Currently Tanzania has 19 large operational textiles and apparel manufacturing firms; altogether employing about 22,000 workers. In the African context, Tanzania's textile industry is particularly large in terms of amount of number of farmers producing cotton and

also in terms of employment by the industry. However, the range of products that it produces is very limited, and the quality of the products is generally quite low. Also, comparing to its African competitors, such as Lesotho, Swaziland, South Africa, Mauritius, Madagascar, Kenya and Ethiopia, Tanzania's garment manufacturing industry is very weak and small.

Figure 13-1 Cotton Textile industry Location Chart

	Spin	Weave	Knit	K-K-K	Bed-linen	Blanket	Bed-nets	Thread	Clothes	Made-up	jobs
New Tabora Textile	*										445
Jambo Spinning	*										150
Nida Textile	*	*		*	*						1700
21st Century Textile	*	*		*	*						1300
Afritex	*	*		*							1000
Mbeya Textile	*	*		*	*						775
Mwanza Textile	*	*		*	*						1100
Friendship Textile	*	*		*	*						1200
Karibu Textile				*							600
African Pride Textile				*							150
Sunflag Tanzania	*	*	*	*	*		*	*	*		1900
Morogoro Canvas Mill	*	*								*	1300
21st Century Sisal	*	*								*	400
A to Z Textile			*				*		*		7500
Ellen Knitwear			*						*		100
Kilimanjaro Blanket						*					100
Blanket & Textile						*					100
Kibotrade									*		45
Mnzava Fabrics									*		600
Total	11	9	3	9	6	2	2	1	5	2	22500

<Cotton Production>

(b) The average seed cotton yield varies from 750 to 800 kg per hectare (equivalent to 260 kg of lint per hectare). However, a Tanzanian cotton grower could easily produce 280 to 480 kgs of lint per hectare with more modern farming practices and with access to fertilizers

and insecticide.

Table 13-2 Conventional Cotton Lint Production in Tanzania

In Tons	2001	2002	2003	2004	2005	2006	2007	2008	2009
Conventional lint	51 000	63 000	50 000	114000	126000	44 000	71 000	131000	90 000

(c) Tanzania is the fourth largest producer of organic cotton lint in the world only after India, Turkey and Syria.

Table 13-3 Organic Cotton Lint Production in Tanzania

In Tons	2006	2007	2008	2009
Organic lint	649	1 662	2 852	4 181

(d) In 2006, Tanzania had 77 registered cotton ginneries, of which only 33 were active. It is important to note that many of the ginneries are over 30 years old. The installed ginning capacity is estimated at 1.2 million bales of 200 kg each, per annum. Tanzanian cotton generally has a high uniformity ratio of 85 % which is ideal for high speed spinning technology. Typical fiber strength ranges between 25 and 29 grams / tex which is also ideal for high-speed spinning.

<Spinning>

(a) There are 11 firms that have spinning capacity. Ten of these firms mainly produce cotton yarn, and one firm spins sisal fibers. Most of the cotton spinning machinery is very old. Two firms, Tabora Textiles and Jambo Spinning, sells yarn in the local and export markets, while the others produce yarn for inhouse. Tabora textile is exporting their yarn to South Africa, Portugal, Turkey and Colombia. However, unreliable power supply and costly land transportation to Dar es Salaam port renders the business noncompetitive.

(b) All cotton spinners use locally grown cotton lint. It has been estimated that each year, Tanzanian spinners consume about 30,000 tons of local lint.

<Weaving>

There are nine firms weaving fabrics, eight of whom makes woven cotton fabric and one weaves sisal fabrics. Until recently most of these firms operated narrow shuttle looms, but many have up-graded to broader-width shuttleless looms importing 5 to 10 years old second hand machinery.

<Textile Processing>

Tanzania's textile manufacturing industry is mainly focused on producing 100% cotton

light-weight printed kanga and kitenge cloths. There are nine factories that concentrate on making these products. Seven firms are large integrated operations that spin their own yarns, weave their own fabrics, and finally print designs. Two of the country's kanga and kitenge producers are merely fabric processing operations, and they print on gray fabrics sourced from other local weavers or imported ones.

<Garments>

There are five large scale garment producers, two of whom produce a range of knitted garment products mainly for export. Most of the garment trims such as zips, buttons, fasteners, labels, undyed threads, elastics, linings, and draw-codes are imported.

<Local Market>

Most of the output of Tanzania's textile factories is ultimately sold in Tanzania in the form of *Kanga* and *Kitenge*. The market for these products is huge. While no proper market survey has been conducted it has been reported that the typical Tanzanian woman may purchase 6.2 *Kanga* and *Kitenge* on average each year. A considerable volume of *Kanga* and *Kitenge* is also sold in neighboring countries of Mozambique, Zambia, Malawi, DRC Congo, Burundi, Rwanda, Uganda and Kenya. Smaller volumes are also sold to Madagascar, the Maldives, Southern Sudan, and parts of Ethiopia and Somalia.

<Exports>

(a) Mosquito Net and Sisal products led exports in 2009 while the garment sub-sector is yet to recover from the shrinking of the market caused by the economic crisis in 2008.

(b) Tanzania exports a limited volume of textiles and apparel to the large markets of the EU, the US and South Africa. Tanzania's exports to these three markets registered only US$ 18.7 million in 2008 and US$ 9.9 million in 2009.

(c) Tanzania's performance in the export of textiles and apparel is considerably low when compared to the immediate regional neighbors such as Kenya, Madagascar and Lesotho.

(d) In 2009, Tanzania's largest export items to the US were cotton lint garments and cotton canvas products, while cotton yarn was the largest item to the EU. The principal garment exporters are Sunflag Tanzania and Mnzava Fabrics & Production.

Table 13-4 Textile & Apparel Export (HS 50-63) to the USA Unit: US$ 000

	2000	2004	2005	2006	2007	2008	2009
Tanzania	239	3,352	4,099	3,717	3,281	1,872	1,203
Kenya	44,057	277,286	270,589	263,687	249,768	246,918	195,368

Uganda	3	1,630	4,843	1,257	1,205	412	185
Ethiopia	28	3,380	3,613	6,000	4,902	9,597	6,753
Madagascar	109,588	323,383	276,959	238,412	289,811	279,417	212,125
Mauritius	244,854	226,678	166,877	118,907	114,672	101,561	101,911
Malawi	7,326	26,774	22,781	18,186	19,825	12,676	9,016
Lesotho	140,057	456,010	390,680	387,185	383,548	339,736	278,386
RSA	174,963	179,950	101,923	86,778	57,807	46,657	49,633

Source: U.S. Department of Statistics

13.2.4 Development Strategy

<Single coordination center>

(a) Tanzania's textile sector and apparel industry has been accorded the status of "priority sectors" for a long time, and a number of institutions have been involved directly or indirectly in efforts for its development. However, there is little coordination among these institutions, as a result of which the potential for its development has not been realized to a significant level.

(b) In order to establish a single structure to oversee and drive the industry, it is proposed to establish a committee under MIT with the participation of textile manufacturers and the following organizations.

- Association of Textile Manufacturers of Tanzania (TEXMAT)
- Textile and Apparel Standing Committee (TASC) of the CTI
- Textile Sector Development Unit (TSDU) of the Tanzania Cotton Board (TBC)
- Export Processing Zone Authority (EPZA)
- Tanzania Investment Center (TIC)
- Vocational Education and Training Authority (VETA)
- College of Engineering and Technology (COET) of the University of Dar es Salaam
- Textile sector supporting NGOs such as the Gatsby Foundation of Tanzania

<Activities to attract FDI>

(a) A comprehensive sector investment promotion strategy has to be established focusing on:

- Attracting foreign investments into textiles and garments, especially from firms with existing markets in the EU, the US and South Africa.
- Targeting firms trying to shift the production base from labor cost increasing countries like Turkey and Mauritius or socially troubled ones like Madagascar.
- Assisting Tanzanian firms looking for JV partners facing financial challenges and/or technical challenges. Investment promotion efforts should try to assist such local firms to find partners or outright buyers. In this regard, it is necessary for the investment

promotion agency to prepare comprehensive and up-to–date profiles of each firm.

- **Preparing easily accessible data for investors by opening industrial information centers and preparing investment tool boxes on investment incentives, governmental policies, industrial and textile statistics, fair labor standards, Tanzania's preferential markets, and cost of doing business in Tanzania.**

(b) **In order to build industrial accumulations for the textile industry, it is proposed to establish a textile sector SEZ following the model of the Cotton Center in Madagascar.**

<Expanding Export>

To expand Tanzanian export of textiles and apparel, following measures are to be undertaken:

- **Encouraging the appointment of a commission agent who will represent Tanzanian firms in each large market in the US, the EU and RSA.**
- **Developing additional varieties of fabrics. Tanzania currently offers a limited range of fabrics.**
- **Promotion and lobbying to extend preferential agreements with major markets, such as extension of AGOA agreement and SADC MMTZ arrangements.**
- **Fully utilizing donor partners' match making programmes, such as the Center for Development of Enterprise in the EU.**

<Defending Local Market>

(a) **To protect the local market from smuggled or under-invoiced importation, a quantitative tax system would be considered.**

(b) **Substantial training programmes should be offered to Customs officers to up-grade their skills and knowledge.**

13.2.5. Quantitative targets and Monitoring Indices

(a) **To increase the number of large scale textile manufacturers with more than 500 workers in Tanzania from current ten to twenty by 2015.**

(b) To increase textile export (HS code 50 – 63) from current US$ 130 million in 2007 to **US$ 1,300 million by 2025.**

Table 13-5 Textile Sector Target Unit : UD$ '000

HS Code	Export	(Unit)	2009	2015	2025
50-63	Cotton, Textile & Apparel	(USD)	243,401	500,000	1,300,000

13.3. Agro-processing Sub-sector

13.3.1 Agro-processing in General

13.3.1.1. Reasons for targeting Agro-processing

(a) Though SIDP cited promotion of agro-processing industry as an important policy objective, regrettably efforts to develop this sector have not been quite successful and Tanzania still exports most of its agricultural products without processing. Weak agro-processing industry does not only allow loss of value addition and job opportunities but also fails to protect the economy from being directly affected by fluctuations in international commodity markets . Hence a strong agro-processing sector increases value addition, creates jobs and protects the economy from international market fluctuations.

(b) In order to ensure the success of ***Kilimo kwanza***, expansion of agro-processing industries which reduce post-harvest losses, ensure markets for farmers and add value to agricultural products are a critical and vital requirement.

(c) In addition, agro-processing is labor intensive and creates many jobs. It would absorb the abundant labor force expected to migrate from villages and the rural economy as a result of improving agricultural yields and rising secondary school and post-secondary training ratios. This will prevent the concentration of an increasing urban population in slum dwellings and lead to the realization of more equitable and inclusive growth.

(d) It has to be borne in mind that one of the major causes for limited success in government efforts in the area of agro-processing has been low agricultural productivity in addition to the strangulating constraint of poor infrastructure. Without stable supply and quality assurance of raw materials, a sound and competitive agro-processing industry cannot grow. In this sense, Tanzania is now standing at the right entrance point for boosting the agro-processing industry with a initiation of the green revolution under Kilimo Kwanza.

(e) Agro-processing industry requires relatively small capital and low technology for entry. In Tanzania, where 74 percent of the population relies on agriculture, promotion of agro-processing industry would have a direct impact on poverty reduction and lay the foundation for economic growth.

Table 13-6 Performance of Agro-processing Industry in Manufacturing Sector

ISIC R4	Activities	No. of stab.	Engagement (persons)	(%)	Value Addition (Tsh. Million)	(%)
102	Fish products	15	3,878	3.6%	72,209	4.0%
104	Vegetables and oils	31	1,107	1.0%	32,730	1.8%
106	Grain milling	61	2,205	2.1%	34,510	1.9%
10-above	Other food products	96	36,602	34.1%	339,796	18.9%

11-12	Beverage and Tobacco	37	12,593	11.7%	404,436	22.5%
13-15	Textile, apparel & leather	47	13,430	12.5%	86,971	4.8%
10-15	Total agro-processing	287	69,515	64.7%	988,652	55.0%
16-33	Other Manufacturing	393	37,872	35.3%	808,731	45.0%
C	Manufacturing Total	680	107,388	100%	1,797,383	100%

Source: MIT Industrial Survey 2008

13.3.1.2 Current Position

Table 13-7 presents the trend for agro-processing sub-sector gross value addition. The Agro-processing sub-sector contributes a constant proportion of 55% of manufacturing value addition to the manufacturing sector, in a situation where the beverage and tobacco industries have increased their shares. The activities of agro-processing industries are spread over all regions and maintain the dominant position.

Table 13-7 Gross Value added by Sub-sector

Unit Million Shillings at 2001 constant price

ISIC	2002	2003	2004	2005	2006	2007	2008
151 Meat, fish and veg.oil	83	86	89	95	99	102	100
152 Dairy products	6	7	7	7	7	8	9
153 Grain mill products	86	94	106	103	105	107	106
154 Other food Products	76	85	83	90	85	100	134
155 Beverages	159	167	180	190	214	247	227
160 Tobacco	39	39	53	76	71	90	95
Sub-total, Agro-process	**449**	**478**	**518**	**561**	**581**	**654**	**674**
Total, Manufacturing	**819**	**909**	**956**	**1016**	**1066**	**1151**	**1212**

Source : NBS

Table 13-8 shows the capacity utilization ratio of each segment of agro-processing industries. The utilization ratio is less than 50% in all of the agro-processing industries due to several constraints such as unstable supply of raw materials, poor road condition, unreliable power supply and water shortage.

Table 13-8 Capacity Utilization in Agro-processing Sector 2005-2006

Sub-sector	2005	2006
	Average Capacity Utilization	
Brewery	37.5%	46.5%
Tobacco	40.5%	42.35
Soft Drinks	46.9%	40.7%

Meat and Meat Products	14.8%	34.0%
Edible Oil	28.2%	30.5%
Dairy and Diary Products	25.0%	31.0%
Cashew sub-sector	6.4%	44.2%
Food sub-sector	33.3%	48.8%

Source : NBS, 2007

13.3.1.5. Development Plans

(a) In addition to the weaknesses of instability of raw material supply and weak infrastructure especially power supply and transportation network, other structural weaknesses as of the agro-processing sector in Tanzania result from the fact that raw materials production areas and processing areas are located far apart. This strategy aims at spreading contract farming across the country and installation of primary processing facilities at community level. Primary processing facilities will be linked to secondary and/or export processing facilities through the development corridors. By such linkage the strategy seeks to establish production/processing networks so as to ensure marketing routes for farmers and stable material supplies for processors.

(b) First of all, project areas are to be selected by MAFS for each targeted crop, where potential participants including raw material producers, primary processors and secondary or export processors can converge. With intervention of farmers' associations and processors' associations, supply and assistance conditions are to be coordinated and planned so as to establish production linkages with efficient use of low capacity utilization facilities of agro-processing industries.

(c) MIT together with processors associations have to chart out a net-working model for each commodity bringing together stakeholders from the agriculture production, processing and marketing value chain segments and locate SEZ function with incentives packages along the growth corridor. Develop collection centers and/or storage facilities along the corridor and also promote high quality packing industries to cater for increased packing of agro-processed products.

(d) Moreover, for commodities such as edible oil, milk and dairy products, the plan will be based on a local production for local consumption model to save on transportation costs.

(e) Establish processors' association for each sub-sector and organize periodical public-private dialogue for the public sector to be ready to intervene when the industry faces any difficulty.

13.3.2 Edible Oil Sub-sector

13.3.2.1. Reasons for Targeting Edible Oil

(a) Annual demand for edible oil in Tanzania is estimated at 200,000 tons, which almost equals the WHO recommendation of minimum per capita consumption of five liters a year. The estimated value of 200,000 tons at ex-factory price of Tshs 1,500 per litre would become Tshs 300 billion or US Dollar 250 million.

(b) Though Tanzania was self-sufficient in edible oil in the 1970's with a variety of oil seeds produced locally, currently 70% of the market is dominated by imported palm oil from Asia as a result of trade liberalization. Foreign exchange paid for edible oil imports in 2008 reached a total of Tsh 190.4 billion (US$ 146 million).

(c) The traditional oil seed industry declined persistently and almost died. But thanks to the grass-roots efforts of MAFS and local NGOs, production of sunflower seed, which is the most popular of oil seed in Tanzania, has shown significant recovery in production since the late 2000's. It is reported that the entry of small scale entrepreneurs for the oil extraction business is also continuing.

(d) Since production of varieties of oil seeds have spread over the country and entry into the oil extraction business is relatively easy financially and technically, promotion of the edible oil sub-sector can be the touchstone for rural industrialization.

13.3.2.2. Current Status of the Sub-sector

(a) Since trade liberalization during the 1990's, the imported palm oil from Malaysia and Indonesia has gradually invaded the domestic market and is currently estimated to occupy 70 % to 80 % share of the edible oil market in Tanzania. The oil refineries newly built in Dar es Salaam are designed to refine the imported palm oil and do not accept other varieties of seed oil.

(b) Upon loss of their price competitiveness against imported palm oil, the local traditional refineries have shut down their operations one by one, and local oil expellers as well as oil refineries and the refining capacity have been lost.

(c) Under such circumstances, the production of sunflower in the central corridor regions has experienced a remarkable increase since 2006 through the promotion of quality seeds, and the entry of entrepreneurs into oil extraction, which continues. To support each other, a small but remarkable industrial cluster is emerging under support of pro-poor NGOs through establishing contract farming.

(d) By replacing re-generated tired seeds with either hybrid seeds or refreshed OPV seeds, significant increase in yields has been realized, providing lessons that have been well understood by farmers.

13.3.2.3. Challenges

(a) Extracted sunflower oil, crude oil just filtered, is safe for human health, if it is consumed immediately after extraction. Currently locally produced sunflower oil is consumed in producing villages without refining processes. However, it has to be refined at an oil refinery facility, if it is to be sold in towns and urban centres through commercial marketing chains.

(b) Oil refinery is a capital intensive industry and a commercial size oil refinery should have a minimum capacity of 50 tons a day or 10,000 tons a year. This is a production level capable of covering consumption for 2 million people. There is a small scale refining plant with 5 tons a day or 1,000 tons a year capacity, which may be viable at the community level of development but this plant has not been tested in the Tanzanian environment. Domestic production of the plant may be considered if community level development on piloting basis confirms its feasibility.

13.3.2.4. Development Plans

(a) The weakness of the edible oil industry in Tanzania comes from scattered or remote processing sites relative to producing areas. The strategy proposes a community based processing solution to take advantage of local production for local consumption.

(b) First of all, with collaboration of MAFS and MIT, value chain analysis is to be undertaken to identify the most suitable oil seeds in the region. Identifying potential participants, extension officers or associations in the region to coordinate contract farming between farmers and primary processors, and industrial advisors of the region to coordinate linkage between primary processors and oil refineries. Collection points and storage facilities are to be prepared by contracted processors at the location provided by the local authority, and delivery system and transportation methodology shall be prepared by the oil refinery.

(c) MIT should support construction efforts for a small capacity (5 tons per day capacity) refinery in Dodoma to examine the rural solution model from seeds production up to the oil refining stages of the value chain for economic and technical viability. CAMARTEC should undertake the technical evaluation and study the possibility of local assembling.

(d) VAT should be exempted from locally produced vegetable oil and seeds cake to support local seeds oil industry.

(e) TBS has to set up safety standards for semi-refined oil (filtered crude oil) for direct consumption and guide the industry to indicate production and expire date for consumption products.

13.3.2.5 Quantitative Targets and Monitoring Index

To raise the self-sufficiency ratio of edible oil in the country up to 70%.

Table 13-9 Quantitative Target of Edible Oil Sub-sector

	2010	2015	2025
ISIC Code (Unit) Edible Oil Production (MT)			

Source: Annual Report, Ministry of Agriculture Food Security and Cooperatives

13.3.3 Cashew-nuts Sub-sector

13.3.3.1. Reasons for targeting Cashew-nuts

(a) Cashew nuts are well suited to Tanzania and production is largely by poor farmers. Cashew nuts are an important source of income for 250,000 small holder farmers in Tanzania. They are especially important in the southern coastal regions, and the regions of Mtwara, Lindi and Ruvuma accounts for 80 % to 90 % of Tanzania's cashew production. These are the three poorest regions in Tanzania and cashew nuts are often the main source of cash income for poor farmers in these regions.

(b) The cashew tree's tolerance of drought conditions provides a hedge against crop failure. Its ability to grow on poor soils and to be intercropped with food crops makes it an ideal product for small farmers in the poorest districts of Tanzania.

(c) Removing the shell and skin without breaking or contaminating the kernel is difficult and requires labor intensive work by skilled workers, where the value addition through manual processing appears to be high and there are large employment opportunities.

13.3.3.2. Cashew-nuts Production

(a) Cashew-nuts production in Tanzania has made a remarkable recovery since its near collapse during the 1980s. Marketed production rose to 121,207 tons in 1999/2000 from the low level of 29,868 tons in 1990/91, and has since then been maintained at more or less 100,000 tons of annual production to-date.

Table 13-10 Cashew nuts Marketing (Tons)

Year	1990/91	1995/96	1997/98	1998/99	1999/00	2000/01	2007/08
Production	29,868	81,729	63,033	106,442	121,207	97,428	99,106

Source: Cashew Marketing Board

(b) This recovery has been credited to economic reforms in the 1990s which eliminated the

monopoly of the Cashew Nuts Marketing Board and the decision to allow free export of raw cashew without local processing. The liberalization of cashew-nuts marketing made it possible for farmers to be paid quickly which enabled them to afford to apply sulfur dust to control powdery mildew resulting in increased yields.

(c) The main cause leading to disaster in the late 1980s was increasing financial difficulties faced by the cooperative unions and Tanzania Cashew Marketing Board, which resulted in large quantities of unsold nuts at the farms or village level at the end of buying seasons. Consequently, the producer's share of export prices fell to 25 %, while cashew factories were operating at a loss, and 9 out of 12 factories had to close down between 1985 and 1990. Reforms in 1994 allowed private sector participation in marketing, which raised the share of FOB prices received by farmers to between 60 % - 65 % compared to the 40 % paid by the Board before liberalization.

(d) Tanzania has comparative advantages in cashew production. However, most of the trees are now old and yields are low. Improved varieties are available from research institutes but have not been widely adopted. A replacement program should be prepared as a part of an overall program to strengthen the industry.

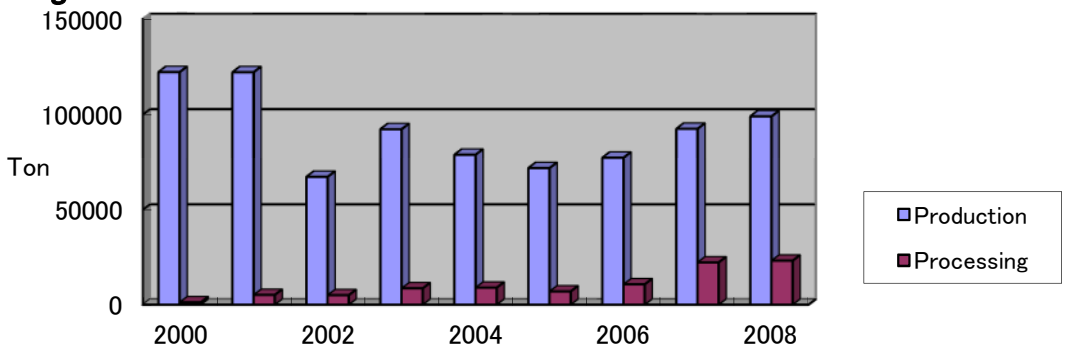
13.3.3.3. Cashew-nuts Processing

(a) Local processing has considerably increased from 1,274 tons in 2000 to 23,219 tons in 2008 (weight in cashew nuts with shell). However, 76.5 % of cashew production was still being exported without processing.

(b) In 2008 according to TRA Trade Data, cashew-nuts exports earned US$ 42.9 million from 52,743 tons of raw cashew exports (HS Code 080131) and US$ 26.5 million was earned from 7,725 tons of processed cashew-nuts export (HS Code 080132). If the whole lot had been exported in processed form, it would have earned an additional US$ 40 -50 million.

Local Production and Processing of Cashew-nuts

Figure 13-2



Source: Cashew-nuts Board of Tanzania

(c) Tanzania invested heavily in mechanized processing facilities in the 1960s and 1970s with donor support. However these facilities are no longer being operated and nearly all the produced cashew nuts have been exported to India for processing. Cashew nuts have a hard outer shell and a leather inner coating, and both must be removed to obtain the kernel. The outer shell contains cashew nut shell liquid that blisters human skin and spoils the kernel on contact. Removing the shell and skin without breaking or contaminating the kernel is difficult and has been most successfully done manually by skilled workers. Efforts to mechanize the process have generally been unprofitable compared with low-wage manual labor.

(d) Mechanized processing is not necessary, since it may not have economic superiority against manual processing. It is entirely the processors' issue. An average worker can shell 20 kg of raw cashew a day yielding 5 kg of kernel. If 20,000 workers worked 250 days a year, they can process the annual production level of 100,000 tons of raw cashew a year.

13.3.3.4. Challenges

(a) For cashew small processors, the largest problem is to secure financial arrangements for purchasing raw material so as to operate throughout the year. Due to the possible price fluctuation of cashews, banks hesitate to extend a long term loan for such working capital. Storage facility for the raw cashews is another concern. In this sense, the Warehouse Receipt System (WRS) provides one possible solution if tied-up with financial institutions who would finance the farmers upon receipt of products. However, the cost structure of the operation is not very clear and need clarification efforts to be made by the Board.

(b) Cashew nuts are a premium nut in high-income countries. They contain 10 - 20 % less fat than other nuts, most of it unsaturated, which is preferred by health conscious consumers. About 75 % of world imports are concentrated in the U.S.A., E.U. and Japanese markets.

(c) Currently Tanzania does not have an industry to extract oil form cashew shells, but cashew shell oil as well as kernel oil has rich natural contents for the development of by-products such as cosmetics.

13.3.3.5. Development Plan

(a) In order to encourage women's group activities in cashew-nuts processing, sub-contracting processing by large scale processors has to be encouraged.

(b) Tanzania should explore export markets with aggressive and direct approaches such as participation in trade fares, advertisement by Tanzanian cashew processors as well as invitation of nuts dealers in targeted countries. Per capita consumption in France and Japan is far less than U.S., Germany and U.K., while all of them have health conscious

markets. International donors may be willing to support such activities and direct links with the final markets would improve and accelerate local processing.

(c) It is recommended that cashew-nuts processors establish an association to promote external marketing as well as to establish a Tanzanian brand of quality cashew. A part of the cashew-nut levy is to be allocated for the achievement of this purpose.

13.3.3.6. Targets and Monitoring

(a) Raise processed cashew exports 3 times by 2015 and 5 times by 2025.

Table 13-11 Quantitative Target of Cashew nuts processing sub-sector

HS Code	Exporting	(Unit)	2008	2015	2025
080132	Processed Cashew-nuts	(Ton)	7,725	20,000	30,000
		USD at FOB	26,503,194	100,000,000	150,000,000

13.3.4. Fruits processing Industry

13.3.4.1. Current Status

(a) It is reported that post harvest losses of fruits and vegetables are so large that as much as 40% to 60% is wasted. This is due to lack of a proper collection system and processing and preservation facilities.

(b) Bakhresa Food Products Ltd. started operation of fresh fruit juice making in Dar es Salaam from July 2008 with an imported modern processing unit. The operation started successfully collecting fruits from farms along the central corridor. It does process oranges from July through August to September, mangoes from November to January, pineapples from December to February, and tomatoes between March and May. Bakhresa accepts raw materials from farmers but has to limit acceptable varieties for quality and taste control. For instance, it identified two varieties for mango juice while there are 50 varieties of mangoes.

13.3.4.2. Challenges

(a) Overseas transportation costs tends to decrease due to efficiency improvement in international logistics and adoption of larger vessels, while inland transportation costs in Tanzania do not show any significant improvement. For example ocean freight from Asia to Dar es Salaam may cost $60 – 100 per ton, while land transport charges between Kigoma and Dar costs $ 100 – 160 per ton. Establishing an efficient fruits collection system is the key challenge for the industry.

(b) Several fresh large scale investments such as Unnat Fruits Processing Ltd in Morogoro, Travocs Produce Ltd in Bagamoyo have followed Bakhresa Food Products Ltd in recent years. Monitoring the progress of these fore-runners, and whether the government can extend effective support or not, are the challenges ahead.

13.3.4.3. Targets and Monitoring Method

Target 10 % growth up to 2025.

Table 13-12 Quantitative Target of Fruits and Vegetables processing subsector

ISIC Code	Production (Unit)	2007	2015	2025
1513	Process/fruits and vegetables(MT)	12,626	27,000	70,000

13.3.5 Milk and Dairy Products Sub-sector

13.3.5.1 Reasons to be targeted

(a) Development of the dairy sub-sector could be the most effective vehicle to improve living standards in rural Tanzania through improved household nutrition, food security and enhanced incomes.

(b) Official figures indicate that per capita consumption of milk in Tanzania has been increasing from 20.4 litres per annum in 1995 to 41 litres to-date. However, this level of consumption is only one fourth of FAO's recommendation of 200 litres per capita, and also lower than per capita consumption of 80 litres in Kenya.

(c) Tanzania has the third largest population of livestock in Africa. However, the performance of the livestock products sub-sector is very poor with negligible volume of meat exported, unprocessed consumption of milk and domination of imported dairy products in the market.

(d) Promotion of the Meat and Dairy sub-sector would benefit 4.9 million agricultural households keeping livestock, generate both large and small scale industries in the rural economy and add value to a wide variety of livestock products.

13.3.5.2. Current Status

(a) Per capita consumption of 40 litres per annum is only one fifth of FAO recommendation of 200 litres and a half of Kenya consumption level.

(b) Total Milk production in Tanzania has increased from 600 million litres in 1996 to 1,600 million litres in 2008. However, only 4% of the milk (60 million litres) is processed and marketed hence leaving the balance of 96% to being consumed at farm level without

processing.

(c) There are 22 milk processing plants with the capacity of 500,000 litres of milk per day but capacity utilization is only 30% (150,000 litres daily or 60 million litres annually).

(d) Tanzania imported 8,550 tons of processed milk and milk products from 37 countries and spent Tshs 9.185 million in 2009.

13.3.5.3. Background

(a) During 1970's the Government of Tanzania established a number of parastatals, namely the Dairy Farming Company (DFC), Tanzania Dairies Ltd., (TDL) and Heifer Breeding units (HBUs). Following the liberalization of the economy in the 1980s and 1990s, these parastatal organizations were dissolved and all the seven dairy processing plants under TDL have been privatized. Since mid 1980s the government policy has put emphasis on the development of the dairy industry through empowering smallholder farmers.

(b) This policy has been supported by a number of donors and a number of donor funded projects were executed in various locations over the country. The combined efforts of government and donors has resulted in the expansion of improved dairy herd from 143,000 in the mid 1980's to 385,000 in 2002, all kept by 130,000 smallholders. Currently, the number of improved dairy cattle is estimated at around 560,000 herds, accounting for two thirds of milk production in Tanzania.

(c) In spite of these gains, the dairy sub-sector is still constrained by a number of problems. The sector is uncoordinated and poorly organized. Productivity is low with about 1,700 - 1,800 litres per year/cow. Only 20 million litres out of 300 million litres of locally produced milk is processed. Taxation on processed milk products is high and per capita consumption of 40 litres in a year is small against FAO recommendation of 200 litres.

(d) Supported by the Dutch government, the first regional dairy stockholder organization, the Tanga Dairy Co-operative Union was established in 1995 in Tanga, and the establishment of Tanzania Milk Processors Association (TAMPA) and Tanzania Milk Producers Association (TAMPRODA) followed in 2004. Tanzania Dairy Board (TDB) was also officiated in 2004 to promote and regulate the industry.

13.3.5.4. Challenges

(a) Out of 18.8 million herds of cattle, the number of commercial (dairy) cows is estimated at 560,000, and the rest are traditional breeds. Only 3% of cows (560,000 dairy cows) produce 60 % of the total milk production. Tanzania has to increase the number of commercial cows through import of new stock of improved breeds and cross breeding with local cows.

(b) Milk has to be collected, cooled and transported or directed to processing plants. Collection centers are the key to this transformation as they will assure farmers of good prices and

assure processors of an attractive business in terms of volumes for collection.

(c) Although there is growing demand, locally processed milk cannot catch up with market demand due to short supply, unreliable quality, poor packaging, poor storage and non-indication of essential data such as production date.

13.3.5.5. Development Plans

(a) Having 18.8 million heads of cattle, livestock farmers already know how to look after cattle. Although the number of commercial (dairy) cows is counted at 560,000 (only 3.0% of the cattle population), the country has a modern breeding center at Arusha and several other heifer breeding units (HBUs). This means that cross breeding with millions of the local cows can take place to produce millions of high-yielding cross breeds and automatically increase milk production by 10 times per cow.

(b) Exploit available resources for market oriented dairying and increase further milk per capita consumption from the present 40 litres to at least 80 litres. Campaigns to buy Tanzanian made products especially milk for schools and other institutions should be organized.

(c) Milk needs to be cooled and transported or directed to processing plant. Provide subsidies to processors for their established milk collection centers. Remove disturbance of smooth traffic, including unnecessary inspection by traffic police. Improvement of collection and transportation system would ensure markets for farmers and also assure processors of stable supply of raw materials.

(d) Strengthen the National Artificial Insemination Center at Usa River, Arusha to provide direct service to HBUs and farmers.

Table 13-13 Quantitative Targets of Dairy Products sub-sector

ISIC Code	(Unit)	2010	2015	2025
1520	Dairy Products			

13.4 Leather and Leather Products Sub-sector

13.4.1 Reasons for Leather Sub-sector targetting

(a) Livestock Resource base (Hides and skins production sub sector)

Tanzania has the third largest population of livestock in Africa, counting 19.1 million cattle, 13.1 million goats and 3.6 million sheep. The large number of available livestock resources provides the base for a significant hides and skins production industry with estimated

production potential of about 92 million sq ft per annum. The availability of hides and skins as raw materials provides advantageous position for the country for investment setup in the tanning sub sector and subsequent leather products manufacturing sub sectors. It is estimated that the number of livestock to be slaughtered (off-take rate) is 1.5 million cattle, 2.5 million goats and 0.5 million sheep per annum while actual collection of hides and skins ranges between 56% - 65% of the potential, which is equivalent to approximated 58 million sq ft per annum. Furthermore, poor performance of livestock sub sector, affects the performance of the tanning sub sector and hence the leather products sub-sector also.

After privatization and trade liberalization in the 1980's and 1990's, the tanning industry as well as footwear and leather goods industry collapsed. As a result, most of the hides and skins are exported in raw form. At the same time, Tanzanian hides are discounted in the international market because of low quality and small size, hence poor international image.

(b) Tanning sub sector (Hides and skins processing)

The installed capacity of all existing operating tanneries in Tanzania is about **50.21 million sq ft** per annum while actual capacity utilization reached **33.086 million sq ft** per annum in 2007 **(see Table 13-8)** below. Investment Promotion in the tanning sub sector should be undertaken by providing attractive incentives to both existing and potential investors to expedite absorption of locally available raw materials for further value addition into finished leather and hence revive the leather products manufacturing sub sector. An informed strategic policy reform is needed to ensure that locally produced raw materials are readily available for local tanneries so as to encourage value addition at domestic level and hence trade on value added leather and leather products.

(c) Footwear and leather goods sub sectors

The Leather sector industry and the footwear and leather goods manufacturing sub sector in particular, have been selected as priority sub sectors due to their effect of pulling up the tanning sub sector through creating demand for finished leather from tanneries. The result of this will be the expansion of tanneries capacities to process all hides and skins produced in the country. The end impact is enlarged employment opportunities and income generation, poverty reduction, increasing exports and foreign earnings, higher government revenues and industrial sector growth with higher contribution to GDP and economic development at large. This connotes that, the development of labor-intensive industries like footwear and leather products manufacturing in the country, ought to be the central theme of sub sector development objectives hence the central focus of the development policies, strategies and programmes.

Moreover, the sector is generally dominated by Micro, Small and Medium Enterprises - MSMEs

and few large industries. However, production levels and product diversification is so far still scanty. In addition, there are a number of emerging enterprises within the sector. Therefore an informed policy-mix model and course of actions should be formulated and implemented as part of moves to promote labour intensive industries like footwear and leather goods manufacturing.

While domestic, regional and international markets for leather products is expanding and growing, strategic initiatives to attract and promote domestic investments for production of quality leather goods is required to enable Tanzania explore and access preferential markets. To date, the number of MSMEs engaging in footwear and leather goods manufacturing in the country is estimated as comprising of 20 enterprises, which signifies an ample domestic investment set up. Development of the leather products sub sectors is expected to benefit more than 4.9 million agricultural households whose economic activities include keeping livestock. It will also benefit hides and skins dealers and traders, increase the number of large and small scale industries in the rural sector and add value to a wide variety of livestock products.

13.4.2 Investment and Production Potentials

(a) Generally, having an abundant resource base, Tanzania has immense investment opportunities for the establishment of footwear and leather products manufacturing enterprises which will further attract investments into tanneries and, therefore, absorb locally available raw materials.

(b) Huge opportunity for production of quality footwear and wide variety of leather products including exotic products.

(c) If the process is properly managed as is currently done in Ethiopia, the value addition to dried hides can jump up many-folds, as many as thirty times of the value of the raw materials.

Table. 13-14 Analysis of the Capacity utilization in tanneries, 2007

S/N	Company	Location	Installed Capacity	Capacity Utilization (Sq.ft.) in 2007	Products
1	Moshi Leather Industries Ltd.	Moshi	10,000,000	2,450,000	Wet blue hides and goat skins, Finished leather
2.	East Hides (T) Ltd.	Morogoro	24, 000,000	19, 000,000	Raw and Wet blue hides, goat and sheep skins
3.	Lake Trading Co. Ltd.	Kibaha	5,160,000	3,096,000	Raw and Wet blue hides, goat and sheep skins, finished leather
4.	Afro Leather	Dar es	3, 000,000	1,500,000	Wet blue hides

	Industries	Salaam			
5.	Salex Tanneries Ltd.	Arusha	4,050,000	3,040,000	Raw hides and skins, wet blue goat and sheep skins
6.	Himo Tanners and Planters Ltd	Moshi	4, 000,000	4, 000,000	Wet blue hides, goat and sheep skins. Finished leather
	Sub Total Capacity		**50,210,000**	**33,086,000**	

Source: Individual Tanneries, MITM and LAT 2009

13.4.3 Challengs

(a) **Tanzania's leather and leather products industry has been influenced by a number of challenges against further growth which hinders its contribution to the economy in terms of;**

- **Employment and income generation opportunities to address respective unemployment and income poverty concerns,**
- **Increased foreign earnings through exports,**
- **Increased Government revenues,**
- **Increased industrial interlinked business opportunities and hence raise the sub-sector's contribution to industrial sector growth and national economic development at large.**

(a) The challenges include the following:

- **Human resources capacity**
- **Physical infrastructure and logistics**
- **Incentives for investments**
- **Safe guard measures to domestic industries (particularly MSMEs)**
- **Access to financial services**
- **Appropriate and affordable technology and technological transfer**
- **Information networking and integrated market development**
- **Products quality, design and diversification**
- **Availability and reliability of quality finished leather for leather products and leather goods manufacturing.**

13.4.4. Development Plans

(a) **On-going implementation of the Integrated Hides, Skins and Leather Sector Development Strategy**

(b) **Formulation and implementation of national programmes geared towards development and promotion of leather products manufacturing in the country**

- Industrial Village Development Support Programme – IVSD Programme

- **Product Quality Improvement and Diversification Support Programme (PQI-DSP)**
- **Promotional Programme on Made in and Buy Tanzanian Leather Products (PP-MTLP)**

(c) Revival and strengthening of Tanzania Institute of Leather Technology (now Mwanza DIT Campus) for human resource development.

(b) Domestic Investment Promotion Initiative programme (DIPI)

(c) Initiative on technology, technological transfer and financing;

Table 13-15 Quantitative Targets of Leather sub-sector

HS Code (Unit)	2007		2015		2025	
	Export	Import	Export	Import	Export	Import
41 Hides and Skins (Kg) (US$000)	10,569,076	106,453	0	8,000,000	0	12,000,000
Semi-processed leather	5,566,405	69,795	500,000	4,000,000	0	7,000,000
Finished Leather (sq ft) (US$000)	0	1,200,000	300,000	1,200,000	900,000	3,000,000
Footwear (pair) (US$000)	1,132,611	31,000,000	8,000,000	15,000,000	15,000,000	13,000,000
Leather goods (Kg) (US$000)	17,553	9,313,811	5,500,000	12,000,000	15,000,000	10,000,000

13.5 Light machinery Sub-sector

Reasons for targeting the Light Machinery sub-sector

(a) Intermediate goods and light machinery industries were the target priority industries for promotion under the second phase of SIDP 2000 – 2010. However, regrettably, the current status of the sub-sector is far from the envisaged target and, in reality, it is in grave danger of near destruction. It was the sub-sector most severely affected by the inflow of imported products from Asian countries consequent to trade liberalization.

(b) As seen in Chapter I - 3, light machinery industries in Tanzania have experienced a steady decline to date. Yet, the light machinery industry is the foundation of all types of mechanical industrial sub-sectors, and is, therefore, by all means the sub-sector that has to be revived at the beginning of any process of industrial recovery.

(c) In the agricultural sector, only 10 % of farm land in Tanzania is cultivated by tractor, while 20% is cultivated by oxen or animal draught power and 70% by manual power. This heavy dependency on manual labor prevents a horizontal expansion of agricultural production, through increased acreage, and keeps land utilization ratio at only 10 % of the available arable land in the country. Mechanization of agriculture is an essential part of any green revolution and the government is keen to introduce power tillers and tractors to popularize mechanized agriculture. However, earth moving equipment must be capable of withstanding severe working conditions, and overtime, will need regular after sales maintenance and spare parts supply.

13.5.1 Current Status

Despite the expectations of SIDP, the light machinery sub-sector has almost disappeared. Manufacturing Production Survey by the National Bureau of Statistics clearly indicates that Tanzania has almost lost the entire light machinery sub-sector (see table 12-9).

Table 13-16 Production of Light Machinery sub-sector

	Unit	1987	1992	1997	2002	2007
Industrial Machines	Number	1,346	370	346	91	16
Electric motors	Number	421	801	130	32	15
Transformers	Number	548	779	1,512	989	676
Electric Cookers	Number	12,628	4,074	1,913	0	0
Radio	Number	72,000	108,000	15,000	0	0
Battery, Automobile	Number	27.565	13,000	250	17,000	47,000
Radiators	Number	5,655	2,646	903	452	125

Source: Quarterly Manufacturing Survey, National Bureau of Statistics

(a) It is reported that the number of tractors operational in Tanzania today is approximately 9,500 units, while there were 17,000 units during the 1970's. MAFS reports that Tanzania needs an additional 1,800 tractors annually in order to maintain mechanical power needs. Even if the whole requirement is met and a single supplier is nominated, the 1,800 tractors scattered over the huge geographical land area would be a very costly operation for a tractor exporter or its agencies for the extension of proper maintenance services.

(b) Besides the operational tractors, there are 6,000 tractors kept idle due to lack of spare parts for carrying out needed repairs. In addition to the decline of the machinery industry, maintenance and repair skills have declined too.

(c) Moreover, it is almost comical, apart from being tragic, that the country has to import 2,000,000 pieces of hand hoes every year, to support an agricultural system that is dependent on manual power at a time when the objective is to transform agriculture through measures that include rapid mechanization starting with the simplest tools available on the market.

13.5.2 Development Plans

<Tractor Assembling and Agricultural Machineries>

(a) The most decisive and absolutely necessary condition for inviting foreign investors into the agricultural machinery industry is the size of demand. In order to run a tractor assembling factory under an economically rational scenario, sales of not less than 1,000 units per annum for a single model have to be projected, while actual demand in Tanzania is far less than that. Without enough demand to sustain the industry, the business becomes more expensive leading to conflict of interests amongst farmers. If the demand can be created first, then the development of the industry will follow.

(b) Therefore, the first action to take is to establish a strategy for agricultural mechanization and entrench mechanization of agriculture, under the mandate of the Ministry of Agriculture and Food Security (MOAFS). Without a market with effective demand, no business can be sustained. Hence, the role of the government is to stimulate the market and promote the demand. Extending this line of logical reasoning further, an effective strategy for the establishment of mechanized farming is to start with the establishment of an agricultural machinery hiring center in every district, starting with high potential districts.

(c) It is recommended to establish agricultural mechanization strategy and equipment hiring centers at core locations. Regional EDZs in Morogoro and Mbeya are to be used as the initial industrial bases to support mechanized agriculture. Strong incentives are to be provided to agricultural equipment manufacturing investors.

(d) Heavy load machineries such as tractors need technical supporting systems including spare

parts supply and periodic maintenance. Therefore the deployment of machinery should be confined to a defined objective area and be subjected to gradual expansion tactics. In this regard mechanization should start in the Big Four regions with back-up systems being deployed along the Agriculture Growth Corridor proposed in Chapter 7.3.

(e) It would not be easy for the Government to reach a conclusion on how to introduce a private sector initiative to work on the challenges of business formation and management as well as design the requisite back-up system. However there are a number of precedent examples in many countries, which MAFS has to study and there from come up with appropriate guidelines to lead Tanzanian stakeholders in the right direction during the formative stage.

(f) At the same time, the Economic Development Zones to be located in Morogoro and Mbeya should be given the privilege and incentives as Agriculture SEZs with a view to promoting agro-processing industries as well as serve as centres for production, maintenance and servicing of agricultural tools and machineries.

(g) Production of agricultural tools, such as the plough or hand hoe can be easily undertaken by MSMEs at competitive prices and quality. Establishment of Industrial Villages as proposed in Chapter 8.2 would promote such manufacturing activities by MSMEs.

<Release of Grass-roots Industries>

(a) As was observed in Chapter 8.3, in Tanzania especially around large cities, there is a considerable number of accumulation of grass-roots industries. These have often been pushed to the outskirts of the city in the course of enlargement of residential blocks. In most cases these are enterprises that have been locked out from growth opportunities through denial of the right to have title of occupancy for the land in which their premises are located.

(b) MITM should investigate and analyse the situation in terms of the location of such accumulations and the factors inhibiting growth, for the purpose of removing such factors and placing such young industries on a course of steady, healthy and solid growth. Efforts to improve the business environment should not only focus on the concerns of large companies and foreign investors alone but also prioritize the needs of local industry including grass-roots industries. MITM must disseminate these issues and efforts for transforming the business environment to the local governments as well.

<Periodical Motor Vehicle Inspection Scheme>

(a) In order to raise technical and maintenance skills across the nation, the introduction of periodical inspection systems for the automobile industry needs to be considered. This will oblige car owners to undergo maintenance inspection periodically (say every two years after five years from the date of registration) by TBS authorized garages. This aims to build and

spread the culture of proper maintenance techniques and philosophy country-wide through the most popular household item i.e. the family car.

(b) To foster the technical foundation necessary to grow mechanical industries, it is necessary to start with a very simple inspection at the first stage and then gradually up-grade the requirements. The work can be done by TBS authorized garages and the mechanics who do the inspection have to carry Grade Test certificates of VETA. Also, the criteria for qualified garages will include investment in equipment to a certain standard of maintenance tools.

13.5.3 Quantitative Targets and Monitoring Indices

(a) Invite an agricultural tractor assembling plant to be established at one of the Waterfront SEZ as a national strategic investment.

Table 13-17 Quantitative Target of Light machinery sub-secto

ISIC Code (Unit)	2007	2015	2025
2921 Agricultural machines (Number)	0	100	1000
2922 Industrial Machines (Number)	16	100	1000

13. 6 Iron and Steel Production Sub-sector

13.6.1. Reasons for targeting iron and steel sub-sector

(a) The Mchuchuma coal mine and Liganga iron ore mines have been earmarked by the Government as key sub-sectors for industrial expansion in the country. To this end the Government has assigned NDC the role of undertaking and coordinating the initiative for their development.

(b) The demand for steel is rapidly growing, not only in Tanzania, but also in neighboring countries in the East African region. The overall objective for the development of Mchuchuma/Liganga is to support the development of a regional industrial and mineral center base, supported by a power platform by utilizing the rich mineral concessions for manufacturing iron and steel products.

(c) The projects could, when developed, become drivers or anchor projects in a wider regional development strategy.

13.6.2 Current Situation

(a) From 1996 to 2000, Tanzania's production of steel averaged 10,000 tons. Since 2001, the production has increased sharply and approached the level of 50,000 tons in 2008.

(b) Tanzania produced iron ore from the Itewe deposit near Chunya until 1997. Resources at this deposit were estimated at 50 million tons at a grade of 32 % iron.

(c) Proven reserve at Liganga iron ore have been estimated at 45 million tons at a grade of 52 %. With this grade and quantity, the mine can be commercially developed only in the event there is a railway line linking Liganga with the nearest port of Mtwara. However, recent studies of Liganga mines highlighted its potential reserves of over 1.2 billion tons and also indicated that the ore contains considerable amounts of Titanium and Vanadium. Though the results of a physical drilling survey have to be secured to ensure accurate estimates, the mine suggests the existence of tremendous possibilities.

(d) The domestic demand for steel in Tanzania is increasing rapidly and will, obviously, keep growing in line with the trend of economic growth. Although the government banned scrap metal exports in 2003, domestic steel mills have to import iron billets to maintain their operations. High cost steel kills competitiveness of metal industries, and Tanzania's East African neighbors face the same difficulties.

13.6.3 Challenges

According to an available study report, the estimated development cost for construction of an iron smelter stands at US$ 720 million. The construction of a railway line from Mtwara port to the site, a distance of over 800 km may cost another US$1.0 billion. The difficulties of the project depend on the extent to which Tanzania can squeeze down the development costs through a new direct reduction technology that is applicable to low quality iron ore, and how to share the rail way construction costs with other mineral development projects in the area such as Titanium, Vanadium, Nickel and Uranium development.

13.6.4 Target

(a) The project is set to be completed by 2012, and the plant will become operational by 2015. Tanzania will then become the only iron billet supplier to the East African region..

(b) Quantitative targets and monitoring measures.

Table 13-18 Quantitative Target of Iron and Steel Subsector

ISIC Code		(Unit)	2007	2015	2025
2891	Rolled Steel	(MT)	12626	25000	250,000
2891	Steel Sheets and billets	(MT)	42500	85000	1,500,000

13.7 Tourism Linkages sub-sector

13.7.1 Reasons for targeting Tourism Linkages sub-sector

(a) Growing number of tourism and business visitors constitute a large high value export market that is easily accessible within Tanzanian territory for a wide of products including: handicrafts and souvenirs; processed gemstones and minerals; textiles, garments and knitwear, the hospitality and entertainment industry intangible products.

(b) Easy participation of rural communities and peoples in tourism sector activities based on cultural tourism that attracted a total of 160,000 visitors in 2010.

(c) Existence of a wide range of downstream and upstream linkages to the tourism industry that constitute a potential large for Tanzanian exports that remains underutilized for reasons that are within the capability of national solutions in the short and medium term.

13.7.2 Status of the Tourism sub-sector

(a) Average visitors to the national parks reached a total of 783,000 in 2010 of whom more than half a million were foreign visitors compared to a total of 714,000 in 2009 and is growing at an average of 9.6 % per annum.

(b) Total earnings through the hospitality industry and ground services were estimated at USD1,254.0 million in 2010 compared to USD 823.0 in 2005 and USD 739.0 million in year 2000.

(c) The sector generated a total of 250,000 direct jobs in 2010 compared to 199,000 jobs in year 2005 and generates an even larger number of indirect jobs through backward and forward linkages that can be enhanced further and realized without new major investments.

13.7.3 Challenges

(a) Identifying priority target products and building local capacity for design, production and marketing to improve quality and lower costs and consultation with tourism/hospitality industry stakeholders for a joint support on all possible marketing channels and conduits including hotels, restaurants, airports, border posts, shopping malls and production cum marketing centres dedicated to tourism visitors.

(b) Skills development and training for design and production of sophisticated products including cutting and polishing of gemstones and gold smith works, design and manufacturing of garments and knitwear, furniture design and making, production of handicrafts and household decorative material and other works of art.

(c) Compliance with SPS and traceability standards and food safety regulations for fresh

produce including horticultural products and other fresh supplies targeting the high quality hotel, supermarkets and mining sectors distribution networks.

(c) Inclusion of tourism facilities and marketing channels in the Waterfront SEZs and the Arusha SEZ to promote cluster development based on products of interest to the tourism industry.

(d) Undertaking baseline survey of current status of extent of utilization of tourism linkages as an input into design of an effective M & E framework for implementation follow-up.

13.7.4 Target

(a) Develop linkages to downstream activities with priority going to dry provisions, fresh produce, hard furnishings and the souvenir and ornamental industries

(b) Increase sales over baseline levels fourfold by 2020

13.7.5 Strategies

(a) Development of dedicated channels in Dar es Salaam and Arusha as the main tourism attraction centres through linkage with the regional SEZs, district industrial parks and MME parks.

(b) Capacity building for the handicraft industry for product diversification based on design and differentiation to suit the behavior of target tourism and business visitors

(c) Develop and accumulation of entrepreneurs for selected products clusters to produce a range of tourism targeted products in the leading regional tourism centres, starting with the leading regional markets of Arusha, Moshi and Dar es Salaam.