

**The Republic of Kenya  
Ministry of Trade and Industry (MOTI)**

**THE MASTER PLAN STUDY  
FOR  
KENYAN INDUSTRIAL DEVELOPMENT  
(MAPSKID)  
IN  
THE REPUBLIC OF KENYA**

**FINAL REPORT  
(SUMMARY)**

**January 2008**

**JAPAN INTERNATIONAL COOPERATION AGENCY**

**SANYU CONSULTANTS INC., JAPAN**

**KRI INTERNATIONAL CORP., JAPAN**

## PREFACE

In response to a request from the Government of the Republic of Kenya, the Government of Japan decided to conduct a study on “the Master Plan for Kenyan Industrial Development” and entrusted to the study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a study team that is headed by Mr. Yoshio NAGAMINE of SANYU Consultants INC., and consists of SANYU CONSULTANTS INC. and KRI International Corp. between February 2006 and December 2007.

The team held discussions with the officials concerned of the Government of the Republic of Kenya and conducted field surveys in the study area. Upon returning to Japan, the team conducted further studies and prepared this final report.

I hope that this report will contribute to the promotion of Kenyan industrial development and to the enhancement of friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of the Republic of Kenya for their close cooperation extended to the study.

January 2008

Seiichi Nagatsuka,  
Vice-President  
Japan International Cooperation Agency

January 2008

Mr. Seiichi Nagatsuka

Vice-President, Japan International Cooperation Agency (JICA), Tokyo, Japan

Dear Mr. Nagatsuka,

**Letter of Transmittal**

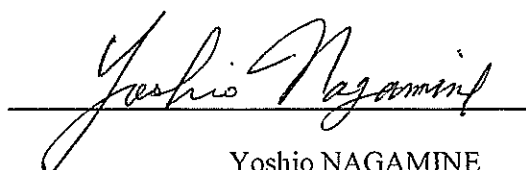
We are pleased to submit to you the Master Plan Study Report on Kenyan Industrial Development in the Republic of Kenya. Under the contract with your Agency a joint venture team (Sanyu Consultants Inc., Japan and KRI International Corp., Japan) has developed the Industrial Master Plan comprising a master plan, action plans and a development plan of the target sub-sectors from February 2006 to December 2007.

The overall goal of this study is to promote the industrial development of Kenya with emphasis on the target sub-sectors. The study was carried out in two stages. In the stage 1 three target sub-sectors were selected and in the stage 2 the Industrial Master Plan was developed. In the course of the study the skills and knowledge for developing the Master Plan were transferred to the counterpart of the Government of Kenya and the public and private partnership through promoting dialogue was strengthened.

We sincerely wish that the master plan, action plans and development plans of target sub-sectors would be duly implemented as a plan for Economic Recovery Strategy under the initiative of the Ministry of Trade and Industry with cooperation from the private sector, hence it would contribute to the development of Kenyan industry.

We wish to take this opportunity to express our sincere gratitude to your Agency, the Ministry of Foreign Affairs, Ministry of Economy, Trade and Industry of the Government of Japan, for their valuable guidance and cooperation. At the same time we also wish to express our deep gratitude to your Agency's Kenya Office, the Embassy of Japan in Kenya, Japan External Trade Organization's Nairobi Office, Japan Bank for International Cooperation's Nairobi Office, the Ministry of Trade and Industry and other relevant Ministries and Government related Agencies in the Republic of Kenya for their precious advices and cooperation during our study.

Very truly yours,



Yoshio NAGAMINE

Team Leader of the Study Team



Master Plan Study for Kenyan Industrial Development (MAPSKID) in the Republic of Kenya

LOCATION MAP





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## Abbreviations

|          |  |
|----------|--|
| AfDB     | African Development Bank   |
| AGOA     | African Growth and Opportunity Act                                 |
| AMFI     | Association of Microfinance Institutions                           |
| ARIPO    | African Regional Intellectual Property Organisation                |
| ASAL     | Arid and Semi Arid Lands   |
| ASCAs    | Accumulating Savings and Credit Associations                       |
| ASDAQ    | Association of Securities Dealers Automated Quotations             |
| BDS      | Business Development Services                                      |
| BFP      | Bio-fuel Production  |
| BPO      | Business Process Outsourcing                                       |
| BSPS     | Business Sector Programme Support                                  |
| B2C      | Business to Consumers  |
| B2G      | Business to Government   |
| CBK      | Central Bank of Kenya  |
| CDC      | Constituency Development Committees                                |
| CDF      | Constituency Development Fund                                      |
| CEEC     | Centre for Energy Efficiency and Conservation                      |
| CMA      | Capital Markets Authority  |
| COMESA   | Common Market for Eastern and Southern Africa                      |
| DANIDA   | Danish International Development Agency                            |
| De-G     | Directorate of e-Government  |
| DFID     | UK Department for International Development                        |
| DFIs     | Development Finance Institutions                                   |
| DIDO     | District Industrial Development Officer                            |
| DIT      | Directorate of Industrial Training                                 |
| DOHSS    | Directorate of Occupational Health and Safety Services             |
| DPM      | Directorate of Personnel Management                                |
| DRC      | District Roads Committees  |
| DTO      | District Trade Officer   |
| EAC      | East African Community   |
| EAM      | Environmental Audit and Monitoring                                 |
| EAPCC    | East Africa Portland Cement Company                                |
| EIA      | Environmental Impact Assessment                                    |
| EIB      | European Investment Bank   |
| EMCA     | Environmental Management Co-ordination Act                         |
| EPC      | Export Promotion Council   |
| EPZ      | Export Processing Zone   |
| EPZA     | Export Processing Zones Authority                                  |
| ERB      | Electricity Regulatory Board                                       |
| ERS      | Economic Recovery Strategy for Wealth and Employment Creation      |
| EU       | European Union   |
| FDI      | Foreign Direct Investment  |
| FMD      | Foot-and-Mouth Disease   |
| GDP      | Gross Domestic Product   |
| GEF      | Global Environment Facilities                                      |
| GER      | Gross Enrolment Rate   |
| GOK      | Government of Kenya  |
| GWh      | Gigawatt-hour  |
| HCDA     | Horticultural Crops Development Authority                          |
| HIV/AIDS | Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome |
| HS       | Harmonised System  |
| ICAP     | Investment Climate Action Plan                                     |
| ICDC     | Industrial and Commercial Development Corporation                  |
| ICIPE    | International Centre of Insect Physiology and Ecology              |



|           |   |
|-----------|---|
| ICRAF     | International Centre for Research in Agroforestry   |
| ICT       | Information Communication Technology  |
| IDBC      | Industrial Development Bank Capital   |
| IEEE      | Institute of Electric Electronic Engineers  |
| IFC       | International Finance Corporation   |
| IIPA      | International Intellectual Property Alliance  |
| ILO       | International Labour Organisation   |
| ILRI      | International Livestock Research Institute  |
| IMF       | International Monetary Fund   |
| IPC       | Investment Promotion Centre   |
| IPP       | Independent Power Producer  |
| IPR       | Intellectual Property Right   |
| IP-ERS    | Investment Programme for Economic Recovery Strategy   |
| ISIC      | International Standard of Industrial Code   |
| ITC       | International Trade Centre  |
| JBIC      | Japan Bank for International Cooperation  |
| JETRO     | Japan External Trade Organisation   |
| JICA      | Japan International Cooperation Agency  |
| JITAP     | Joint Integrated Technical Assistance Programme to Selected Least Developed and Other African Countries |
| JKA       | Jua Kali Association  |
| JKIA      | Jomo Kenyatta International Airport   |
| JKUAT     | Jomo Kenyatta University of Agriculture and Technology  |
| JLBS      | Joint Loan Boards Scheme  |
| KAA       | Kenya Airport Authority   |
| KAM       | Kenya Association of Manufacturers  |
| KARI      | Kenya Agricultural Research Institute   |
| KATTI     | Kenya Association of Technological Training Institutes  |
| KEBS      | Kenya Bureau of Standards   |
| KCAA      | Kenya Civil Aviation Authority  |
| KeKoBI    | Kenya Kountry Business Incubator  |
| KenInvest | Kenya Investment Authority  |
| KEPSA     | Kenya Private Sector Alliance   |
| KEWI      | Kenya Water Institute   |
| KfW       | Kreditanstalt fur Wiederaufbau  |
| KGt       | Kenya Gatsby Trust  |
| KIBT      | Kenya Institute of Business Training  |
| KICTAnet  | Kenya ICT Action Network  |
| KICTB     | Kenya ICT Board   |
| KIE       | Kenya Institute of Education  |
| KIEL      | Kenya Industrial Estates Limited  |
| KIM       | Kenya Institute of Management   |
| KIPI      | Kenya Industrial Property Institute   |
| KIRDI     | Kenya Industrial Research and Development Institute   |
| KITI      | Kenya Industrial Training Institute   |
| KNBS      | Kenya National Bureau of Statistics   |
| KNPCPC    | Kenya National Cleaner Production Centre  |
| KNEC      | Kenya National Examination Council  |
| KNTC      | Kenya National Trading Corporation  |
| KPA       | Kenya Ports Authority   |
| KPLC      | Kenya Power and Lighting Company  |
| KR        | Kenya Railway Corporation   |
| KRA       | Kenya Revenue Authority   |
| Kshs.     | Kenya Shillings   |
| KWAL      | Kenya Wine Agencies Limited   |
| LATF      | Local Authority Transfer Fund   |
| MDGs      | Millennium Development Goals  |

|          |   |
|----------|---|
| MFIs     | Micro Finance Institutions                                      |
| MIA      | Moi International Airport                                       |
| MLHRD    | Ministry of Labour and Human Resource Development               |
| MNEs     | Multi National Enterprises                                      |
| MOA      | Ministry of Agriculture   |
| MOED     | Ministry of Education   |
| MOEN     | Ministry of Energy  |
| MOF      | Ministry of Finance   |
| MOIC     | Ministry of Information and Communications                      |
| MOL      | Ministry of Lands   |
| MOLF     | Ministry of Livestock and Fisheries Development                 |
| MOLG     | Ministry of Local Government                                    |
| MOST     | Ministry of Science and Technology                              |
| MOTI     | Ministry of Trade and Industry                                  |
| MPs      | Members of Parliament   |
| MRPW     | Ministry of Roads and Public Works                              |
| MSE      | Micro and Small Enterprise                                      |
| MSM      | Micro, Small and Medium   |
| MSME     | Micro, Small and Medium Enterprise                              |
| MTEF     | Medium Term Expenditure Framework                               |
| MW       | Megawatt  |
| MOWI     | Ministry of Water and Irrigation                                |
| NASDAQ   | National Association of Securities Dealers Automated Quotations |
| NEMA     | National Environment Management Authority                       |
| NES      | National Export Strategy  |
| NESC     | National Economic and Social Council                            |
| NGOs     | Non-Governmental Organisations                                  |
| NITC     | National Industrial Training Council                            |
| NMC      | Numerical Machining Complex                                     |
| NWCPC    | National Water Conservation and Pipeline Corporation            |
| NWRMS    | National Water Resource Management Strategy                     |
| NWSS     | National Water Services Strategy                                |
| PEAK     | Plastic Environmental Action Kenya                              |
| POS      | Point of Sales  |
| PPP      | Public Private Partnership                                      |
| PSDC     | Penang Skills Development Centre                                |
| PSDS     | Private Sector Development Strategy                             |
| PSDS-PIP | PSDS Implementation Plan  |
| QCT      | Quality, Cost, and Cycle Time                                   |
| R & D    | Research and Development  |
| RIC      | Revealed International Competitiveness                          |
| ROSCAs   | Rotating Savings and Credit Associations                        |
| SACCOs   | Savings and Credit Cooperatives                                 |
| SAGA     | Semi-Autonomous Government Agency                               |
| SBP      | Single Business Permit  |
| SCM      | Supplier Chain Management                                       |
| SEZ      | Special Economic Zone   |
| SME      | Small and Medium Enterprise                                     |
| SSC      | SME Solution Centre   |
| SWAP     | Sector Wide Approach to Planning                                |
| SWGs     | Sector Working Groups   |
| SWOT     | Strength, Weaknesses, Opportunities and Threats                 |
| TCIP     | Transparency and Communications Infrastructure Project          |
| TNCs     | Trans National Corporations                                     |
| TRIPs    | Trade Related Intellectual Property Rights                      |
| TIVET    | Technical, Industrial, Vocational and Entrepreneurship Training |
| UK       | United Kingdom  |

|          |  |
|----------|--|
| UN       | United Nations                                       |
| UNCTAD   | United Nations Conference on Trade and Development   |
| UNDP     | United Nations Development Programme                 |
| UNCITRAL | United Nations Commission on International Trade Law |
| UNIDO    | United Nations Industrial Development Organisation   |
| UNSD     | United Nations Statistics Division                   |
| UON      | University of Nairobi                                |
| USA      | United States of America                             |
| VAT      | Value Added Tax                                      |
| WRMA     | Water Resource Management Authority                  |
| WAB      | Water Appeals Board                                  |
| WB       | World Bank   |
| WIPO     | World Intellectual Property Organisation             |
| WSB      | Water Services Board                                 |
| WSPs     | Water Services Providers                             |
| WSRB     | Water Services Regulatory Board                      |
| WSS      | Water and Sewerage Services                          |
| WSTF     | Water Services Trust Fund                            |
| WTO      | World Trade Organisation                             |
| 3R       | Reduce, Reuse, Recycle                               |

## Introduction: Outline of Master Plan

### (1) Background

The Economic Recovery Strategy for Wealth and Employment Creation (ERS) in 2003 clearly stipulates the “Industrial Transformation to the Year 2020”, (hereinafter referred to as “Sessional Paper”), Sessional Paper No.2 published in 1996 (Revised in 1997), should be reviewed to be developed into a master plan for industrial development (hereinafter referred to as “the Master Plan”). GOK, then, has requested the Government of Japan (hereinafter referred to as “GOJ”) to conduct the study on “Master Plan Study for Kenyan Industrial Development” (hereinafter referred to as “MAPSKID”). In response to the request of GOK, GOJ has decided to conduct MAPSKID, and the Japan International Cooperation Agency (hereinafter referred to as “JICA”), the official agency responsible for the implementation of the technical cooperation programmes of GOJ, was commissioned to undertake MAPSKID. JICA set up a team of consultants comprised from Sanyu Consultants Inc. and KRI International Corp. (hereinafter referred to as “the Study Team”) to carry out MAPSKID.

### (2) Purpose

Purposes of MAPSKID are as follows.

- |                      |  |
|----------------------|--|
| i) Overall Goal:     | to promote the industrial development of Kenya with emphasis on the target sub-sectors   |
| ii) Project Purpose: | to have the Master Plan adopted as a component of ERS<br>to implement Master Plan with initiatives of MOTI and cooperation from the private sector   |
| iii) Outputs:        | to develop the Master Plan comprising a master plan, action plans, and a development plan of the target sub-sectors<br>to transfer skills and knowledge to the counterpart of the counterpart for developing the Master Plan<br>to strengthen the public and private partnership through promoting dialogues |

### (3) Target sectors

MAPSKID focuses on the manufacturing sector. The related sectors to the manufacturing sector are also studied in the linkage analysis. Particularly, Information communication technology (ICT) sector shall be paid attention since ICT is an emerging sector and its potential contribution to the industry needs to be examined.

#### (4) Outline

To achieve the objectives described in (2), MAPSKID implemented the items listed below.

##### STAGE 1: Selection of three target sub-sectors <January 2006 - October 2006>

- i) Reviewing the current situation and issues of manufacturers
  - analysis of economic data
  - analysis of economic and industrial policies, legal framework, and programmes
  - analysis of donor-funded projects
- ii) Formulating development framework
  - analysing external factors that affect the development framework and cross check with the current situation
  - setting tentative framework for industrial development up to Year 2020
- iii) Developing methodologies for selecting the target sub-sectors
- iv) Selection of three target sub-sectors
  - evaluating sub-sectors based on the developed methodology
  - selecting three target sub-sectors based on their evaluation
  - analysing the situation and issues relating to the development of the three target sub-sectors
- v) Identifying the stakeholders of the selected sub-sectors
  - identifying institutions assisting growth of the selected target sub-sectors
  - analysing the current status and issues for strengthening contributions from the stakeholders to the development of the selected sub-sectors

##### STAGE 2: Developing the Master Plan <November 2006 - October 2007>

- vi) Finalizing industrial development framework and scenario
- vii) Developing an industrial development master plan
- viii) Developing development plans of the targeting sub-sectors
- ix) Developing action plans
- x) Publication and dissemination of the industrial development master plan

## **PART I : Recent Trend of Kenyan Economy/Industry and National/Industrial Development Policy**

### **Chapter 1 Kenyan Economy and Trend of Industry**

#### **1.1 Industrialization in Kenya**

Basic infrastructures, which are indispensable for economic activity, have not yet been sufficiently prepared. And an essential lack of cooperation is recognized in every scene e.g. between supplier and assembler, manufacture and sale, university and enterprise, and private sector and public sector.

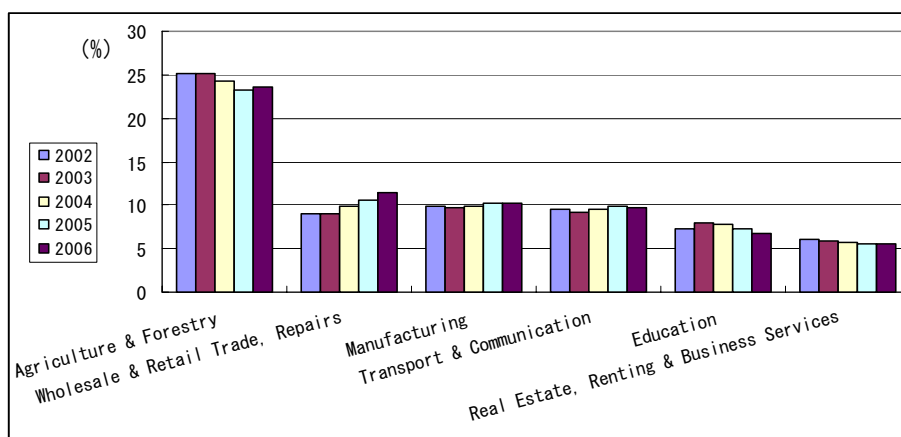
The structural Adjustment Programmes in the 1980's-1990's led Kenyan economy into international economy causing serious shake-up for manufacturing sector. In 1997, Sessional Paper No.2 emphasized that it was necessary to improve investment condition through strengthening fundamentals of business but the condition was not satisfied. Kenyan people are making effort to promote industrial development in many sub-sectors though the current situation does not allow them easily to find appropriate targets and ways to them. Therefore, they need concrete and comprehensive picture that leads them to a goal for industrialization.

#### **1.2 Trend of Sectors**

The Kenyan Economy attained growth of 6.1 % in 2006 compared to that of 5.7 % in 2005 (Economic Survey 2007). In 2006, the inflation rate increased from 10.3 % in 2005 to 14.5 % reflecting drought and soaring of oil prices. The industrial sector is anticipated to be obliged much more to tighten its management.

Figure 1-1 shows the trend that the biggest sector is agriculture, which occupies a quarter of GDP; yet, the second group including manufacturing, wholesale and retail trade, repairs, and transport and communication is not so small in comparison with agriculture. Each sector in the second group covers approximately ten percent, which is about a half of agriculture. The growth of the manufacturing has been stable.





Source: Economic Survey 2007, KNBS

Figure 1-1 Contribution to GDP by Major Sector

### 1.3 Outline of Manufacturing Sector

#### 1.3.1 Outline of the Sub-sectors in Manufacturing Sector

In the manufacturing sector the main contributors for growth in the domestic economy by quantum index in 2005 were beverages and tobacco, which grew by 18 %, paper and paper products, which grew by 21 %, and plastic products, which grew by 26 %. The markets of COMESA, EAC, Southern Sudan and Rwanda played an important role in boosting the economic growth performance.

#### 1.3.2 Manufacturing Organisation

Kenya Association of Manufacturers (KAM) is the biggest manufacturing organisation in Kenya, which was established as a corporate body in 1959. The association provides an essential link for cooperation, dialogue and understanding with the Government by promoting investment, upholding standards and representing members' views and concerns to the authorities in the manufacturing industry. KAM is the biggest corporate association in the manufacturing industry but the number of formal members is only 525, which covers 23 % of the formal enterprises, recorded by CBS.

### 1.4 Domestic Market

The domestic market in Kenya is imbalanced between a small portion of the formal market and the rest of the informal market. The informal market is supplied mainly by the informal manufacturing sector, whose workforce was estimated to be 5.6 times that of the formal manufacturing sector in 2005.

### 1.5 International Market

As for international trade, total export earnings in 2005 increased by 13.7 % while in 2004 by 17.3 %. The total import bills increased by 29.3 % in 2004 and by 18.2 % in 2005. This has caused trade deficit of Kshs. 149,764 million in 2004 and Kshs. 186,542 million in 2005 respectively. Almost 50 % of the total export earnings were from horticulture and tea and

coffee, followed by iron and steel, essential oils, tobacco and plastic articles.

The export of Kenyan “goods and services” totalled 4,207 million US\$ and 26.2 % of GDP in 2004. The amounts have been historically on an upward trend but shares have been between 25 % and 30 % of the Kenyan GDP from the mid 1990s. The annual growth of exports of “goods and services” has shown positive figures from 1999.

The share of manufacturing imports has been at the top with more than sixty percent for more than ten years. The historical Trends of Trade in Kenya show that i) there is relatively no change in trade commodities for both exports and imports. In addition, it can be said that ii) there are also relatively few differences between trade partners in export as well as in imports.

## **1.6 Labour Market**

The Central Bureau of Statistics reports that formal employment by the manufacturing sector is 247,500 persons and 3 %, 3rd ranking following to community, social & personal services and agriculture, of total employment in 2005.

Micro and small enterprises (MSEs) as defined in this survey include businesses employing up to 50 workers. About 30 % of MSE’s labours work in urban area and 70 % work in rural area. Their main sector is trade, and services and manufacturing follow the trade sector.

Human resources required for industrial development comprises various kinds of job groups. In an enterprise, activities such as labour, production management, marketing, general management, and research and development should be carried out by workers with various skills.

In the current industrial setting, a majority of the population is working in the informal sector and the kind of skills and knowledge acquired may be limited in terms of the level and variety of skills.

According to the population census of 1999, the population of ages 15 to 64 was about 15 million, about 52 % of the total population. In the same data, the ratio of the population under 15 was 44 %. The population is growing with a growth rate of between 2.1 to 2.4 % per annum. As a result, the labour force is expected to expand from 9.5 million in 2001 to 14 million in 2010, which means an additional 4.5million jobs have to be created by 2010.

## **Chapter 2 National/Industrial Development Policy and Framework of National Economic Development and Industrial Development**

### **2.1 National Development Policy and Industrial Development Policy**

#### **2.1.1 Policy Framework**

Kenya Vision 2030: Long-term national development is to be envisioned by the “Kenya Vision 2030” which envisages “A globally competitive and prosperous nation with a high quality of life by 2030.” It comprises three pillars, namely, Economic pillar which targets sustainable economic growth to be 10 % per annum over the next 25 years, Social pillar “a just and cohesive society enjoying equitable social development in a clean and secure environment,” and Political pillar for “issue-based, people-centred, result-oriented, accountable democratic political system.”

Economic Recovery Strategy for Wealth and Employment Creation (ERS): The ERS is the basic policy document that provides medium-term policy direction of national development from 2003 to 2007 and the priority actions. ERS forecasts the average GDP growth rate at 3.3 % per annum with the contribution of average increase in investment at 16.4 % and average export growth at 11.9 % per annum during the period. ERS aims at restoring the economy on a path of high growth as a prerequisite for achieving all other developmental objectives. ERS recognises that development of an industrial master plan is one of the major outputs of the industrial development efforts, which operationalise the Sessional Paper No.2 of 1996 for industrial transformation.

Private Sector Development Strategy (PSDS): PSDS provides the mechanism for the Government to lay out its activities, targeting at growth and competitiveness of the private sector from 2006 to 2010. PSDS is expected to contribute towards achieving the medium-term objectives set by the ERS. The strategic objectives identified by PSDS are:

- i) To create a conducive business environment for Private Sector growth by alleviating major constraints; and
- ii) To enhance the growth and competitiveness of the Private Sector, especially, the Micro, Small and Medium Enterprises (MSMEs).

In order to achieve the above objectives, PSDS identifies the following five key goals:

- Goal 1 Improving Kenya’s Business Environment
- Goal 2 Accelerating Public Sector Institutional Transformation
- Goal 3 Facilitating Growth through Greater Trade Expansion
- Goal 4 Improving Productivity
- Goal 5 Supporting Entrepreneurship and Indigenous Enterprise Development

Sessional Paper No.2 of 1997 “Industrial Transformation to the year 2020”: Currently, the existing industrial policy is the Sessional Paper No. 2 of 1997 “Industrial Transformation

toward Year 2020.” This Sessional Paper was developed with the aim of providing a framework of Government policies for industrial development which was expected to stimulate economic growth and employment through expansion. The policy comprises broad areas of actions comprehensively. The strategies are two-fold: the two-phased scenario of industrial transformation from 1996 to 2006 and from 2007 to 2020 with selection of industries for each phase. The implementation of the policies stipulated in the Sessional Paper has not been observed fully to date. The nature of the policy requires coordination among various ministries and government agencies.

**Table 2-1 Development Target in Sessional Paper No.2 1997**

|                    | Phase 1 (1996 to 2006)   | Phase 2 (2007 to 2020)   |
|--------------------|--|--|
| Development target | Promotion of micro, small and medium scale industries<br>Utilising and adding value to local raw materials<br>Requiring relatively modest capital investment | Promotion of capital intensive manufacturing industries that will require high capital investment, support infrastructure<br>Well developed technologies and human resource skills |
| Type of industry   | agro-processing, building and construction materials, and the tourism industries   | Metallurgical, petrochemical, pharmaceutical, machinery and capital goods and telecommunication and information processing industries  |

Source: Republic of Kenya (1996)

National Export Strategy (NES): Trade promotion is defined in NES: 2003 – 2007, in which sixteen items (ten sectors and six issues) are prioritised. In each item, 1) overview, 2) critical issues, 3) strategic objectives, 4) strategic interventions and 5) strategic plan matrix and level of resource requirements are specified. As a concrete action plan, the government adopted the NES: Implementation Action Plan: 2005 – 2008 at a Cabinet meeting as phase one on May, 2005. MOTI (functioning Permanent Secretary as leader and establishing coordination office), the Ministry of Agriculture (MOA), the Ministry of Livestock and Fisheries Development (MOLF), the Ministry of Finance (MOF), EPC, the Export Processing Zones Authority (EPZA), the Kenya Revenue Authority (KRA) and the Kenya Private Sector Alliance (KEPSA) are involved in the process of formulating policies and institutions by establishing a technical steering committee.

### **2.1.2 Facilitating Good Business Environment for Industrial Development**

It is recognised that private sector development is the crucial factor for Kenya’s economic development under the national development objective. Despite the recognition, the situation of the business environment requires further improvement and, in 2006, Kenya was ranked as 83rd place out of 175 countries in terms of the easiness of doing business by the “Doing Business” survey by the WB.

Investment Climate Action Plan (ICAP) was developed with the recognition of the necessity of fast-track policy measures to improve the investment climate for private sector growth. The programme comprises short- and medium-term activities for private sector development to

achieve tangible results. ICAP focuses on the following nine priority areas.

i) Controlling rampant and escalating insecurity ii) Addressing the poor state of roads iii) Fast-tracking construction approvals iv) removing inefficient, unnecessary, unfriendly and cumbersome licensing v) Improving business registration vi) Improving land administration vii) Improving power hook-ups viii) Updating the Company Law ix) Improving customs and tax administration

Due to the issues involving various stakeholders and the government intuitions, one of the major constraints for swift delivery of the policy measures is to have the continuous and persistent commitment from relevant ministries and the Government institutions. Many issues are actually deeply rooted institutionally and systematically.

The positive improvement is i) the introduction of performance contracts; and ii) continuous monitoring of the progress on the activities under initiative of ICAP and taken over by PSDS. If actions are chosen to be included into the performance contracts of relevant senior management, it is more likely to be pursued.

## **2.2 Necessity to Establish the Master Plan**

### **2.2.1 Industrial Development for Driving Force for Growth and Poverty Alleviation**

Industrial development in the context of the current national development policy stipulated in ERS is the driving force to achieve the overall goal of restoring the national economy on a high growth path with strong economic growth. Industrial development is expected to entail high productivity and employment opportunities. The economic growth is to alleviate poverty eventually.

It should be noted the ERS recognised that three important issues for the industrial development. First, it identifies the role of the Government as a facilitator of the business environment. Second, on the other hand, the collaboration with stakeholders, especially putting the private sector as a heart of the issue and establishing a good working relationship is highlighted as the crucial issue. Third, in order to ensure that this idea is to be realised, the industrial development master plans should be in place. The master plan should be, therefore, a feasible and realistic road map that can be operationalised.

### **2.2.2 Updating the Sessional Paper No.2 of 1997 “Industrial Transformation to the Year 2020”**

Currently available industrial development policy is the Sessional Paper No. 2 “Industrial Transformation to the Year 2020.” This document drew the lessons from the success of Asian countries, and various policy measures were laid out in order to replicate their experiences. However, the current structure of the manufacturing sector in Kenya has some significant characteristics. One of the issues is, for example, the current level of wages do not provide much of incentives for the industries looking for cheap labour. Therefore, it is a mandate of MAPSKID to critically review the theoretical background and direction proposed in the

Sessional Paper No. 2 and to provide the new direction for industrial development based on constraints and possibilities of the Kenyan industry.



## **PART II : Industrial Development (Manufacturing Sector) --- Analysis of Present Situation/Issues, and Future Directions**

### **Chapter 3 Ministry of Trade and Industry (MOTI) - Its Role and Organization**

#### **3.1 Role and Organization of MOTI**

##### **3.1.1 Role of MOTI**

Industrial development formulation and administration is the primary responsibility of the MOTI. Based on the Presidential Circular No. 1/2006, the mandates of MOTI are summarised as follows:

- i) trade development policy,
- ii) industrial development policy,
- iii) international trade development,
- iv) patent policy,
- v) quality control,
- vi) consumer protection, and
- vii) development of micro and small enterprises.

The actual implementation of policies that affect industrial development is undertaken by various institutions. It is important for the MOTI officers to take a proactive role in developing linkages with other ministries and stakeholders at large in order to gain the goodwill and cooperation of other stakeholders.

##### **3.1.2 Organization of MOTI**

The current organisational structure of MOTI is comprised of five departments, two training institutes, and two tribunals. Under MOTI, specialised agencies are established to provide specific services, namely research and development (R&D), human resource development, standard and metrology, intellectual property, export promotion, and investment promotion. While the current organisation structure is flat type, Strategic Plan 2006-2011 proposes integrating major functions into two main Directorates, namely Directorate of Trade and Directorate of Industry. Although this has not yet been implemented, the new organisational structure would make it easier to coordinate and consolidate various activities and to avoid duplicate efforts within MOTI.

###### **(1) General Administration and Planning**

The General and Planning Administration Department is divided into the following:

- i) Administration Division
- ii) Central Planning Unit
- iii) Finance Division

- iv) Accounts Division
- v) Procuring Entity
- vi) Personnel Division

## (2) Department of Internal Trade

Department of Internal Trade is charged with the responsibility of facilitating orderly development and growth of domestic trade through formulation and implementation of appropriate policies and strategies. The roles of the department are as follows: i) Trade policy formulation, implementation, and domestication of regional trade arrangements including trade licensing, ii) Promotion of small enterprises, business counselling, training and consultancy services, management of traders credit scheme and facilitation of micro credit programmes, iii) Trade practices/policies monitoring, research trade policy evaluation, trade information management & dissemination and trade promotion, iv) Trade licensing under the Trade Licensing Act Cap. 497, and import/export licensing under the Cap. 502.

## (3) Department of External Trade

Department of External Trade is in charge of trade issues related with the World Trade Organisation (WTO), United Nations Conference on Trade and Development (UNCTAD), United Nations Development Programme (UNDP), WB, IMF, United Nations Industrial Development Organisation (UNIDO), World Intellectual Property Organisation (WIPO), and FAO. The roles of the department are as follows: i) Formulation, implementation coordination, monitoring and reviewing of external trade policies, ii) Identification and monitoring of new trade and investment policies, iii) Promotion of bilateral, regional and multilateral trade relations consistent with Kenya external trade interests, iv) Initiating and negotiating bilateral/multilateral trade agreements arrangements in order to secure the favourable terms for Kenya external trade, v) Promotion of Kenya products, vi) Attracting foreign investments, vii) Coordination of international trade activities, viii) Liaising with International Trade Organizations (ITOs) on trade matters, the ITOs are: WTO, UNCTAD, and International Trade Centre (ITC), ix) Coordination of regional trade matters: COMESA, ACP, European Union (EU), COTONOU AGREEMENT, EAC, IGAD, etc, through participation in bilateral, regional and multilateral trade negotiations to safeguard Kenyan trade interests, in the face of globalisation, and x) Cooperation and launching aggressive marketing campaigns through Kenyan commercial attaches.

## (4) Department of Weights and Measures

Its departmental mission is to ensure the use of accurate weighing and measuring equipment in trade transactions, encouraging fair trade practices and protecting the consumer in order to enhance social economic development. The Department has grown both in structure and scope to encompass a wider area in the measurement field than

hitherto, such as the field of measurements needed for ensuring public health and human safety as well as introducing other areas of consumer protection and fair trade practices.

(5) Department of Industry

Department of Industry is in charge of development, co-ordination, and implementation of industrial development policies. The estimate of expenditure for 2006/07 is the recurrent cost of Kshs. 41.7 million, a 30 % increase from 2005/06 mainly explained from the increase in personal allowances. The development expenditure for 2006/07 is estimated at Kshs. 206 million, 19 % decrease from the previous year. The Department of Industry has 49 professional staff including 20 field officers, designated as District Industrial Development Officers (DIDOs). The current level of staffing is considered to be half of the requirement due to the public service retrenchment.

(6) Business Premises Rent Tribunal

The departmental mission is to offer legal protection to tenants carrying out businesses in rental premises with leases that are inadequate and ensure landlords obtain fair returns from their investments. The Tribunal was established in 1965 by an Act of Parliament namely the Land Lord and Tenant (Shops, hotels and catering establishments) Act, Cap. 301 in 1965.

(7) Industrial Property Tribunal

The mandate of the Tribunal under the Act is to adjudicate and determine disputes that arise from rights that are granted under the Act namely patents, industrial designs and utility models.

(8) Kenya Institute of Business Training (KIBT)

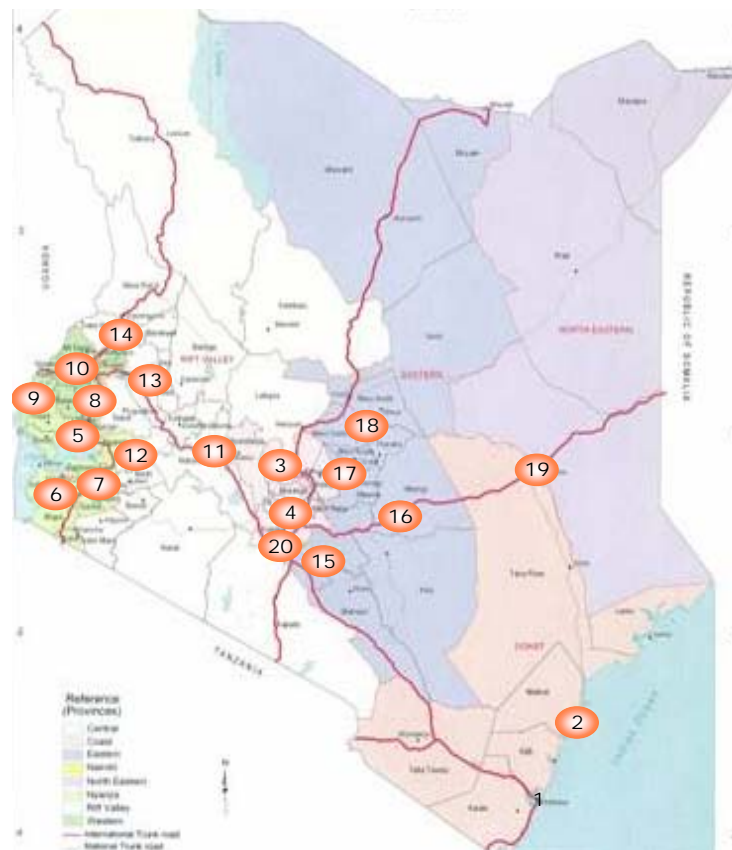
The Institute is operated under MOTI holding business/management development courses/seminars such as “The Effective Supervisor”, “Purchasing and Supply Management”, “Accounting & Finance for the Non-Financial Manager”, and diploma full/part-time courses such as “Higher diploma in entrepreneurship development” and “Diploma in marketing”.

(9) Kenya Industrial Training Institute (KITI)

The Department’s mission is to provide practical oriented business and management development training for the growth of commercial and industrial sectors of the economy. Here are offered courses mainly at craft and diploma levels and are offered academic courses such as mechanical engineering department.

(10) Regional Offices

The regional outreach of MOTI is deployed nation-wide; however, the number of field offices has been reduced over time due to the civil service retrenchment. Consequently, the country is divided into 20 zones, each staffed with a DIDO, District Trade Officer (DTO), and a Weights and Measures Officer. This staffing level necessitates that each DIDO has to care for 3.5 districts on average.



Legend: Zone 1 Mombasa, Zone 2 Malindi, Zone 3 Nyeri, Zone 4 Thika, Zone 5 Kisumu, Zone 6 Homa Bay, Zone 7 Kisii, Zone 8 Kakamega, Zone 9 Busia, Zone 10 Bungoma, Zone 11 Nakuru, Zone 12 Kericho, Zone 13 Eldoret, Zone 14 Kitale, Zone 15 Machakos, Zone 16 Mwingi, Zone 17 Embu, Zone 18 Meru, Zone 19 Garissa, Zone 20 Nairobi  
Source: The JICA Study Team

Figure 3-1 Distribution of Field Offices

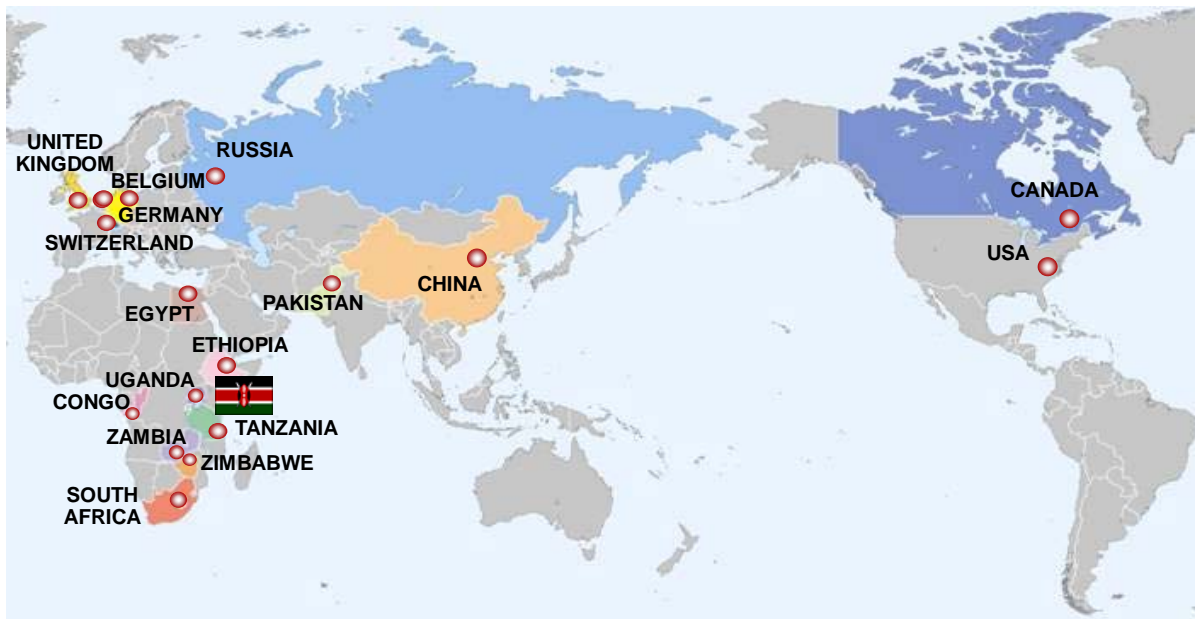
The roles of the DIDO are multiple, namely

- i) industrial information collection (both quantitative and qualitative),
- ii) industrial information delivery service,
- iii) consultation service for the manufacturers, and
- iv) investment promotion.

DIDOs are trying to create networks with other officers in the region. This networking is to an extent working positively, but the collaboration is not strong enough to create a competitive edge of the industrial development.

#### (11) Foreign Missions

Foreign missions are catered for the commercial attaches deployed to embassies in 17 countries. The commercial attaches are sent from the Department of External Trade and are in charge of promoting trade and investment. In those embassies without commercial attaches, trade and investment activities are undertaken by the secretaries dispatched from other ministries with very limited budgets.



Source: The JICA Study Team

Figure 3-2 Deployment of the Commercial Attaches

The MOTI Strategic paper recognises that the current deployment is not directly linked to the trade and investment promotion strategies and that there is a need to reinforce the capacity of the foreign missions.

### 3.1.3 Financial Issues

The Government budgeting and expenditure has been operational under the Medium Term Expenditure Framework (MTEF) since 1999. This system ensures effective fiscal policy management by linking financial resources with the national development objectives. Under the MTEF system, the Sector Working Groups (SWG) comprising the relevant ministries are to discuss sector priorities and to agree on the budget distribution among policies. Formation of the Kenya Private Sector Alliance (KEPSA) in 2003 and its participation in the SWGs made some improvement in establishing collaboration with the private sector in formulating government policies with direct links to the budget.

Given the financial constraints of the Kenyan Government, it would be realistic to assume that the governmental funding towards MOTI would not increase significantly in the near future. Yet the funding volume is not necessarily a hindrance to viability of ministerial activities. What is more important than the governmental funding is sharing the visions among the stakeholders and commitment from the ministry to realise the vision. While MOTI recognises well the importance of collaboration with the development partners, it also needs to increase efforts in promoting the Public Private Partnership (PPP) by attracting more involvement from the private sector.

### **3.1.4 Operational Issues**

#### **(1) Poor Networking**

Weak communication with the private sector blurs consciousness towards effectiveness of the policy. Sessional Paper No 2 of 2007 encouraged formation of the Strategic Consultative Group for specific sub-sectors. Consequently, some sectoral consultative groups were formed such as Motor Vehicle Sectoral Consultative Group with the participation of the motor vehicle assemblers, Numerical Machining Complex, Ministry of Finance, Ministry of Public Works, and MOTI. However, lack of the commitment from the public sector caused the loss of enthusiasm of the manufacturers who needed to sacrifice their busy time to attend the meetings.

MOTI occasionally tries to collect information from the manufacturers by undertaking surveys. However, distributing questionnaires is not enough to identify the needs of the private sector. It is necessary to revive the regular meetings with the manufactures in a more effective manner. The meetings will allow for proper identification of key issues and faster response to areas of concern by both parties.

#### **(2) Weakness in Implementation**

It is observed that the execution level of the planned activities is not as expected. The expenditure level of the development budget of MOTI has been significantly low in the last few fiscal years. The percentage of used funds was limited to 22.4 % and 22.3 % of the revised budget 2003/04 and 2004/05, respectively, whereas the recurrent expenditure absorbs approximately 90 % of what was allocated by the revised budget.<sup>1</sup> Delay in the procurement explains one of the bottlenecks.

### **3.1.5 On-going Reforms**

As a part of the public sector reform, MOTI has been implementing some reform measures, namely, introduction of performance contracts, developing the strategic plan, and activities under the SWG for MTEF. Introduction of the performance contracts is expected to improve efficiency of public administration.

## **3.2 Institutional Capacity Development of MOTI**

It is considered extremely important to reinforce MOTI's capacity to lead industrial development. This section discusses the institutional capacity of MOTI, especially the Department of Industry.

### **3.2.1 Clarifying the role of the Department of Industry**

#### **(1) Delivering the service for the target beneficiaries**

Activities of the Department of Industry should be geared towards the benefits of the

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manufacturers. Any policies which affect the performance of the manufacturers, the Department of Industry should represent the interest of the industry and negotiate with other ministries to find the optimal solution. Yet, among the category of beneficiaries, the micro- and small-scale manufacturers have many overlaps with other ministries.

(2) Facilitating the service provision by the private sector

MOTI needs to acknowledge the various services offered by the private sector including those provided by the training institutions and the BDS providers. Duplication of the service provision means not only losing the opportunities to divert the limited resources into other important activities but also invading market opportunities of the private sector.

### 3.2.2 Operational Strategies

(3) Shifting the manpower to the implementation phase

Performance of MOTI needs to be monitored along the process of "planning", "implementation", and "evaluation". Currently, much of MOTI's manpower is allocated to the planning. MOTI needs to avoid repeating the basic studies that have already been conducted and to shift its resource to implementation.

(4) Specialisation

There are a few areas where MOTI can make decisions by itself while many other issues are inter-ministerial. For the MOTI officers to become responsible and reliable in handling matters that are outside the jurisdiction of MOTI, each officer needs to be specialised so that the officer becomes fully knowledgeable and competent enough to negotiate with other ministries.

### 3.2.3 Institutional Setting

(1) Establishment of sub-sectoral and district committees

In the implementation phase, it is highly expected to establish sub-sectoral and district committees comprised of inter-ministerial and private stakeholders. The committees will provide the MOTI with the opportunities to hear the direct voices of the manufacturers as well as responses from the officers in other ministries in charge.

(2) Strengthening capacity of the regional offices

Currently, industrial development is concentrated in the Nairobi Metropolitan Area, and even the coastal area where it is usually considered advantageous for industrial production has not developed much. Vision 2030 notes the importance of the industrial promotion outside Nairobi. Yet, this cannot happen without strengthening capacity of the regional offices.

(3) Capacity of foreign missions

Strengthening capacity of the foreign missions is very important since they are the contact

windows of foreign investors and the source of the technological and market information. This is the area that is needed to be discussed in the SWG of the GESS in the MTEF. Strengthening the capacity of the foreign missions would be beneficial not only for activities of MOTI but also those of the Ministry of Tourism and Wildlife.

## **Chapter 4 Institutional Framework Relating to Public Administration**

### **4.1 Public Institutional Framework**

#### **4.1.1 Economic and Business-related Legal System**

Legal framework is expected to facilitate industrial development and promotion of trade. However, existing legislative instruments have been barriers to the industry and trade, such as excessive licensing requirements, outdated laws, too much government regulation in business activities, and numerous amendments to laws and regulations creating confusions.

Key Acts as the Investment Promotion Act, the Privatisation Act and the Trade Licensing Act among others are expected to be amended or introduced. Policy statements and guidelines are also required on work and residence permits, allocation of undeveloped agricultural land and government land, and so on.

The main and important items relating to industrial development in terms of legal framework are as follows;

- i) Registration and regulation of business
- ii) Investment promotion and facilitation
- iii) Trade licensing
- iv) Public divesture and privatisation
- v) Trading in the capital market
- vi) Taxation of industry and trade
- vii) Export Processing Zones (EPZ)
- viii) Public procurement
- ix) Regulation and protection of intellectual property right (IPR)
- x) Issuance of work permits
- xi) Requirement of an environment impact assessment (EIA)
- xii) Dispute settlement mechanism
- xiii) Regulation of employment
- xiv) Regulation of conditions of employment under the Factories Act
- xv) Regime of land ownership and transfer
- xvi) Control of restrictive trade practices and monopolies

#### **4.1.2 Facilitating Establishment of Regulatory Framework for MSME Development**

MSMEs cut across all sectors of the country's economy and provide one of the most prolific sources of employment, not to mention the breeding ground for large industries, which are critical for industrialization. MSME enterprise operating within the Kenyan legal framework may take following three forms:

- i) Sole proprietorship
- ii) Sharing (Partnership)

iii) Company

(1) Issues relating to the limitation of liabilities

Following issues need to be addressed:

- i) Harmonize and simplify the process of incorporation of companies to remove the monopoly on lawyers to incorporate, hence lowering the overall costs
- ii) Streamline and reduce the reporting requirements especially for small businesses
- iii) Possibly develop a new type of Limited Liability Company with the principal features of an MSME venture. This would cushion the investors from liability where they act in good faith, but also give sufficient legal status to facilitate access to financing and other incentives, and reduced capital requirements

(2) Licensing requirements for MSME ventures

There have been attempts at reducing the number of licences that are required of businesses in Kenya annually. There is however some principal licensing requirements required generally of any trading venture in Kenya. The main licensing systems that have a bearing on the MSME sectors are:

- i) Licensing under the Trade Licensing Act
- ii) Licensing under the Local Government Act

(3) Tax regime of MSME

The tax regime in Kenya is administered by the Kenya Revenue Authority (KRA) established under the Kenya Revenue Authority Act. KRA administers the tax regime set out under the Customs and Excise Act, the Income Tax Act and the Value Added Tax Act, among others. Depending on the nature of their incorporation, MSMEs can be subject to all or some of the taxation requirements set out below.

- i) The Income Tax Act, Cap 470 Laws of Kenya
- ii) Customs and Excise Act, Cap 472 Laws of Kenya
- iii) The Value Added Tax Act, Cap 476 Laws of Kenya

(4) Regulation of the working environment for MSME

Currently, conditions of work are regulated under the Factories Act. It applies the generic term factory to all places of work. Essentially thus, a factory means any premises in which, or within precincts of which, persons are employed in manual labour in any process. This law sets out standards of safety and sanitation that are necessary for the maintenance of a safe working environment. The Minister for Labour has published the Occupational Safety and Health Bill, 2007, which is intended to consolidate and review the law relating to the safety, health and welfare of workers and all persons lawfully present at workplaces. It is notable that the bill attempts to redefine a workplace, as well as impose duties on both employees and employers while engaged at a workplace.

(5) The role of anti-trust law in MSME regulation and protection

The Restrictive Trade Practices, Monopolies and Price Control, Cap 504 Laws of Kenya establishes the office of the Commissioner of Monopolies to deal with issues arising. The Act defines a restrictive trade practice to include practices, which unfairly prevent others in the same industry from practicing their trade on level ground. This law is important since it works to prevent creation of monopolies that would essentially lock out MSMEs from the business market.

(6) Necessity to improve legal framework for MSMEs

The legal framework for MSME may not be functionally prudent since application of a single legislation cannot traverse all these aspects. It is imperative that aspects of the different laws relating to MSMEs should be reviewed to harmonize and make them conducive for business. Such a drive would for instance involve streamlining company law to factor in the interests of MSME, taxation, licensing and other requirements to factor in MSME requirements. However, the most critical would be a framework legislation governing incorporation of a business as an MSME and setting out incentives and unique regulatory features.

It is imperative to point out that whereas MSMEs would ordinarily require special/unique legal framework to foster their development, such a framework will never operate in isolation. It will always operate within the general framework of industrial development. There is thus the need to consider the legal provisions addressing different components of industrial development generally.

**4.1.3 Protecting IPR**

(1) Intellectual property in Kenya

Intellectual property is generally classified into two categories; industrial property and copyrights. Industrial property consists of four classes: i) patents; ii) utility models; iii) industrial designs; iv) trademarks. A summary of them is shown in the next table. Kenya Industrial Property Institute (KIPI) is responsible for administering and promoting industrial property rights.

Table 4-1 IPRs

| Objects            | Description  | Duration of protection                       |
|--------------------|--|--|
| Patents            | A patent is a certificate or a document granted to the inventor to give him temporary exclusive rights over his invention, which covers a process, device, substance or method, including originality. The right offers a monopoly which prevents unauthorised selling, marketing, or use of intellectual property assets. | 20 years from application, not renewable.    |
| Utility models     | Utility model certificates cover innovations that allow better or different functioning, use or manufacture of appliances, instruments on the existing inventions.   | 10 years from registration, not renewable.   |
| Industrial designs | An industrial design relates to the outward appearance of a product, which makes a product attractive or appealing to customers.   | 5 years from application, extendable every 5 |

|            |  |  |
|------------|--|--|
|            |  | years, up to two times.  |
| Trademarks | A trademark is a distinctive sign which distinguishes the goods or services produced or provided by one enterprise from those of another. A mark includes any distinctive word, letter, slogan, device, brand, heading, label, ticket, name, signature or numeral or any combination whether in two dimensional or three dimensional form. | 10 years from application, extendable for another 10 years.                            |
| Copyrights | Literary, musical, artistic or audiovisual works; sound recordings and broadcasts; programmes carrying signals; and computer software are protected in Kenya   | 50 years. The date from which protection begins varies depending on the kinds of works |

Source: The JICA Study Team based on KIPI documents

## (2) Number of registration of industrial property

The number of registration of industrial property rights in Kenya is moderate, especially for patents and industrial designs. It seems that one of the reasons for such a small number of applications for patents would be the costly fee structure for registration and other related fees. Looking at nature of applicants of patents, around 95 % of the applications are from individuals or private companies, while the number of applications from universities and national R&D institutions is quite limited. As for the fields of patents granted, there is a tendency that applications regarding agriculture-related and pharmaceutical-related inventions are main areas in recent years although exact figures of classification are not available.

## (3) International membership

Apart from a membership to World Trade Organisation (WTO), which Kenya joined in 1988, the country is a signatory to various international treaties on intellectual property, as listed below.

- i) WIPO Convention: October 1971
- ii) Paris Convention (Industrial Property): June 1883
- iii) Bern Convention (Literary and Artistic Works): June 1993
- iv) Patent Cooperation Treaty (PCT): June 1994
- v) Trade Related Intellectual Property Rights (TRIPs) Agreement: January 1995
- vi) Madrid Agreement and Madrid Protocol Agreement (International Registration of Marks): June 1998
- vii) Geneva Convention (Unauthorized Duplication of Phonograms): April 1976
- viii) Brussels Convention (Distribution of Programme Carrying Signals transmitted by Satellite): August 1979
- ix) Nairobi Treaty (Olympic Symbol): September 1982
- x) WIPO Copyright Treaty (WCT): December 1996
- xi) African Regional Intellectual Property Organization (ARIPO): February 1978

- xii) Universal Copyright Convention (UCC): June 1966
- xiii) Union for Protection of Plant Varieties (UPOV): May 1999

#### (4) Legislation

A number of laws and regulations expound on issues concerning IPRs in Kenya, of which prime bills are as follows:

- i) The Industry Property Act, 2001
- ii) The Trade Mark Act, 2002
- iii) The Copyright Act, 2001

#### (5) Procedure of registration

All industry property rights, i.e. patents, utility models, trademarks and industrial designs are registered by KIPi. The application for patents must include the inventor's claims (the object to be patented), an abstract, including technical information and the title of the object to be patented. After KIPi officials formally examine the application, and if they accept it, a patent will be issued, which is published in the local gazette. As for copyrights it does not need to be registered. Issues related to copyright are handled by the Kenyan Copyright Board, which was established in 2003.

#### (6) Counterfeit goods

Kenya is one of the countries where counterfeit products are widely found in the market. Counterfeit goods, including pirated materials, both imported and locally produced, are readily available in all major towns. It is estimated that counterfeit products cost the Kenyan economy Kshs. 20 to 30 billion and employment opportunities every year. Goods that are commonly counterfeited are: pharmaceuticals; clothing; electronics; stationery; vehicle parts; chemicals; DVDs; CDs; and pre-recorded audiocassette tapes.

It seems that anti counterfeit measures in Kenya are not effective enough by international standards. For one, the government, including its agencies concerned, cannot afford to have human resources who are fully equipped with knowledge of the matter. International Intellectual Property Alliance (IIPA), an international business advocacy organisation based in USA, specially mentions Kenya's infringement of IPRs as remarkable<sup>2</sup>.

#### (7) Future Direction

Although KIPi has a computerised database of industrial property, it is only for internal use and closed to the general public and applicants for registration. Open and free access to the database, including its search system of registered rights, and the facilitation of electronic application of industrial properties, would encourage application of patents, utility models, trademarks and industrial designs by individuals, private companies, universities and other

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<sup>2</sup> According to a report of 2006, Kenya is specially mentioned because of "rampant piracy for all sectors, and a Kenyan Government system that is unwilling to address the problem."

research and development institutions.

It is observed that laws and regulations on intellectual property rights in Kenya are generally well prepared and comply with TRIPs Agreement, whereas enforcement of anti-counterfeit measures is still weak. With new Counterfeit Goods Bill coming into effect, in the near future, the situation would be improved. However, it is true that the organizations concerned, such as Customs and Police, do not have sufficient human resources to deal with the matter. It is necessary to train staff specialized in the issues in the field of intellectual property rights, in both juridical knowledge and practical measures.

Public awareness of protection of intellectual property rights is also quite important to prevent and decrease infringement of the rights. It is desired that the government should promote a nation wide campaign to raise public awareness.

## **4.2 Infrastructure Relating to Industry**

### **4.2.1 Financing in Infrastructure Development**

Infrastructure development requires a lot of funds. While many development partners provide funds, sometimes there is a lack of coordination among relevant parties though industry related infrastructure projects are inter-related. Coordination and collaboration among relevant parties are needed for effective financing and allocating funds as well as for effective implementation of projects.

### **4.2.2 Providing Stable and Cost Efficient Energy**

#### **(1) Electricity prices**

The electricity prices are designed to recover the cost of power supply. The main cost components include cost of power purchases from KenGen and Independent Power Producers (IPPs), transmission and distribution networks costs, user service including billing costs, debt service, some contribution to system capacity development costs and a reasonable return to the shareholders. In addition various taxes and levies are paid as part of electricity bill. Although the price paid in Kenya is comparable to that paid by users within the East African countries it is relatively higher than many of COMESA countries and South Africa. The higher price can be attributed to many factors including higher generation cost on account of required investments for expansion of facility capacity, and debt service obligations as well as high IPP availability costs; high operational costs and system losses, among other factors.

#### **(2) Electricity demand**

The electricity sales, and hence power demand, continued to register positive growth over the last five years. The projected electricity demand is estimated using econometric models that correlate electricity consumption for a category such as large commercial/industrial to sectoral GDP (non-agricultural) and applicable tariffs. The demand forecast for 2030 shows it will be 5 ~7 times (low to high estimate) larger than that of present one.



### (3) Challenges

The challenge facing the power sector is improvement of reliability and quality of electricity supplies and to its delivery cost to the customers. The latter is of particular concern to the industrial and commercial sector as electricity is a critical input in the manufacture of goods and delivery of services.

### (4) Measures to address the challenges in the power sector

In order to improve the reliability and quality, the power sector institutions and the government are undertaking rehabilitation/upgrade of existing generation, distribution and system operation facilities; For one thing, implementation of predetermined new projects in the medium term to meet the load growth; for another, annual updating of both power master plan (LCPDP: Least Cost Power Development Plan) based on diversified energy sources (hydro, non-hydro, renewable energy) and ranked on least cost selection criteria; and undertaking project preparation activities such as geothermal and coal exploration and feasibility studies for high priority projects in the Master Plan.

### (5) Other renewable energy sources

Kenya has a number of sugar milling factories in West Kenya and coast regions. These have potential for cogeneration power plants utilizing waste heat generated as a by product of the process. Mumias currently export into the grid a non-firm 2MW under a contract with KPLC and further plans to install other cogeneration facilities. Currently KenGen operates 2 wind power plants connected to the grid, installed in 1995 as prototype with a total capacity of 350KW at Ngong. At the same time KPLC, operates on behalf of MOE, a hybrid diesel/wind power plant at Marsabit, Other renewable with power production potential include solar, bio-fuel and mini hydro.

## 4.2.3 Providing Stable Water Supply

In Kenya, availability of clean water in the required quantities as well as adequate sanitation facilities remains a major constraint to industrial development and economic growth. The access to safe water is estimated at 60 % in urban and 40 % in rural areas while sewerage systems cover only 14 % of the population. The key problems regarding water supply and sanitation include; i) Inadequate supply due to old infrastructure facilities, ii) Inadequate management and maintenance of existing facilities results in loss through unaccounted for water estimated at 60 %, iii) Insufficient revenues from low tariffs lead to unsustainable supply, iv) Inadequate investment funds constrain expansion of supply capacity, v) Presence of informal service providers operating outside the regulatory regime results in further losses.

National Water Services Strategy (NWSS) and National Water Resource Management Strategy (NWRMS) 2006 provide the framework for the implementing sector policies. The various institutions and service providers will be required to elaborate three (3) year action plans that will be updated annually. The action plans outline the business and investment priorities that will be agreed upon during the annual SWAP conference.

#### **4.2.4 Providing Efficient Surface Transportation System**

##### **(1) Roads**

The national road transport in Kenya accounts for 90 % of the land freight and passenger traffic in the country. In 2005 the Road Condition Survey was undertaken, and it revealed that only 18 % of the classified road network, covering 63,572Km of total road network of approx. 194,000Km, is in good condition and that 33 % is in poor or failed condition.

Reflecting the heaviest concentration of transport facilities along the so called “Northern Transport Corridor” from the Mombasa port to Western region and the border to Uganda through Nairobi, the WB with various development partners started the “Northern Corridor Transport Improvement Project”, which includes the Rehabilitation of the Northern Road Corridor and Road Safety Improvement.

##### **(2) Railway**

The railway handles about 20 % of the inland freight of imports and exports that pass through the port of Mombasa. It is an important link between Kenya and land locked countries of Uganda, Rwanda, Burundi, DR Congo and Southern Sudan. Its key advantage over road transport is the ability to handle bulk freight over long distances. However, the system consists of a narrow gauge configuration and old locomotives which limits the speed and travel time that it can achieve.

##### **(3) Port**

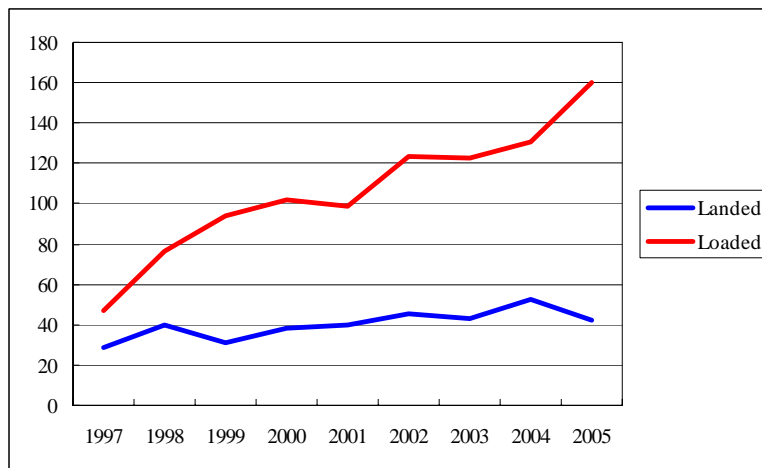
The port of Mombasa is the main international seaport which services Kenya, Uganda, Rwanda, Burundi, Southern Sudan and DR Congo. It handled approx. 11 million tons of import / export freight per year by 2003, with 25 % of that volume being transit traffic. In 2005 the volume handled was 13.3 million tons, 3.1 % increase of that of 2004. The Master Plan Study of the Port of Mombasa projected the growth of its facilities to the year 2028. Among the components under the Master Plan the expansion of container terminals is expected to be financed by the Government of Japan through Japan Bank for International Cooperation (JBIC).

##### **(4) Airport**

The Nairobi (Jomo Kenyatta) International Airport (JKIA) is the largest and busiest airport in East and Central Africa. Its network of passenger and air cargo services goes beyond the African Continent. In 2005, commercial cargo loading at JKIA amounted to 160.4 million Kg, and the trend for the last several years has been increasing. As the largest and most functionally advanced facility in the region, it will surely remain the leading airport for years to come.

KAA commissioned a feasibility study of JKIA which was completed in February 2005. They aim at expanding capacity and modernizing the terminal facilities to meet demand to the year 2024 presented in the study. KAA has embarked on the implementation of the modernisation

programme that will take three years (2005-08) to full completion. At the completion of the modernisation programme the facility will be able to handle up to 9.0 million passengers per year and a much larger volume of cargo freight.



(Thousand Kg)

Source: Central Bureau of Statistics, Various Year, Economic Survey

Figure 4-1 Commercial Cargo Traffic at the Jomo Kenyatta International Airport

### 4.3 Statistical Data on Trade and Industry

#### 4.3.1 Available Industrial Information

The most serious problem with the industrial information is that there is no single set of data covering the whole industry. Based on the Industrial Registration Act of 1988, the Department of Industry had been responsible for data collection from all operational manufacturers. However, only limited data set from the questionnaire was keyed into the personal database, and the comprehensive analysis has not been conducted.

Even the two sets of national statistics, that is, the Economic Survey and Statistical Abstract have a fundamental problem. The base data for industrial statistics reported in these two documents is the Census of Industrial Production, last conducted in 1977. The master file is from the labour database updated annually by the Labour Division of KNBS. Monthly Survey of Industrial Production is conducted on 20 % of the manufacturers drawn from the large-scale enterprises, which were estimated to represent 80 % of the total value addition at the time of sampling. Although the master file on population is updated annually, the samples have been fixed since 2002. Therefore, contribution to the industry by the new comers and potential dynamism created by the MSMEs are not captured in the statistics. Moreover, the Monthly Survey of Industrial Production only includes questions on the values and quantities of the output. Intermediate consumption is calculated on estimate basis, using various conversions and weights depending on the sub-sectors that are derived from the results of other researches, which are not explained in a published document. This makes cross-sub-sectoral analysis on value addition unreliable.

Various organisations try to collect industrial information with their own efforts to compensate the incomplete picture of industrial statistics; however, they do this without harmonisation. Consequently, each set of data becomes partial and not suitable for cross reference.

Information on each manufacturer can be a powerful marketing tool. Although KAM has a comprehensive directory of its members, it is estimated that less than quarter of operational manufacturers have joined KAM. The directory on the MOTI Web is not user friendly: it is not classified by the sub-sector; the product name cannot be identified without checking International Standard of Industrial Code (ISIC); and there is no link to the website of the individual company. The most frequently used tool for identifying the non-KAM manufacturers is through the telephone directory, *Yellow Page*. The lack of information on the manufacturers is one of the causes for weak industrial linkages within Kenya. Improved directory on the Web is recommended to be developed.

#### **4.3.2 Improving Availability of the Industrial Information**

There are two sets of major initiatives undertaken for improving availability of industrial information. The first initiative is the Statistical Capacity Building Project (STATCAP), supported by the World Bank (WB). The STATCAP project includes organisational restructuring of KNBS, human resource development, development of statistical infrastructure, data development, and provision of physical infrastructure and equipment.

Another initiative is through the e-Government under the Office of the President. The e-Government Strategy formulated in 2004 pushes forward a plan to build Trade, Industry, and Tourism Information Systems, which are to generate and share information for strategic planning.

##### **(1) Industrial Statistics**

With reference to the International Recommendations for Industrial Statistics by UN in 1983, MOTI and KNBS are expected to develop the plan for improving industrial statistics. It is also necessary for MOTI and KNBS to produce guidelines for collection of the industrial statistics in order to harmonise and share the data with other organisations undertaking industrial statistics on their own.

##### **(2) Report**

It should be the responsibility of MOTI to analyse the industrial status of the Kenyan industry and produce a report annually; yet, it may be realistic that the industrial report be made in collaboration between KAM and MOTI. Moreover, the industrial report is expected to be uploaded on the Web since disclosure of the industrial information would increase transparency of the Kenyan industry and attract potential investors.

##### **(3) Disclosure of Industrial Information**

There are many types of industrial information, which the Government has to disseminate to the public for industrial development, such as Acts, Regulations, Standards, and Patents. In

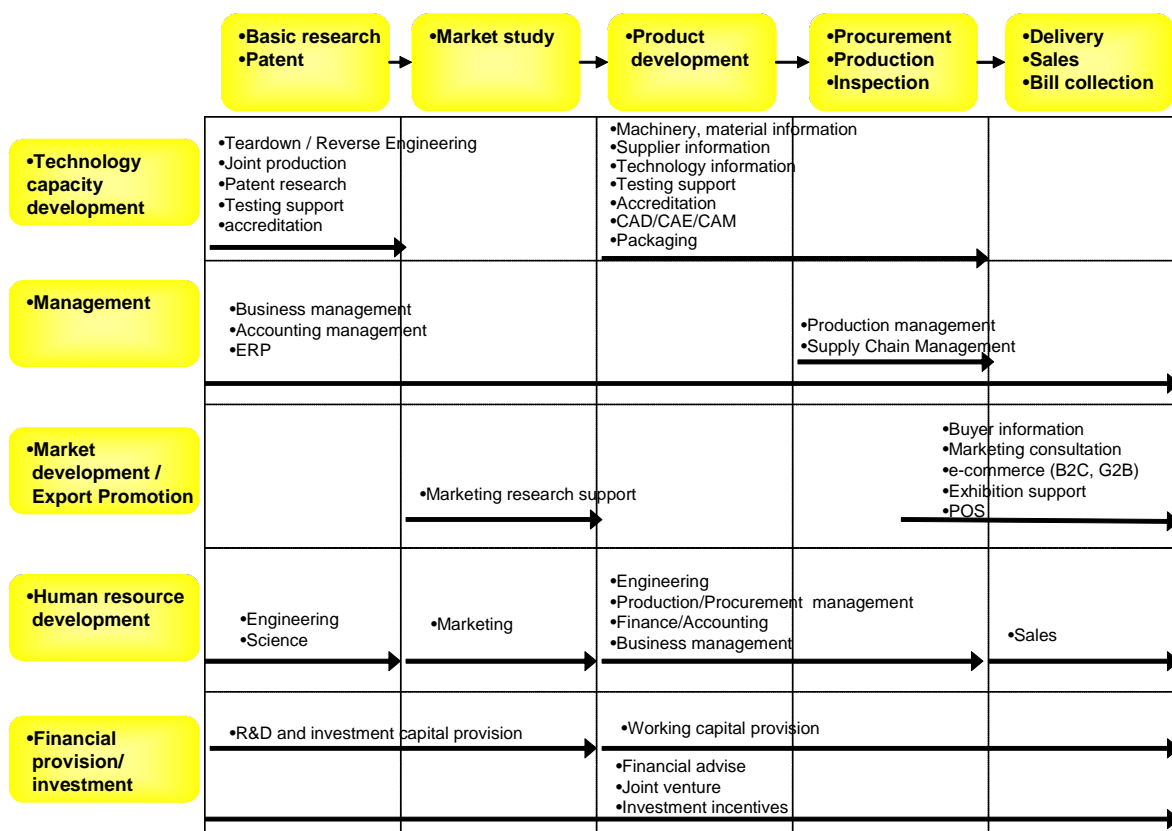
line with the e-Government Strategy, the cost of obtaining industrial information from the public has to be reduced while uploading information to the Web is to be encouraged.

## Chapter 5 Contents of Industrial Development Support

### 5.1 Framework of the Support System

#### 5.1.1 Identifying the framework

The government should be geared towards policies which promote internal innovations by the manufacturers so that they can attain improvement in quality and productivity for their sustainable growth and survive in the global competition. Various supporting services are necessary alongside the production cycle of the manufacturers.



Source: The JICA Study Team

Figure 5-1 Supporting Platform alongside the Production Cycle

#### 5.1.2 Supporting Services under MOTI at Present

There are many initiatives and services offered by business development service (BDS) providers, the financial sector, universities, R&D institutes, associations, and parastatals. MOTI oversees the operations of thirteen parastatals.

#### 5.1.3 Creation of the Kenya Industrial Development Platform (KIDEP)

There are many initiatives and services offered by BDS providers, the financial sector, universities, R & D institutes, and associations. Yet, Kenyan manufacturers do not have one

particular place where they can consult on various operational problems since each agency operates separately based on its own mandate. The current isolated status makes it difficult for the manufacturers to know where to go to solve their problems.

There are already various "one-stop-shop (OSS)" initiatives on going for respective target groups such as KenInvest for investors, EPC for exports, and EPZA for EPZ enterprises. Donor agencies also support creating OSS; i.e. the Small and Medium Enterprise (SME) Solutions Centre<sup>3</sup> (SSC) in Nairobi by International Finance Corporation (IFC) and the District Information Centres and the Business Solution Centres<sup>4</sup> by UNDP. In spite of all these initiatives, there is no general consultation point, open to any manufacturer during office hours in a location easily accessible for MSMEs in Nairobi.

Recognition of the issues mentioned above calls for creation of a platform for comprehensive one-stop service centre, which would create effective networks with various supporting institutions and become the practical contact window for the manufacturers. MAPSKID names this platform "the Kenya Industrial Development Platform" (KIDEP), where all the services geared towards strengthening internal innovation of the industry. This is the concept of providing the services on one platform that is coordinated and streamlined while each service is expected to be upgraded to meet the needs of the manufacturers.

In order to create KIDEP, MOTI needs to appoint or set up one agency or section that integrates all service information into one platform, which is connected to the ICT network so that information can be shared among stakeholders and beneficiaries regardless of their locations. KIDEP is expected to function and be open to all traders and manufacturers regardless of their sizes and accept visits during office hours without prior appointments.

## **5.2 Technological Development**

### **5.2.1 Current status of technological capacity**

Technological capacity is a reflection of the industrialisation level in Kenya. Its growth is the source of creating industrial competitiveness to survive in the global markets. Industrial technological capacity of the nation can be analysed by both internal and external factors of manufactures; the former comprises engineering and management technologies, and the latter comprises effectiveness of the supporting institutions and policy measures.

#### **(1) Internal technological capacity**

Internal technology is comprised of i) equipment capacity, ii) element technologies, iii) procurement availability, and iv) management technology.

Equipment technology is one of the weakest characteristics of the Kenyan industry. Equipment

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<sup>3</sup> The supporting areas of SSC are i) business enabling environment, ii) access to information, iii) access to finance, and iv) capacity building.

<sup>4</sup> under the Youth Employment Scheme - Micro and Small Enterprise Programme

technology can be assessed by the machine utilisation rate and capital productivity. Since most manufacturers are not adopting production management, exact figures are unknown; however, Kenya is known for low rate of machine utilisation and it has been pointed out.<sup>5</sup> The high idle rate is explained by four reasons. Firstly, weak industrial linkage tempts the manufacturers to produce more parts internally instead of outsourcing. This makes the factories to have various machineries. Secondly, weak industrial linkages also cause delay in procurement of necessary inputs and leave machinery idle until the inputs are delivered. Thirdly, the small market size tends to make the manufacturers opt for the horizontal growth rather than specialisation. The manufacturers acquire machinery more and more when they find market opportunities, but deterioration of the macro environment between the late 1990's and mid 2000's did not provide enough volume of jobs to make machinery fully operational. Fourthly, lack of maintenance capacity and replacement parts have left broken machinery unrepaired.

On the other hand, Kenya has some capacities in supplying domestic machinery as long as required technology is basics, particularly in agro-machinery sub-sector (See Chapter 10.2). According to the survey on the KAM members, majority of the machinery is imported from Germany, India, and UK while Kenyan machinery occupies the share of 7 %. While a few leading manufactures are equipped with the new models, the rest are using old machinery, which were mostly imported in the '80s and '90s. The weakest nature of equipment capacity is lack of design capacity, placing limitations not only on development but also on modification of machinery. In terms of maintenance capacity, Kenya is capable of fixing machinery as long as the required technology is basic. Some middle and large-scale factories have maintenance sections to keep the machinery running.

Element technologies are defined as technologies that are necessary to design and process parts, modules, assemblies, or whole products. Competitive industrial products are made out of interdisciplinary technological elements with each element having some innovative invention. This is why networking among the enterprises such as joint ventures, subcontracting, and the public-private-academia partnership is getting more and more important while each company pursues competency in specialised technological elements. Although Kenyan manufacturers show some level of competency in processing techniques, they are weak in product development and designing

Procurement availability is a level of domestic sourcing of materials and parts. This is another very weak area of the Kenya industry. Usage of imported materials and parts increases the cost of the production and makes the Kenyan products less competitive. Local procurement is also vital in increasing technological capacity because proximity of the suppliers would enable close negotiations and adjustment in ordering and developing products.

Management technology is becoming increasingly important in competitiveness creation of manufacturers. Kenyan manufactures started to recognise importance of management

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<sup>5</sup> For example, see MOTI (2007) Draft National Industrial Policy as of 26<sup>th</sup> October 2007, p. 9



technology in the aspect of cost cutting, whose practice was introduced through consultations on Kaizen, energy efficiency, and cleaner production activities. Yet, a few manufacturers have internalised management methodologies including those basics ones like 5S and visual controls. The level of management can be evaluated based on quality, cost, and cycle time (QCT) standards. In Kenya, concept of QCT is lacking although this is the key to the productivity improvement for the manufacturing sector. Improvement in capacity in management technology is the area where awareness of the whole industry and supporting institutions has to be quickly raised.

## (2) External technological capacity

External technological capacity is comprised of i) capacity of sub-sectoral organisations, ii) capacity of supporting institutions, and iii) effectiveness of policy measures.

Top industrialised countries have sub-sectoral organisations that undertake activities to upgrade technological capacity of their sub-sectors. Their activities include trainings, seminars, collaborative researches, and collection and dissemination of technological information. Although KAM has sub-sectoral committees, they have not been very active.

R&D activities are carried out in public R&D institutions, international R&D institutions, and universities. All the public research institutions have mandates to disseminate research findings effectively. Under the recent public sector reform, more public research institutions including universities are interested in the technology transfer of their research findings and incubation activities albeit only a few successful cases have been observed so far. Promoting commercialisation of R&D findings is one of the key agendas discussed by the R&D institutions and policy makers.

Policies for technological upgrades are formulated by the Ministry of Science and Technology (MOST) in the areas of science, technology and innovation (STI) and technical, industrial, vocational and entrepreneurship training (TIVET). MOST recognises that the current national activities in science and technological development spread across various actors including those in the government, semi-government, private, non-government, and universities without coordination and that such fragmented and duplicated activities have made very limited accomplishments.

With a back up by the Vision 2030, which considers that enhancing STI is fundamental for economic transformation, MOST is developing an STI policy and the National TIVET Strategy. In formulating STI policy, setting up R & D funds for promoting commercialisation of R & D outcomes have been examined by MOST. In addition, the draft National TIVET Strategy is proposing setting up an inter-ministerial committee called TIVET Authority, in which the Permanent Secretary of MOTI shall be a member, and developing TIVET National Qualification Framework. These policies are expected to improve effectiveness of commercialisation of R & D outcomes and upgradation of industrial human resources.

MOTI, on the other hand, is in charge of standardisation and accreditation that are practiced by

KEBS and Kenya Accreditation Service (KENAS). KEBS was established to promote standardisation in industry and commerce under Chapter 496 of 1974. KEBS covers all standards except those of drug and medicine which are covered by the Pharmaceutical and Poison Board, phytosanitary by the Kenya Plant Health Institute, and pesticides by the Pest Control Board. KEBS undertakes the policy formulation on standard and metrology, provision of information and advisory services, and certification and accreditation. It has regional offices in seven cities, namely Nairobi, Kisumu, Mombasa, Nakuru, Eldoret, Nyeri, and Garissa. Yet, Nairobi office is the only one equipped with a complete laboratory testing facilities while Kisumu and Mombasa have testing capacity only for food and chemicals.

KEBS creates both mandatory and voluntary standards through close consultation with the stakeholders. While the mandatory standards are for consumer protection, the voluntary standards aim to lead competitiveness creation. Standardisation also needs to ensure conformity and harmonisation with the international agreement and obligation as designated by bodies such as WTO process. Therefore, optimisation of the level of both mandatory and voluntary standards is necessary in order to contribute to more comprehensive competitiveness improvement.

The problem of KEBS has been lack of international recognition of its standards. Accordingly, KENAS was established in 2005 so as to be developed into accreditation of conformity assessment and service provision for inspection, testing, and certification. The main aim of KENAS is to become an internationally recognised accreditation body that will offer cost effective accreditation to its customers. KENAS is expected to benefit the exporters, which are currently paying high cost for receiving accreditation from overseas consultants. However, KENAS is still at the infant stage as an institution and is highly dependent on KEBS in terms of financial resource and facilities. Strengthening the public support towards KENAS is required.

### **5.2.2 Future Directions of Development of Technological Capacity**

#### **(1) Assessment of technological capacity levels**

Assessment of internal technological capacities is difficult due to variations in technological level among the manufacturers. Yet, it can be observed that the Kenyan manufactures are generally in the level 2 of 5 levels except the management technology, which is in level 1. Concrete measures are required to be taken in upgrading into the next levels.

#### **(2) Toward action plans**

Firstly, strengthening capacity of KENAS is recommended. KEBS is one of the active supporting institutions, trying to upgrade quality of Kenyan products through standardisation. Yet, lack of acknowledgement of its standards by the global markets has left the exporting companies to have no choice but to receive accreditation from the foreign organisations. Such institutional un-readiness is not only adding cost of production but also making it difficult for the manufactures to receive close consultations on the global standards.

Secondly, strengthening vertical and horizontal linkages needs to be promoted. Increasing global competition calls for interdisciplinary technological elements while each company is specialised in certain technological element. This makes networking among the manufacturers indispensable to compete in the global markets. One practical solution is promoting tear-down practice, which is the initial step in reverse engineering. Tear-down forums, which invites potential suppliers, is a methodology for identifying subcontractors to the original equipment. The tear-down forums is also a good opportunity to create a horizontal network since the forum calls in manufactures operating in the same field. Discussing technological capabilities in the forum often motivates the attendants to venture into higher value-added production through collaboration. Moreover, the forums provides opportunities for the Government, particularly MOTI, KIA, and EPZA officers, to learn about the technological capabilities of the suppliers. Learning about the suppliers' capabilities would help the Government to appeal to foreign assemblers to invest in Kenya because suppliers' availability is one key factor for choosing the production location for the assemblers.

Thirdly, promoting commercialisation of R&D seeds is recommended. With presence of many leading R&D institutions in Kenya including those international ones, Kenya is considered to have many R&D seeds, which can be commercialised, particularly in the area of agro-processing. To promote commercialisations, assistances in both financial and human resources are required. In terms of the human resource, an experienced "converter" is needed. Converter is a type of BDS provider, specialised in business development and mobilises the stakeholders to work in the same project. Then availability of financial resources, through provision of concessional loan, would stimulate activities of the converter and efforts towards commercialisation. It is necessary to involve commercial banks and/or venture capital companies in providing the loan while the Government sets up an advisory committee to offer necessary assistance throughout the commercialisation process.

### **5.3 Management and Market Development**

#### **5.3.1 Issues for Management and Market Development**

##### **(1) Management**

Management techniques mean controlling and organising internal and external resources in a most effective manner. Management technology is considered one integral component of industrial technology. Trainings on business administration is popular in Kenya, and various institutions offer training courses on financial and human resource management. Supply chain management is another subject, which training has become available. In spite of all these progress, the area of production management has not been fully highlighted.

In maximising Quality, Cost, Cycle Time (QCT) standards, production needs to be undertaken based on the market information; i.e. planning of upstream production to be based on the estimated demand of downstream markets. Use of ICT has tremendously improved productivity of the global manufacturers and enabled to integrate upstream and downstream

production. In competing in the global markets, Kenyan manufacturers also have to take advantage of ICT.

## (2) Market Development

One problem of the Kenyan manufactures is a weak linkage with the domestic markets. The formal shops are small in size except Uchumi Supermarkets, Nakumatt Holdings, and a few more big stores. Moreover, payment conditions to the stores are often unfavourable for the MSM manufacturers, who don't have bargaining powers. It is not rare that the term of payment from the stores often exceeds 90 days and that many pay only after sales are made.

Among all the tools ICT can avail to the manufacturing sector, one that needs an urgent support from the Government is Business to Consumer (B2C) e-commerce because it deals with the mass that requires legal protection. B2C e-commerce tremendously reduces distance barrier, and it offers market opportunities to the rural enterprises.

Since the Government is the single largest buyer in Kenya, providing more opportunities to the local manufactures to join in the Government purchasing is critical. The e-Government Strategy formulated in 2004 has set up a target of establishing e-procurement in the Government, i.e., Business to Government (B2G) e-commerce. The e-procurement will simplify and increase transparency of the Government purchases and will widen up the opportunities for the MSMEs to join in the bidding process.

### **5.3.2 Actions for Management and Market Development**

#### (1) Linking BDS providers with manufacturers

There are many initiatives and services offered by business development service (BDS) providers in Kenya, and they have comparative advantages in supporting management and marketing than the government officers. It is recommended that, the proposed One Stop Shop in the Kenya Industrial Development Platform (KIDEP) collects information on BDS providers and introduces the clients to suitable BDS providers who can guide them to solve or improve issues in management, marketing, etc. Since there are only a few BDS providers who can give consultancy services in production management, trainer's training schemes is needed.

#### (2) Improving in production management

Support of existing activities on production management should be strengthened including *Kaizen* by KAM and 5S by the Productivity Centre of Kenya. This should be combined with promotion of use of ICT in management. The task of MOTI is to fasten such moves through enlightening and disseminating ideas to the manufactures in collaboration with KAM and ICT associations. The One Stop Shop proposed to be established over KIDEP is expected to hold a list of production management solutions, BDS providers, and ICT consultants who can customise software upon requests so that the One Stop Shop can properly guide the clients towards improvement.

(3) Legal protection over B2B transaction by MSM manufacturers

The legal system which supports creating forward linkages of MSM manufacturers with particular attention to payment conditions be studied. Proposed legal protection is expected to cover the sales of all the Business to Business (B2B) transactions including the sales to outsourcers and retailers.

(4) Accelerating development of B2C e-commerce

For rapid expansion of market opportunities, development of B2C e-commerce is recommended to be accelerated. The Government needs to set up institutional framework for secure and trustable transactions over the Internet to avoid any cyber crimes, which may easily happen if unprepared. It is expected that the institutional framework is set by the end of 2010.

(5) Accelerating development of B2G e-commerce

E-Government is in the process of developing B2G e-commerce. Like B2C e-commerce, it is expected that necessary institutional framework would be set before B2G e-commerce is implemented by the end of year 2010.

## **5.4 Export Promotion**

### **5.4.1 Kenya's Present Attitude toward Trade-related Agreements**

(1) Regional economic integration

Kenya is a member country of World Trade Organization (WTO) from January 1, 1995. At the same time, Kenya also belongs to the Common Market for East and Southern African States (COMESA) as well as the East African Community (EAC). As the leader of East African countries, Kenya has assumed a leading role at respective framework. Kenya's attitudes toward trade-related agreements are highly and positively evaluated by not only other African countries but also by other developing countries. The first proof of this evaluation is that Kenya accepted the first support of Joint Integrated Technical Assistance Programme to Selected Least Developed and Other African Countries (JITAP) by joint supporting of the WTO, UNCTAD and ITC because establishment of national networks of trainers and experts in WTO-related issues is a feature of JITAP.

(2) Impact of regional economic integration to Kenya

The gradual reduction of internal tariffs in accordance with EAC and COMESA is expected to facilitate intraregional trade. However, in the case of Kenya, its manufacturing industries are most likely to provide FDI to member countries.

### **5.4.2 Measures for Export Promotion**

(1) Improving Packaging

Poor quality of packaging makes products less competitive in the global markets and shortens expiry date. For market expansion abroad, improvement in packaging quality is vital.

Packaging has three functions, namely, i) protecting the contents, ii) improving convenience of handling and transport, and iii) describing the contents and sales promotion. Accordingly, improvement in packaging involves various scientific subjects that cover designs, material, and production techniques. It is desirable that training courses are offered at universities in collaboration with the Packaging Institute and that packaging seminars are regularly held in association with several stakeholders such as MOTI, KAM, KIRDI, EPC, and the Packaging Institute.

## (2) Building Brand Image

With the increase in global competition, establishing brand image is important to differentiate Kenyan products from others. Yet, both Kenyan manufactures and the Government have not taken up strategies for the brand building. Brand image starts from establishing the key concept of the products and identifying the target customers. Then marketing tools including advertisement and packaging are designed to appeal the target customers of the brand image. Quality assurance of the products is also essential to maintain the brand image. In absorbing the cost and making strategies appropriate to the target markets, alliance with the foreign partners may be ideal. It is recommended that seminars and consultancy services on brand promotion are provided by EPC in collaboration with KAM and relevant BDS providers. The Kenya Investment Authority (Keninvest) is also recommended to search for foreign partners who would be interested in brand building of the Kenyan products.

## (3) Strengthening harmonization of international quality standards

In Kenya, there are three major exporting commodities: coffee, tea and horticulture. Coffee and tea are the traditional exporting commodities and can formulate “base cargo” even though there are some fluctuations of international prices. In the case of horticulture, however, its export is historically and continuously centred on European countries, where the requirements of environmental standards are likely to be strengthened. Compliance with EurepGAP requirements is vital for the development of Kenya’s horticultural industry. However, it is evident that they have not fully established an effective system which abides by European standards. KEBS is trying very hard to swiftly implement a full-fledged system. However, several changes in the horticultural industry, especially the increase of out growers, pose a serious obstacle for ensuring compliance with environmental requirements of export countries. Claiming corporate social responsibility, major exporting companies such as Homegrown Kenya, Ltd., ensure that raw materials come from the country of origin (Kenya), but more strategic/institutional methods need to be developed. Moreover, in order to cultivate cut flowers which are competitive in an international market, employment of capital intensive farming system is a must. However, such a system might not be able to offer employment opportunities to ‘the poor and the needy.’ In other words, the horticultural industry cannot serve as a strategic industry for pro-poor policy-makers. In addition, in order to expand the export of fruit and vegetables by out growers, it is essential to improve the social infrastructure by building refrigerated warehouses, coping with rapidly-increasing demands for water

resources, and reviewing the land ownership system in Kenya. When considering these conditions, it is difficult for the horticultural industry in Kenya to constantly maintain a stable export share in the market.

(4) **Insufficient statistics: Example of horticulture sector**

According to various statistics on Kenya, the amount of horticultural export and its share has been increasing steadily. This data utilizes HCDA compilation of statistics based on exporters' Implementation Plan Lists. The data itself does not conform to international trade statistics codes such as HS. Therefore, even though the horticultural export quantity, amount and destination can be understood by the Kenyan data, the data is inadequate to accurately grasp the international market trend and the share of Kenya's horticultural commodities in export countries or regions. It is also inadequate for determining which new markets to develop and cultivate.

(5) **Textile industry: Concern after general systems of tariff preferences**

In NES and its Action Plan, the textile and clothing sectors are designated as 'strategic sectors'. This is probably due to the General Systems of Tariff Preferences of major export countries and regions, such as AGOA or the Cotonou Agreement. At this stage, it is extremely important to analyse the comparative advantage of Kenyan products in the international market, based on a micro analysis of cost structure, in particular, a comparison of competitiveness with Chinese products. From the strategic and institutional points of view, it is generally believed that improving raw materials procurement capabilities will serve as a breakthrough for the cotton industry, given the expansion of cotton production. However, this must be studied more carefully before a strategy is implemented.

(6) **High cost in production and development assistance programmes**

How to overcome the problem of 'high cost in production,' which is a result of many factors, is a major issue for Kenya. It is true that Kenya has fallen into a 'vicious cycle of poverty' even though the country employs a relatively high cost of production. It is necessary to look for 'breakthrough' in both supply and demand aspects. So far, most of the development assistance programmes related to promotional policies and institutions of the economic and industrial sectors, which were provided by major developed countries such as European countries and USA, are highly dependent on development assistance programmes based on the typical- or standard-type development patterns of developing countries.

## **5.5 Investment Promotion**

### **5.5.1 Status and Issues of Investment Promotion**

(1) **Historical trends of foreign investment**

Kenya's net inflow of foreign direct investment has been less than 0.5 % to GDP after 1981 except 1990, 1991, 2000 and 2003. This level is relatively lower than economic and industrial development in East Asian countries. The important aspect to be focused is that the average

amount per investment has been declining in recent years and reached 57.2 million Kshs. in 2005.

## (2) Policies and Institutions for Investment Promotion

For enhancement of policies and institutions for investment promotion, the Japan Bank for International Cooperation (JBIC) jointly with the United Nations Conference on Trade and Development (UNCTAD) established Blue Book on Best Practice in Investment Promotion and Facilitation published on May 2005. There are 9 measures suggested there and 8 of them are still in progress. . However, the predominant view is that fulfilment and accomplishment of some measures have difficulties such as in the case of the necessity of financial support.

EPZ is established under EPZ Act enacted in 1990. At the end of 2006, 32 zones with 71 enterprises were in operation. Production volume of EPZ enterprises was estimated at 4.7 % of the total production of the formal manufacturing sector while employment by EPZ enterprises was 15.7 % in 2005.

Among operational 32 EPZs, Athi River EPZ is the largest, hosting 24 companies and 10,000 workers in 108 hectares out of 339 hectare fenced site. From a transport perspective, the location of Athi River is at the confluence of 2 major roads. It is also next to the Nairobi-Mombasa Railway line and only 19 km from JKIA. Vision 2030 recognises the importance of Athi River and plans to set up a Business Process Outsourcing (BPO) Zone in cooperation with MOIC and first tier retail shops under MOTI. It also plans to improve the access roads to Athi River. With proper designing and infrastructure building, industrial activities in Athi River have much potential to grow rapidly.

On the other hand, Kipevu EPZ in Mombasa is leased to Export Processing Zone Authority (EPZA) from the Government for 99 years with effect from January 1995, and 48.84 hectare was gazetted as an EPZ in the following year. However, majority of area has been left undeveloped due to the lack of funding from the Government. Kipevu site is proximate to the Port, Mombasa town, the Airport, and the industrial areas of the North Mainland. Its location is ideal for attracting investors if properly developed. Vision 2030 envisages development of Mombasa as an industrial site. Kipevu remains the best location for further development as an industrial area. For a concern to provide level playing field to the manufactures outside EPZ, current EPZ Act imposes many restrictions on the EPZ companies. EPZ Act requires separate registration for manufacturing, commercial, and service activities. EPZA internally sets up a rule to restrict domestic sales of EPZ companies up to 20 % of production. This restriction makes it difficult to motivate investors to join EPZ because the Kenyan markets are important for those who aim to penetrate the regional markets.

## (3) Supporting System for the Local Industrial Development

Kenya lacks measures for attracting investment in industry to the rural areas. This has resulted in heavy concentration of industry in Nairobi metropolitan area and to a lesser extent in Mombasa. Present conditions of poor infrastructure and weak supporting system outside



Nairobi do not attract manufacturers to invest outside Nairobi. The only existing attraction is geographical advantage for some manufacturers seeking a close location to a specific natural resource. The industrial supporting system outside major towns is insufficient in terms of finance and human resource. Industrial concentration in one area not only causes environmental deterioration but also increases prices, especially labour costs. On the contrary, investment to the rural areas would reduce poverty through stimulating economic activity in those areas.

Kenyan local administration system comprises two administrative streams. One is the local authorities and the other is the central government functions posted in districts. Local authorities refer to municipal, city, town, and county councils. The administration is governed by the Local Government Act (Cap. 265). Local Authority various powers over economic development of their jurisdiction such as enforcement of license fees and land levies, approval of investment, and development of basic and economic infrastructure such as market place. Local authorities have councils with elected and appointed councillors as governing body. Under the councils, the administrative functions are established with clerks, treasurers, engineers, and medical officers, their deputies, and others.

However, in reality, the actual autonomy of the local authorities seems to be limited. Firstly, budget and important decision on development requires approval or, at least, reporting to the Minister of Local Government. Secondly, clerks, treasurers, engineer, health officers, and their deputies are appointed by the Public Service Commission. Moreover, clerks, treasurers, engineers, medical officers are paid from the central government.

Apart from the local authority system, departments of ministries in the area with local authorities have various fora for planning and coordination. Relevant local authorities and these departments hold meetings. District Development Committees spearheaded by the District Development Officers and various sub-committees are held for discussion on the specific sector development issues.

Local authorities with the assistance of the Department of Physical Planning of the Ministry of Lands (MOL) prepare the area development plan. However, the final decision whether or not the local authorities follow the plan is made by the local authorities. Any investment proposal submitted to the local authorities is subjected to be approved by the councils and their political functions with or without full compliance with the area development plans. In order to grasp the situation on the degree of compliance with the area plan and actual land use, MOL has been dispatched the auditing team. However, apart from this ad-hoc measure, the checking mechanism of land planning and implementation has not been followed up. This non-compliance to area development plans and decision making resting on the political function of the local authorities causes unclear and unpredictable acquisition of lands for investors that provide room for corruption and pressure on the living and natural environment.

Local authorities have two sources of finance: revenue generated through license fees and land reviews and transfer funds from the central government. Local Authority Transfer Fund

(LATF) is one of the major fund sources for the local authorities allocated by the Central Government. The total amount allocated in the fiscal year 2005/06 was about Kshs. 5 billion, which has grown 5 times more than the amount of 1999/2000. The amount allocated to each local authority is minimum Kshs. 1.5 million plus the amount depending on the size of population (e.g., the Nairobi City receives approximately Kshs. 800 million). However, due to the smallness of the economic activities within the boundary and lack of human and institutional capacity in collecting revenue, the degree of self-sufficiency of local governments tend to be low. In other words, many are depending on LATF. Moreover, the majority of the budget is used for recurrent costs, and a small amount is left for the development budget.

Another financing mechanism available for rural development is Constituency Development Fund (CDF), established by the statutory law, CDF Act in 2003. CDF has been allocated to the constituencies nationwide in order to service local needs directly. The fund is to be managed by Constituency Development Committees (CDC) appointed by the area members of Parliament (MPs). Total amount provided in the fiscal year 2005/06 was approximately Kshs. 7 billion. The amount has been dramatically increased from Kshs. 1.26 billion in 2003/04 to Kshs. 5.6 billion in 2004/05. According to the Annual Report of 2004/05, the fund is used for education, health, and water projects mainly. The impact of the fund may be significantly affected by the management of the fund. Some problems pointed out are: lack of technical and managerial capacity of CDC to manage the fund; manipulation by MPs to use the fund according to their own political interest; and no proper mechanism of follow-up and ensuring accountability.<sup>6</sup>

Under the efforts of decentralisation, the budget for both LATF and CDF are secured: LATF to be 5 % of the all personal income tax collected and CDF to be 2.5 % of all ordinal revenue collected. However, the disbursement and utilisation process adds some confusion. The financial resources are managed by various functions and not really following any uniform plans. The generic problem is lack of transparency and objectivity in choice of projects and lack of capacity in implementation and management of the projects. In order to ensure the involvement of communities and grassroots in local development, the Local Authorities are now required to develop Local Authority Service Development Action Plans through a participatory approach to access LATF.

While the licensing and permit reforms envisage the reduction of cost of doing business, it can affect the revenue collection of local authorities. In the long-run, it is necessary for local authorities to plan area economic development and thereby increase the revenue from taxing the corporate and people optimally. Having multiple financing sources with no mechanism of leading all the efforts for common economic development plans may not contribute to the

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<sup>6</sup> Mapesa, Benson, and Kibua, Thomas, An Assessment of the Management and Utilisation of the Constituency Development Fund in Kenya, IPAR Discussion Paper No. 077/2006: CDF Annual Report 2004/05, CDF Website: [www.cdf.go.ke](http://www.cdf.go.ke).

capacity of local authorities and, consequently, area economic development.

Although the private sector is the strongest driving force for local economies, the power is not well captured. The collective actions through various private sector organisations are taken to some extent by lobbying and attending various planning fora. Chapters and offices of KAM and Kenya National Chamber of Commerce and Industry exist in some large cities though they are not strong enough. It is often the case that these offices are functioning only as the referral points for their headquarters.

### **5.5.2 Recommendations for Investment Promotion**

#### **(1) Promoting FDI**

While not denying the importance of domestic investors, more attention is required to improve policy measures to call in FDI since the foreign companies are sources of technological and market information abroad. Calling in transnational companies is the most effective way to dramatically upgrade the technological capacity of the Kenyan industry to the global standards. Attracting investment is under severe global competition. Investors' satisfaction is very important to call in sustainable investment into Kenya. KenInvest and other related agencies have to be conscious of the best practices adopted in other countries and have to achieve the highest standards in providing services to the investors to win the global competition. In addition, more human and financial resources need to be allocated for the marketing activities abroad. Firstly, capacity of commercial attaches needs to be strengthened. Secondly, it is recommended that overseas missions to the targeted markets be jointly formed by the public and private sectors.

#### **(2) Establishing Special Economic Zone (SEZ)**

EPZA is well aware of the necessity to revise EPZ policy and is now negotiating with MOTI to amend EPZ Act, which enables expanding activities in EPZ and relaxing restrictions to the EPZ companies. Furthermore, it is necessary to benchmark industrial zone models abroad, which integrate industrial area, commercial area, service area, residential area, and social and amenity area in order to provide comfortable living environment to the investors. Such successful industrial areas are often constructed under PPP scheme with initiatives taken by private developers who try to make their product most attractive to generate profit. While it is well recognised that amendment of EPZ Act is necessary, EPZA is also expected to start working on reforming in the area where they have an authority under the current law such as relaxing restrictions on domestic sales and strengthening amenities and facility within EPZ.

#### **(3) Promoting investment outside Nairobi**

Rural economic development policy has been focusing on agriculture and tourism, and there have been no systematic policy measures for industrial development outside Nairobi. Yet, investment promotion to the rural areas is vital in stimulating economic activities for poverty reduction. The Master Plan proposes that Government initiate in-depth planning for investment promotion outside Nairobi.

## **5.6 Financing**

### **5.6.1 Improving Access to Indirect Finance**

#### **(1) Overview**

The Kenyan financial sector has been growing steadily with 11.3 % and 16.0 % increases in money supply (M3) in the fiscal years of 2004/05 and 2005/06 respectively. Market capitalisation has risen more rapidly, reaching Kshs. 800 billion in November 2006, which is equivalent to 57 % of GDP. Kenya's banking system is in the middle of recovery with the financial sector reforms under the present government, after weakening in the 1990s. Following the reforms and favourable economic conditions, profitability of banking institutions has been increasing and non performing loans are on a decreasing trend.

#### **(2) Financial sources for MSMEs**

A number of commercial banks have lending schemes specially designed for MSMEs. However, many of them require borrowers to have sufficient security and immovable assets in most cases, making it difficult for MSEs to be eligible. Three Development Financing Institutions (DFIs) under MOTI are mandated to provide a specific segment of the economy with financial services. However, they continue to experience financial and operational constraints that limit their efficiency. There are a large number of Micro Finance Institutions (MFIs) that provide micro credit to MSMEs, as well as low-income individual borrowers. Under major umbrella organisations, i.e. Association of Microfinance Institutions (AMFI), K-REP development Agency and MicroNet, there are 128 institutions. Informal financing is quite popular with MSEs and low-income households as they are more accessible than formal services. There is a variety of informal financial service providers in Kenya, including, Rotating Savings and Credit Associations (ROSCAs) and Accumulating Savings and Credit Associations (ASCAs).

#### **(3) MSME support activities by development partners and GOK**

There are many donor-funded activities to support micro, medium and small enterprises, many of which have financial services, directly or indirectly to enterprises.

#### **(4) Access to credit by enterprises**

The results of National MSE Baseline Survey 1999, which is the most recent comprehensive survey on MSEs, shows that, one of the most severe constraints faced by MSEs is lack of credit, as 18.4 % of all surveyed MSEs cited access to credit as key constraint. On the other hand, members of KAM, most of whom are relatively large in size, do not seem to have difficulty in accessing financial sources. The survey report by KAM in 2005 found that the majority of the manufacturing companies were financed through domestic banks. On a macro economic basis, domestic credit to the private sector in Kenya has been increasing in total since 2002, with 8.1 % and 12.1 % growth in 2005 and 2006 respectively, indicating a growing demand for credit by the private sector collectively.

#### (5) Future direction

One of the methods to facilitate MSEs' access to credit which can be practiced immediately is to systematically provide information on financial sources for MSEs. Although there are various financial schemes even now, as mentioned above, MSEs do not appear to be provided with sufficient information on them. Another option may be diversification of financial services for MSEs to acquire industrial machinery, which is normally difficult for small manufacturers. The possibility of financing services such as asset financing, leasing and hire purchase should be studied and if proved to be feasible, the government may encourage these services by improving legal environment and possibly providing some forms of assistance.

#### **5.6.2 Improving Access to Direct Finance**

Lending from the banks is inevitably limited to enterprises with stable revenue or collateral because the banks cannot take the risk of losing money. On the contrary, the venture capitalists can take risks aiming at high returns. The incentive system for the venture capitalists has been already set up as registered venture capital can enjoy 10 year income tax holiday. Development of venture capital and the stock exchange market is mutually important.

Currently, discussion is ongoing on the need to open an African version of the National Association of Securities Dealers Automated Quotations (NASDAQ) of USA in Kenya, popularly called "ASDAQ". ASDAQ is the over the counter dealing of company shares whose criteria are lower than existing markets in the Nairobi Stock Exchange. ASDAQ could provide direct financial markets to SMEs which have constraints on receiving sufficient credit through indirect finance and stimulate venture capital activities in Kenya.

Thus, the business environment for the direct financial markets is improving, and stock markets and venture capitals are increasingly becoming active. The manufacturers should pay more attention to available opportunities of direct finance through initial public offering and investment by the venture capitals. MOTI is recommended to support in raising awareness of the manufacturers and assist in linking the potential manufacturers to the venture capitals. This would help the venture capital companies find more investment opportunities in the manufacturing sector.

#### **5.6.3 Improving Cash Flow**

Inefficiency of the Kenyan manufacturers increases the amount of working capital. The Kenyan manufacturers have to take up some methodologies to reduce working capital; thus reducing the needs for a loan. One reason that accounts for weakness of the forward linkages with the manufacturing sector is the long duration to collect accounts receivable. Another reason that causes increase in the working capital is the large number of inventory and low productivity.

It is also recommended that the financial consultation services be geared towards not only the indirect finance but also the direct finance and financial management. It is also essential that the financial consultation includes feasibility assessment of investment.

## **5.7 Human Resource Development**

### **5.7.1 Current Situations and Constraints of TIVET System**

Technical, Industrial, Vocational, and Entrepreneurship Training (TIVET) institutions are administered by various agencies without a legal system nor institutions governing the whole TIVET. This spread of management has made coordination of activities and maintenance of training standards difficult. Reforming of TIVET system has been advocated for a long time. Notable progress was made in 2003 with a rapid appraisal report on the status of TIVET. It was on this occasion when importance of linking technical education to industrial development was stressed. The recommendations from the report were successfully put in place in *Sessional Paper No.1 of 2005 on a Policy Framework for Education, Training and Research*, which was followed by the Kenya Education Sector Support Programme (2006-10).

Low level of industrial development is a reflection of the status of TIVET in Kenya. Many TIVET institutions have laid emphasis on job creations and providing students with hand-on technology, which enables production with low investment. Since job absorption by the formal sector is limited, it has made a sense that the curriculum is designed for equipping the students with basic knowledge. However, the increasing global competition now calls for more emphasis on training human resource to become competitive workers at the global standards.

### **5.7.2 Recommendations for improving TIVET for the industrial development**

#### **(1) Strengthening linkage with the private sector**

The best model of TIVET needs to be sought through public, private, academic partnership. The private sector is the foremost effective source of information that can upgrade TIVET. Because the technologies change rapidly, it is necessary to have the involvement of the private sector in curriculum development and dispatching the trainers. Moreover, many vocational training schools abroad receive orders from the private sector. This helps the vocational schools to keep up with the technological needs of the private sector and also generates some income for machinery renovation. Creation of the relationship between TIVET institutions and the private sector may rely on more to do the development of the latter. Yet, TIVET institutions need to keep in mind on creation of mutual benefits between the two.

#### **(2) Coverage of technical education and training**

Increasing competitiveness of the industry now requires that technical education and training cover both production and management technologies. The present technical curriculum is focused on production technology, and it almost neglects the management technology, which is the source of productivity increase. A review of the curriculum is necessary to capture all the components that would bring up the industry.

Although the actual practice on production management may be difficult to learn at training institutions, theories, concepts, and basic practice should be introduced so that the students acquire ideas before they go into the field. Having learned in youth is helpful to internalise the

concept of Quality, Cost, and Cycle-time (QCT) since it has been found extremely difficult to motivate MSMEs to change their production practices unless their immediate customers demand for the change.

In the area of production technology, improvement needs to be made in designing and drawing, which are the fundamental techniques for creating networks among the manufacturers. Without designing and drawing techniques, it is not possible to pass an order to another company since specifications need to be agreed based on the drawing before making a contract. This does not mean that all the TIVET institutions require CAD. The drawing techniques can be learned from an early age, starting from the hand drawing. On the foundation of the hand drawing, TIVET institutions can teach technical drawing over the drafters and finally on CAD depending on their financial availability. While it is recognised that upgrading whole TIVET institutions is difficult to achieve due to financial constraints, the best practices need to be made starting from the top, i.e. at the national polytechnics.

### (3) Inducing motivation for life-long TIVET

The industrial development necessitates continuous upgrade of worker skills. Accordingly, TIVET system needs to be designed in a way to motivate both employers to employees to utilise the system after employment. Such system needs to be convenient (e.g. trainings can be undertaken in flexible time) and to be appreciated of the values.

If the national trade test is well designed in various levels from the basics to the highest, employees will be motivated to receive higher certificates, and employers have incentives to support the initiatives by the employees. The Japanese Government, for example, has the national trade tests in 137 job categories. In addition, many sub-sectoral associations design and administer specific testing. Trade test is now available for any job category. Each trade test has from 3 to 5 levels of certificates, which cover from the beginner to the top managerial levels. Applicants can take tests according to their knowledge level. This trade test system in Japan is greatly contributing to upgrading industrial human resource. Both employers and employees utilise the trade tests to acquire specific technical skills since academic course usually does not equip the students with specific technical knowledge necessary to undertake the job. It is recommended that Kenya also establish such life-long vocational skills evaluation system.

Another system, which Kenya can utilise, is skills competitions both domestically and internationally. As for international skills competition, it is recommended to join in WorldSkills, an international association, which carries out an international competition every 2 year. WorldSkills now has memberships of 41 countries including South Africa. In 2007, over 850 young people are participating in the international skills competition. Many member countries have established domestic competitions to select the candidates for the international competition. Top companies also have established internal training system, which is designed to win in the competitions. Joining in WorldSkills would guide the Kenyan TIVET to keep up with the global standards.

## **5.8 Industry Network**

### **5.8.1 Theory and current situation of industrial clustering in Kenya**

The term "cluster" is used in various ways and sometimes leads to confusion. There are two popular streams of definitions used for industrial development in developing countries, these are: "geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field that are present in a nation or region"<sup>7</sup> and "sectoral and spatial concentration of firms".

The main difference between the two definitions is that the former definition often covers a wider area whereas the latter definition covers a more concentrated area based on the theory on "externality" by Marshall. On the other hand, the players in the former definition often include large-scale enterprises, and its activities cover issues that are considered the key factors for competitiveness creations. While there are many cluster promotion projects, their approaches are different depending on its project purpose.

Yet, there are similarities between the two definitions. Both definitions recognise the importance of strengthening linkages and specialisation that lead to competitiveness creation. The linkage creations are not restricted to the manufacturers since the dynamic clusters show linkages with other economic sectors including BDS providers. Specialisation is the key for technological development since it is not possible to accumulate knowledge and capital if a company does not concentrate on its core competency. Then specialisation requires linkage creation so that the value chain is created. Thus linkages with the related and supporting industries are very important for clustering.

However, the present characteristics of the Kenyan manufacturers do not show competency neither in linkage creation nor specialisation. Porter argues that the dynamic cluster shows strong correlation among the four determinants; namely factor conditions, demand conditions, related and supporting industries, and firm strategy, structure, and rivalry. Although creation of dynamic clusters requires improvement in all the four determinants, this chapter particularly discusses about some ways for linkage creations.

### **5.8.2 Cluster promotion**

#### **(1) Creation of integrated economic zones**

Vision 2030 finds potential in Athi River, which is only 19 km away from Jomo Kenyatta International Airport. With the planned rehabilitation of Nairobi-Namanga road, accessibility to Nairobi and Arusha will improve. EPZ Athi River is the largest EPZ. Due to the development of EPZ companies, the local Mavoko/Kitengela area is developing into a major commercial, residential, and industrial area. With the policy back up and investment interest

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<sup>7</sup>The Institute for Strategy and Competitiveness, Harvard Business School  
<<http://www.isc.hbs.edu/econ-clusters.htm>>



by the private sector, it is high time to create the best model of an integrated economic zone, which can attract investment from the leading manufacturers.

It is unlikely that Kenya can compete in investment incentives by offering fiscal incentives only, since more industrially advanced countries try to attract investment by not only the fiscal incentives but also provision of a strong economic infrastructure, which is integrated with the social and amenity environment. However, Kenya as a leading tourism country, definitely has a comparative advantage in the social and amenity environment in the region. If these are integrated in industrial areas, Kenya's attractiveness as an industrial investment destination shall improve.

It is also recommended that an SME Park be established in this zone so that it could have four viable economic entities which can enjoy externality together; namely transformed, BPO, first-tier retail shops, and the SME park. There would also be a Technology Development Centre, which can serve the training needs of the workers. After establishment of the zone, it is expected that a forum is formed by the private and public sectors operating in the zone to create a collaborative atmosphere for the linkage creation as observed in a model case demonstrated in Penang, Malaysia. After the successful model in Athi River, the lessons can be replicated in other areas along the proposed industrial corridors.

## (2) Promotion of subcontracting

Subcontracting has been repeatedly tried out in vain since 70's including assistance from KIEL and UNIDO. The main reason for not producing the sustainable outcomes is disregard of QCT standards. Trying to match the large enterprises with MSMEs without understanding the concept of QCT will not result in a sustainable outcome. It is more realistic that the subcontracting network is created from the top MSMEs and subsequently to the lower levels so that the level of QCT standards is easily shared between an outsourcer and subcontractors.

## (3) Incubation centres

Regarding the various needs and vulnerable nature of infant enterprises, business incubation approach has been tried out in Kenya. An incubator provides a variety of services such as provision of affordable operating space, access to finance, technical and managerial support, and so forth. KIEL was established for the same purpose. MOTI is currently pursuing the possibility of establishing incubations, utilising its own affiliated parastatals under the partnership with JKUAT.

Yet, some issues need to be reviewed. The biggest challenge is sustainability: whether it is possible to operate on a cost recovery basis. Providing various supports can be costly. Maintaining the services requires some mechanism of cost recovery. On the other hand, the beneficiaries may not be able to grow as the implementers expect them to make some kind of contribution, such as the rent of the premises. For example, the Kenya Kountry Business Incubator (KeKoBI) facilities are accommodated in IFC SSC, and the rent charged to the tenants is subsidised. However, it has been experienced that the enterprises cannot generate

profit in order to pay even the subsidised rent on a sustainable basis. One of the problems observed among these start-ups is marketing capacity. Therefore, KeKoBI started to support their marketing activities within its capacity; e.g., providing the reference to JKUAT related institutions. This shows that tenants need to be selected on their potentials; i.e. those which can grow and pay-back some fixed costs. In the case of KeKoBI, securing rent income is critical. Another aspect is the question of the competitiveness of the incubators as service providers. Though it is a good idea to have everything in one place, it is not always the case that the service providers are have up-to-date good skills and knowledge to provide various types of services. Therefore, networking with other BDS providers become crucial.

#### (4) MSME parks

Vision 2030 envisages setting up MSME parks under its flagship project. To have the MSME parks as a tool for competitiveness creation, tenant enterprises have to be selected on the basis of the growth potential. Attracting the competitive MSMEs to move into the MSME parks requires well prepared infrastructure and common facilities such as testing and laboratory facilities, delivery stations and daily life facilities. MSME parks also have to be connected to the major cities through efficient transportation. The MSME parks can also be a tool for clustering if the group of enterprises is selected from those which have common business interest so that the common facility and the business network can be created based on the needs of the sub-sector. Moreover, it is important to create the best model at first and to replicate the lessons in other locations.

#### (5) One Village One Product

One Village One Product is a movement promoted by the Japanese Government in assisting local economic development in developing countries. This movement was popularly adopted in Japan in 1980's and 1990's and successfully created an economic development model in rural areas. The aim of the One Village One Product is to produce competitive product utilising the local resource, which the area has a comparative advantage.

The movement starts from creating a network in the community and comes up with a vision of transforming the community to the one which can produce more value-added products and expand the markets, thus increasing the income level. It finds a way to utilise the local resources including commodities, technology, and human resources in the most effective manner. This movement is considered applicable to the Kenyan rural development through empowering the local communities.

Kenyan market access is not well developed. It is thus important for the Kenya Government to speed up building infrastructure and B2C e-commerce. In the meantime, one important aspect, which might require government assistance, is establishing market channels to compensate the missing link.

Several similar activities like One Village and One Product are being conducted in Kenya. One of them is the Kenya Agricultural Productivity Project (KAPP) assisted by WB. One Village

and One Product approach and these on-going projects can share their experiences with each other and establish the best model in Kenya.

## **Chapter 6 Consideration of Environment and Social Aspects in Industrial Development**

### **6.1 Consideration of Environment**

#### **6.1.1 Situation of National Environment in Kenya**

According to the National Environmental Management Authority (NEMA), 85 % of the territory in Kenya is covered by Arid and Semi-Arid Land (ASAL). 80 % of the population lives in 15 % of the total land, which poses enormous pressure on nature. Due to the insufficient solid and liquid waste management capacity and regulatory framework with enforcement capacity, the situation of soil, river and lake water has been increasingly deteriorated.

#### **6.1.2 Environment and Industrial Development—Some Critical Issues**

Conservation of the environment and a balanced co-existence of industrial development are especially important for Kenya. From the aspect of industrial development, environmental issues are especially critical in the following point:

- i) Utilisation/exploitation of resources as energy, raw materials and inputs such as water and land for production activities
- ii) Being the cause of urbanisation as a result of the agglomeration of industrial enterprises and workers working in the area as well as the traffic
- iii) Emission of pollutants through production activities
- iv) Providing active solutions to environmental problems: Potentials of alternative energy

#### **6.1.3 Environmental Management: Regulatory Mechanism, Institutional Arrangement and Current Situation on the Implementation**

- (1) Environment Management Co-ordination Act (EMCA) and establishment of NEMA

The environmental management has been regulated through a wide range of legal frameworks, scattered through various ministries responsible for specific resources and economic activities. In 1999, EMCA was enacted in order to co-ordinate environmental management. Based on this act, the National Environmental Council was established as a body to coordinate relevant ministries and organisations. As the implementation body, the National Environment Management Co-ordination Agency (NEMA) was established as the oversight agency of environmental management. EMCA also obliges almost all the new economic, industrial, and social projects to undertake the EIA in order to obtain EIA license. For the existing economic, industrial and social activities, periodic Environmental Audit and Monitoring EAM are required.

## (2) Other regulation for environmental management

The standard and procedures for EIA/EAM are to be specified by legal notices. Currently, only water quality, water management, and conservation of bio-diversity regulation have been enacted. On the other hand, as mentioned earlier, various regulations define various resource utilisation and management as well as control of emission of pollutants. Industrial activities are also regulated by the Public Health Act (Cap 242) administered by the Ministry of Health for their factories: location of factories, solid and liquid waste emission through production activities, and the hygienic situation within the facilities are regulated by the Act. Factories Act is administered by the Ministry of Labour and Human Resource Development Directorate of Occupational Health and Safety Services (DOHSS.) This act regulates the occupational health and safety as well as emission of untreated fumes into the atmosphere.

## (3) Public regulatory bodies relevant to the environmental management

The regulatory bodies relevant to environmental management comprise a wide range of ministries and regulatory agencies due to the nature of environmental management as a crosscutting issue. The above-mentioned regulations are administered by the Ministry of Environment and National Resources, NEMA, Ministry of Water and Irrigation, Ministry of Health, Ministry of Local Government, Ministry of Labour, Ministry of Land and Housing, Ministry of Agriculture and other regulatory bodies under these ministries.

## (4) Enforcement

Despite the regulatory framework, there are many cases where enforcement has not been adequately done. The reasons may be due to the small capacity of the enforcement bodies. For example, there is only 1 inspector per province in addition to 10 in Nairobi for enforcing compliance to EIA/EMA. Likewise, DOHSS has a limited capacity to undertake inspections of all the industrial establishments. In addition, the prosecution requires police force whereas the human resources to understand the issues within the police is very limited.

### **6.1.4 On-Going Activities and Supporting Institutions**

#### (1) Energy efficiency, conservation and development of alternative sources of energy

With financial assistance through Global Environment Facilities (GEF) mainly financed and organised by the WB and UNDP, the GEF-KAM Energy Efficiency Project was started in 2001. In 2006, with the financial support from the Ministry of Energy, the Centre for Energy Efficiency and Conservation (CEEC) was established at KAM.

The Sessional Paper No. 4 on Energy in 2004 mentioned the need for developing renewable sources of energy raising geo-thermal, hydro-power, solar energy, co-generation, wind power, and bio-gas. Apart from large-scale projects with donors' financial support (hydro-power and geo-thermal), co-generation and possibility supply of the electricity to national grid as IPP has been pursued in Mumias using the waste of production during the sugar extraction.

## (2) Controlling industrial waste and pollution emission

Kenya National Cleaner Production Centre (KNCPC) was established by the support of UNIDO in order to transfer technology and manufacturing skills to reduce the emission of wastes. The idea is to reduce environmental hazardous waste emissions whereby reducing cost as well as increasing the efficiency of production by promoting 3R (Reduce, Reuse and Recycle.)

In order to control the plastic waste, United Nations Environment Programme (UNEP), UNDP, NEMA, and KAM formed joint initiatives. The package includes the development of a policy framework and mechanism for recycling and raising public awareness.

World Wildlife Foundation (WWF) and Oxfam financed a project implemented by the Kenya Gatsby Trust (KGT) to promote the use of trees which grow relatively faster than those commonly used by wood curving artisans.

## (3) Recommendation

The following directions can be drawn:

- i) Awareness building of corporate sector and consumers
- ii) Provision of the technical support for MSEs to assist controlling their waste management and energy use
- iii) Assisting the developing marketable products which positively contribute to conservation of environment or to reduce the stress of environment
- iv) Assisting the physical and economic development planning of relevant authorities and environmental management

In order for enterprises to adapt environmentally sound technology and manufacturing practices with less emission and efficient operation, the technology first has to attract them by demonstrating the possibility of cost reduction. On the other hand, MSME sectors with sound operation and efficient production technology may be attracted to access this technology.

## 6.2 Safety, Health and Gender

Industrial development has to be in tandem with social welfare. Yet, observation of the safety and health regulations is very weak. Some areas for improvement include consolidating auditing between environment, health, and safety, including advices for improvement in time of auditing, and conducting campaigns to raise social responsibility towards compliance.

As for gender consideration, GOK, through the Ministry of Gender, Sports, Culture and Social Services (MGSC&SS), issued National Gender and Development Policy in 2000. In 2006 MGSC&SS prepared the Strategic Plan (2005-2010). GOK has a clear policy to enhance efforts to achieve gender equality in the implementation of development programmes.

It is noted, as an example, that Kenya Women Finance Trust (KWFT), private micro financing institution, provides loans to women entrepreneurs especially for low income women

managing enterprises. Activities like KWFT would encourage and enhance gender consideration.

## **PART III : Action Plan of Kenyan Industrial Development**

### **Chapter 7 Future Directions and Development Framework**

#### **7.1 Preconditions of the Kenyan Industry**

##### **7.1.1 Poverty Alleviation and Industrialisation**

Poverty alleviation and job creation are of utmost importance to the policy agenda for Kenya. Although the Kenyan economy has been enjoying a steady growth for the last three years with 5.9 % CAGR between 2004 and 2006, Kenya is still far from graduating from poverty. GDP per capita was Kshs. 45,447 (US\$ 630) in 2006 with 3.0 % CAGR in the previous three years. According to the data from 1997, 49 % of the total income was enjoyed only by the top 20 % of the population while 58 % of the Kenyan population lived under US\$ 2 a day. Relative to the issue of poverty alleviation, contribution by the manufacturing sector is still small. The manufacturing sector's contribution to GDP was 10 % in 2006. As for job creation, the formal manufacturing sector absorbed only 3 % while the informal manufacturing sector absorbed 13 % of the labour force in 2002.

##### **7.1.2 Fundamental Issues**

Inability of the manufacturing sector to catch up on the path towards industrialisation is mainly attributed to the current fundamental conditions, which can be explained by conditions of the four determinants in the Diamond Model.<sup>8</sup>

###### **(1) Demand conditions**

Demand conditions are the most influential determinants affecting the other three determinants. However, the domestic market in Kenya is not very encouraging. Firstly, the size of the domestic market is too small to be the driving force for industrial development. Secondly, the inclined preferences towards imported products largely by those with reasonable purchasing power, giving even less opportunities for the local enterprises to expand their production volumes. Thirdly, pervasiveness of counterfeits, dumping, and substandard goods is destroying fair market competition. Fourthly, high transaction costs between the retailers and manufacturers. Finally, lack of statistics and market information makes it difficult for the manufacturers to have sales predictions in the long-run.

###### **(2) Factor conditions**

Favourable factor conditions are often the main reason for attracting investment to developing countries which have comparative advantages in low wages and natural resources. However,

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<sup>8</sup> The Diamond Model is an analytical model with four determinants; namely i) demand conditions, ii) factor conditions, iii) related and supporting industries, and iv) firm strategy, structure, and rivalry. <Porter, M. (1990), *The Competitive Advantage of Nations*, Macmillan.>



Kenya has not demonstrated competence in these factors. Firstly, the wage rate in Kenya is relatively higher than that in Asian countries. Secondly, agricultural activities are not effectively linked to industrial production in Kenya. Thirdly, as of the cases in many developing countries, Kenya has a strong need to improve her infrastructure. Fourthly, reliance on imported raw materials under the current tariffs structure is even adding to the cost of production.

### (3) Related and supporting industries

The level of development of supporting industries shows strength of that sub-sector. In Kenya, the difference in this level is observed among sub-sectors. While the food sub-sector and the automotive sub-sector have relatively well established related and supporting industries, the other sub-sectors hardly show existence of horizontal and vertical linkages. Supporting mechanisms also have weaknesses. Firstly, the public supporting mechanism has duplications of service menus while funding is not enough to support its wide spread activities. Secondly, linkages between R&D institutions and the manufacturing sector are not very strong. Thirdly, financial supporting mechanisms are not very favourable since lending conditions are based on short-term repayment periods with high interest rates. Moreover, micro and small scale enterprises have difficulties in accessing loans due to lack of collateral.

### (4) Firm strategy, structure and rivalry

Due to the poor conditions in the above three determinants, most manufacturers are currently not taking an aggressive stance to see Kenya as a strategic location for further expansion. Many are currently suffering from under-utilisation of capacity due to the lower demand volume than that of the 90's. Because most enterprises lack R&D capacities, their production activities are not of high value addition. Many mistakenly rely on machinery for technological capability and productivity instead of the human capacity variable.

## **7.1.3 Competition and Opportunities from Globalisation**

Increasing liberalisation backed by WTO and improvement in transportation and ICT has globally integrated both manufacturing centres and markets. This globalisation, on one hand, is a great threat to uncompetitive enterprises, but on the other hand, it opens up global markets to competitive enterprises wherever they are located. Local manufacturers have no alternative but now to compete against imported products in terms of quality and price. There is therefore the need for the government to double its efforts in creating an enabling environment which will motivate local manufacturers to improve their businesses.

The preferential access to the USA and the EU markets through AGOA and ACP–EU Cotonou Agreement has generated major inflow of Foreign Direct Investment (FDI). While such benefits exist, Kenya should seriously pursue technology and productivity improvement so that technological capacity is transferred to Kenya before such temporary benefits expire.

Regional economic integrations like EAC and COMESA are providing immediate market opportunities to the Kenyan industry. Kenya is in an advantageous position to exploit the

market opportunities created through these regional economic integrations because of her long-term industrial foundation since early 1970's. Despite the advantageous position, Kenya has to compete with those member countries as a manufacturing hub. If her fundamental conditions remain poor, then investors would prefer investing in more investor-friendly countries.

#### **7.1.4 Existing Advantages**

In spite of the threats which the Kenyan industry is facing from global competition, Kenya is still in an advantageous position if she seriously pursues the path to industrialisation now. Firstly, she has English as an official language, with a large number of her work-force capable of conducting work in English. This is advantageous for global transactions and for absorbing technology know-how from abroad. Secondly, Kenya's strategic location as a gateway to East and Central Africa should be able to facilitate more flow of goods and people. No other countries in East Africa have a large port facing the Indian Ocean like the Mombasa port and an international airport linking various destinations like JKIA.

### **7.2 Industrialisation Scenarios**

The previous section discussed four main preconditions surrounding the Kenyan industry. First, it discussed the serious need for industrialisation as a means for poverty alleviation. Secondly, the current global competition requires strengthening competitiveness of the manufacturing sector for its sustainable growth. Thirdly, the current poor state of the fundamental conditions calls for an urgent improvement for survival of the Kenyan industry. Fourthly, in spite of the current poor state of conditions, Kenya does have some absolute advantages, which can enable her to pursue the path to industrialisation.

The above four conditions are not easy to link to industrialisation without a strong political commitment to support the industrial transformation. The Sessional Paper No.2 of 1997 was aiming for structural transformation of the Kenyan industry so that Kenya can join the Newly Industrialised Countries by Year 2020. However, little progress has been made on its implementation. MAPSKID intends to relay scenarios for industrial transformation, succeeding the intention of the Sessional Paper No. 2.

#### **7.2.1 Vision for Industrialisation**

To support high economic growth targeted at 10 % CAGR by Vision 2030, the Industrial Master Plan depicts a scenario of rapid industrial development. MAPSKID proposes to set a vision of Kenyan industry becoming the third industrial pillar in Central and East Africa, heading towards the faster growing industries in South Africa and Egypt, and establishing a position as an industrial hub in East and Central Africa.

In formulating a scenario heading towards the vision, horizontal and vertical approaches are simultaneously sought. The horizontal approach is the four types of linkage creations, which are aimed to become the industrial transformation triggers. The vertical approach, on the other hand, shows the implementation framework categorised by four main subjects.

## 7.2.2 Linkage Creation as Industrial Transformation Triggers

The weakest nature of the Kenyan industry is the fragmented business operations. To change the situation, four types of linkage creations are recommended to become industrial transformation triggers.

- v) Spatial Linkage Creation ⇒ Creating Industrial Corridors
- vi) Foreign Linkage Creation ⇒ Promoting Foreign Direct Investment
- vii) Sectoral Linkage Creation ⇒ Strengthening Industrial Linkages
- viii) Economic Linkage Creation ⇒ Integrating Informal Economy into Formal Economy

### Linkage 1: Creating Industrial Corridors (Spatial Linkage)

Attaining rapid growth and minimising the income gap simultaneously is a big challenge. To minimise the regional income gap, a strategy for promoting investment outside Nairobi has to be developed. Currently, industrial activities are concentrated in Nairobi as it can be observed from the fact that 71 % of KAM members are located in Nairobi. Even Mombasa area, which is advantaged by having the port, is not fully developed.

The regional hub strategy would induce creation of industrial corridors, which aim to establish major industrial areas alongside the strengthened distribution networks with phased approach. In addition, proper incentive system should be made under the zoning policy, which provides higher incentives for the investment to the area where the infrastructure is weaker. Creation of the spatial industrial linkages prerequisites strategic national spatial planning that is backed by realistic budgeting.

### Linkage 2: Promotion of FDI (Foreign Linkage)

An annual 10 % economic growth, as targeted in Vision 2030, inevitably requires an enlarged volume of investment. While domestic investment is limited, it is necessary to promote FDI more proactively. FDI is also essential for technological transfer to Kenya so that the Kenyan industry upgrades its technological capability to global standards. Although Kenya now has FDI concentration in garment and pharmaceutical sub-sectors, technological diffusion is very limited. The government needs to make full use of such investments and try to meet their demand for quality and productivity improvement. Some of the best practices utilising FDI have demonstrated promotion of investment initiatives through public-private partnerships, resulting in the creation of dynamic clusters which have made significant spin-off effects on the local industry

### Linkage 3: Strengthening industrial linkages (Sectoral Linkage)

For the Kenyan industry to increase its value addition and to bring about multiplier effects to other economic sections, a strategy to strengthen the domestic linkages with other growing economic sectors shall be taken up through both forward and backward linkages. The multiplier effect is also expected to make a larger impact on job creation with wider sections of

the labour markets.

Except the linkage creation between the agricultural sector and the manufacturing sector, the policy makers have hardly taken note of interconnected effects across the sectors. Vertically, the segmented nature of the administrative system has often caused them to make decisions without consideration of possible impacts on the manufacturing sector. Considerations for strengthening cross-sectoral linkages and possible impacts on the manufacturing sector have to be kept always in mind.

#### Linkage 4: Integration of informal economy into formal economy (Economic linkage)

While recognising importance of informal sector as the main source of employment, informality makes it difficult to extend public support effectively. Being informal is also undesirable in terms of income generation of the nation. It is expected that the Government places stronger commitment in assisting graduation of the informal manufacturers to the formal manufacturers with the aim of integrating the informal economy into the formal economy.

### 7.3 Development Framework

Although linkage creations are considered as the key strategies for triggering industrial transformation, translating them directly into the implementation framework would not be practical since their implementation overlaps each other. Alternatively, the implementation framework for industrial development is proposed with four categories of development objectives, which are set vertically whereas the linkage creations are placed as the horizontal objectives. The implementation framework is to provide the Government with a set of tangible and concrete action plans to improve the supporting system of the industrial development.

#### Objective 1: Improving efficiency of services delivery by MOTI

(Chapter 3)

Being the responsible ministry for driving industrial development, the role of MOTI and the implementation structure is firstly defined. As the facilitator of industrial development, MOTI is recommended to strengthen its efforts on inter-ministerial collaboration and to take the leading role in negotiating policy issues with other ministries as a representative of the interests of the manufacturers. With limitations in the number of personnel in MOTI, the job description of MOTI officers is required to be defined based on specialisation strategy of each officer while putting stronger commitment on actual implementation. At the same time, institutional capacity in the field offices and foreign missions are needed to be reinforced to increase industrial linkages both domestically and internationally.

#### Objective 2 : Improving conducive business environment

(Chapter 4)

Improving conducive business environment is a prerequisite for economic growth.

MAPSKID has identified the legal and taxation frameworks, infrastructural conditions, and information delivery are the three key items of which the Government has primary responsibilities for implementation. Although many of the issues are already covered in PSDS, MAPSKID re-emphasises their importance from the views of industrial development.

**Objective 3 : Facilitating internal innovation of industry over the Kenyan Industrial Development Platform (KIDEP)**

(Chapter 5)

MAPSKID identifies seven key subjects of supporting system for facilitating internal innovation of the manufacturers; namely, i) technology, ii) management and marketing, iii) export promotion, iv) human capacity development, v) financing, vi) investment promotion, and vii) industrial networking. There are already many existing initiatives in each subject; yet, public and private agencies are not effectively connected with each other; thus each initiative has not really been effective. Moreover, the supporting system is generally weak outside the Nairobi Metropolitan Area.

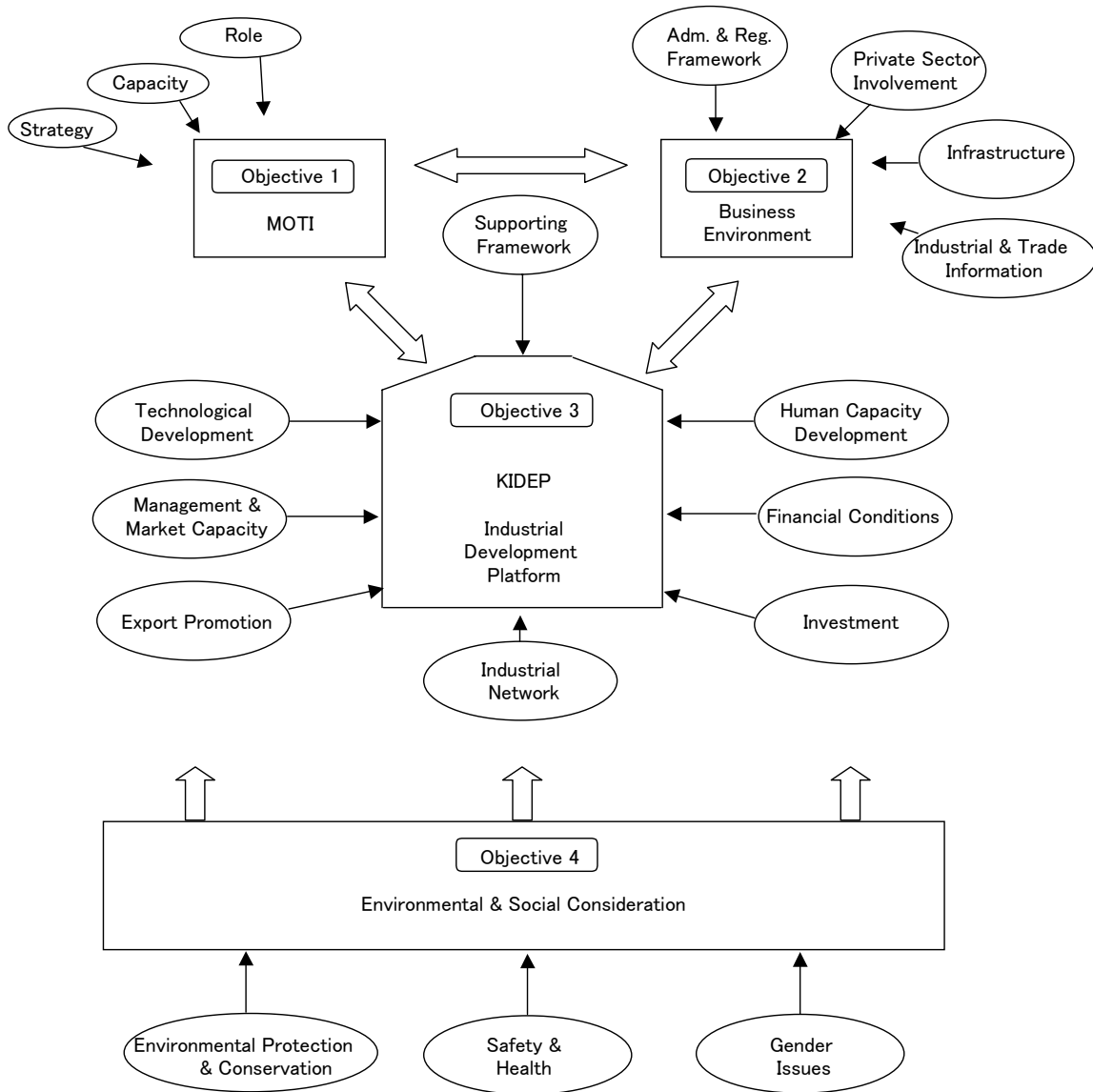
KIDEP aims to improve the service of above key subjects with a central one-stop shop. The one-stop shop has effective networks with various supporting institutions as well as service information of such institutions in their databases and becomes the contact window for the manufacturers who come for consultation. Then the one-stop shop directs the manufacturers into specific institutions or BDS providers. The service information shall become accessible nationwide over the Internet.

**Objective 4 : Sustainable development with environmental and social consideration**

(Chapter 6)

Industrialisation has to be harmonised with conserving the environment especially since Kenya reserves ample natural resources, which are very important for the world. On this account, cleaner production, waste treatment, land allocation planning for industry and recycling are important to the agenda. Moreover, industry should produce environmentally friendly products such as bio-diesel and bio-plastics. At the same time, safety regulations and labour welfare should be taken into account so that the growth of the manufacturing sector can be appreciated by society and lay the foundation for sustainable development.

Figure 7-1 shows above mentioned four objectives and the detailed objective items under these objectives



Source: The JICA Study Team

Figure 7-1 Industrial Development Implementation Framework

## Chapter 8 Action Plan of Industrial Development

### 8.1 Establishment of Action Plan

Based on the industrial development framework described in Chapter 7, feasible concrete plans are necessary. Considering current limited budget and human resources, to formulate action plans on every item of the framework would be futile and unrealistic. In prioritising the areas for actions, five aspects for evaluation were considered to review the development objectives of the development framework; Impact, Urgency, Effectiveness, Efficiency, and Sustainability. These evaluation items were based on the five items of evaluation by Development Assistance Committee (DAC). In these items, “Relevance” was replaced by “Urgency”.

### 8.2 Scenario of Implementing Action Plan

Implementation schedule of the overall action plan was reviewed in three phases. The detailed schedule of each action plan would be decided in accordance with the actual contents and nature of each action project.

#### (1) First Phase (2007 – 2010): Stage of preparation and commencement

After determining an implementation framework (personnel and budget) within MOTI, collection and analysis of information necessary to grasp the current situation will be conducted. The current situation will be grasped by implementation actors, and detailed schedule including implementation schedule with proper human resource allocation will be set up. In the case that new establishment or change of regulations and Parliament bills are necessary, such draft will be reviewed and studied to proceed with the procedure for approval.

#### (2) Second Phase (2011 – 2016): Stage of actual implementation

As well as implementing necessary regulations and laws, basic infrastructure will be developed to establish a supporting system of industrial development. In the project, periodical monitoring and evaluation will be conducted and its plan will be revised if necessary. Through activities in the project, it is aimed to achieve the goal of the action plan. Once the goal is achieved, continued plan or expanded development program will be formulated.

#### (3) Third Phase (2017 – 2020): Stage of continuation/expansion

Through continuation and expansion of the project, comparative advantage will be established, aiming for becoming a manufacturing hub in Central and Eastern Africa. As well as maximising the hub function, the industrial network (forward/backward linkage) will be enhanced. Through comprehensive outcome of the action plan, integration of the informal sector into the formal sector is expected to be achieved.

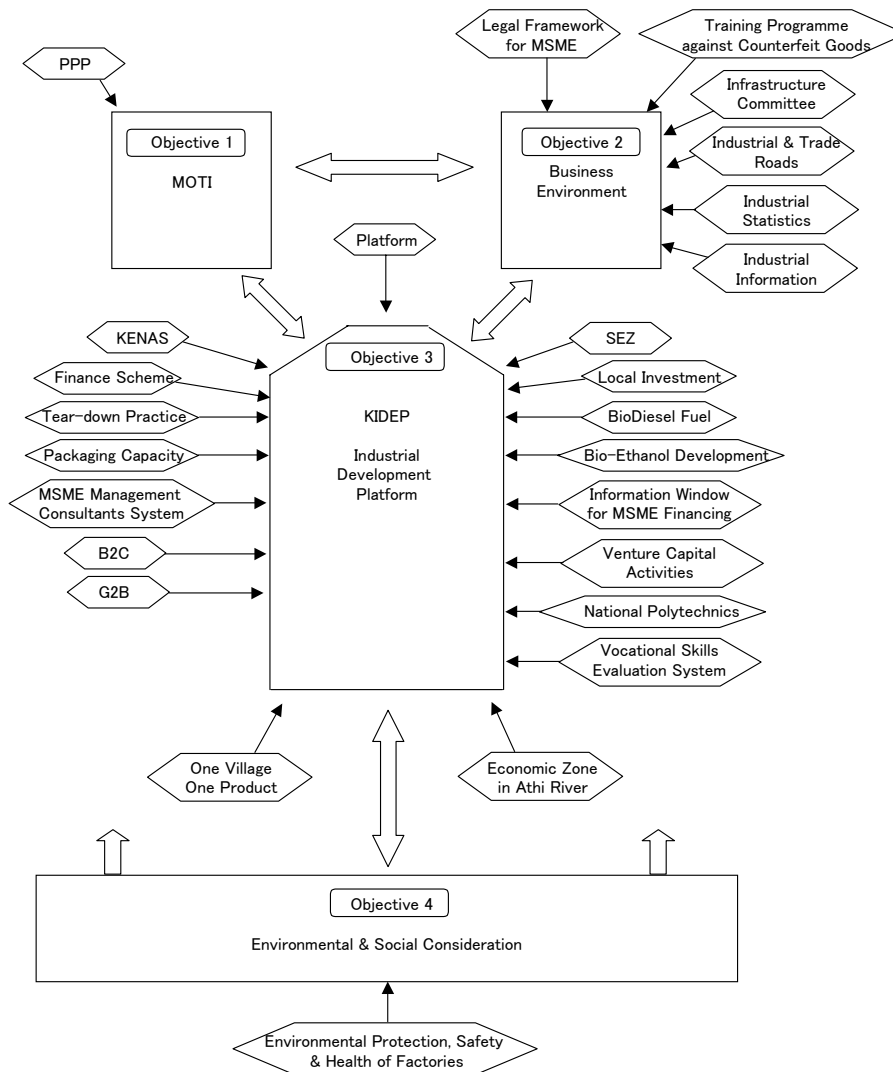
### 8.3 Outline of Action Plan

In the previous Chapter the development framework was prepared under the recognition of four

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objectives. Under such objectives the more detailed development objectives and target objectives were presented. Based on those detailed objectives, the possible action plans, which would be implementable and effective, were studied, discussed, and selected with MOTI. In this Chapter, as a result of such process, the detailed projects, which were formulated in each development objective, were presented.

In the process of preparing these action plans, the same as the case of preparing development framework and objectives, the discussions with relevant stakeholders through seminars, forums and workshops as well as the discussions with MOTI and within MAPSKID team were duly considered. The following figure shows the action plan items relating to the four main objectives.



Source: The JICA Study Team

Figure 8-1 Outline of the Action Plan



#### **8.4 Details of Individual Action Plan**

The following are the project sheets on each proposed project as action plans. The contents of each project sheet are provisional ones and are expected to be updated and reviewed/studied further by main players of the project. Consequently, the implementing agencies and cost estimates as well as implementation items/schedules would be revised accordingly.

It is also noted that there are some other potential projects being prepared by MOTI. Once such projects are ready with necessary information, they are expected to be taken up as action projects.



## 2.1.1

**Project Name: Studying Legal Protection over B2B Transaction by MSMEs****【Background and Issues】**

Many MSMEs prefer to sell directly to customers instead of forwarding their products to retailers. The major reason for this is that the retailers tend to impose unfavorable payment conditions to manufacturers, resulting in cash shortage for the manufacturers. In some cases, payment is made only after the sales. In other cases, payment is made over 90 days after the receipt of products. There are no legal restrictions on the payment conditions. On the other hand, Japan, which has a notably good structure of supporting industries, has legalised payment conditions to subcontractors within 60 days of delivery of services/products (Act Against Delay in Payment of Subcontract Proceeds, etc. to Subcontractors; Law No. 120 of 1956). The Act also obligates outsourcers to make a written contract in time of order and prohibits breach of the written contract. Enforcement of the Act is overseen by the Fair Trade Commission. Such legal protection of subcontractors since 1956 helped to establish linkages between outsourcers and subcontractors. It also contributed to part of high productivity in Japan because more than 30 days difference in working capital can be used for more output. This lesson is worthwhile exploring in Kenyan cases where a vertical linkage throughout the value chain is notably weak.

**【Purpose】**

To establish the legal system for promoting creation of forward linkages by MSMEs with particular attention to payment conditions, which support reduction in running cost  
Target beneficiaries: MSME

**【Implementing Agencies】**

Secretariat: MOTI  
in consultation with: Attorney General's Office

**【Scope of Work】**

| Work Items [Lead Institution]   | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 - 2020 |
|---|------------------------|------------------------|------------------------|
| 1) Studying problems in B2B transactions of services and products by MSM manufacturers [MOTI(Department of Internal Trade)] | ↔                      |                        |                        |
| 2) Legalisation study with benchmarking of overseas models [MOTI(Department of Internal Trade)]                             | ↔                      |                        |                        |
| 3) Drafting the legal document [MOTI(Department of Internal Trade)]   |                        | ↔                      |                        |
| 4)* Implementation [MOTI(Department of Internal Trade)]   |                        | ←————→                 |                        |

\* Critical issues before proceeding to 4) are legal documents and commitments of Attorney General's Office.

**【Indicators】**

MSM manufacturers find more business partners to sell their products/services.

**【Note for Taking Actions】 (Rough Cost Estimate)**

This action plan is implementable under the full responsibility of MOTI, particularly Department of Industry and Department of Internal Trade. Therefore, coordination of actions is relatively easy though the assistance of legal professional is indispensable. This action plan relates to PSDS-PIP 1.5.6, which plans to reform Kenya's core commercial laws, and 5.1.2, which is to draft MSE Bill. (Kshs. 25 million)

## 2.1.4

**Project Name: Promoting Graduation of Informal Manufacturers**

**【Background and Issues】** The informal sector is the main contributor to the labour force in Kenya. Likewise, the manufacturing informal sector is estimated to absorb approx. five times more employment than the formal manufacturing sector. Under the current complicated registration and tax administration system, it is rare for the informal sector to graduate into formal sector. Yet, the global competition would make it hard for the informal sector to survive. For MOTI to extend appropriate support to the manufacturing sector, having them registered is the first and prerequisite step. On going reform aimed at reducing licenses and tax rates are still not enough to make it applicable to the informal sector, whose owners often lack sufficient education. (For example, registration form has both English and Kiswahili instructions.) It is therefore important that formalisation of the informal sector is clearly emphasised in on-going efforts of the reform. The Component Three of "MSME Competitiveness Project" (2005-2009) by WB plans to combine business name registration from the Registrar General Office of the Attorney General, KRA PIN registration, and the local authorities' permits (including the SBP) into one interface. Then the Project plans to establish a Unified Tax system, whose collection is undertaken by KRA's regional offices or One Stop Shop. PSDS-PIP 1.5 also backs up implementation of the reform. This Action Plan intends to re-emphasise the importance of a proactive role of MOTI in registration and tax reform in order to promote the graduation of the informal manufacturer into the formal sector.

**【Purpose】** To lower the administrative barrier for the informal manufacturers to graduate into the formal sector. Target beneficiaries: MSEs, particularly the informal sector

**【Implementing Agencies】** Secretariat: MOF (Business Regulatory Reform Unit)  
Task force: Attorney General's Office (Registration General Office), KRA, MOTI, and the local authorities

**【Scope of Work】**

| Work Items [Lead Institution]   | Phase 1<br>2007 – 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 – 2020 |
|---|------------------------|------------------------|------------------------|
| 1) Develop and implement action for licensing reform as part of Regulatory Reform Strategy (PSDS-PIP 1.5.3; FIAS/WB Improving Regulatory Performance) [MOF] | ↔                      |                        |                        |
| 2) Undertake baseline survey in relation to current licensing regimes (PSDS-PIP 1.5.3.3) [MOF]  | ↔                      |                        |                        |
| 3) Enact Business Reform Bill (PSDS-PIP 1.5.3.4) [MOF]  | ↔                      |                        |                        |
| 4) Establish Unified Tax system (PSDS-PIP 1.5.2, MSME Competitiveness Project; Component 3) [MOF]   | ↔                      |                        |                        |
| 5) Establish One Stop Shop for registration and tax clearance (PSDS-PIP 1.5.2, MSME Competitiveness Project; Component 3) [MOF]                             | ↔                      |                        |                        |
| 6)* Carry out campaign to the informal sector for registration [MOTI(Department of Industry)]   |                        | ←————→                 |                        |
| 7) Continuous administrative improvement in supporting MSMEs for registration and tax clearance [MOF]   |                        | ←————→                 |                        |

\* Critical issues before proceeding to 6) are the establishment of the One Stop Shop for registration, unified tax system and enactment of Business Reform Bill.

**【Indicators】** This Action Plan targets the entire informal sector to be registered by Year 2020.

**【Note for Taking Actions】 (Rough Cost Estimate)**

Work Items between 1) and 5) are readily planned activities by PSDS-PIP under 1.5, and its main implementation will be handled by MOF. The role of MOTI is to make sure that the reform level is enough to support formalisation of the informal sector and to undertake campaign in work item 6).

(Kshs. 50 million)

## 2.1.5

|   |                        |                        |                        |
|---|------------------------|------------------------|------------------------|
| <b>Project Name: Establishment of Training Programme for Actions against Counterfeit Goods</b>  |                        |                        |                        |
| <b>【Background and Issues】</b><br>In Kenyan market extensive inflow of various counterfeit and pirated goods are observed, such as automobile parts, electric products, computer software, and audio and visual medias, causing significant loss of domestic consumers, holders of intellectual property and distributors of genuine products. Infringement of IPRs can also be one of factors to hinder FDI to Kenya. Kenyan government has already announced the draft of new Counterfeit Goods Bill, which will be passed and come into effect in the near future. Under the Bill, penalties on manufacturing, selling and importing counterfeit goods will be strictly imposed and a new organization called Counterfeit Goods Agency will be established with board members from MOTI, KIPi, Centre for Enterprise Development, Police and other concerned agencies. However, although Kenyan laws on intellectual property are appropriately prepared, execution of the laws, i.e. practical actions against counterfeit and pirated goods are not necessarily appropriate because of several reasons such as shortage of knowledge and know-how by the staff involved in anti-counterfeit actions, and lack of awareness of IPRs by the general public. With this background, training programmes for the concerned staffs are needed and the system to implement the training should be urgently established. |                        |                        |                        |
| <b>【Purpose】</b><br>Training systems for actions against counterfeit goods in the Kenyan market are established.<br>Target beneficiaries: All the manufacturers in the focus area   |                        |                        |                        |
| <b>【Implementing Agencies】</b><br>Secretariat: Counterfeit Goods Agency (CGA), which will be newly established under the stipulation of the Counterfeit Goods Bill, may be an implementing agency. However, if the Bill does not become effective soon, alternatively, KIPi is suitable as an implementing agency.<br>Task force: MOTI, MOF   |                        |                        |                        |
| <b>【Scope of Work】</b>  |                        |                        |                        |
| Work Items [Lead Institution]   | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 – 2020 |
| 1) Technology transfer from foreign experts to Kenyan officers in IPR protection issues [CGA/KIPi]  | ↔                      |                        |                        |
| 2) Training of Kenyan officials on IPR protection issues abroad [CGA/KIPi]  | ↔                      |                        |                        |
| 3) Development of training system and programmes for actions against counterfeit goods [CGA/MOTI(Department of Industry)]   | ↔                      |                        |                        |
| <b>【Indicators】</b><br>1) Number of training programmes<br>2) Number of staff of concerned agencies who attended and completed the training programme<br>3) Situation of counterfeit in the domestic market (e.g. amount of loss)   |                        |                        |                        |
| <b>【Note for Taking Actions】 (Rough Cost Estimate)</b><br>This is the area where MOTI is placing much effort recently. This action plan is implementable under the full responsibility of MOTI and its line agency, i.e. either CGA or KIPi. Therefore, coordination for actions is relatively easy. This action plan can be implemented in conjunction with PSDS-PIP 4.4.1, which plans on trainings and awareness raising activities to strengthen IPRs.<br><br>(Kshs. 30 million)  |                        |                        |                        |

## 2.2.1

| <b>Project Name: Infrastructure Committee for Industrial Development (ICID)</b>  |                        |                        |                        |
|--|------------------------|------------------------|------------------------|
| <b>【Background and Issues】</b><br>Many problems have been pointed out on infrastructure relating to industrial development. In transport sector, the improvements are required especially on roads and railroads as well as ports and airports. In energy sector the problems of tariff and unstable supply of electricity have been always said to be the obstacles of industry. Other issues relating to infrastructure include water supply and telecommunication among others. There have been huge amount put into such infrastructure projects from donors though the improvement of infrastructure has not been well achieved. There are donors consultation meetings based on sectors. However, basic and economic infrastructure is in fact inter-related and it is necessary to have well prepared coordination among relevant sectors and ministries. In order to improve infrastructure for industrial development the horizontal forum with relevant ministries and donors is required and effective. |                        |                        |                        |
| <b>【Purpose】</b><br>To secure implementation of infrastructure projects without delay in relevant sectors by establishing an Infrastructure Committee for Industrial Development to supervise the improvement and progress of economic infrastructure horizontally for industrial development of Kenya.<br>Target beneficiaries: All the manufacturers in the focus area   |                        |                        |                        |
| <b>【Implementing Agencies】</b><br>Secretariat: MOTI<br>Task force: Ministries relating to economic infrastructure, Relevant implementation agencies, Donors Coordinating agencies  |                        |                        |                        |
| <b>【Scope of Work】</b>   |                        |                        |                        |
| Work Items [Lead Institution]  | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 – 2020 |
| 1) Establishing an infrastructure committee [MOTI(Department of Industry)]   | ↔                      |                        |                        |
| 2) Infrastructure Committee in operation [MOTI(Department of Industry)]  | ↔                      |                        |                        |
| * Critical issues before proceeding to 2) are the establishment of the committee and commitments of the task force.  |                        |                        |                        |
| <b>【Indicators】</b><br>1) No. of Committee meetings held<br>2) No. of Periodical Reports issued<br>3) No. of infrastructure projects in progress and completed   |                        |                        |                        |
| <b>【Note for Taking Actions】 (Rough Cost Estimate)</b><br>Since the infrastructure covers many sectors it is necessary, first of all, to decide the focus development area by MOTI such as industrial area improvement, Mombasa area improvement, etc. based on the MOTI's strategy. Then the identification of necessary infrastructure improvement in such area will be made and relevant ministries, agencies, development partners will be identified accordingly for establishing committee(s). MOTI needs to take the initiative to organize and manage such committee(s) for smooth implementation of infrastructure projects. This action plan can be considered as an implementation structure for PSDS-PIP 1.1.2, which has various activities for strengthening PPP in providing adequate and good quality infrastructure. (Kshs. 10 million)   |                        |                        |                        |

## 2.2.5

**Project Name: Rehabilitating Industrial Roads****【Background and Issues】**

It is well recognised that poor road conditions are a hindrance to economic growth. While national roads have been considered for expansion and rehabilitation with the leadership of Ministry of Transport, priority of rehabilitation of the local roads is considered lower. It is necessary to raise more awareness to rehabilitate industrial roads linking to the markets. Because of the heavily loaded tracks, industrial roads are generally in very poor conditions. Moreover, they are very congested, thereby causing traffic jams. It is critical to rehabilitate industrial roads in order to increase productivity of the industry.

IP-ERS (p.38) highlights the importance of strengthening infrastructure for attaining competitiveness of the Kenyan industry. Cluster 2.1 in ICAP (2005-2007) also recognises importance of rehabilitating industrial roads and recommends developing an investment charter on roads. This project proposal intends to re-emphasise the importance of rehabilitating industrial roads.

**【Purpose】**

To increase productivity through improved road conditions between the city centre and the industrial areas.

Target beneficiaries: All the manufacturers operating in the industrial areas

**【Implementing Agencies】**

Secretariat: DRC

Task force: MOLG, MRPW, MOTI, Local Authority

**【Scope of Work】**

| Work Items [Lead Institution]  | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 - 2020 |
|--|------------------------|------------------------|------------------------|
| 1) Develop an investment charter on roads (ICAP; Cluster 2.1) [DRC]                                | ↔                      |                        |                        |
| 2)* Studying traffic volume and conditions of the industrial roads in Nairobi and in Mombasa [DRC] | ↔                      |                        |                        |
| 3) Designing rehabilitation plan of the industrial roads in Nairobi and in Mombasa [DRC]           | ↔                      |                        |                        |
| 4) Conducting environmental assessment and project estimates [DRC]                                 | ↔                      |                        |                        |
| 5) Construction [DRC]  |                        | ↔                      |                        |

\* Critical issue before proceeding to 2) is securing budget for industrial roads construction.

**【Indicators】**

1) Sound conditions of the industrial roads in Nairobi and in Mombasa.

2) Congestions are reduced along the industrial roads.

**【Note for Taking Actions】 (Rough Cost Estimate)**

This is one of the problems, which the Government has left for a long time. The role of MOTI is representing the voice of the manufacturing sector to DRC in order to improve operation environment of the manufacturers located in industrial area. PSDS-PIP 1.1.2 notes importance of improving urban roads particularly in industrial areas and has activities to remove procurement and construction bottlenecks.

(Kshs. 50 million excluding the construction cost)

## 2.3.1

**Project Name: Strengthening Collection and Disclosure of Industrial Statistics****【Background and Issues】**

Although industrial statistics are the basic information necessary for making policy or assessing risks for policy makers and investors, very limited amount of data are collected and disclosed in Kenya. Available industrial statistics are not only partial but also statistically unreliable. The Government is now implementing Statistical Capacity Building (STATCAP) project assisted by WB, and the Office of the President is also driving to implement the e-Government Strategy. It is the best time for MOTI to quickly construct the strategy to collection and disclosure of the industrial statistics and put it into the actions. Industrial statistics needs be reliable and compatible with international comparison. MOTI and KNBS are recommended to re-design the collection, analysis, and disclosure of the industrial statistics with reference to *the International Recommendations for Industrial Statistics* by UN in 1983.

**【Purpose】** Industrial statistics are readily available for policy making and risk assessment for investors. Target beneficiaries: All the manufacturers in the focus area, relating and supporting sectors, potential investors, policy planners and analysts.

**【Implementing Agencies】** Task force: MOTI and KNBS

**【Scope of Work】**

| Work Items [Lead Institution]   | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 – 2020 |
|---|------------------------|------------------------|------------------------|
| 1) Deciding upon collecting data items (e.g. production volumes and values by products, purchasing of goods/services, capital formation, number of labourers, labour fees, etc.) (PSDS-PIP 4.1.1.1) [MOTI(Department of Industry)/KNBS] | ↔                      |                        |                        |
| 2) Designing the new questionnaire form (PSDS-PIP 4.1.1.1) [MOTI(Department of Industry)/KNBS]  | ↔                      |                        |                        |
| 3) Deciding upon methodologies for collection (e.g. population, sampling frame) (PSDS-PIP 4.1.1.1) [MOTI(Department of Industry)/KNBS]  | ↔                      |                        |                        |
| 4) Deciding upon institutional settings for collection of data and analysis [MOTI(Department of Industry)/KNBS]   | ↔                      |                        |                        |
| 5) Producing the guideline of the industrial statistics [KNBS/MOTI(Department of Industry)]   | ↔                      |                        |                        |
| 6)* Data collection and analysis [KNBS/MOTI(Department of Industry)]  | ← - - -                | - - - - -              | - - - - - →            |
| 7) Publication and uploading on the Web (PSDS-PIP 4.1.1.1) [KNBS/MOTI(Department of Industry)]  | ←                      | - - - - -              | - - - - - →            |

\* Critical issue before proceeding to 6) is the establishment of guideline of industrial statistics.

**【Indicators】** 1) Improved industrial statistical data is being published in the Statistical Abstract 2009.  
2) Improved industrial statistics are uploaded on home page of KNBS and/or MOTI by the end of 2010.

**【Note for Taking Actions】 (Rough Cost Estimate)**

STATCAP would provide the best opportunities for above actions to be taken. More proactive role of MOTI is expected to be taken. Institutional setting and demarcation of responsibilities between KNBS and MOTI shall be discussed in Work Item 4). This action plan can be integrated into PSDS-PIP 4.1.1, which aims to conduct productivity and competitiveness survey. (Kshs. 20 million)



## 2.3.3

**Project Name: Promoting Easy Access to Industrial Information**

**【Background and Issues】** There are many types of industrial information, which the Government has to disseminate to the public for industrial development, such as Acts, regulations, standards, and patents. However, the public agencies tend to charge high fee for the enterprises to obtain and/or search such information (ex. Kshs. 1,000 for one piece of printed regulations and/or standards). Some of the reasons for the high charge are that the public agencies have the mandate to generate some income by themselves, and partly because printed materials become expensive when they sell in small quantity. E-Government Strategy under the Office of President has a policy to set up Trade, Industry, and Tourism Information System on information and to promote disclosure over the Web. In line with the e-Government Strategy, cost of obtaining industrial information from the public needs to be reduced, and uploading information to the Web be encouraged.

**【Purpose】** To make the industrial information easily accessible to the industry

- 1) Costs for obtaining and searching government-source information such as regulations, standards, and property rights are reduced.
- 2) Data base of regulations and standards are uploaded on the Web.

Target beneficiaries: All the manufacturers in the focus area

**【Implementing Agencies】** Secretariat: MOTI

Task force: e-Government (Office of the President), MOTI (KIPI, KEBS), KAM, MLHRD (Health and Safety Services), NEMA

**【Scope of Work】**

| Work Items [Lead Institution]  | Phase 1<br>2007 - 2010 | Phase 2<br>2011 – 2015 | Phase 3<br>2016 – 2020 |
|--|------------------------|------------------------|------------------------|
| 1) Open information policy for the industrial development is agreed between e-Government and MOTI. [MOTI(Department of Industry)]  | ↔                      |                        |                        |
| 2) With consultation of KAM, relevant industrial information and ministries are identified. [MOTI(Department of Industry)]   | ↔                      |                        |                        |
| 3) Task force is set up with relevant Ministries. [MOTI(Department of Industry)]   | ↔                      |                        |                        |
| 4)* Task Force receives the price list, which is produced by each member ministry, for obtaining and searching government-source information. [MOTI(Department of Industry)] | ↔                      |                        |                        |
| 5) Task Force makes a price reduction list while encouraging uploading the database on the Web, which is accessible free of charge. [MOTI(Department of Industry)]           | ↔                      |                        |                        |
| 6) Each ministry/agency reduces the price while uploading some of the data on the Web. [Each Agency]   | ←————→                 |                        |                        |

\* Critical issue before proceeding to 4) is the agreement of the open information policy for the industrial development between e-Government and MOTI.

**【Indicators】**

- 1) Most industry-related regulations have become open on the Web.
- 2) Standards and property right information can be searched and obtained at an affordable cost.

**【Note for Taking Actions】 (Rough Cost Estimate)**

Because this action is inter-ministerial matter, obtaining to support from e-Government Office is needed as initial action. Although similar activities are currently not included in PSDS, this can be integrated into PSDS-PIP 1.5, which aims to reduce legal, regulatory and administrative barriers.

(Kshs. 30 million)

## 3.1.1

**Project Name: Establishment of Kenyan Industrial Development Platform (KIDEP)**

**【Background and Issues】** There are many initiatives and services offered by BDS providers, the financial sector, universities, R & D institutes, and associations. Yet, manufacturers do not have one particular place where they can consult on various operational problems since each agency operates separately based on its own mandate. The current isolated status makes it difficult for the manufacturers to know where to go to solve their problems. There are various "one-stop-shop" initiatives on going for respective target groups such as KenInvest for investors, EPC for exports, and EPZA for EPZ enterprises. Donor agencies also support creating one stop shop; i.e. SSC by IFC, District Information Centre by EU, and Business Solution Centres by UNDP. In spite of all these initiatives, there is no general consultation point, open to any clients during office hours in a location easily accessible for MSMEs in Nairobi. As a facilitator for industrial development, MOTI is responsible for setting up a central One Stop Shop. This OSS should be open to all traders and manufacturers regardless of their size and accept visits during the office hours without prior appointments. The mandate of OSS includes making a portal site, which connects to all the database and homepages of other supporting agencies. The portal site shall also connect to the Trade and Industrial Information System, which is planned to be set up under the initiative of e-Government. The portal site and the Information System shall be shared with other OSS initiatives. This networking of industrial supporting agencies shall enable the Government to identify the area where it should concentrate on since there are many initiatives offered by the private sector. There is a limitation in the direct intervention by the government due to budget constraints and its institutional difference from the profit-driven private sector. Creation of Kenya Industrial Development Platform (KIDEP) shall allow identifying what services the government needs to reinforce and/or streamline the redundancy of existing public services.

**【Purpose】** To promote flow of industrial information and advisory services

Target beneficiaries: All the manufacturers in the focus area

**【Implementing Agencies】** MOTI and OSS, which is proposed to be established in this action plan

**【Scope of Work】**

| Work Items [Lead Institution]  | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 - 2020 |
|--|------------------------|------------------------|------------------------|
| 1) Formulate a strategic plan of KIDEP [MOTI(Department of Industry)]  | ↔                      |                        |                        |
| 2)* Streamlining existing supporting agencies under MOTI (concentration of areas of their expertise and merging with others if necessary) [MOTI(Department of Industry)] |                        | ←————→                 |                        |
| 3) Construction of OSS in a location easily accessible to MSMEs in Nairobi [MOTI(Department of Industry)]  | ↔                      |                        |                        |
| 4) Equipping OSS with library and computers [OSS]  | ↔                      |                        |                        |
| 5) Consultation on marketing, management, and finance starts at OSS while some consultants are employed from the private sector. [OSS]                                   |                        | ←————→                 |                        |
| 6) Developing and maintaining Trade and Industrial Information System [MOTI(Department of Industry)/OSS]   |                        | ←————→                 |                        |
| 7) Developing and maintaining Portal Site of agencies and BDS providers which support development of industries. [MOTI(Department of Industry)/OSS]                      |                        | ←————→                 |                        |

\* Critical issue before proceeding to 2) is the formulation of the strategic plan of KIDEP by MOTI.

**【Indicators】** 1) Traders and manufacturers can receive general consultation without a prior appointment during the office hours at OSS. 2) Service information on trade and industry becomes easily accessible over the Web.

**【Note for Taking Actions】 (Rough Cost Estimate)**

KIDEP is a virtual platform, so investment size and schedule can be adjusted depending on availability of financial resource. Above actions are not to be selected on all-or-nothing basis. It is important to start with work item 1) so that the framework of action plan is clarified. KIDEP is considered as supporting platform for PSDS Goal 4 as a whole. (Kshs. 150 million)

## 3.2.1

**Project Name: Strengthening Capacity of Kenya National Accreditation Service (KENAS)****【Background and Issues】**

Kenya Accreditation Service (KENAS) was established in 2005 to be developed into accreditation of conformity assessment and service provision for inspection, testing, and certification. Its main aim is to become an internationally recognised accreditation body that will offer cost effective accreditation to its customers. KENAS is still at the infant stage as an institution and is highly dependent on KEBS in terms of financial resource and facilities. Establishment of an international accreditation body in Kenya would greatly benefit the industry, especially the export-oriented manufacturers, since it is currently very costly to obtain accreditation from foreign accreditation bodies. In order to realize its prime objective, KENAS is in the process of building the necessary technical capacity that enables providing accreditation services required by international best practices as enshrined in ISO/IEC 17011:2004 and other ILAC/IAF guidance documents that include the key performance indicators. This includes training of a pool of assessors and experts to support its accreditation programmes and creation of the necessary awareness on the needs and benefits of accreditation in the trade facilitation, i.e. "one inspection/test report/ certificate accepted everywhere". For this to happen, the support towards KENAS needs to be strengthened.

**【Purpose】**

To establish a sound national accreditation body whose accreditation activities will be recognised internationally and facilitate the trade of the local manufactures products

Target beneficiaries: All size of manufacturers, particularly export-oriented ones.

**【Implementing Agencies】**

Secretariat: KENAS

Task force: KEBS, MOTI(Department of Industry), KAM

**【Scope of Work】**

| Work Items [Lead Institution]  | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 – 2020 |
|--|------------------------|------------------------|------------------------|
| 1) Enhancing laboratory capacity; i.e. Supplying equipment and training lab personnel (PSDS-PIP 3.2.1.13) [KENAS]  | ←→                     |                        |                        |
| 2)* Overseas trainings for the accreditation staff of KENAS in the fields of calibration, testing, inspection, certification, medical laboratories, marketing of accreditation, and development of accreditation scope [KENAS] |                        | ←→                     |                        |
| 3) Awareness seminars for the industry [KENAS]   |                        | ←→                     |                        |

\* Critical issue before proceeding to 2) is securing budget for the trainings of the accreditation staff of KENAS.

**【Indicators】**

- 1) KENAS attains international recognition at ILAC/IAF level
- 2) Reduction in cost of accreditation among the manufacturers
- 3) Values of accredited products exported overseas

**【Note for Taking Actions】 (Rough Cost Estimate)**

Above action plan is requested by KEBS, and MOTI is expected to support initiatives of KENAS financially. This action plan can be integrated into PSDS-PIP 3.2.1, which has activities on strengthening capacity of Kenyan manufacturers to comply with international standards.

(Kshs. 100 million)

## 3.2.2

| <b>Project Name: Introduction of Tear-down Practices</b>  |                        |                        |                        |
|---|------------------------|------------------------|------------------------|
| <b>【Background and Issues】</b><br>Tear down is the initial step in reverse engineering, which is a popular methodology for learning from existing technology for the purpose of modifying or developing new product. Tear down involves a thorough breakdown of equipment followed by a detailed study on components and subassemblies of the equipment. Tear down is also a popular methodology to identify subcontractors to the original equipment makers by inviting potential suppliers to a forum. However, tear down exercises are not commonly practiced in the Kenyan industry whose R & D activities are not active. MAPSKID team made a first attempt to hold the tear down forum to introduce the tear down exercises to Kenya. It is recommended that this effort shall be continuously undertaken in Kenya for upgrading technological capability of the Kenyan industry and for producing higher value added products. |                        |                        |                        |
| <b>【Purpose】</b><br>To promote value added production and subcontracting<br>Target beneficiaries: Suppliers are MSM manufactures capable of producing parts (metal, plastics, rubber, etc.) with certain QCT standards while original equipment makers are the large-scale manufacturers.   |                        |                        |                        |
| <b>【Implementing Agencies】</b><br>Secretariat: KIRDI<br>Task force: MOTI(Department of Industry), KAM, KenInvest, EPZA, BDS providers   |                        |                        |                        |
| <b>【Scope of Work】</b>  |                        |                        |                        |
| Work Items [Lead Institution]   | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 – 2020 |
| 1) Holding tear-down forums periodically by MOTI and KIRDI. [KIRDI]   | ← - - - - -            | - - - - -              | - - - - - →            |
| 2)* Holding tear down forums with the participation of original equipment manufacturers and universities. [KIRDI]   |                        | ← - - - - -            | - - - - - →            |
| 3) Subcontractors group is created by the original equipment makers for training and seminars. [Original Equipment Makers]  |                        |                        | ← - - - - - →          |
| * Critical issue before proceeding to 2) is well-rooted implementation of tear-down forums periodically with collaboration from the taskforce.  |                        |                        |                        |
| <b>【Indicators】</b><br>Domestic production of machinery and equipment is increased.   |                        |                        |                        |
| <b>【Note for Taking Actions】 (Rough Cost Estimate)</b><br>This action plan involves three developmental stages. First stage is lead by KIRDI while MOTI, KenInvest, and EPZA learn about technological capabilities of the MSMEs so that they can promote involvement of original equipment makers. In the second stage, original equipment makers participate in the forums. Then the third stage is undertaken with the initiative of the original equipment makers on business basis. This action plan can be integrated into PSDS-PIP 4.4.3.4, which plans to extend support to KIRDI for further technology transfer initiatives. (Kshs. 10 million)   |                        |                        |                        |

## 3.2.5

**Project Name: Setting up Funding Scheme for Commercialisation of R & D Activities**

**【Background and Issues】** Kenya has 20 top research institutions, receiving annual funding of US\$ 100 million, including international institutions such as ICIPE, ILRI, and ICRAF. Although the research institutions have produced many R & D seeds, only a few have been commercialised so far. The reasons include a wide conceptual gap between the researchers and the manufacturers; difference in the research level; and a few ventures willing to take risks. To overcome these constraints, some instruments are necessary in both financial and human resources. In terms of the human resource, there needs an experienced "converter" who is specialised in business development and mobilises the stakeholders to work in the same project. Availability of the financial resources would stimulate activities of the converter and efforts towards commercialisation. Commercialisation of R & D seeds requires long-term funding, which is considered risky area. Since the required funding is quite large, combination of grant scheme, concessional loan-scheme, and mobilisation of the venture capital funding can be considered. The draft Science Technology and Innovation (STI) Policy proposes R & D fund, which promotes commercialisation of R & D findings. At the same time, funding by venture capital is to be promoted (See Action Plan for "Promoting Direct Finance"). In this action plan, setting of concessional loan scheme with long-term and low-interest rate is proposed. A loan scheme is considered appropriate because bearing risks for repayment would induce endeavour of the private sector towards the successful return. Since it is unrealistic to expect the government officers to be talented in lending and monitoring business cash flow, it is recommended that implementation is contracted to commercial banks and/or venture capital firms while the Government sets up an advisory committee to offer necessary assistance throughout the commercialisation process.

**【Purpose】** To promote commercialisation of R & D outcomes

Target beneficiaries: All the size of growth-oriented manufactures, which are willing to venture into new lines of production

**【Implementing Agencies】**

Secretariat: MOTI or MOST, to be decided in Work Item 1)

Task force: KIRDI, universities, contracted commercial banks, venture capital firms

**【Scope of Work】**

| Work Items [Lead Institution]   | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 - 2020 |
|---|------------------------|------------------------|------------------------|
| 1) Clarifying implementation structure and schedules for the R & D commercialisation loan [KIRDI/MOTI/MOSE - Secretariat to be decided] | ←→                     |                        |                        |
| 2)* Drafting a bill for the R & D commercialisation loan [Secretariat]  | ←→                     |                        |                        |
| 3) Enactment of the bill for the R & D commercialisation loan [Secretariat]   |                        | ←→                     |                        |
| 4) Setting up revolving fund for the R & D commercialisation loan [Secretariat]   |                        | ←→                     | ←→                     |
| 5) Setting up advisory committee (works also as evaluators and monitors) for the R & D commercialisation loan [Secretariat]             |                        | ←→                     | ←→                     |
| 6) Disbursement of the R & D commercialisation loan through contracted commercial banks and/or venture capital firms [Secretariat]      |                        | ←→                     | ←→                     |

\* Critical issue before proceeding to 2) is completion of clarification work on the implementation structure for the R & D commercialisation loan.

**【Indicators】** 1) Number of IPRs to be commercialised through the R & D commercialisation loan, 2) Amount of the royalty fee from the usage of the IPRs, which are commercialised through the R & D commercialisation loan

**【Note for Taking Actions】 (Rough Cost Estimate)**

This action is to be discussed in line with STI Policy and PSDS-PIP 4.4.2.3. Both of them are proposing to set up industrial R & D fund to promote commercialisation of R & D findings. (Kshs. 100 million)

## 3.3.1

| <b>Project Name: Introduction of MSME Management Consultant System</b>  |                        |                        |                        |
|---|------------------------|------------------------|------------------------|
| <b>【Background and Issues】</b><br>It is effective to introduce MSME Management Consultant (MC) system to solve the following problems facing the MSME in Kenya.<br>- MSME in manufacturing sector needs support for marketing, collaboration with other sub-sectors, human resources (e.g. retired engineers), and obtaining technical information.<br>- Public sector does not grasp the needs of supporting MSME.<br>MSME MC system was introduced in Southeast Asia including Thailand and it was successful there. Once the system and training institute is introduced, maximum of approximately 100 qualified MSME MCs can be registered every year and the above situation will be improved in five years. |                        |                        |                        |
| <b>【Purpose】</b><br>To grasp the needs of public support for MSME and implement necessary supports to MSME by MC<br>Target beneficiaries: MSME  |                        |                        |                        |
| <b>【Implementing Agencies】</b><br>Secretariat: KIBT<br>Task force: MOTI   |                        |                        |                        |
| <b>【Scope of Work】</b>  |                        |                        |                        |
| Work Items [Lead Institution]   | Phase 1<br>2007 – 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 – 2020 |
| 1) Preparing institutional framework and regulations [KIBT]   | ←→                     |                        |                        |
| 2)* Establishment of training institute for MC [KIBT]   |                        |                        |                        |
| 3) Preparing training curriculum for MC candidates [Training institute for MC]  |                        |                        |                        |
| 4) MSME MC system starts [MOTI(Department of Industry)]   |                        | ←→                     |                        |
| 5) Training for MC candidates [Training institute for MC]   |                        |                        |                        |
| 6) Running a diagnostic check on MSMEs by MCs [Training institute for MC]   |                        |                        | ←→                     |
| 7) MSME MC's activities expand [KIBT]   |                        |                        |                        |
| * Critical issue before proceeding to 2) is securing budget for the establishment of the training institute for MC.   |                        |                        |                        |
| <b>【Indicators】</b><br>1) Number of training programmes<br>2) Number of registered MSME MC<br>3) Number of diagnostic checks on MSMEs by MSME MC<br>4) Evaluation of diagnostic checks by MSMEs who received the checks   |                        |                        |                        |
| <b>【Note for Taking Actions】 (Rough Cost Estimate)</b><br>It is necessary to study the information on the existing systems in different countries and to prepare the plan suitable to the situation in Kenya by KIBT in collaboration with MOTI at the initial stage. For designing and operating the system, the assignment of the management consultant system expert could be considered. This action plan can be considered as a part of PSDS-PIP 4.2.2.1, which plans to review curricula of leading management training institutions and initiatives as well as a gap analysis against international best practice for labour productivity and HRD. (Kshs. 100 million)                                     |                        |                        |                        |

## 3.3.4

| <b>Project Name: Development of B2C E-commerce</b>  |                        |                        |                        |
|---|------------------------|------------------------|------------------------|
| <b>【Background and Issues】</b><br>In developed countries, B2C e-commerce is generating more and more market opportunities to MSMEs. Because B2C e-commerce tremendously reduces the distance barrier, it offers market opportunities to the rural enterprises as well. However, development of B2C e-commerce has not received the highest attention in Kenya because there are many policy and regulatory issues to be addressed relating to ICT. Yet, considering tremendous potential opportunities to the industry, development of regulatory framework for B2C e-commerce needs to be speeded up. There is a model law made by UNCITRAL, but consumer protection is not covered by the law. Because the beneficiaries of B2C e-commerce are traders, retailers, and the manufacturers, MOTI is recommended to take a proactive role to set up regulatory framework for B2C e-commerce. |                        |                        |                        |
| <b>【Purpose】</b><br>To set up regulatory framework of B2C e-commerce<br>Target beneficiaries: all size of growth oriented manufacturers in the focus area   |                        |                        |                        |
| <b>【Implementing Agencies】</b><br>Secretariat: MOTI<br>Task force: E-Government, MOIC (National Communications Secretariat), KICTAnet, Kenya Credit and Debit Card Association, Representatives of Courier companies, Chamber of Commerce, etc.   |                        |                        |                        |
| <b>【Scope of Work】</b>  |                        |                        |                        |
| Work Items [Lead Institution]   | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 – 2020 |
| 1) Establishment of Committee for Promoting B2C e-commerce [e-Government]   | ↔                      |                        |                        |
| 2) Strategic planning for regulatory framework [e-Government]   | ↔                      |                        |                        |
| 3) Reviewing existing laws [e-Government]   | ↔                      |                        |                        |
| 4) Strategic planning for implementation structure [e-Government]   | ↔                      |                        |                        |
| 5) Drafting laws [e-Government]   | ↔                      |                        |                        |
| 6)* Implementation [MOTI(Department of Internal Trade)]   |                        | ↔                      |                        |
| * Critical issues before proceeding to 6) is the establishment of legal framework.  |                        |                        |                        |
| <b>【Indicators】</b><br>Sound regulatory framework is established to encourage B2C e-commerce business by the end of 2010.   |                        |                        |                        |
| <b>【Note for Taking Actions】 (Rough Cost Estimate)</b><br>This action plan has been initiated by e-Government office. MOTI is requested to take more proactive role in the activities and quickly acquires knowledge on B2C e-commerce so that MOTI accumulates enough capacity to implement and monitor e-commerce. PSDS-PIP does not include specific activities on e-commerce, but activities under 1.5.6 have some relations since they are to reform commercial laws.<br>(Kshs. 20 million)  |                        |                        |                        |

## 3.3.5

| <b>Project Name: Development of B2G E-commerce</b>  |                        |                        |                        |
|---|------------------------|------------------------|------------------------|
| <b>【Background and Issues】</b><br>There has been an outcry from MSMEs to the Government to provide them with the business opportunities. However, the current status of complicated purchasing procedures by the Government makes it difficult for the MSMEs to join in the bidding. Consequently, the large-scale manufactures and traders are in a better position to be benefited from the Government purchasing, which is the largest buyer in Kenya. The e-Government Strategy formulated in 2004 has set up a target of establishing e-procurement in the Government. The e-procurement would simplify and increase transparency of the purchasing by the Government and would widen up the opportunities to the MSMEs to join in the bid. While the main agency of setting up the e-procurement lies in the hands of the MOF, MOTI is expected to support in speeding up the process and to assist the manufacturers in utilising the e-procurement. |                        |                        |                        |
| <b>【Purpose】</b> To provide equal opportunities for the local manufacturers to benefit from the Government purchasing<br>Target beneficiaries: all size of growth-oriented manufacturers with particular attention to MSMEs   |                        |                        |                        |
| <b>【Implementing Agencies】</b><br>Secretariat: MOF<br>Task force: Public Procurement Oversight Authority (PPOA), E-Government (Office of the President), MOTI   |                        |                        |                        |
| <b>【Scope of Work】</b>  |                        |                        |                        |
| Work Items [Lead Institution]   | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 – 2020 |
| 1) Reviewing the procurement process to be adopted in the e-procurement [MOF]   | ↔                      |                        |                        |
| 2) Drafting an amendment of the Public Procurement and Disposal Act (Act No.3 of 2005) and its regulations [PPOA]   | ↔                      |                        |                        |
| 3) Designing the system and the programme [MOF]   | ↔                      |                        |                        |
| 4)* Enactment of the amendment of the Act and regulations [PPOA/MOF]  | ↔                      |                        |                        |
| 5) Training the Government officers in the usage of the e-procurement programme [MOF]   |                        | ↔                      |                        |
| 6) Disseminating the e-procurement to the public [MOTI(Department of Internal Trade)]   |                        | ↔                      |                        |
| 7) Implementation [PPOA]  |                        |                        | ↔                      |
| * Critical issue before proceeding to 4) is the establishment of legal framework.   |                        |                        |                        |
| <b>【Indicators】</b><br>Increased values of the local products purchased by the Government   |                        |                        |                        |
| <b>【Note for Taking Actions】 (Rough Cost Estimate)</b><br>With the back up by e-Government Office, above action has been initiated by MOF. The main task of MOTI is in Work Item 6), in which MOTI trains the manufacturers on the usage of e-procurement. PSDS does not have an activity relating to e-procurement, but this might be followed under Goal 5, which is to support entrepreneurship and MSE development. (Kshs. 30 million)  |                        |                        |                        |



## 3.4.2

**Project Name: Strengthening Capacity of Packaging**

**【Background and Issues】** Poor quality of packaging makes products less competitive in the global markets and shortens expiry date. Recognising importance of packaging, 70 countries have established packaging institutes under the World Packaging Organization. Kenya also established the Institute of Packaging in 1996 and has been holding occasional seminars and exhibitions using the membership fees. While MOTI has hardly provided support to the Institute, presence of the Institute has not been effective enough to make a big impact. Improvement in packaging involves various scientific subjects including designing, material, and production techniques. Some degree courses are available in USA, UK, and India at universities and packaging institutes. Yet, such courses are not available in Kenya. This makes very difficult to improve the packaging quality except a few top manufacturers who can access to technical information from abroad. Moreover, improvement in packaging is required in the light of environmental protection particularly in the use of plastics. With support from UNEP and UNDP, NEMA and KAM have set up PEAK initiatives, in which they try to raise awareness for recycling and to develop a policy framework for plastic waste.

**【Purpose】** To expand the markets of the Kenyan products with the better packaging  
Target beneficiaries: all size of growth-oriented manufacturers particularly food exporting producers

**【Implementing Agencies】** Secretariat: Institute of Packaging, Task force: MOTI, Universities (UON, JKUAT, etc.), KIRDI, EPC, KAM, PEAK/NEMA

**【Scope of Work】**

| Work Items [Lead Institution]   | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 – 2020 |
|---|------------------------|------------------------|------------------------|
| 1) Clarifying implementation structure and schedule among the stakeholders [MOTI(Department of Industry)]   | ↔                      |                        |                        |
| 2) Agreement is made with Packaging Institutes and/or universities abroad to establish packaging courses in universities in Kenya [Universities/Institute of Packaging] | ↔                      |                        |                        |
| 3)* Trainers are trained through distance education and on-site training [Universities/Institute of Packaging]  | ↔                      |                        |                        |
| 4) Packaging courses are offered in universities in cooperation with the Institute of Packaging and/or universities abroad [Universities]                               |                        | ↔                      |                        |
| 5) Packaging seminars are regularly held in association with MOTI, KAM, KIRDI, EPC, and Institute of Packaging [Institute of Packaging]                                 |                        | ↔                      |                        |
| 6) Regulations on 3R for packaging are established (on going by PEAK) [PEAK]  |                        | ↔                      |                        |

\* Critical issue before proceeding to 3) is the establishment of the implementation structure for the training plan.

**【Indicators】** 1) Students who took the packaging courses are employed in the manufacturing sector.  
2) Quality of packaging is improved (consumer packaging and transport packaging).  
3) Recycle rate of packaging increases.

**【Note for Taking Actions】 (Rough Cost Estimate)**

The issue of strengthening packaging quality has been rather neglected by the Government and universities. MOTI is recommended to take an initiative in raising awareness and planning in Work Item 1). Then actual implementation can be designated to the relevant agencies. Work Item 6) can be implementable separately from others (See Action Plan 4.1.1). PSDS-PIP does not have specific activities for packaging. The closest is 4.4.3.2, which is to develop sector-specific technology transfer programme. (Kshs. 20 million)

## 3.5.3

**Project Name: Transforming EPZ into SEZ**

**【Background and Issues】** Current EPZ Act imposes many restrictions on the EPZ companies. For example, EPZ Act requires separate registration for manufacturing, commercial, and service activities. Moreover, EPZA internally sets up a rule to restrict domestic sales of EPZ companies up to 20 % of production. This restriction makes it difficult to motivate investors to join EPZ because the Kenyan markets are important for those who aim to penetrate the regional markets. EPZs have sought to be regionally dispersed to attract private sector investment in locations where public sector funding has not been sufficient and to facilitate a wider variety of activities including agro-processing closer to the raw materials. This has resulted in only 2 major public zones in Athi River and Mombasa with the remaining 30 small zones in which between 1 and 10 enterprises operate in each. This scattered set up of EPZ locations make it difficult to strengthen infrastructure and extend assistance to EPZ companies. Overall, present EPZ benefit proposition, strategy, and funding resources are not adequate enough to attract significant FDI. Under such conditions, contribution from EPZ companies to the economy and to the labour market is not well recognised by general citizens, and instead, they often receive criticism of working conditions from COTU. However, high economic target set forth by Vision 2030 calls for an urgent improvement of the EPZs to make it attractive place for FDI. EPZA is well aware of the necessity to revise EPZ policy and is now negotiating with MOTI to amend EPZ Act, which enables expanding activities in EPZ and relaxing restrictions to the EPZ companies. Furthermore, it is necessary to benchmark industrial zone models abroad, which integrate industrial area, commercial area, service area, residential area, and social and amenity area in order to provide comfortable living environment to the investors. Such successful industrial areas are often constructed under PPP scheme with initiatives taken by private developers who try to make their product most attractive to generate profit. While it is well recognised that amendment of EPZ Act is necessary, EPZA is also recommended to start working on reforming in the area where they have an authority under the current law such as relaxing restrictions on domestic sales and strengthening amenities and facility within EPZ.

**【Purpose】** To create attractive SEZs for promotion of FDI Target beneficiaries: all size of growth and export oriented manufacturers especially those of the foreign origins

**【Implementing Agencies】** Secretariat: EPZA  
Task force: MOTI(Department of Industry), KRA, MOF, KenInvest

**【Scope of Work】**

| Work Items [Lead Institution]   | Phase 1<br>2007-2010 | Phase 2<br>2011-2015 | Phase 3<br>2016-2020 |
|---|----------------------|----------------------|----------------------|
| 1) Bench marking study on industrial zones overseas (PSDS-PIP 4.3.1.1) [EPZA]                     | ←→                   |                      |                      |
| 2) Write up a proposal for industrial zones policy (PSDS-PIP 4.3.1.3) [EPZA]                      | ←→                   |                      |                      |
| 3) Drafting an amendment of EPZ Act (PSDS-PIP 4.3.1.3) [EPZA/MOTI]                                | ←→                   |                      |                      |
| 4) Enactment of SEZ Act (amended EPZ Act) (PSDS-PIP 4.3.1.3) [EPZA/MOTI]                          | ←→                   |                      |                      |
| 5) Relaxing restriction from domestic sales from EPZ (PSDS-PIP 4.3.1.3) [EPZA]                    | ←→                   |                      |                      |
| 6) Strengthening amenities and facility inside EPZ (PSDS-PIP 4.3.1.3) [EPZA]                      | ←→                   |                      |                      |
| 7) Strengthening infrastructure inside SEZ (PSDS-PIP 4.3.1.3) [EPZA]                              | ←→                   |                      |                      |
| 8) Improving access road to the city centre and the transportation hubs (PSDS-PIP 4.3.1.3) [MRPW] |                      | ←→                   |                      |

\* Critical issue before proceeding to 4) are the establishment of legal framework and concrete industrial zones policy.

**【Indicators】** 1) Investment to EPZ increases from various sub-sectors.  
2) Economic contribution from EPZ is appreciated by the citizens.

**【Note for Taking Actions】 (Rough Cost Estimate)** While the proposal is made by MOTI and EPZA, actual implementation requires collaboration from other ministries. For instance, MOF and KRA on taxation, MRPW on roads, MOWI on water supply. This action plan needs to be considered with Action Plan 3.8.3 and to be integrated into PSDS-PIP 4.3.1, which is to develop an integrated zone strategy. (Kshs. 500 million)

## 3.5.4

| <b>Project Name: Local Investment Promotion</b>   |                        |                        |                        |
|---|------------------------|------------------------|------------------------|
| <b>【Background and Issues】</b><br>Kenya lacks measures for attracting investment in industry, commerce, and service to the rural areas. This has resulted in heavy concentration of industry in Nairobi Metropolitan area and to a lesser extent in Mombasa. At present, poor infrastructure and a weak-supporting system outside Nairobi do not attract industries to invest outside Nairobi. The only existing attraction is geographical advantage if the industry is close to a specific natural resource. The industrial supporting system outside major towns is insufficient in terms of finance and human resource. Industrial concentration in one area not only causes environmental deterioration but also increases prices, especially labour cost. On the contrary, investment to the rural areas would reduce poverty through stimulating economic activity in those areas. Many Asian countries such as Thailand, Malaysia, and India have clear local investment measures by providing better incentives to the rural areas through zoning. Promotion of local industry, service, and commercial enterprises requires proper land planning in pursuing sustainable development, harmonising with agricultural and tourism activities. |                        |                        |                        |
| <b>【Purpose】</b><br>To promote investment to the manufacturing activities outside Nairobi<br>Target beneficiaries: All size of growth oriented manufacturers  |                        |                        |                        |
| <b>【Implementing Agencies】</b><br>Secretariat: KenInvest, MOTI(Department of Internal Trade)<br>Task Force: MOF, Ministry of Planning, EPZA, KAM, KEPSA, Ministry of Regional Development, etc.   |                        |                        |                        |
| <b>【Scope of Work】</b>  |                        |                        |                        |
| Work Items [Lead Institution]   | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 – 2020 |
| 1) Set up a Task Force for studying investment promotion outside Nairobi. [KenInvest/MOTI]<br>Agenda:<br>i. Studying on the national incentive system towards investment. (Comparative study with benchmarking abroad: ex. tax reduction, exemption from license fee, and reduction of electricity charges.)<br>ii. Producing an industrial land use map for planning<br>iii. Planning on establishment of industrial local supporting system   | ↔                      |                        |                        |
| 2)* The Task Force formulates a strategic paper. [KenInvest/MOTI]   | ↔                      |                        |                        |
| 3) Drafts a bill [KenInvest/MOTI]   | ↔                      |                        |                        |
| 4) Implementation [KenInvest/MOTI]  |                        | ↔                      |                        |
| * Critical issue before proceeding to 2) is completion of study on national incentive system towards investment.  |                        |                        |                        |
| <b>【Indicators】</b><br>The manufacturing activities increase outside Nairobi in terms of production volume and employment.  |                        |                        |                        |
| <b>【Note for Taking Actions】 (Rough Cost Estimate)</b><br>This is the area where MOTI can symbolise its leadership in industrial development. Coordination with other ministries may not be easy, but MOTI needs to request commitment from other ministries since this is the area directly linked to the poverty reduction in Kenya. Although PSDS does not specifically address promotion of investment outside Nairobi, this can be considered in conjunction with PSDS-PIP 4.3.2, which has activities to strengthen international and domestic investment. (Kshs. 50 million)   |                        |                        |                        |



## 3.7.1

**Project Name: Upgrading Training in the National Polytechnics**

**【Background and Issues】** TIVET Programme has a complicated structure in Kenya. MOST is now drafting the National Science and Technology Skills Training Strategy, which is likely to propose setting up an inter-ministerial committee, i.e. TIVET Authority. It has been well recognised that there is a need of upgrading technological capability of TIVET in order to supply human resource that enable global competition in the industry. One important strategy for this is to have closer linkage between the industry and TIVET institutions. For this purpose, it is recommended that MOTI and KAM be more involved in TIVET activities. PSDS-PIP 4.2.3 also recognises this issue. Since TIVET consists of many institutions, this Action Plan particularly focuses on the national polytechnics (Kenya/Nairobi, Mombasa, Kisumu, and Eldoret) because they are currently under reform through Sessional Paper No.1 of 2005, which proposes allowing national polytechnics to offer degree courses and to have operational autonomy. Government of Italy has collaborated with upgrading of training curriculum and facilitation of the Department of Electric and Electronics in Kenya Polytechnics and Mombasa Polytechnics from 2004 to 2007. While it is recognised that quick implementation of upgrade cannot be achieved without the support from the donor agencies, this action plan intends to focus on areas where more attention needs to be raised for the national polytechnics to become centres of excellence of training high skilled workers for the industrial development.

**【Purpose】** To upgrade the trainings at the national polytechnics for industrial development  
Target beneficiaries: Polytechnics students willing to be employed in the manufacturing sector

**【Implementing Agencies】** Secretariat: National Polytechnics  
Task force: MOST, KATTI, MOTI, KAM

**【Scope of Work】**

| Work Items [Lead Institution]   | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 - 2020 |
|---|------------------------|------------------------|------------------------|
| 1) Establishment of TIVET Authority with participation of MOTI, KAM, KEPSA (National Science and Technology Skills Training Strategy) [MOST]  | ↔                      |                        |                        |
| 2) Annual review of training curriculum of the National Polytechnics<br>- with the participation of the industry and<br>- with more emphasis on production management and technical designing [National Polytechnics] | ←                      | -----                  | -----→                 |
| 3)* MOTI and KAM collaborates with allocation of industrial attaches for the National Polytechnics [MOTI(Department of Industry)]   | ←                      |                        | →                      |

\* Critical issue before proceeding to 3) is the establishment of TIVET Authority with participation of the task force.

**【Indicators】** Majority of graduates from the national polytechnics can find employment in the sub-sector if they are trained by Year 2020.

**【Note for Taking Actions】 (Rough Cost Estimate)** Establishment of TIVET Authority is being planned by MOST. Participation in the TIVET Authority shall clarify the role of MOTI to be taken in TIVET. This action plan particularly proposes MOTI to collaborate in allocation of industrial attaches (Work Item 3) and in receiving more collaboration from the Industry (Work Item 2) for the development of the national polytechnics as the top TIVET institutions. This action plan can be integrated with PSDS-PIP 4.2.3, which is to articulate interests of private sector in the TIVET reform process.

(Kshs. 10 million)

## 3.7.2

**Project Name: Introduction of Organised Vocational Skills Evaluation System****【Background and Issues】**

The industrial development necessitates continuous upgrade of worker skills. Although the industrial training levy system is designed to provide training opportunities to employees, it is difficult for the employers to release employees from jobs to attend training courses, whose certificates are not appreciated to have high values in undertaking jobs. On the other hand, the national trade test system can overcome constraints from sacrificing working time if the test is designed for those who study by themselves outside the job. Kenya already has national trade tests, but they are for craftsmen and considered lower qualification than diploma or degrees. If the national trade test is designed at various levels from the basics to the highest, employees will be motivated to receive higher certificates. Japan, for example, has the national trade tests in 137 job categories. Each trade test has from 3 to 5 levels of certificates so that applicants can take tests according to their knowledge level. This trade test system in Japan is greatly contributes to acquiring technical skills after employment. Currently, the national trade test in Kenya is designed by the MLHRD. Upgrade of the national trade test is recommended to be taken up as one of the agenda in TIVET reform.

**【Purpose】**

To provide life-time opportunities in technical trainings

Beneficiaries: All the engineers who wish to upgrade their skills

**【Implementing Agencies】**

Secretariat: TIVET Authority, MOST

Task force: MLHRD, KATTI

**【Scope of Work】**

| Work Items [Lead Institution]  | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 – 2020 |
|--|------------------------|------------------------|------------------------|
| 1) Benchmarking study on trade test system abroad [TIVET Authority/MOST] | ↔                      |                        |                        |
| 2) Designing new trade test system in Kenya [TIVET Authority/MOST]       | ↔                      |                        |                        |
| 3)* Pilot tests [TIVET Authority/MOST]                                   | ↔                      |                        |                        |
| 4) Annual implementation [TIVET Authority/MOST]                          |                        | ← - - - - -            | - - - - - →            |

\* Critical issue before proceeding to 3) is the completion of design work on new trade test system with collaboration from the task force.

**【Indicators】**

Holders of qualifications from the trade tests can exert high technical skills on the job.

**【Note for Taking Actions】 (Rough Cost Estimate)**

The national trading test is currently administered by MLHRD. It needs to be discussed in the TIVET Authority, which ministry is responsible for above action, either MOST or MLHRD. MOTI's task is to represent the interest of the manufacturers in the TIVET Authority and encourage the sub-sectoral committee towards involvement in the process of developing the system. PSDS-PIP does not have specific activity on the qualification system, but this can be considered under 4.2.3, which aims to articulate interest of private sector in the TIVET reform. (Kshs. 50 million)

## 3.8.2

**Project Name: One Village One Product Project**

**【Background and Issues】** One Village One Product is a movement promoted by the Japanese Government in assisting regional economic development in developing countries. This movement is popularly adopted in Japan in 1980's and 1990's and successfully created a regional economic development model. The movement starts from creating a network among the community and comes up with a vision to transform the community to produce more value-added products and to expand the markets. It finds the way to utilise the local resources including commodities, technology, and human resources in the most effective manner. This movement is most applicable in the Kenyan rural development through empowering the local community. It is also noted that this approach is similar to community projects undertaken by the Kenya Agricultural Productivity Project (KAPP).

**【Purpose】** To create local initiatives towards transforming themselves to more active economic entities Target beneficiaries: MSMEs in rural areas

**【Implementing Agencies】** Secretariat: MOTI  
Task force: Relevant ministries (e.g. MOA, MOLF, etc.), District Offices, BDS Providers (universities, NGO, consultants)

**【Scope of Work】**

| Work Items [Lead Institution]  | Phase 1<br>2007 – 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 – 2020 |
|--|------------------------|------------------------|------------------------|
| 1) MOTI holds the national seminar for introducing One Village One Product movement [MOTI(Department of Industry)]   | ↔                      |                        |                        |
| 2) Meetings and workshops with stakeholders<br>- Making a development plan and action plans<br>- Deciding upon implementation structure and work schedules<br>- Selection of target products<br>- Identifying necessary supports and trainings [MOTI(Department of Industry)/DIDO] | ↔                      |                        |                        |
| 3)* Implementation of the supports and the trainings [DIDO/MOTI(Department of Industry)]   |                        | ↔                      |                        |
| 4) Monitoring and evaluation of Work Items [MOTI(Department of Industry)]  |                        | ↔                      |                        |
| 5) The best model is introduced in the national seminar [MOTI(Department of Industry)]   |                        | ↔                      |                        |
| 6) A strategy to expand the model nationwide is formulated [MOTI(Department of Industry)]  |                        | ↔                      |                        |
| 7) Expansion of the model [MOTI(Department of Industry)/DIDO]  |                        |                        | ↔                      |

\* Critical issues before proceeding to 3) are the identification of target products, the establishment of implementation structure, and provision of appropriate supports.

**【Indicators】** Community group takes initiative in activating the regional economy with the support of the Government and various BDS providers including consultants, academia, and NGOs.

**【Note for Taking Actions】 (Rough Cost Estimate)**

Considering all necessary aspects, the implementation structure is expected to be established for effective implementation and well coordinated consensus among the stakeholders. The key to success of above action plan is to motivate the local community to produce value-added products, which meet the needs of target markets. The best practice needs to be produced so that the lessons can be followed nationwide. PSDS-PIP 5.3.1 notes various on-going value-chain and BDS projects in Kenya. This model drawn from the Japanese experience has to be shared with other on-going projects in a framework of PSDS-PIP 5.3.1. (Kshs. 150 million)

## 3.8.3

**Project Name: Creation of an Integrated Economic Zone in Athi River**

**【Background and Issues】** Athi River has a huge potential as an economic centre. Athi River shows the highest concentration of large-scale industries next to Nairobi City and Mombasa. EPZ Athi River is the largest EPZ, hosting 24 companies and 10,000 workers in 108 hectares out of 339 hectare fenced site. From a transport perspective, the location is at the confluence of 2 major roads, the Mombasa-Nairobi highway and the Nairobi-Namanga road, which connects to northern Tanzania. It is also next to the Nairobi-Mombasa Railway line and only 19 km from Jomo Kenyatta Airport. Due to the development of EPZ companies, the local Mavoko/Kitengela area has developed into a major commercial, residential, and industrial hub, supporting farming and residential developments along the Mombasa Highway and on the Kajjado-Isenya-Kitengela axis. The fibre optic cable linking Mombasa to Nairobi passes right through EPZ. In addition, the Technology Development Centre managed by MLHRD is adjacent to EPZ. The Centre is designed to serve the needs of EPZ companies by providing technical training at vocational level. Vision 2030 recognises the importance of Athi River and plans to set up a BPO Zone under MOIC and first-tier retail shops under MOTI. It also plans to improve access roads to Athi River. However, strengthening Athi River as a manufacturing centre is not mentioned. Instead, Vision 2030 calls upon creation of strategic industrial clusters and SME parks as flagship projects under the manufacturing sector. It is considered that Athi River is the best location to initiate the two flagship projects under the manufacturing sector as well. In order to meet the high economic growth targeted by Vision 2030, it is recommended that four flagship projects contained in Vision 2030, including BPO and retail shops, and the Technological Development Centre be consolidated into one Integrated Economic Zone. This will increase externality of the economic entities located in Athi River. Since Athi River is in high demand for various activities, urgent mapping is necessary. Without proper development and promotion support, potential capacity of Athi-River as an economic zone will be decreased. This action plan will be considered as a part of Nairobi Metropolitan Region Development Strategy, which is also under the activities of Vision 2030.

**【Purpose】** To transform Athi-River into an Integrated Economic Zone

Target beneficiaries: All size of growth oriented manufacturers and the service sector as well as new investors

**【Implementing Agencies】** Secretariat: Committee for Integrated Economic Zone in Athi River (proposed to be established in Work Item 1); Task force: Proposed Nairobi Metropolitan Region Development Board (NMRDB), MOL, Mavoko Municipal Council, MOIC, MLHRD (Technology Development Centre), MOTI(Department of Industry), EPZA, KIEL

**【Scope of Work】**

| Work Items [Lead Institution]  | Phase 1<br>2007 - 2010 | Phase 2<br>2011 - 2015 | Phase 3<br>2016 – 2020 |
|--|------------------------|------------------------|------------------------|
| 1) Establishment of committee for Integrated Economic Zone in Athi River (CIEZ) [NMRDB]  | ↔                      |                        |                        |
| 2)* Formulating a concept paper for the integrated economic zone and land mapping of Athi River [CIEZ]   | ↔                      |                        |                        |
| 3) Designing and constructing BPO Park (Vision 2030) [MOIC]  | ↔                      |                        |                        |
| 4) Designing and constructing retail shops (Vision 2030) [EPZA/MOTI]   | ↔                      |                        |                        |
| 5) Designing and constructing SME park (Vision 2030) [KIEL]  | ↔                      |                        |                        |
| 6) Drafting an amendment of EPZ Act, enabling expansion of activities within EPZ and strengthening amenities, facility, and infrastructure inside EPZ Athi River (PSDS-PIP 4.3.1; Action Plan 3.5.1) [MOTI(Department of Industry)/EPZA] | ↔                      |                        |                        |
| 7) Formulating a strategy to strengthen linkage between EPZ companies, SME Park companies, and the Technology Training Centre [CIEZ]   | ↔                      |                        |                        |
| 8) Construction of school and hospital [MOED, MOH]   | ↔                      |                        |                        |
| 9) Installing optical fiber network [MOIC]   | ↔                      |                        |                        |
| 10) Improving access road to Nairobi and to Namanga (on going: AfDB project) [MRPW]  | ↔                      |                        |                        |
| 11) Improving electricity and water supply [MOEN&MOWI]   | ↔                      |                        |                        |
| 12) Opening a railway station in Athi River [MOTI]   |                        | ↔                      |                        |
| 13) Promotion and marketing activities for the Zone [EPZA/MOTI]  | ↔                      |                        |                        |

\* Critical issue before proceeding to 2) is the establishment of the CIEZ in Athi River.

**【Indicators】** Dynamic economic zone is created in Athi River by the end of 2015.

**【Note for Taking Actions】 (Rough Cost Estimate)** Since above action involves many stakeholders, leadership from NMRDB, being proposed to be established by NESAC, is required. Success of above action plan would demonstrate the transformed economic nature of Kenya in contrast from the current fragmented and uncoordinated nature. This action plan is to be integrated into PSDS-PIP 4.3.1 together with Action Plan 3.5.3. (Kshs. 2 billion)





## **PART IV : Development Plan of the Target Sub-sectors**

### **Chapter 9 Selection of the Target Sub-sectors**

#### **9.1 Intention of target sub-sector selection**

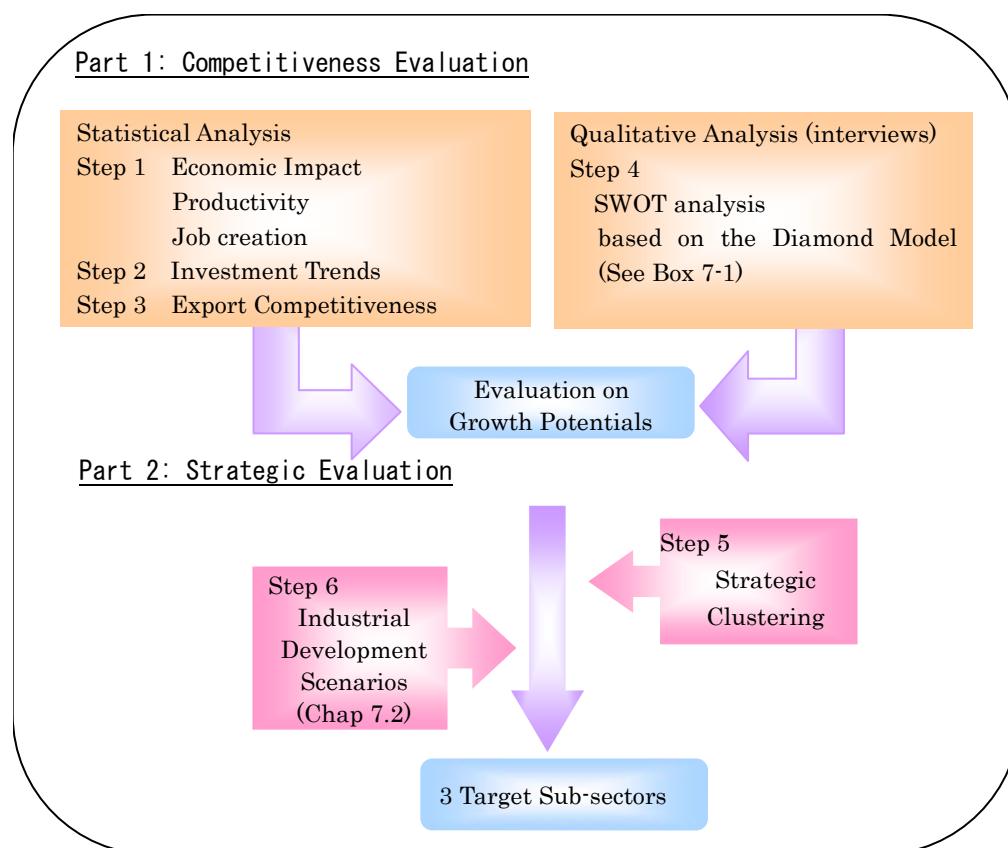
The industrial master plan has a dual structure; actions covering issues applicable to whole manufacturing sector and those of the target sub-sectors. While there are many constraints and countermeasures that are common across the industry, there are some that are unique to each sub-sector. Lack of sub-sectoral development strategy has delayed the response to the needs of the industry. Formulating a sub-sectoral strategy would help to identify such unique issues and put actions that can help to leap the sub-sector.

#### **9.2 Selection process**

Three target sub-sectors are selected based on potentialities for contributing to industrial transformation along ERS and Vision 2030. Industrial transformation shall have the following characteristics:

- i) industrialisation accompanied by technological innovation,
- ii) industrialisation strengthening industrial linkages, and
- iii) industrialisation contributing to regional development.

Verification process has two parts, namely, Competitiveness Evaluation and Strategic Evaluation.



Source: The JICA Study Team

Figure 9-1 Verification Process of the Target Sub-sectors

### 9.3 Part 1: Competitiveness evaluation

#### 9.3.1 Evaluation criteria

##### (1) Statistical Analysis

The statistical analysis is divided into three parts;

- i) value addition, productivity, and job creation evaluation based on ISIC
- ii) investment trend analysis classified into ISIC
- iii) export competitiveness based on Harmonizes System (HS) codes 2002.

##### (2) Qualitative analysis

Competitiveness evaluation from the statistical analysis is cross checked with qualitative analysis by using the diamond model. The data are collected from the interviews with sample manufactures. Obtained information gives insights on the market conditions, input availability, suppliers' availability, extent of assistance from the supporting institutions, etc.

### 9.3.2 Statistical analysis

#### (1) Value addition, productivity and job creation assessment

In this first section of statistical analysis, three sets of criteria that demonstrate economic impact and growth potential were given importance:

- iv) Economic impact (value addition over 10 % of total) or
- v) High productivity (Both input productivity and labour productivity are over the averages.), but those whose value addition is less than 1 % of total are excluded because of low economic impact and
- vi) High growth rate (average growth of value addition from 2001 to 2005 is above the total average of 5 %).

The following eight sub-sectors passed the above criteria.

- vii) Food processing,
- viii) Petroleum and other chemicals,
- ix) Non-metallic mineral products,
- x) Beverages and tobacco,
- xi) Pottery and glass products,
- xii) Electrical machinery,
- xiii) Rubber products, and
- xiv) Non-electrical machinery.

#### (2) FDI Trends

In the second step, FDI trend is analysed in order to identify which sub-sectors foreign countries are willing to invest in Kenya. In terms of investment trends, the following five sub-sectors are found to be prominent:

- xv) petroleum and other chemicals
- xvi) clothing
- xvii) electric machinery & equipment
- xviii) food processing & beverages
- xix) metallic products

#### (3) Export Competitiveness

In the third step, export competitiveness is analysed by international competitiveness index. The competitive commodities are;

(Each head number is the code of HS2002)

- 09 coffee, tea, mate and spices;
- 06 live trees and other plants (horticulture);
- 07 edible vegetables and certain roots and tubers;
- 25 salt, sulfur, earths and stone, plastering material;

- 20 preparation of vegetables, fruit or nuts;
- 03 fish and crustaceans, molluscs and other aquatic invertebrates and
- 08 edible fruit and nuts; peel of citrus fruit or melons
- 41 raw hides, skins and leather.

All the above are processed or unprocessed commodities supplied from the agro industry. In terms of growth rates, following two commodities are showing rapid growth.

- 34 soap, organic surface-active agents
- 64 footwear, gaiters and associated ingredients/products.

#### (4) Results from the Statistical Analysis

The following Table summarises conclusion of the statistical analysis. The results from the statistical analysis show that "food processing and beverages" and "clothing" sub-sectors possess dominant positions in the manufacturing sector although their productivity is not very competitive.

Table 9-1 Results from the Statistical Analysis

| Value Added, Productivity and Employment  | FDI Trend   | International Competitiveness   |
|---|---|---|
| <u>Food processing</u><br><u>Beverages and tobacco</u><br><u>Petroleum and other chemicals</u><br>(petroleum refinery)<br>Non-metallic mineral products<br>Pottery and glass products<br><u>Electrical machinery &amp; equipment</u><br>Rubber products<br>Non-electrical machinery | <u>Food processing and beverages</u><br><u>Petroleum and other chemicals</u><br>(pharmacy and ethanol)<br><u>Electric machinery &amp; equipment</u><br>Metallic products<br><u>Clothing</u> | <u>Food Processing and beverages</u><br>-coffee, tea, mate and spices<br>-salt, sulfur, earths and stone, plastering material<br>-preparation of vegetables, fruit or nuts<br>Leather<br>-raw hides, skins, and leather<br><u>Other Chemicals</u><br>-soap, organic surface-active agents<br>Footwear |
| Employment Contribution<br>Textile<br><u>Clothing</u>   |   | Export contribution<br><u>Clothing</u>  |

Note: Underlined sub-sectors are those which are listed in two or three criteria.

| First priority                            | Second Priority  | Third Priority  |
|---|--|---|
| Food Processing and Beverages<br>Clothing | Petroleum and other chemical<br>Electrical machinery & equipment | Non-metallic mineral products<br>Pottery and glass products<br>Rubber products<br>Non-electrical machinery<br>Textile<br>Metallic products<br>Leather<br>Footwear |

Source: The JICA Study Team

### 9.3.3 Qualitative Analysis

The main information sources of the analysis in this Step are the interviews conducted with 92 sample enterprises between June and September 2006. Questionnaire was designed to collect data on determinants in the Diamond Model. As a result of analysis, imbalances in strengths and weaknesses among the four determinants were observed across the sub-sectors as well as within a sub-sector. Table 9-2 shows major factors that cause such variations in strengths and weaknesses.

Table 9-2 Factors Strengthening or Weakening Competitiveness

|   | Demand Conditions   | Factor Conditions                                      | Related and Supporting Industries   | Firm Strategy, Structure and Rivalry  |
|---|---|--|---|---|
| + | Steady growth in African markets<br>(e.g. consumer products)<br>Variations in demand<br>(e.g. food) | Use of local raw materials<br>(e.g. pyrethrum, sisal)  | Existence of local subcontractors<br>(e.g. food, automobile)<br>Existence of supporting institutions<br>(e.g. agro-machinery) | Fair competition<br>New investment<br>Aggressive marketing strategies<br>Possibility to produce higher value added products |
| - | Markets flooded by imported and used products<br>(e.g. sedan cars, leather shoes)                   | Diminishing raw materials<br>(e.g. forests for timber) | Lack of linkages with R&D sector<br>Absence of effective HRD programmes<br>(e.g. pharmaceuticals)                             | Lack of awareness for productivity improvement<br>Low value-added production  |

Source: The JICA Study Team

### 9.3.4 Evaluation on Growth Potentials

#### (1) Strategies for upgradation

The diamond analysis shows that each sub-sector is facing challenges and that there is no easy winner due to severe global competition. Because of competition from imported products, continuous efforts for quality upgrade are must for all the sub-sectors. While all sub-sectors have potential of further growth if fundamental conditions improve, each sub-sector has to adopt specific strategies for upgrading.

#### (2) Scenarios for creating competitiveness of sub-sectors

Results from competitiveness analysis from the previous steps show the general direction for increasing competitiveness of each sub-sector. It is considered that improving following five conditions is critical in encouraging enterprises to go into higher value added production, to improve productivity, and to expand markets.

##### i) Creating an enabling environment

- ii) Targeting the growing demand in the African region
- iii) Increase usage of local materials
- iv) Strengthening supporting system on the platform
- v) Developing subcontractors

Among above five conditions, creating an enabling environment (as in number i) and strengthening supporting system on the platform (as in number iv) would have effects more or less similarly on all the sub-sectors. Therefore, sub-sectors which can support strategies of targeting at the growing demand in the African region (as in number ii), increasing usage of the local materials (as in number iii), and developing the local suppliers (as in number v) are considered the best candidates for the target sub-sectors.

Food processing and beverages is the only sub-sector which satisfied all three conditions. The sub-sectors which satisfied the demand conditions and one of the other two are:

- i) petroleum and other chemical products (fast moving consumer goods and traditional medicine),
- ii) electric equipment and machinery,
- iii) non-metallic mineral products (as of construction material and glass), and
- iv) non-electric machinery (as of agro-machinery).

Short List from Competitive Evaluation (Part 1)

Table 9-3 Short List from Competitive Evaluation (Part 1)

|                          |   |
|--------------------------|---|
| 1 <sup>st</sup> priority | i) food and beverages   |
| 2 <sup>nd</sup> priority | ii) petroleum and other chemical products (fast moving consumer goods and traditional medicine) |
|                          | iii) electric equipment and machinery   |
| 3 <sup>rd</sup> priority | iv) non-metallic minerals (construction materials and glasses)                                  |
|                          | v) non-electric machinery (agro-machinery)  |

## 9.4 Part 2: Strategic Evaluation

### 9.4.1 Strategic Clustering

#### (1) Strengthening linkages with growing economic sectors

In Part 2, instead of ISIC based sub-sector approach, clustering approach is proposed for classification of sub-sector selection. There are two reasons for adopting clustering approach, which combines sub-sectors through the value chain. Firstly, because only three sub-sectors are to be chosen, adoption of the clustering approach shall widen the beneficiaries from development of the target sub-sector than simply selecting by ISIC classification. Secondly, sub-sector approach is considered to overlook value chain which affects development of the sub-sector. The way to identify strategic clustering is proposed to be considered in conjunction with other important and/or growing sectors of the Kenyan economy as discussed in development scenario; i.e. agriculture, tourism sector, construction sector, transportation

sector and ICT. Each sector has relationship with the manufacturing sector both backward and forward.

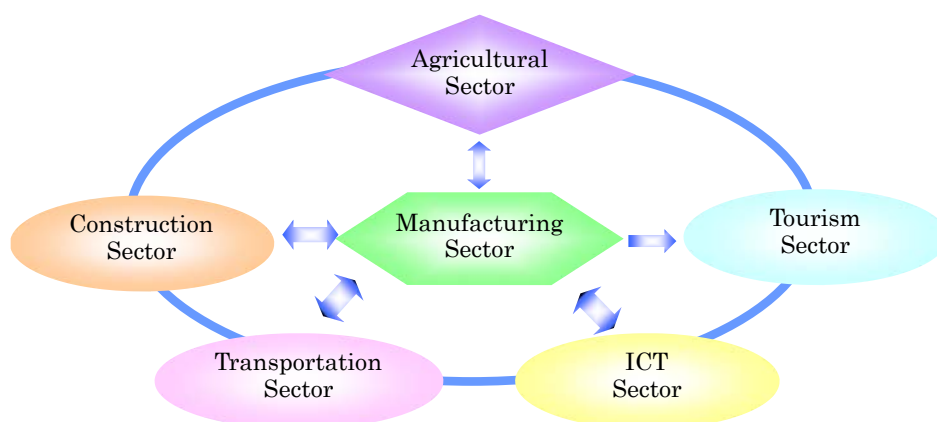


Figure 9-2 Strengthening Industrial Linkages

## (2) Reflecting policy priorities

Taking into account of results from the verification process of the target sub-sectors, MAPSKID team had a series of discussion to decide upon three sub-sectors that reflect the policy priorities and came up with the following selections.

### Selection 1: Agro-processing

Firstly, backward linkages with the agricultural sector including crops, dairy, livestock, forestry, and fishery received highest priority. Agricultural products are inputs of various industrial sub-sectors including food processing, beverages, chemicals, textiles, leather, footwear, furniture, paper, and wooden products. Selection of the backward linkage with agricultural sector is renamed as agro-processing, which covers the two highest priorities sub-sectors in competitive analysis, namely food and beverages and petroleum and other chemicals

### Selection 2: Agro-machinery

In selecting agro-processing sub-sector, choice on agro-machinery was made simultaneously since development of agro-machinery is indispensable component to promote agro-processing activities nationwide. The number of formal agro-machinery producers is not large. Most agro-machinery producers are MSMEs found in major cities spread across Kenya. Their customers are nearby agro-processors, but they also find some export opportunities in neighbouring countries. Development of agro-processing sub-sector is expected to be a trigger for capacity improvement in designing and electronic components production as well as creating supplier networks. At the same time, export expansion to East and Central Africa is expected.



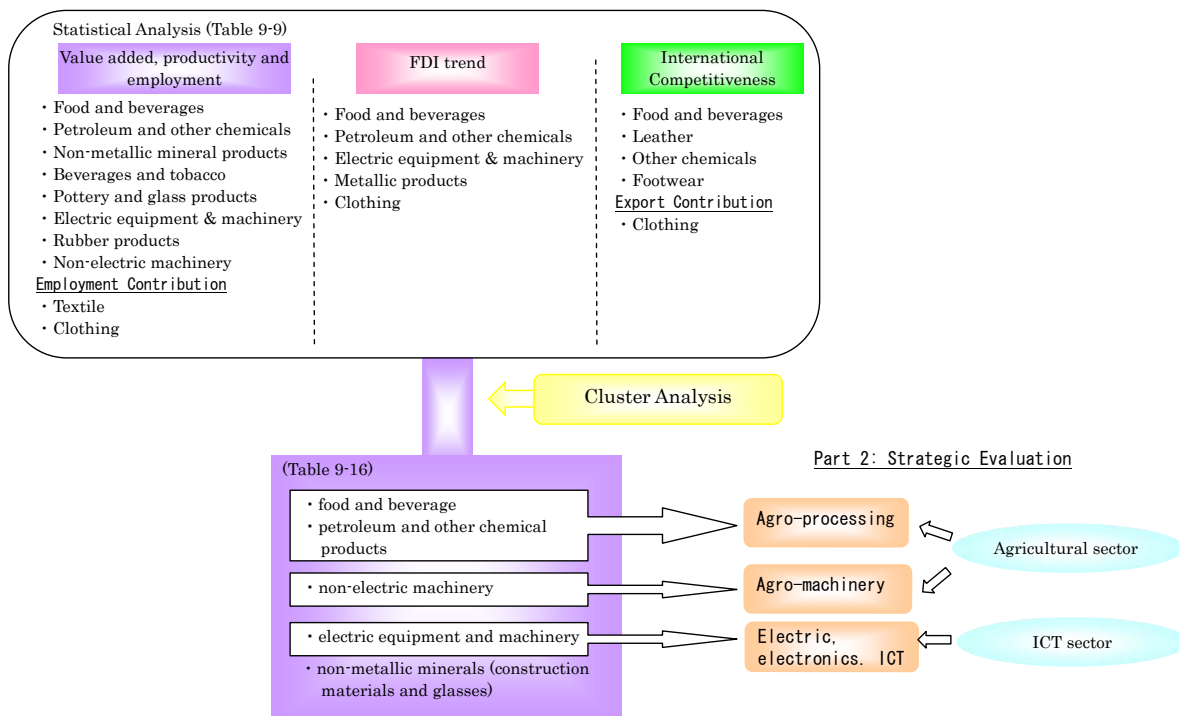
**Selection 3: Electrics, electronics / ICT sub-sector**

The third choice was made with the backward and forward linkage creation with the ICT sub-sector. The selection of electrics, electronics sub-sector is not because its current performance surpasses others; rather, it was selected because it is seriously underdeveloped in spite of the rapid expansion of ICT markets and infrastructure. Kenya is currently undergoing massive transformation in ICT with the back up from the ICT policy, E-Government Strategy, and rapid expansion on ICT infrastructure. The National ICT Policy commits to the realisation of universal access and, at the same time, stipulates the involvement of local manufacturers. It is considered the highest time to conduct an in-depth study on development of electrics, electronics sub-sector on potential linkages with the ICT sector.

**9.4.2 Cross Checking with Industrial Development Scenarios**

In the final step, selection of the above three target sub-sectors is confirmed through cross-checking with industrial development scenarios. With the spirits of ERS, industrial development should contribute to poverty alleviation and employment creation. Therefore, in the final stage of verification, how the development of the target sub-sectors would support industrial development scenarios was cross checked; namely, ways to benefit across the country’s regions, all sizes of enterprises, both skilled and unskilled workers with synergetic effect on other economic sectors.

Part 1: Competitiveness Evaluation



Source: The JICA Study Team

Figure 9-3 Result of the Verification Process of the Target Sub-sectors

## Chapter 10 Development Plan of Target Sub-sectors

### 10.1 Development Plan of Agro-processing Sub-sector

#### 10.1.1 Introduction

Agro-industry has two outstanding structural features. One is wider diversity of constituent sub-sectors including food, textile, energy industries and biotechnology sector. The other is its strong linkage with agriculture, especially at the dimension of material, labour and land supply. Locality of agro-industrial activities is the strongest among others, so far, processing materials are highly perishable and transport cost should be dispensed through transformation within producing sites.

#### 10.1.2 Overview of Agro-processing Sub-sector

##### (1) Sector composition and employment

Earnings from agro-processing in Kenya registered 6 % of GDP in 2006, accounting for 30 % of total exports value in 2006, or 70 % of that to total manufacture. According to the data published by MOTI, agro-processing sub-sector has the largest share in number of enterprises, accounting for 459 (22 %) out of 2,058 formally registered enterprises in total. As regards scale of enterprises, it has relatively larger scale than that of other sectors as observed in sugar mills, while some agro-processing sub-sectors including bakery/ confectionary, tea processing, flour mills, oil extracting mills and dairy firms have smaller scale but larger numbers. As regards the status of Kenya's agro-industry in overall manufacturing sector, it has somewhat dropped its share, but still keeping the top rank among various manufacturing constituents.

Table 10-1 Number of Registered and Listed Agro-Industry Related Enterprises

| Agro-processing type | No. of Firms | Share | Composition | Agro-processing type     | No. of Firms | Share | Composition |
|----------------------|--------------|-------|-------------|--------------------------|--------------|-------|-------------|
| Bakery               | 107          | 5.2   | 23.4 %      | Sugar Mill               | 12           | 0.6   | 2.6 %       |
| Tea Factory          | 78           | 3.8   | 17.0 %      | Fish Processing          | 12           | 0.6   | 2.6 %       |
| Flour Mill           | 58           | 2.8   | 12.7 %      | Sweet Confectionary      | 12           | 0.6   | 2.6 %       |
| Oil Extraction       | 35           | 1.7   | 7.6 %       | Coffee processing        | 11           | 0.5   | 2.4 %       |
| Dairy Processing     | 21           | 1.0   | 4.6 %       | Soap Maker               | 10           | 0.5   | 2.2 %       |
| Yarn / Spinning      | 18           | 0.9   | 3.9 %       | Juice / Sauce            | 7            | 0.3   | 1.4 %       |
| Feed Mill            | 17           | 0.8   | 3.7 %       | Spice processing         | 7            | 0.3   | 1.4 %       |
| Package Material     | 16           | 0.8   | 3.5 %       | Skin/hide processing     | 7            | 0.3   | 1.4 %       |
| Beverage Bottler     | 15           | 0.7   | 3.3 %       | Others                   | 1            | 0.1   | 0.3 %       |
| Agro-machinery       | 15           | 0.7   | 3.3 %       | Total Agro-related Firms | 459          | *22.3 | 100.0 %     |

Note: \* percentage to the total registered manufacturing firms throughout Kenya

Source: Listed in MOTI Firm List 2003

##### (2) Production performances

In regards to productivity of agro-industry, it has generally been lower than other industries because of limited scale of production deterring the industry to benefit from economy of scale.

Through the comparison of annual earning per employee, only spirits, beer and tobacco manufacturing and dairy processing show higher earning above that of the whole manufacturing sector.

### (3) Production costs

Kenya is increasingly importing agricultural processing materials from abroad, leading to higher procurement cost for agro-processing, thus eventually it would become harder to maintain hitherto created comparative advantage for agro-exports towards neighbouring countries. Likewise, agro-industry has inherent shortcoming of incurring higher transportation cost due to widely scattered distribution of processing locations over wide production areas.

### (4) Technical efficiency of agro-processing

As far as food industry is concerned, Kenya has comparable technical efficiency to that of Zimbabwe, though considerably low as compared with Asian / Latin American competitors. Possible cause of lower technical efficiency in African countries may originate from too many producing items or commodities by one line of current facility and also lower utility of currently installed / mounted production lines / facilities. Also, skill of the machine / facility operators / managers may affect the technical efficiency. Likewise, shortage of spare-parts, mosaic assembly of machinery and equipment made in various countries would entail in insufficient pressure or temperature within the system, failure of perfect control, leakage of gas or liquid from the system.

### (5) International competitiveness of Kenya's agro-industry

Limited scale directly affects capital productivity, however, in most rural areas where production of processing materials is usually dispersed over wide areas. In addition access to processing sites is generally poor on account of poor roads, so issues of how to timely procuring materials are not easily solved. Unless produce by monoculture or in large estates is readily available, the scale of processing naturally is inevitably limited.

### (6) Kenya's markets of agro-processed commodities

Market supply pattern of Kenya's agro-processed products shows a typical export-oriented nature. As national consumption demand for each commodity is not available except raw meats, self-sufficiency is calculated from domestic supply and imports. Most agro-processed products are self-sufficient, but vegetable oil and feed materials are dependent on imports. In case of fibres, sisal is self-sufficient but cotton relies on imports due to decline of domestic production. Exports and imports are mutually offset in the case of sugar. As for meat, only red meats are self-sufficient.

### (7) Analysed character of agro-processing in Kenya

Agriculture has supplied such raw materials for agro-processing as tea, coffee, fruit and vegetables, dairy produce and meat, cereals etc. Agro-processing can add value by linking with it for procuring material supply. As a result of increasing demand for processed foods

from expanding population in urban areas, agro-processing becomes ever more important to meet ever-rising domestic market demand. Recently, consumptive demand for dairy / meat products and other processed foods in urban areas has remarkably grown.

### 10.1.3 Development Scenarios

#### (1) Scenarios commonly applied to overall agro-processing sub-sector

In most cases, it is desirable that an industrial complex consisting of material supplying sub-sector ~ processing sub-sector ~ marketing and environmental control sub-sector must be formed in the same area for sustainable industrial activities. From processors point of view, contracts should be sought with as many producers as possible who produce plural kinds / species of crops that can be processed with the same machines / line of processing in order to fully operate currently installed capacity.

#### (2) Issues in the agro-processing sub-sector

The issues of six priority product items are summarized in the table below separating into those for feedstuff and for processing/ management.

Table 10-2 Issues Related to Agro-industry Sub-sector

| Priority Products                         | Feedstuff  | Processing/ Management  |
|---|--|---|
| Processed Fruits & Vegetables             | Available period of a material is commonly short with wide annual fluctuation                                      | Very costly packaging materials relative to material costs, poor processing skill may erode export competitiveness  |
| Tea                                       | Low quality, low yield of smallholder's raw material opposition to machine-cutting                                 | Majority exported as semi- products, difficulty in establishing Kenyan brand  |
| Coffee                                    | Highly variable quality among producers, Rapid decline of material supply  | Majority exported as semi- products, difficulty in manufacturing finished ones                                      |
| Dairy Products & Meats                    | Meat-cattle herds are expanding but dairy herds level off. Still epizootic problem continues                       | Slaughtering and processing are not satisfactory for export quality   |
| Hides and Skins                           | Low quality due to hurts over the skin surface   | Domestic processing is affected by aggressive exports of raw hide   |
| Leather                                   | Enough raw materials but mostly salted and exported  | Processing requires dear inputs of foreign origin   |
| Fish (over 90 % of landing is lacustrine) | Resources are depleting by rampant catch without control among 3 countries   | Hygiene management cannot clear EUREPGAP*. Untreated wastes heap up   |
| Fermented/Distilled Liquor, Beer etc      | Raw materials can be procured domestically, low quality as they are  | Processing techniques are existing but inputs & utility are too expensive   |
| Soft Drinks                               | Enough domestic raw material is available  | Processing skills are easily diffusible   |
| Sugarcane (only domestic sale)            | Low level of procurement, Reluctance of production due to low purchasing price, Opposition against new reclamation | Under-capacity / over-capitalized, very old machinery, low yield of crystallized sucrose                            |
| Edible Oil / Fat                          | Scattered material availability, difficult to procure large volume of processing material                          | Period of operation is too short & very limited material to use full capacity, supply of plural material is desired |
| Cotton (exports)                          | High cultivation cost with cheap buying  | Short operation period of ginning with  |

|  |  |  |
|--|--|--|
| decline /imports are growing)              | prices and delayed material payment  | limited material feeding led to under-capacity operations                  |
| Sisal                                      | Production base declines   | Limited design & utility   |
| Pyrethrum (exports essence & dried flower) | Reluctance of production due to Board's delayed payment & duty for administrative cost, leading to rapid decline of supply | Processing techniques are highest among producing countries                |
| Bixa                                       | Coastal region has ground for cultivating / collecting material  | Local Processing has declined but now revitalization proceeds on.          |
| Cereals, Feeds                             | Domestic materials are procurable but it takes time to collect large amount at a time                                      | Many small millers are competing but processing machines are cheap         |
| Tobacco                                    | Consuming much manure & inputs for cultivation of material   | Poor skill of farmyard pre- processing may deteriorate end product quality |

Source: The JICA Study Team

### (3) Development scenario by priority products

Taking the above tabulated issues into consideration, a phased development scenario by priority products are shown in table below:

Table 10-3 Examples of Stage-wise Improvement/Development of Kenya's Agro-industry

| Traditional Export /Primary Product  | 2007~2010  | 2011~2015  | 2016~2020  |
|--------------------------------------|--|--|--|
| Processed Fruits & Vegetables etc.   | Healthy drinks made of aloe vera, macerated Kenyan kale, marula etc.                                 | Exporting value added ASAL products like acacia honey-wax or pro-polis                           | Exploiting ASAL products such as aloe vera   |
| Tea                                  | Exploitation of end products matching with global propensity trends & internal demand expansion      | Regenerating tea garden with new varieties suitable for changes / diversifying tea utilization   | Extraction of ingredients of tealeaf for industrial use for exporting to demanding countries |
| Coffee                               | Test exports of instantly soluble coffee powder, global campaign/ exploitation of traceable products | Exploiting fast soluble powder, Exporting ingredient adjusted coffee packs such as caffeine-less | Production adjustment to meet global trends while converting coffee garden to other crops    |
| Dairy Produce and Meats              | Installing milk cooling parlour at village to start system-collection                                | Exploit de-odorizing processing of goat / camel meat for export                                  | Processing and exporting dairy produce from camel's milk                                     |
| Hides and Skins                      | Introducing livestock husbandry style suitable for skin utilization                                  | Technical transfer to provide quality tanning & leather making                                   | Establishment of Kenyan brand for high quality leather products                              |
| Leather                              | Eliminating hazard for value addition/ impose export-tax on raw hides / skin exports                 | Restoring tannery and stimulate domestic demands for leather                                     | Supply of better quality leather for acquiring global reputation                             |
| Fish                                 | Convert to other species other than Nile perch   | Aqua culture of Nile Tilapia etc.  | Launching offshore fishery in place of lake fishery  |
| Fermented/Distilled Liquor, Beer etc | Exploiting & exporting natural fermented marula wine etc.  | Shifting part of distilleries into bio-ethanol manufacturing                                     | Exploiting nutrition supplement foods prepared from wine yeast                               |
| Soft Drinks                          | Diversifying kinds of soft drinks  | Processing diversified drinks by season  | Exporting drinks by a brand of fresh fruit drink   |

|                                |  |   |  |
|--------------------------------|--|---|--|
|                                |  | matching with availability of fruits  | by season  |
| Sugarcane (only domestic sale) | Installing & starting operation of manufacturing ethanol from molasses headed by sugar mills     | Gradual offsetting cumulative debt, improving sucrose yield by seeding core of crystals in tank | Compensation of gain to contract farmer suppliers, thereby shortening period of cane cultivation |
| Edible Oil / Fat               | Local extraction of crude edible oil under contract within farmer's group for oilseed production | Improving edible oil quality through coupling oil-crops with animal-origin fats                 | Exporting high quality sunflower oil & corn oil to developed world                               |
| Cotton                         | Introducing long lint cotton strains   | Producing hygroscopic cloth   | Producing other specific cloth   |
| Sisal                          | Starting exploitation of cellulose / fibre softening technology                                  | Developing mixed weaving with other fibre such as abaca   | Pursuing what's suggested in the left column and improving it                                    |
| Pyrethrum                      | Complete privatisation of KPB  | Devise new usage of pyrethrum/ crop diversification   |  |
| Bixa                           | Exploiting shift of usage of Bixa  | Convert into other profitable crops if other usage of Bixa is not found.                        |  |
| Cereals, Feeds                 | Develop fast-foods (including ugali/uji) for urban abiders                                       | Exploiting instant cooking $\alpha$ -rice for export  | Exporting healthy food containing origin-traceable cereals                                       |
| Tobacco*                       | Production control of tobacco crop & exploiting usage other than smoking                         | Production adjustment in compliance with global trends  | The same as the left column  |

Source: The JICA Study Team

#### 10.1.4 Development Strategies

##### (1) Processing of fruits/vegetables

In Kenya, there are abundant foodstuff from juice that are of local specialty fruits and starchy materials. In particular, mango and passion fruits flood the markets during harvesting season in producing areas in Eastern ~ Central provinces and are wasted without being eaten or marketed or rot during the delivery to existing, remote processing firms. The rate of waste amounts to a quarter of the total annual mango production according to a datum by MOA. It is good enough for district level small firms to extract juice from materials to save perishing loss. In order to minimize post-harvest loss and make use of freshness of harvests, small firms at district level might process perishable materials to semi-processed forms that have longer life than raw materials.

##### (2) Coffee (traditional agro-product) processing

As for organic coffee production in East African countries, Ethiopia shows a big stride through coops, while Uganda indicates increasing organic coffee production, both Arabic and robusta varieties. In Madagascar, the scale of production has been small but growing. In Kenya, the potential is large but up till now organic coffee production has been so limited with a very small market share. In COMESA as a whole, a growing trend can be seen. Amidst such ambient development, Kenya faces an exigent need to strive for organic coffee production.

### (3) Processing of dairy produce

Kenyan export of meat commodities will continuously be handicapped by Foot-and-Mouth Disease (FMD) that has been the cause of shutting out the outlet to the developed importers. FMD is likely never to disappear unless border livestock trade is permanently banned. Accordingly, future international market is also confined to Arab and COMESA where processed meat consumption has religiously been refrained or raw meats are preferred to the processed. Accordingly, it is imperative for the Government to plan to implement a concerted strategy for disease outbreak prevention and control, at the same time to consider the introduction of a single permit system for cattle movement.

As to dairy produce, middle to small-scale enterprises in Rift Valley or Nyanza can provide export-oriented quality because many of them can collect and treat milk quickly after milking. Though these enterprises manage to keep acceptable quality of milk for dairy processing, further improvement in its quality is a prerequisite to make export-oriented dairy produce fully competitive; concrete measures to be employed include eradication of mastitis and other diseases that spoil milk quality, reinforcement of using vacuum milkers instead of hand milking, facilitating quicker delivery, provision of cooling milk station at the collection points, or treatment under fully sterile ambient conditions, to prevent quality deterioration.

### (4) Leather processing

Kenya has so far exported more hides and skins than leather, and this is attributable to the fact that major supplying areas of hides and skins or slaughterhouses are remote ASAL, and in ASAL industrial water and electricity are hardly accessible, thus making further processing at them into leather awfully difficult. By this reason, leather processors are concentrated around Nairobi ~ Rift Valley. Leather is very often used for decorative purposes but leather made in Africa is often not a-la-mode from quality aspects, very often not exactly satisfying requirement of consumer countries. Hence, it is necessary to grasp consumers' requirements and to acquire manufacturing skills and to install due facilities to produce acceptable quality leather.

### (5) Fisheries processing

Even though Kenya is bestowed with offshore fishing grounds along the Indian Ocean, fishery operations have been confined to petty coastal operations. First of all to overcome this limitation, it is advised to learn technical and managerial dimensions from specialty fishery countries like Norway and Japan on how to efficiently tap offshore marine resources. Such marine resource utilization techniques as fishing boat operation, fish port and ice producing factories construction, fish swarm detection by fish finders, fishing gear operation and freshness preservative techniques for landed catches. As regards fishery produce preserving techniques, Kenya's fishermen should learn from specialty fishery countries how to produce fish sauces, seasoned sun-dried or smoked fish / crustacean that can readily be practiced at landing shore without any facility or cost preparation. Simultaneously, Lamu fishery port

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should be used as a base of fishing fleets, where possibility can be examined on the creation of an efficient fishing fleet and exports of frozen or canned products of pelagic resources.

#### (6) Examples of promising projects

While Kenya mainly exports primary agro-products, energy is dependent on imports. This has a negative effect on production costs, thereby contributing to erosion of export competitiveness. To overcome this issue, it is advisable to utilize untapped ASAL areas for domestic energy supply, replacing current useless semi-arid vegetation with Physic-nut (non-edible oil plant) that can withstand rigorous arid climate. Industrial oil production can provide ASAL inhabitants with job opportunities through the activities of production management, harvest and storage, and trading with oil brokers for bio-diesel material. Use of physic nut has already been commercially exploited in Mali, Thailand, India and many other developing countries. In Kenya, KIRDI has been developing the process of industrial utilization in cooperation with KARI etc

## 10.2 Development Plan of Agro-machinery Sub-sector

### 10.2.1 Introduction

Agro-machinery sub-sector consists of (a) metallic products, (b) non-electrical machinery and (c) transport equipment in accordance with KEBS's industrial classification<sup>9</sup>. Contribution of the agro-machinery sub-sector to GDP has declined from around 3 % in 1990s, to 1.2 % in 2000 and further 0.7 % in 2005. Major reasons behind the decline are that the sub-sector failed to follow the higher speed of GDP growth and many manufacturing enterprises stopped their operations shifting themselves to mere import-substituting traders because of the followings. They are (a) difficulty in procuring raw materials at reasonable prices, (b) expensive electricity cost, (c) hike of transportation cost, (d) higher labour cost and (e) insecurity. The fore mentioned factors are beyond the control of individual enterprises, leading to closure of factories at the rate of roughly 10 % per year. Such a situation can easily cause even the withdrawal of foreign-affiliated enterprises or discourage foreign investment in the sub-sector.

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<sup>9</sup> KEBS's industrial classification is different from that of ISIC or International Standard for Industrial Classification. In this study we use KEBS's industrial classification because of available data.



Table 10-4 Economic Structure of Agro-Machinery Industry in Kenya

| Index                     | Unit      | 1990  | 1995  | 2000   | 2005    | Annual Growth Rate, % (1990~2005) |
|---------------------------|-----------|-------|-------|--------|---------|-----------------------------------|
| GDP at market prices      | Kshs. Bil | 99.4  | 232.6 | 967.8  | 1,445.5 | 21.1                              |
| Contribution to GDP       |           |       |       |        |         | Total down                        |
| Metal Products            | %         | 2.1   | 1.3   | 0.4    | 0.3     | -1.8 %                            |
| Non-electrical Machine    | %         | 0.1   | 0.2   | 0.1    | 0.1     | -                                 |
| Transport Equipment       | %         | 1.2   | 1.8   | 0.7    | 0.3     | -0.9                              |
| Total 3 Groups            | %         | 3.4   | 3.3   | 1.2    | 0.7     | -2.7                              |
| Manufacturing             | %         | 13.3  | 13.5  | 10.3   | 10.3    | -3.0                              |
| Manufacturing Output      |           |       |       |        |         |                                   |
| Metal Products            | Kshs. Bil | 14.2* | 21.8  | 13.7   | 15.4    | +0.6                              |
| Non-electrical Machine    | Kshs. Bil | 0.5*  | 2.8   | 2.0    | 2.6     | +13.5                             |
| Transport Equipment       | Kshs. Bil | 7.7*  | 30.3  | 24.3   | 14.1    | +4.8                              |
| Total 3 Groups            | Kshs. Bil | 22.4  | 54.9  | 40.0   | 32.1    | +2.8                              |
| Manufacturing             | Kshs. Bil | 88.2  | 230.7 | 347.7  | 499.8   | +13.2                             |
| Quantum Index             |           |       |       | 238.1  | 257.9   |                                   |
| Metal Products            | 1976=100  | 150.5 | 206.8 | 86.1   | 87.9    | +3.9                              |
| Non-electrical Machine    | 1976=100  | 108.7 | 78.1  | 241.5  | 975.7   | --1.5                             |
| Transport Equipment       | 1976=100  | 646.4 | 529.0 | 281.4  | 334.1   | +2.9                              |
| Manufacturing             | 1976=100  | 219.8 | 263.9 | 134.5  | 260.4   | +3.0                              |
| Trade                     |           |       |       |        |         | 2000-2005                         |
| Export                    | Kshs. Bil |       | 97.3  | 134.5  | 260.4   | +18.0                             |
| Iron and Steel            | Kshs. Bil |       |       | 2.6    | 8.9     | 3.4 times                         |
| Metal Scrap               | Kshs. Bil |       |       | 0.2    | 0.4     | +19.0                             |
| Machinery & transport     | Kshs. Bil |       |       | 0.6    | 3.6     | +6.0 times                        |
| Import                    | Kshs. Bil |       | 155.2 | 247.8  | 443.1   | +15.7                             |
| Iron & steel              | Kshs. Bil |       |       | 8.6    | 21.1    | 2.5 times                         |
| Motor vehicle tyres       | '000      |       |       | 2,518  | 1,580   | -11.0                             |
| Bicycle tyres             | '000      |       |       | 859    | 1,337   | +11.7                             |
| Hand & machine tools      | Kshs. Bil |       |       | 0.8    | 0.8     | -                                 |
| Industrial machinery      | Kshs. Bil |       |       | 39.4   | 48.9    | +5.6                              |
| Agricultural machinery    | Kshs. Bil |       |       | 1.0    | 2.3     | 2.3 times                         |
| Metal working machinery   | Kshs. Bil |       |       | 0.1    | 0.2     | 2 times                           |
| Food processing machinery | Kshs. Bil |       |       | 0.8    | 2.0     | 2.5 times                         |
| Road motor vehicle        | Kshs. Bil |       |       | 9.7    | 25.3    | 2.6 times                         |
| Trade Balance             | Kshs. Bil |       | -57.9 | -113.3 | -182.7  | +12.7                             |

Note: \* = 1991, Contribution to GDP of 3 groups estimated by The JICA Study Team

Source: Economic Survey 1984~2007 and Statistical Abstract 1994~2006, KNBS

## 10.2.2 Overview of Agro-machinery Sub-sector

### (1) Scale of manufacturers in agro-machinery sub-sector

The registration of factories in Kenya is mandatory under the Industrial Registration Act of 1987. Number of enterprises officially registered in agro-machinery sub-sector is 437 and it is 15 % less than the existing firms. It is necessary to strengthen information and communication system between the MOTI and manufacturers in the private sector to enable real time administration of policy and for executing medium and long-term strategies for development of the manufacturing industry in Kenya.

## (2) Transportation industry

Transportation is an important sector in agro-machinery because it supports agriculture and the agro-processing industry in Kenya. "Agriculture" is sometimes referred to as "transportation business". Therefore, transportation issues have been dealt with in this study. Other essential supports include forklifts for loading and unloading raw materials and finished goods, and the most popular item is the bicycle for small-scale farmers as transportation means both of farm input and produce in rural areas.

## (3) Import duties on agro-machinery in Kenya

While the fact that import duties decrease Kenyan manufacturers competitiveness outside of Kenyan markets, the government has to face the recent direction to ease import duties as EAC and COMESA policies to introduce common market. Therefore, the manufacturers in agro-machinery sub-sector are urged to increase their ability to compete with imported products in order to survive in expanding market.

## (4) International trade of machinery

The export value of machinery in 2005 was Kshs. 60,749 million, while the import value thereof stood at Kshs. 213,615 million, resulting in an excess of imports amounting to Kshs. 152,866 million. Kenyan agro-machinery products were exported to 67 countries in 2004, out of which the export to COMESA countries amounted to approx. US\$ 23 million, equivalent to 74 % of the total agro-machinery exports. And agro-machinery products were imported from 121 countries in 2004, the import from COMESA countries amounted to approx. US\$ 6.4 million, equivalent to 0.9 % of the total agro-machinery imports. Import amount from COMESA countries is very small. On the export and import balance of agro-machinery with COMESA countries, the export exceeded the import approx. US\$ 17 million in 2004. COMESA countries are the important market for Kenyan agro-machinery industry.

## (5) Raw materials used in the agro-machinery industry

Steel is imported from Japan, Korea, Europe, South Africa, Brazil, Argentina and other countries that have integrated steel plants. Carbon steel is imported from Zimbabwe, Poland and Ukraine but distribution is highly monopolized by few traders, which causes shortage of raw materials. High carbon steel is imported in the form of flat bars from Zimbabwe. Many manufacturers have to make hand tools from mild steel sheet direct from mills, which results in poor quality of goods especially made by Jua Kali who have difficulty accessing raw materials. Because of these, many manufacturers have been forced to stop their production lines and to shift their businesses from manufacturing to importing of completed tools.

## (6) Complete unit post-harvest machinery

Major post-harvest machinery used in Kenya are (i) Roots and tubers: Peelers, chippers, graters, (ii) Cereals and legumes: Threshers and shellers, Cleaners and winnowers, De-hullers and grinders/millers, (iii) Oil crops and nuts: Nut shellers/crackers, Oil extractors (screw and

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ram), Filter and (iv) Fruits and vegetables: Pulpers, blenders, juice extractors, Sealers- cup, impulse. However, equipment utilization is very low as reported by MOA.

#### (7) Bicycle, bodaboda (bicycle taxis), motorbikes and tuku tukus (tricycles)

Original models of motorbikes and tuku tukus (tricycle) are imported but not so popular in Kenyan market. On the other hand, bicycles are welcomed to transport agricultural input and produce in rural areas. More than half of the annual demand for bicycles is imported from China, India, Taiwan and Japan (high grade mountain bikes). Bicycles have very high potential for local manufacturing.

#### (8) Motor vehicle and accessories industry

Motor vehicle industry should be the engine to drive the manufacturing industry but it is still weak. Average annual selling amount is 3,000 units of commercial trucks and buses, and 6,000 units of passenger cars and the total 9,000 units, and the local contents are less than ten percent. According to data from three motor vehicle assemblers, the number of locally assembled vehicles stood at 6,621 in 2004. However, the actual volume sold both in the domestic and export markets stood at 6,548 vehicles in the same year. The installed capacity stood at 28,700 vehicles in 2004, meaning that capacity utilization stood at 23.1 %.

Some of the critical issues for the future development of the sector include stiff competition from second hand vehicles, which started with liberalization of the economy. Massive importation of these vehicles has reduced the capacity utilization in vehicle assembly plants drastically. The leading tyre company pulled out of Kenyan manufacturing due to (a) expensive electricity cost, (b) hike of transportation cost, (c) higher labour cost, (d) no increase of domestic demand, (e) insecurity and (f) change of marketing strategy in Africa. As such, it is necessary to improve the manufacturing environment.

#### (9) Major agro-machinery for supporting agro-processing industry

Most agro- processing machines and facilities are of imported origin and most of them are timeworn. There are several advanced enterprises for local-manufacturing tea and coffee processing machines. However, it is still hard to enjoy reasonable profit. It takes a longer time to manufacture them locally instead of importing from the viewpoint of the capability of getting competitive price, performance and quality against import machinery. The most important activity is to increase local manufacturing contents including belt conveyors, bucket elevators, silos and tanks, catwalks etc. Import value of food processing machinery shares around 0.5 % of the total import value. At present, local contents of agro-processing machinery and facilities are estimated less than 5 % of the import value of food processing machinery.

#### (10) Farm machinery

Local utilization of tractors and implements is very low, and local assembling of tractors is not active and the level of local contents for local assembling which may be locally manufactured,

is also very low. Apart from the number of tractors and farm machinery in use, annual introduction of tractors is estimated as average of 500-700 units. Agricultural mechanization development programme is required to encourage foreign-affiliated and local manufacturers to manufacture agricultural machinery locally.

### **10.2.3 Development Scenarios**

#### **(1) Promotion of farming mechanisation**

Most manufacturers, especially foreign-affiliated enterprises of agricultural machinery have cautious attitudes toward investing in and promoting local manufacturing industry in Kenya. An agricultural mechanization development programme is necessary to be provided and put into practice through a review of The National Agricultural Mechanization Strategy (draft) formulated by MOA in 1995 so that the programme can more realistically be realized matching with current status.

#### **(2) Promotion of agro-machinery exports**

The most critical issue facing the manufacturers and importers is the low level of demand, which hinders efforts to decrease production cost, to produce acceptable cheaper products and to increase productivity, bringing poor cycle between manufacturers and farmers. To alleviate this issue, it is necessary to plan both domestic and COMESA market. Coupled with the above-mentioned agricultural mechanization development programme, a strategy of agro-machinery export is necessary to be provided and implemented particularly targeting the COMESA market.

### **10.2.4 Development Strategy**

#### **(1) Agricultural mechanisation service stations**

It is considered necessary to privatise the service station to improve the management efficiency. The hiring machinery is not necessarily confined to farm tractors but can also be used as harvesting and post-harvest machinery, and animal drawn power complete with attachments for ploughing, harrowing, ridging, planting, weeding and transport. Thereby it enables to meet labour shortage and to improve productivity of farms owned by smallholders and works to economize production costs. In implementing the proposed measures, it would be worth referring to successful examples of similar projects in other countries.

#### **(2) Strengthening the system of mutual cooperation among stakeholders**

In order to promote extension of agro-machinery, it is necessary to harness mutual cooperation/ coordination among three types of stakeholders, namely agro-machinery manufacturers, marketing/sales-related dealers and machinery engineers. With a view to realizing the promotion and strengthening of the aimed cooperation and coordination, various provision of opportunities as well as supporting assistance are considered necessary through the collaboration with MOA and MOTI. It is considered necessary to include provision of mechanisation fora/seminars and extension programmes and support on the provision of the

budget for implementing these activities.

(3) Establishment of manufacturers' associations in agro-machinery sub-sector

It is suggested to establish manufacturers' associations, which would collect and disseminate the information on market, technology, products, and manufacturers data as well as having the function to link with public sector. Such manufacturers' associations are expected to contribute to increase the local procurement of parts for agro-machinery and to enhance manufacturing technology. Moreover, it is necessary to establish those associations in order to develop understanding of "competition and cooperation", that is indispensable for manufacturing promotion, and also for promotion of eradicating various constraints in the business circumstances.

(4) Grouping for procuring raw material

Manufacturers have to resort mainly to import to procure prerequisite steel due to lack of blast furnace in Kenya, and recent global price hikes of iron ores and outstanding progress of monopoly in iron industry make Kenyan manufacturing industries progressively disadvantageous. Therefore, imports by individual import traders and manufacturers would lead to higher procurement costs because of small quantity order and sometimes exporters' strong cartels. To cope with this issue, it is envisaged necessary to secure procurement of raw material at reasonable prices by grouping the enterprises, which purchase hard steel from foreign countries. Those syndicates can nurture bargaining power against foreign steel supplier firms, thereby, procurement of raw material at reasonable price levels will be secured.

(5) Pilot project for development of Bio Diesel Fuel (BDF) production plant

The project goal is to develop a small-scale plant to extract from jatropha nuts material of bio-diesel fuel, as part of the development of agro-processing sub-sector. Local equipment and technology should be fully utilized for developing the plant. While implementing the project, all information on the progress of plant and facilities are expected to be publicly available. It should be noted that the prototypes developed by the governmental institutions or university in the past failed to commercialise because the R & D was not well-coordinated and linked to commercial manufacturers.

### **10.3 Development of Electrics, Electronics / ICT Sub-sector**

#### **10.3.1 Introduction**

Electrics, electronics / ICT sub-sector was selected as one of the target sub-sectors not because of its current strength but because of its market opportunities. The investment climate in ICT has been rapidly expanding because of the optical fibre backbones, which are expected to be introduced to Kenya within a year. The Kenya Communications (Amendment) Bill has been submitted to the Attorney General's Office, awaiting to be discussed in the Parliament. The draft Bill envisages setting up a Universal Service Fund, which provides access to the Internet throughout the country. This means that electrification shall be rapidly promoted, and the size

of a local demand for electronic equipments shall be expanded.

### 10.3.2 Overview of Electrics, Electronics / ICT Sub-sector

#### (1) Trends of the electrics, electronics sub-sector

Electrics, electronics sub-sector is one of the most competitive markets in the world. Based on the survey of 51 leading countries, the world total production of the electrics, electronics sub-sector was US\$ 1,416 billion with the annual growth rate of 7.2 % while the size of global market of the sub-sector was US\$ 1,390 billion with the growth rate of 5.5 % in 2005.

Over 70 % of both production and the market are occupied by 10 top countries out of surveyed 51 countries. For both production and market, USA is the biggest player, followed by China and Japan. A common characteristic in East and South East Asian countries such as China, South Korea, Malaysia, Singapore, and Taiwan is that they produce more electronic products than their own market. Especially, the production volume in South Korea, Malaysia, and Singapore are more than twice the market.

Overall, African markets for electrics, electronics sub-sector have not fully developed because of the purchasing power of the people and the low electrification rate. South Africa and Egypt are the only African countries listed among the surveyed 51 countries, but their shares in the global markets are small in terms of both production and markets. In production, South Africa ranks in 40<sup>th</sup> and Egypt in 49<sup>th</sup>. In the market, South Africa ranks higher at 31<sup>st</sup>, but Egypt at 50<sup>th</sup>.

#### (2) Current status of the electrics, electronic sub-sector in Kenya

Although Kenyan industry has variety in its sub-sectoral activities, electrics, electronics sub-sector is one of the sub-sectors whose activities are at an infant stage. Registered electrical machinery and appliance manufacturers were only 69 companies with Kshs. 3,021 million value addition and 3,039 employees in 2005. 55 % of the formal companies in this sub-sector are large-scale. Due to the small number of players, the contribution of this sector to the total value addition of the manufacturing sector was only 2 % in 2005.

Among all the activities in the electric, electronic sub-sector, Kenya shows strength in power supply facilities; particularly, power switchboard. Kenya's unique conditions in power failure and voltage change calls for customised production for the large and medium scale enterprises. Due to the shortage in energy supply, power generators have a big market in Kenya; yet most components of the power generators are imported.

PC is a fast growing market, but there is currently only one local assembler, Mecer East Africa. Ltd. Mecer originates from South Africa. All module parts are imported and only assembling is being conducted in the factory. The Ministry of Information and Communication (MOIC) has taken the initiative to increase the local supply of PCs. This is called Madaraka PC Project.

Because of the low electrification rate, the market for consumer products is not growing as fast as office equipment. Major multinationals which operated in 70's and 80's stopped assembling

in Kenya because of the high production cost. However, new assembly makers are coming into Kenya mainly from China.

Development of the electrics, electronics sub-sector requires support from the metalwork and plastics sub-sectors. It is generally observed that Kenya already has a few, but very good metalwork and plastic makers. Particularly, existence of good mould and die makers can provide significant contribution to the development of the Kenyan industry; not only electrics, electronics sub-sector but also metalwork, plastics, machinery, and automotive sub-sectors.

Packaged software, categorised under "publishing, printing, and reproduction of recorded media", is a newly emerging business in Kenya. Software development is popular business among the start-up companies because of low-investment compared to other manufacturing activities. Business models of the packaged software companies differ from each other; i.e. some may undertake in-house development while others may outsource software development. The latter case particularly demonstrates the dynamism of the packaged software business through the width of its service network. Most of packaged software companies are micro-scale, and they outsource services in order to minimise their operation cost. Majority of the players are also micro-scale in this value chain where each player can generate income with low investment. Therefore, the economic and employment impact of the software companies is larger than packaged software companies itself.

### **10.3.3 Development Scenarios of the electrics, electronics sub-sector**

#### **(1) Development pattern**

The development pattern of the sub-sector, in general, is explained with hypothetical 5 stages of development based on changing pattern of competitiveness. At the first stage, domestic demands for both intermediate and final products of the sub-sector are supplied mostly by imports. At the second stage, the industry begins to export final goods, assembling imported parts and components. Next at the third stage, the sub-sector gains advantages in production of intermediate goods. At the fourth stage, it begins to lose its international competitiveness in assembly with increasing labour costs, at which point it has to specialise in intermediate goods which are capital-intensive. Finally at the fifth stage, the sub-sector loses competitiveness both in intermediate and final goods. However, it is possible for the sub-sector to hold competitiveness in specific products which require high quality and high functions utilising established brand names and highly advanced technology.

The electrics, electronics sub-sector is expected to create its competitiveness and to diverge in its production items in accordance with its level of production factors such as production technology, production management skill, development of supporting industries, and labour costs. Production of some products requires large amount of investment, hence domestic capital accumulation or inflow of FDI is a precondition for those goods. Generally, a country with low technology and low labour costs starts production of labour-intensive goods, typically simple assembly of electric parts and equipments. On the other hand, highly

industrialised countries have competitiveness in capital-intensive and technology-intensive goods such as LCD and semiconductors.

## (2) Development scenario

Taking into consideration the theories mentioned above and current conditions of Kenya, as well as national development plans and policies illustrated in Chapter 2, the target figures in 2020 for the electrics, electronics sub-sector in Kenya are set as follows.

Table 10-5 Target Figures for Electrics, Electronics Sub-sector

|                             | 2005 (actual) | 2020 (target) |
|-----------------------------|---------------|---------------|
| Turnover (Kshs. million)    | 8,392         | 32,982        |
| Value Added (Kshs. million) | 3,021         | 13,193        |
| Export (Kshs. million)      | 1,444         | 8,245         |
| Employment (person)         | 3,039         | 11,993        |

Source: The JICA Study Team

The development scenario of the sub-sector up until 2020 is envisaged by three phases:

Phase 1 (2007-2010): Starting assembly production

Phase 2 (2011-2015): Advantage in assembly production and starting overall production

Phase 3 (2016-2020): Advantage in overall production

Table 10-6 Development Scenario of Electrics, Electronics Sub-sector in Kenya

|                                     | Market  | Technology  | Investment Environment                                  | International Competitiveness   |
|-------------------------------------|---|---|---|---|
| Phase 1 (2007-10), 9 % plus growth  | Kenya, EAC, COMESA  | Existing SI to supply products to assemblers                      | Some improvement in infrastructure, labour productivity | Final goods (assembly): Low to Middle<br>Intermediate goods: Low            |
| Phase 2 (2011-15), 10 % plus growth | Expansion of regional market with increasing income level | Technology introduced by FDI to produce some parts and components | Reform of EPZ attracting FDI                            | Final goods (assembly): Middle to High<br>Intermediate goods: Low to Middle |
| Phase 3 (2016-20) 12 % plus growth  | Expansion and diversification of markets                  | Technology upgraded with FDI and improved domestic R&D base       | Improvement in power and transport                      | Final goods (assembly): High<br>Intermediate goods: Middle                  |

Source: The JICA Study Team

### 10.3.4 Development Strategies

#### (1) Promoting new investment

Since existing electrics, electronics manufacturers are small in number, the source of expansion has to be found in calling in FDI. Export Promotion Zone Authority (EPZA) is consulting with MOTI about expanding its activities and transforming the Economic



Promotion Zone (EPZ) into the Special Economic Zone (SEZ). Transformation of EPZ is recommended to envisage an idea of integrating living conditions of the investors. Integration of production centres and the social places shall enhance attractiveness of investment into transformed EPZ.

#### (2) Developing the local suppliers

Although Kenya does not have a foundation of electronic components manufacturers, she has a number of good plastic, metal, and rubber product manufactures. It should be recognised that the cost composition of plastics, metal, and rubber components are relatively large in the electronic equipment. The Government can assist linking the plastic, metal, and rubber product manufacturers to the electronic equipment assemblers. The tear-down exercise is one methodology to encourage the suppliers to start producing new products. The tear-down forum can be either held by assemblers, by the public sector, or by associations.

#### (3) Expansion of the markets

Because the electronic equipment is produced in mass production, its price competition is severe. The expansion of demand in East and Central Africa is a necessary condition for the electrics, electronics sub-sector to grow. In the early phase of development, Government purchasing would help to reduce the risk of manufacturers shifting their production for supplying electronic equipment. There are three specific recommendations for market expansion.

Firstly, it is recommended that local manufacturers with sound technology and production capabilities are to be involved in these ICT projects. This would help to develop production of electronic products, which are mostly imported at present. Secondly, the markets need to be protected from the counterfeit goods. Among all industrial products sold in the Kenyan market, electronic products are one of the worst hit by the counterfeits. Infringement of copyright of computer software is also one of the most serious issues in terms of protection of intellectual property right in Kenya. While the protection of copyrights is stipulated in the Copyright Act of 2001, the enforcement of the law needs to be strengthened. Thirdly, studies should be done to find out a rational tax rate, which would encourage local assembling of electronic equipment. For the purpose of promoting usage of computers and growing ICT sector, the value added tax (VAT) and import duty on computers (finished goods) have been zero rated. Yet, import duties on electrics components such as integrated circuits are still rated at 15 %. Thus, the current tariff structure is discouraging assembling of computers in Kenya.

#### (4) Technological education and training

Increasing competitiveness of the industry requires that technical education and training cover both production and management technologies. The present technical curriculum is focused on production technology, and it almost neglects the management technology, which is a key for increased productivity. A review of the curriculum is necessary to capture all the components that bring up the industry as a whole.

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In the area of production technology, four issues need to be stressed. Firstly, the curriculum for electrics, electronics engineering has to be shifted from analogue to digital. Secondly, the development scenario in electrics, electronics sub-sector takes importance on the development of the plastic and material suppliers; thus it is considered necessary to strengthen the mechanical techniques especially manufacturing techniques with precision. Thirdly, design skills training needs to be strengthened. Fourthly, more advanced design skills such as standardisation, module design, and value engineering design should be taught since these techniques are a source of increased value addition.

The best model of education and training can be sought through public, private, academic partnership. Because the needs for education and training change rapidly, it is necessary to have the involvement of the private sector in curriculum development and dispatching the trainers.

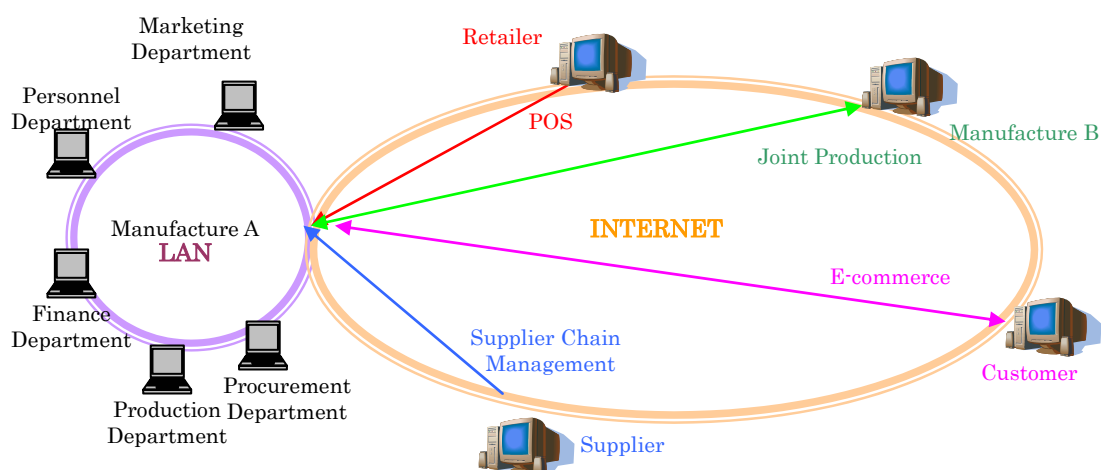
### **10.3.5 ICT**

#### **(1) Development of ICT in Kenya**

ICT sector is the most dynamic sector in Kenyan economy nowadays. Most obvious statistics that shows development of ICT is the increase of the mobile phone subscribers by 70 % per annum between 2001 and 2006. Another event that heats up the public and private attention is international optical fibre backbone, which is expected to be opened up within a year. ICT is indeed a hot topic in Kenya now, involving all the economic and social entities across public, private, and academic sectors.

#### **(2) Developing use of ICT by the manufacturing sector**

There are many ways in which the manufacturing sector can be benefited from the use of ICT. ICT not only increases productivity but also expands markets and creates stronger foundation of R&D. Ignorance in usage of ICT would worsen the global position of the Kenyan manufacturers since the manufacturers in the developed economies are creating their competitiveness by fully adopting ICT. MOTI needs to be aware of the range of available technologies that the manufacturers can use over the Internet so that proper guidance is to be given to the manufacturers.



Source: The JICA Study Team

Figure 10-1 ICT Utilisation by the Manufacturing Sector

Among all the tools ICT can avail to the manufacturing sector, one that needs urgent support from the Government is B2C e-commerce because it deals with the masses who require legal protection. Usage of e-commerce opens up the market regardless of the location of enterprises. MOTI is expected to take an initiative in developing the legal framework for B2C e-commerce with the support from the Directorate of e-Government (De-G) of the Office of the President.

In addition, B2G e-commerce, i.e. e-procurement by the Government is very effective in development of the markets for the manufacturers. Development of B2G e-commerce is also one of activities under e-Government, but the initiative has been taken by MOF.

Joint order is another area, which the Government can effectively support. Because marketing skills of SMEs are limited, it is getting popular to set up a portal site where the SMEs jointly receive a purchase order. The listed enterprises are comprised of capable manufacturers with different elements of technology (e.g. metalworker specialised in moulding, pressing, welding, polishing, etc.) so that the portal site becomes similar to a department of the manufacturing services. Setting up portal site also helps to create horizontal linkages among SMEs. The OSS information centre, which is proposed to be established under KIDEP, is recommended to create such portal sites as one of its activities while the orders are taken and managed directly by the private sector.

Use of Internet also enables collaborate production between manufacturers in distant locations. This methodology is often used by large-scale manufacturers to collaborate with their branches and 1<sup>st</sup>-tier suppliers. This tool is found particularly useful to reduce the production time, utilising global time difference of the partner company. While the basic method involves exchanging designs through file transfer over the Internet, the most advanced technology enables simultaneous designing on 3D CAD in the design space created over the Internet. Therefore, this tool provides a capable manufacturer with opportunities to join in the global production chain as long it has high designing and manufacturing skills regardless of its location. The collaborative engineering would be feasible with the manufactures, which can

design over certain CAD software. Therefore, strengthening design capacity is the first step to expand such business opportunities.

Establishment of Supplier Chain Management (SCM) network is usually driven by large-scale manufacturers, which construct the common database to which the suppliers can access via secured network. SCM system is expected to be developed alongside the linkage creation between the assemblers and the suppliers. Since SCM deals with B2B transaction and does not require additional legal framework for implementation, it has already moved to implementation stage in Kenya. It is expected that the introduction of the broadband network would induce higher usages of SCM. MOTI is recommended to raise awareness of the manufactures to utilise existing SCM solutions since this is one of effective methodologies to improve productivity.

According to the recent statistics, 0.9 % population possessed personal computers while 3.2 % had access to Internet in 2005. It is ideal that each manufacturer is equipped with PCs, which have connection to the Internet. Yet, in reality, access points need to be developed gradually. The main access points in the countryside will be the Digital Villages. There are also many NGOs which have initiated services to transfer data from the computer text to SMS text messages or to voice data over the radios. These initiatives are rational since 13.5 % of the population were estimated mobile subscribers, and radios are even more popular tools in the country side. Yet, contents targeted towards the manufacturers have not been developed. It is recommended that MOTI appoints an officer to support to develop contents to be availed to the manufacturers utilising such various ICT terminals; starting from the service information provided by the Government such as training, exhibitions, subsidies, and loans.