



**KENYA INDUSTRIAL RESEARCH AND DEVELOPMENT
INSTITUTE (KIRDI)**

**STRATEGIC PLAN
2010-2015**

**REVIEWED
APRIL 2011**

PREFACE

Public and Private sector Institutions alike become what they are based on decisions and choices leaders and managers make over a long period of time. In all institutions, the management is charged with the responsibility of thinking and planning for the organizations that they run. In the corporate world, managers articulate their intents in a strategic sense based on plans that usually cover medium to long term; 5-10 years. The 21st century is characterized by the incorporation of strategic planning in every dimension of management, including government and the public sector organizations.

Strategic plans have become tools for any organization that wishes to change and grow. Such plans help management in the allocation of resources to the most strategic areas and in the pursuit of areas of core competences, often leading to greater productivity. Involvement of every member of staff in the implementation of the strategic plan ensures that synergy and accountability are enhanced.

This strategic plan is for the Kenya Industrial Research and Development Institute; it lays out the blueprint necessary for the realization of an industrialized country, as envisaged within the government's Vision 2030. The plan also incorporates the medium term framework covering 2008-2012. It also articulates other provisions requisite for the realization of advanced Research and Development for Industrialization in Kenya, within the wider institutional framework.

The plan is realistic and hopes to realize the aspirations of the government as articulated in the Ministry of Industrialization strategic plan, the Kenya Private Sector Alliance plan, the Master Plan Study for Kenyan Industrial Development (MAPSKID) as well as the Manufacturing Sector (2008/2012) plan that includes flagship projects within the Vision 2030 plan.

At the Ministry, we congratulate KIRDI management for developing this plan which we trust will be implemented as articulated in this document. The achievement of the stipulated strategic objectives will certainly contribute to Kenya's industrialization effort. The plan further has the capacity to transform the institute into a centre of excellence in Kenya, the region and beyond as articulated in the vision statement.

The Ministry will spare no effort in supporting implementation of this plan.

Thank you.

Permanent Secretary,
Ministry of Industrialization.

FOREWORD

It is evident that strategic planning has revolutionized and supported effective implementation of activities and realization of mandates of public sector organizations, leading to better achievement of objectives, realization of visions and progressive development of specific functions and sectors.

KIRDI has progressively continued to support the industrial sector through research towards achievement of Vision 2030 that seeks to realise a medium industrialized country with a 10% annual growth in GDP. This effort has been greatly enhanced through subsequent development of strategic plans, with this one being the 3rd plan. However, one of the greatest challenges has been the lack of consistent funding to ensure complete and timely implementation of all the activities.

This new plan has simplified the implementation mechanism and prioritized core activities which make it not only relevant but fundamental in supporting the national agenda of Industrialization. It has captured the provisions in the Master Plan Study for Kenya Industrial Development (MAPSKID 2008), the 4K MSE 2030 programme and incorporated the Ministry of Industrialization and Trade Strategic Plan provisions, including the Private Sector Development Strategy (PSDS).

Beyond KIRDI's significant contribution in localized technology development that focuses on local raw materials and value addition, there is a necessity to ensure increased utilisation and domestication of technologies, including reverse engineering technology. At the same time, prioritized objectives will have to be in tandem with growth areas at the national, regional and global levels. These prioritized objectives include Information and Communication technologies, renewable energy and environment, value addition technologies and a supportive value-adding strategy for agriculture sector products.

KIRDI Management will prioritize on resource support and enhanced facilitative policy regime towards effective implementation of this Strategic Plan. While financial sustainability remains a critical challenge, competent human capital will be

deployed while forging strategic Public Private Partnerships (PPPs) in order to tap resources and capacities in other sectors. We congratulate KIRDI Staff and Management for articulating the critical elements and concerns needed for the realization of Mission and Vision of the Institute. As a Board of Directors we wish them success and unreserved support as we embark on the implementation of this Strategic Plan 2010 - 2015.

Thank you.

Prof. Tuikong D. K. Serem:
Ag. Chairman, KIRDI Board of Directors

ACKNOWLEDGEMENTS

The development of this Strategic Plan has been a challenging exercise. To begin with, the Institute lacked adequate resources to support the process while at the same time most of the Management Staff were engaged in various other processes. This meant serious time constraints and a critical challenge in the entire Strategic Planning Process. Notwithstanding the challenges encountered in its preparation, KIRDI Management is confident that this Strategic Plan will guide in positioning KIRDI in its pivotal role of spearheading the industrialization of Kenya within the broad framework of Vision 2030.

KIRDI has struggled financially in the last few years due to low funding in research curtailing disseminating and commercializing of research findings. Most innovations at the local level have either been ignored or remained latent due to lack of resources for commercialization, with 90% of technology being externally sourced. However, the recent emphasis by the government to support and mainstream R & D in most of the processes has significantly created impetus for greater involvement in industrial research and innovation.

This strategic plan therefore positions KIRDI towards the realization of increased research and development outputs, improved technology transfer, dissemination and commercialization of R & D outputs, establishment of strategic partnerships and strengthened institutional capacity.

The process of drafting this plan was inclusive and involved the entire KIRDI Management team, which tirelessly worked on this plan, putting in many hours during the workshops to clearly articulate the objectives and activities that KIRDI hopes to carryout with in the next five years. We thank all those that participated in the planning process.

We also thank the consultants who facilitated discussions during the workshops; Dr Eliud Nthiga and Mr Paul Mathenge of Adventure Educator Kenya. They did an

exemplary job and supported management in compiling this plan. We further thank the KIRDI Board of Directors for providing guidance and support during the entire planning process.

Finally, we thank the Permanent Secretary in Ministry of Industrialization for his support and guidance. To all others who contributed and their names are not mentioned, we thank you for your input.

Director, KIRDI

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ACRONYMS

4K	Initiative by 4 organizations (KIRDI, KIPI, KEBS, KNFJKA)
AAS	Atomic Absorption Spectrophotometer
BOD	Board of Directors
COMESA	Common Market for Eastern and Southern Africa
CSR	Corporate Social Responsibility
DANIDA	Danish International Development Agency
DIR	Director
DIT	Directorate of Industrial Training
EA	Environmental Audit
EAC	East African Community
EAIRO	East Africa Industrial Research Organization
EDSC	Engineering Development and Service Centre
EIA	Environnemental Impact Assessment
EMCA	Environnemental Management Coordination Act
EPC	Export Promotion Council
EPZA	Export Processing Zones Authority
ES	Extension Services
F&A	Finance and Administration
GDP	Gross Domestic Product
GMO	Genetically Modified Organisms
GOK	Government of Kenya
HIV & AIDS	Human Immuno-Virus; Acquired Immune-Deficiency Syndrome
HPLC	High Performance Liquid Chromatography
HR	Human Resource
ICDC	Industrial & Commercial Development Corporation
ICT	Information, Communication Technology
IEC	Information, Education and Communication
IP	Intellectual Property
ISO	International Organization for Standardization
JICA	Japan International Cooperation Agency
KEBS	Kenya Bureau of Standards
KIMBO	Kenya Industrial Management Board
KIPI	Kenya Industrial Properties Institute
KIRDI	Kenya Industrial Research and Development Institute

KNFJKA	Kenya National Federation of Jua Kali Associations
LDC	Leather Development Centre
LSC	Laboratory Services Centre
M & E	Monitoring & Evaluation
MAPSKID	Master Plan Study for Kenya Industrial Development
MKT	Marketing
MOA	Ministry of Agriculture
MOGCA	Ministry of Gender and Children Affairs
MOHEST	Ministry of Higher Education, Science and Technology
MOI	Ministry of Industrialization
MOIC	Ministry of Information and Communication
MOLA	Ministry of Local Authority
MOLD	Ministry of Livestock Development
MOTI	Ministry of Trade and Industry
MOU	Memorandum of Understanding
MOYAS	Ministry of Youth Affairs and Sports
MSME	Micro, Small and Medium Enterprises
MSMIs	Micro, Small and Medium Industries
NACADA	National Coordinator against Alcohol and Drugs Abuse
NCST	National Council for Science and Technology
NEMA	National Environmental Management Authority
OHS	Occupational Health & safety
OVOP	One Village One Product
PC	Performance Contract
PESTLE	Political, Economic, Social, Technological, Legal & Environmental
PSDS	Public Sector Development Strategy
QMS	Quality Management System
R & D	Research and Development
RTOS	Research & Trade Organizations
SWOT	Strengths, Weaknesses, Opportunities & Threats
TT	Technology Transfer
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNIDO	United Nations Industrial Development Organization

CHAPTER ONE

1.0 INTRODUCTION AND BACKGROUND

1.1 Introduction

This Strategic Plan is set against the backdrop of major developments and changes that have taken place in the country, in particular, the onset of a new Constitutional dispensation that came with the promulgation of the new Constitution in August 2010. While the Strategic Plan is set in line with the aspirations of the country's Vision 2030, it takes cognizance of devolved government that creates County governments as set out in the new Constitution.

The Strategic Plan also sets out the transformation of the Institute over the years and the development of research since its inception in 1979 under the Science and Technology Act Cap 250.

1.2 Background

Kenya Vision 2030 recognizes the central role played by the manufacturing sector in the realization of the goal of making Kenya a newly industrialized middle-income country by the year 2030. To attain this goal, the development and promotion of Micro, Small and Medium Industries (MSMIs) has been identified as the critical engine to propel this industrialization process. It is therefore important that a conducive environment be provided for the creation and growth of MSMIs.

This role is geared towards supporting Kenya's socio-economic development by attracting both foreign and local investments. In addition, through the creation of jobs and generation of wealth, the sector will continue to make positive contribution towards the achievement of the Millennium Development Goals, particularly the eradication of poverty and hunger; enhancement of environmental sustainability and global partnerships for development.

As an initial step towards attaining this goal, Kenya Vision 2030 lays emphasis on the development of Industrial Parks for the MSMEs in five Kenyan towns so that they will spur industrial growth. Vision 2030 also proposes the development of two Special Economic Industrial Cluster Zones in Kisumu and Mombasa.

Critical to the realization of the above aspirations is effective Research and Development. In this regard, KIRDI will continue to play its critical role as the lead Government R & D Agency as articulated in its mandate, bearing in mind the long road the Institution has travelled since its initial inception and the journey to the future as guided by its Vision and Mission.

1.3 KIRDI's Historical Development

Kenya Industrial Research and Development Institute (KIRDI) was established in 1979 under the Science & Technology Act Cap.250. However, the Institute's history dates back to 1942, when the then colonial government set up a central laboratory at Kabete, Nairobi, with the aim of initiating and developing industries so as to relieve shortages of industrial goods that had been caused by the Second World War. In the initial years, the Kenya Industrial Management Board (KIMBO) administered the laboratory. Later, as the laboratory expanded, its management was taken over by the East African Community (EAC) and renamed East African Industrial Research Organization (EAIRO).

EAIRO, the predecessor of the present day KIRDI, which had Centres in Kenya, Uganda and Tanzania, ceased its operations in 1977 following the collapse of the East African Community. The National Industrial Research Complex under the Ministry of Commerce and Industry subsequently took up operations. In 1979, an Act of Parliament establishing the National Council for Science & Technology (NCST) was amended to establish five Research Institutes, KIRDI being one of them.

Since becoming a fully-fledged Institution, KIRDI has undergone remarkable expansion and transformation. In 1987 a new building complex was put up in South C, Nairobi to house the newly established Leather Development Centre (LDC) and the Engineering Development and Service Centre (EDSC). The complex, also houses

the Headquarters of the Institute. Further expansion was made in 1991 when a Sorghum Processing Pilot Plant was commissioned in Kisumu.

The Institute has undergone major structural changes overtime, in response to changes and needs brought about by Industrial markets and reforms in Government. Currently, the Institute is placed under the Ministry of Industrialization (MOI).

1.4 KIRDI Mandate

The primary functions of KIRDI are derived from the institution's mandate as stipulated in the Science and Technology Act Cap 250, Laws of Kenya Section 14. These are:

- To carry out research and development in the fields specified in the Fifth Schedule of the Act.
- To Co-operate with other organizations and institutions of higher learning in training programmes on matters of relevant research.
- To liaise with other research bodies within and outside Kenya carrying out similar research.
- To disseminate research findings.
- To co-operate with the responsible Ministry, the Council and the relevant Research Committee, in matters pertaining to research policies and priorities.
- To do all such things as deemed appropriate, desirable and expedient to carry out its functions.

1.5 Core Thematic Areas and Collaborative Ministries And Departments

KIRDI's key areas of focus as stipulated in the Act are:

- Civil, Electrical, Mechanical and Chemical Industry Engineering Technologies
- Textile, Food and Ceramic and Clay Technologies
- Mining Technologies
- Power Resources Technologies

Collaborative Ministries are diverse since R & D is aimed at supporting the entire country's industrial sector. In particular, the following Ministries are set out in the Fourth Schedule of the Act as the participating Ministries in industrial research:

- Ministry of Agriculture (MOA)
- Ministry of Livestock Development (MOLD)
- Ministry of Higher of Education Science & Technology (MOHEST)
- Ministry of Planning, National Development and Vision 2030
- Ministry of Youth Affairs & Sports (MOYAS)
- Ministry of Gender, Women and Children Affairs
- Ministry of Information and Communication (MOIC)
- Ministry of Public Works
- Ministry of Local Authorities (MOLA)
- Ministry of Labour and Manpower Development
- Ministry of Health (MOH)
- Ministry of Environment and Natural Resources

1.6 Strategic Management

KIRDI has in the past undertaken strategic management to deal with emergent initiatives involving utilization of resources and to enhance its performance in both its internal and external environments. In 2004, KIRDI developed the initial 5years Strategic Plan (2005 - 2009) in tandem with government policy and requirements. This entailed specifying the Institute's Mission, Vision and Objectives. The Vision and Mission were clearly articulated thus enabling the Institute maintain focus and clarification of goals and objectives and develop projects and programs designed to achieve the set objectives, and allocate resources to implement activities guided by the laid down government policies. The Plan was useful particularly in articulating the role of KIRDI in championing development and growth of the country's industrial development through MSMIs.

Support for the informal sector is especially significant in industrial transformation and realization of Kenya's Vision 2030 industrialization. In this regard, KIRDI will continue to play a lead role in collaboration with other R & D Institutions,

Government Departments and Service Providers for effective promotion and support of R & D. Emphasis on R&D is crucial as it is a pre-requisite in the establishment of industries and relevant technologies that will be used in the business hubs in the identified urban centres. One of the strategies of ensuring encompassing national involvement is the “*one-village one product*” (OVOP) recommendation, in the Master Plan Study for Kenya’s Industrial Development (MAPSKID).

1.7 Process of Strategic Plan Development

This Strategic Plan development process adopted a broad consultative approach for sharing of ideas and ownership by all the stakeholders. The process has therefore been participatory, involving Management Staff at KIRDI, the Board and other key stakeholders.

The initial draft was prepared by Consultants after review of various relevant documents that included:

- The Institute’s previous Strategic Plan 2004-2009;
- The Master Plan Study for Kenya Industrial Development (MAPSKID);
- Ministry of Industrialization Strategic Plan (2008-2012);
- Kenya Vision 2030 Sector Planning for Manufacturing (2008-2012);
- Private Sector Development Strategy (PSDS) (2006-2010); and
- Science and Technology Act Cap 250, Laws of Kenya.

This was followed with a Strategic Planning Workshop where all the Senior Management had an opportunity to articulate the various provisions in this Strategic Plan. This was later followed by the Board of Directors approval and eventual validation that brought together primary stakeholders in the sector before completion, printing and dissemination.

CHAPTER TWO

2.0 INSTITUTIONAL ANALYSIS

2.1 Role of KIRDI in National Development and Vision 2030

Industrial Research and Development (R&D) will continue to be the critical component of the institute's research agenda. This is more so due to the prevailing situation reckoned to be of a generally low culture of embracing technology, innovation as well as R&D in the Industrial sector thus hindering growth. Further, it is reckoned, technology used in most industries is outdated and will need to be modernized through research.

A review of the Vision 2030 Economic Pillar¹ indicates that the Agricultural sector has immense potential of improving the country's revenue and GDP, through establishment of value adding industries in agro-processing, with value-addition especially on agricultural exports. Apart from establishment of institutions and formulation of relevant policies, improvement of agricultural research and development through strengthening of human and financial capacities is emphasized, resulting to better coordination and improved interplay between government, private sector, research institutions (KIRDI and others) and the farmers to ensure effective value addition.

Equally critical is the role of R&D in the growth and innovation in the manufacturing sector. Indeed research indicates that only 7% of manufacturing technology in Kenya is locally sourced while 93% is imported thus making import of affordable and modern technology a major challenge. The other challenge is that Kenya's manufacturing sector is principally agro-based with most of the industries located in urban and pre-urban areas with the intent of utilizing raw materials sourced from rural production. This has resulted into rural-urban disparities, rural-urban

¹ Ministry of State for Planning, National Development and Vision 2010; First Medium Term Plan 2008-2012

migration and sub-optimal utilization of natural resources.² With improved R&D in agro-processing technologies, the above situation can be addressed with increased value addition in agriculture, increased food security and employment.

Way back in 1997, the policy for Kenya industrial development was formulated under Sessional Paper No 2 of 1997 on “Industrial Transformation by the year 2020”. Since then, new policies have been formulated notably under Economic Recovery Strategy (ERS) 2003 – 2007 and then Vision 2030. Furthermore, to be on the roadmap of technology development, the Master Plan Study for Kenya Industrial Development (MAPSKID 2008) undertaken by JICA, identified KIRDI as a key player in the development, dissemination and commercialization of technology for industry, including the reverse engineering (tear-down) and the innovation of “One-village-one-product” (OVOP) initiative.

In line with Vision 2030 also, the Medium Term Plan for Industrialization (2008 – 2012), has identified several flagship projects which will require intensive and diverse technologies, in which KIRDI will play a central role in the required technology development and transfer. These flagship projects in which KIRDI has been identified as a key collaborator, are in line with the policy of private sector growth, especially the MSMEs, which currently employ 66% of total people employed in the industrial sector with trade contributing 64%³.

They include:

- Establishment of special economic zones in major urban areas initially in Mombasa and Kisumu.
- Development of Small and Medium Enterprise Industrial Parks in key urban centres, with the objective of enhancing and transforming them into industries. They are earmarked to be located in Mombasa, Kisumu, Nakuru, Eldoret and Nairobi.

² Ministry of Industrialisation; Vision 2030 Sector Plan for Manufacturing 2008-2012

³ MAPSKID

- Product and market diversification to address over reliance on limited exports.
- Development and up-scaling of industrial research and creation of collaborative linkages for improved uptake and commercialization. This envisages involvement of private-public partnerships.
- Establishment of an incubation fund and development of an elaborate incubation programme involving key stakeholders, to mitigate against the low survival rate of MSMEs, as most micro-industries are noted to rarely survive beyond the 3rd anniversary.
- The “One Village One Product” concept supported by JICA through the support of SMIs aimed at increasing utilization of local resources for local and international markets. It will require transfer of skills and technology
- Support of the 4K (KEBS, KIRDI, KIPI, KNFJKA) MSE 2030 programme aimed at addressing issues of productivity, quality and competitiveness of MSE products through provision of technology, design, product development, standardization, protection, patenting and innovation.
- Capacity building and integrated facilitation in technology transfer, technology assimilation and management, intellectual asset management among other education and outreach programs.

The strategies set out above entail effective participation in Research and Development in realization of various manufacturing sector projects as articulated by the Ministry of Industrialization Strategic Plan.⁴

The approach adopted above will receive the necessary impetus from the Private Sector Development Strategy (PSDS) still aimed at enhancing private sector growth and competitiveness and contributing to the country’s medium-term objectives. PSDS will continue with the objectives of stimulating research and development activities as a means of productivity improvement in close collaboration with KIRDI, within the framework of 4K MSE Vision 2030 Initiative; creation of more effective linkages between technology developers and industry; as well as protection of

⁴ Ministry of Industrialization Strategic plan 2008-2012

intellectual rights. This will ensure that the country no longer lags behind in R&D as has been the case in the past observed by PSDS to have been the result of limited participation of the Public Sector in R&D with Public Funding of R & D having remained peripheral. In addition the links between researchers/ technology developers and industry were also weak and will have to be addressed.⁵

On R&D, the PSDS observed:

“Kenya has lagged behind in this area as there is limited participation of the Public Sector in R&D while Public Funding of R&D has remained peripheral. In addition the links between researchers/ technology developers and industry are weak.”⁶

The PSDS also envisaged supporting the MSMEs to access markets, capital, training and capacity enhancement and establishment of strategic linkages. This includes initiation or up-scaling of industrial incubation programs, establishment of special funds like Youth and Women funds and collaborative linkages with venture capital providers.

In addition and as the primary agency responsible for adoption of modern and appropriate technology in support of MSMEs, KIRDI will continue to play its critical role in the actualization and implementation of strategies for industrialization in close liaison with the Ministry and other key players. This will entail strengthening linkages among research Institutions and Industry, supporting Innovative Schemes for MSMEs and enhancing Capacity Building for Incubator Programmes.

⁵ Ministry of Trade and Industry; Public Sector Development Strategy 2006-2010 p.23-24

⁶ Ministry of Trade and Industry; Public Sector Development Strategy 2006-2010 p.23-24

2.2 Institutional Capacity Analysis

2.2.1 Introduction

For KIRDI to play effectively its role in national development, it has to have in place a strong institutional capacity in terms of policy framework; human resources; facilities and equipment; financial resources and research capacities. In the enhancement of these capacities, KIRDI will, in partnership with other industry service providers like KIPI, KEBS, EPZA and others, continue to support MSMIs and link them particularly to emerging practices like intellectual property registration, attainment of KEBS mark of quality, access to incubation and to venture capital.

2.2.2 Policy Framework

KIRDI has developed various policies that guide operations including; OHS policy, Gender, HIV & AIDS and Financial management. Relevant manuals like HR and Finance have also been developed over the years. There are other various guidelines supporting engagement with stakeholders, particularly the MSMIs and Industry, in development, implementation and commercialization of research findings and innovations.

2.2.3 Human Resources

The Institute has a team of highly skilled and experienced manpower. As a research institution, most of staff are technical and research oriented. The complement includes; engineers, economists, chemists, technologists, technicians and artisans.

The institute has comparative strength in new idea generation and product/process development. It is however less endowed in the areas of prototype development (piloting), commercial scale production and market development /marketing. These areas of core competence provide the framework around which the institute's resource allocation has been rationalized.

2.2.4 Facilities and Equipment

KIRDI has established facilities and laboratories that have been used for industrial research. In fact, one of the laboratories for Water and Waste Water has been accredited and offers services to industry. However, though 80% of these facilities are operational, there is need for modern facilities for testing, measurements and general purposes to enable the country achieve excellence and respond competitively to international technological advancement. Indeed over the years, the Institute has continued to upgrade equipment and facilities in order to meet the continually increasing demand as guided by the national and global developments. Such equipment and facilities have included ICT networks, computers and peripherals, and work space. However, there is still need to acquire more equipment for highly specialized service delivery and improved productivity. This will entail the Institute acquiring state-of-the-art facilities and equipment.

2.2.5 KIRDI Funding

Although most of the funds come from the exchequer, the Institute has put in place an ambitious strategy targeted at attracting donor funding to support its projects. Several Donor funded projects are currently under implementation in collaboration with development partners namely; UNIDO, DANIDA, JICA, UNDP and UNEP

In addition, KIRDI has in place a strategy to attain a stable internal income base to support its development and realize the requisite industrial research potential to support the industrial development of the country. In this respect plans are underway to establish an Enterprises Entity to manage and coordinate the commercialization of KIRDI's technologies and other revenue generating activities.

2.2.6 Research Capacities

Since its inception in 1979, the Institute has carried out various researches leading to the development of various products and processes based on utilization of local raw materials. Significant achievements have been made as depicted in the table below.

Table 2.1: Achievements in Research and Development

Economic area of Focus	Achievement
Leather Processing Technology	Research on leather processing technologies has enabled the processing of fish skin to exotic leather.
Cashew Nut Processing Technology	Different coating products were developed from cashew nut shell liquid. This project was transferred to a client at the Coast for commercial exploitation.
Animal feed	The Institute has developed various formulations of animal feeds using locally available raw materials to support MSEs in animal feed production. A low cost software package that facilitates quick processing of different low cost feed formulations is available.
Power alcohol	Through collaborative efforts of KIRDI, IPT of Brazil and support of UNIDO the Institute acquired technology for a small scale power alcohol production plant based on sugar cane.
Cassava Processing And Utilization	KIRDI facilitated the importation and testing of Cassava Processing Technologies from Nigeria and Uganda.
Composite Technologies	Through intervention of de-hulling and milling technologies for cereals and root crops, novel composite products have been developed for making bread, cakes, filler for sausages etc. from an assortment of composite flours.
Gum Arabic	Successfully developed the process for production of refined gum Arabic for powder and passed on the same to a client for commercialization.
Coffee Processing	Through collaborative research with the Coffee Board of Kenya eradication of many off flavours in coffee including onion flavours and stinkers, the two stage fermentation process, ultra-violet sorting of coffee, drying and storage

	of beans has been developed.
Rosin And Turpentine Development From Oleoresin.	The Institute carried out investigations and designed a plant, which was established in Nakuru.
Glue from Cassava	A number of glues based on Cassava Starch were developed and results were passed on to the client for commercialization.
Essential Oils	Extraction and refinement methods for Essential Oil Extraction from local available raw materials e.g. Gum Frankincense, Gum Myrrh and Rose Flowers.
Ceramic Industry Mapping.	A mapping for commercial exploitation of materials for manufacture of ceramic items.

KIRDI has commercialized a few of the products from these projects. However, there is a lot more ground to be covered including up-scaling of the projects and improved production.

2.2.7 Constraints and Challenges

The achievements highlighted above have not come easy. The Institute has experienced various constraints and challenges over several–years slowing down research and limiting dissemination and industrial technology uptake. In particular, some of the critical limitations have been:

- Shortage of qualified staff due to brain drain and high staff turnover (There is need for rigorous internal revenue generation for self sufficiency and provision of attractive remuneration packages).
- Inadequate funds to update facilities and equipment (There is need for rigorous internal revenue generation).
- Inadequate exchequer funds allocations (There is need for rigorous internal revenue generation).
- Inadequate development partner funding (All the more need for rigorous internal revenue generation).

- Low absorption rate of the developed technologies (There is need to increase uptake to reasonable levels in an incremental sense).
- Poor dissemination of the locally developed innovations and technologies (Interesting entrepreneurs and supporting the MSMEs will be a positive initiative toward technology dissemination).
- Over reliance on foreign technologies frustrating commercialization of the local innovations (There is need for continued effort to commercialize and incubate businesses working with local entrepreneurs).
- Proliferation of counterfeit technologies due to poor vetting mechanisms (KIRDI needs to work with the Ministry of Industrialization and relevant anti-dumping agencies).

This Strategic Plan has relevant objectives and strategies for channeling KIRDI's resources and energy, towards addressing the prevailing constraints and progressively positioning the government on the path of realizing the vision 2030, creating employment, generating wealth and middle-level industrialization.

2.2.8 KIRDI's Projects Focus

The following thematic areas have been identified where KIRDI will lay emphasis on:

- Mapping, protection, improvement/adaptation and use of indigenous technologies.
- Value addition to local raw materials especially in agriculture.
- Technology development and reverse engineering.
- Utilization of agricultural/ industrial raw materials.
- Renewable Energy and Environment protection technologies.
- Cleaner Production technologies with bias to Health and Sanitation.
- Information and Communication Technology adoption.

These are not the only areas of focus, but they are primary within the core mandate of KIRDI. They are also areas of synergy in collaboration with other industrial sector players and strategically seek to utilize national thrift sectors, specifically agriculture, energy and service provision.

CHAPTER THREE

3.0 SITUATIONAL ANALYSIS

Generally, three tools are usually applied in undertaking a situational analysis often known as a business environmental scan. These include: PESTLE, SWOT and Stakeholders Analysis. They are important in informing the deliberations on the strategic interventions that KIRDI is expected to address within this strategic duration.

3.1 Pestle Analysis

The following is a scan of the environment in which KIRDI operates, which will inform the development of strategies during the implementation of the strategic plan. They are realities in the political, economic, social-culture, technical, legal and environmental spheres.

Table 3.1 PESTLE Analysis

Area	Issues Identified
Political Issues	<ul style="list-style-type: none">• Change of Government and policies is likely to affect focus and emphasis given to R&D. On the converse, greater attention will significantly propel and strengthen the need for R&D• Regional conflicts; Kenya partners with neighbouring countries and there is cross-utilization of resources. Conflicts could easily affect availability of raw materials for industry• Internal politics can easily derail achievement of set objectives. In some cases, appointments to management have been made on political grounds severely impacting on an organization's direction and delivery of services• The current regional integration will lead to increased competition in various industries and also demand for technology in fields like ICT, manufacturing as well as agricultural value addition• Frequent Changes at parent ministry level, with frequent mergers or splits generally leads to loss of consistency and changes in policy

	<p>guidelines. This can be quite confusing.</p> <ul style="list-style-type: none"> • Lack of political goodwill has in most cases led to low funding for R&D • Political upheavals and violence redirects resources to other areas leading to low attention and poor funding of R&D. This has happened often in the past. • Enforcement of regional agreements; most of the agreements seek to either regulate or control research and technology transfer. Most of the regulations are political in nature. • Creation of County Governments; greater focus will now be economic development at the county levels. Therefore research and development should be devolved to the county level.
<p>Economic Issues</p>	<ul style="list-style-type: none"> • Economic crimes have led to misappropriation of resources and low funds allocation to R&D or commercialization of the same. • Food insecurity/ dwelling or focusing on subsistence; KIRDIs reliance on local raw materials has led and will probably limit utilization of technologies for commercialization • Piracy along the Somalia coastline has led to increased cost of production particularly petrol-based or involving energy production. • Inflation/deflation; Industrial development is prone to economic changes that involve increase in interest rates and levels of economic activities • Tariff and non-tariff barriers; these are likely to impact on cost of services and revenue generation. • International treaties and conventions often affect how technology is transferred or used and the rate of commercialization. • Poor infrastructure increases cost of production and discourages investment in industry. • High cost of energy/ industrial production; Kenya has inhibitive costs of production due to energy, poor infrastructure and other factors like tax regimes. • Over reliance on agriculture sector; climate change, poor production and increasing population have created instability in the agricultural sector. This will certainly impact on agriculture technologies and

	<p>eventual transfer for commercialization</p> <ul style="list-style-type: none"> • Shift to manufacturing and service sector development has been identified as the strategy that Kenya should adopt. But there are challenges in patenting, availability of natural resources and business climate for effective growth of the service sector. • Global economic trends/globalization; like most other countries in the developing world, Kenya will continue to grapple with globalization challenges that include capital flows, investments, markets and impact of production in other economies. Products from other economies have nearly killed some of the local industries and yet protectionist strategies do not seem to work in a liberalized economy.
<p>Social-Cultural issues</p>	<ul style="list-style-type: none"> • Rural urban migration; while the focus and strategy is to develop technology that will use local materials, there is increased urbanization that frustrates location of production at the rural areas. Kenya's rural industrialization strategy has not made progress for a long time. Kenyans will need to invest at the rural levels, create employment opportunities and stem rural-urban migration. • HIV/AIDS and other health challenges; the country has continued to lose researchers and innovators due to the scourge. • Language and cultural differences; some of the technologies are designed using foreign languages that require interpretation especially those sourced from Asia and some countries in Europe. For effective reverse engineering, language and cultural barriers will continue to affect transfer. At the local level, R&D is technical and not for ordinary language use, yet not many are scientifically oriented. • Low literacy levels; Science continues to be shunned by most Kenyans. Debate has been live on how to motivate more Kenyans into science which is the backbone for most technologies. Other than Science, research as a discipline is generally ignored due to its complexity and costs. • Negative ethnicity/ Tribalism/ <i>balkanization</i>; Kenya continues to experience tribal differences that have been politicized leading to a nearly failed state. This affects R&D and technology growth. Some of the areas that would be developed for specific production that would

	<p>utilize a particular technology would probably be politicized thus frustrating such efforts.</p> <ul style="list-style-type: none"> • Insecurity; development can not take place in an insecure environment. Kenya continues to suffer under insecurity from international terrorism, unstable neighbours and international organized and white-colour crimes. • Human rights perspectives in industrial development; there has been increased opposition towards application of certain technologies that are perceived as hazardous to health. These include GMOs, stem cells development and energy generation equipments like nuclear reactors. Various human rights groups are keen to oppose some of these technologies and in other cases agitate for compensations or increased corporate social responsibility • Brain drain in research areas; most of Kenyans in leading research have been targeted for better jobs out of the country or absorbed into international organizations leaving local research institutions with deficiencies • Low interest in Science based subjects; as mentioned earlier, this is an aspect that severely affects R & D • Unemployment and underemployment; there is a tendency to concentrate in economic survival than areas of thrift in developing countries. Unemployment and underemployment both waste available human resource capital.
<p>Technological Issues</p>	<ul style="list-style-type: none"> • Brain drain in research areas has led to low availability of researchers and few innovations that can be commercialized. • High cost of modern technologies; with advancement and rapid changes in technology, buying new or improved technologies is not easy • Low absorption of technologies; Kenya has insignificant number of investors willing to support start-ups or new local technologies. Even what has been developed has lacked entrepreneurs for commercialization. • High cost and inhibitive process of protection of Intellectual Property Rights.

	<ul style="list-style-type: none"> • Low commercialization process of technologies. • Inadequate capacity for technology management. • Rapid technological changes have led to obsolescence of technology which makes it expensive and out of reach for developing world economies. • Dumping/counterfeit technologies continues to negatively impact developing countries. Most of the developed economies are not willing to share or transfer their advanced and modern technologies. • Poor implementation of relevant technological policies; most countries in the developing world lack technology acquisition, development or transfer policies. This is left to industry players who are commercially oriented other than for sustainability and strategic national direction. Kenya lacks such policies
Legal Issues	<ul style="list-style-type: none"> • Ratification and implementation of Regional Treaties. • High licensing costs and processes for investors; technology acquisition or development is an expensive venture and in most cases requires licensing that comes with stiff conditionalities. • Inadequate capacity for drawing technological transfer agreements and negotiations; UNIDO has been a leading agency in facilitating drawing and negotiating of agreements for technology transfer. • Protracted disputes/conflict resolution systems. • High legal costs and low support for emerging industries.
Environmental issues	<ul style="list-style-type: none"> • Climate change and global warming have severally affected industries that rely on water and agriculture. • Environmental treaties and conventions; the international community is increasingly becoming sensitive to pollution, development of new technologies, their commercialization and transfer. Complex treaties and conventions aimed at environmental protection have been developed and most countries including Kenya are signatories to some of them. • Impact of EMCA - (<i>NEMA</i>). There are many small and upcoming industries that are not able to meet the requirements of EMCA. • Waste management and its role on pollution will continue to affect the development of technologies and their commercialization.

	<ul style="list-style-type: none"> • Cleaner production provisions also continue to influence R&D. Most technologies are keen to ensure cleaner production to avoid pollution, litigation and such other cases. • Emerging industries/opportunities e.g. green technologies
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3.2 SWOT Analysis

A SWOT analysis of KIRDI identified gaps that need to be addressed and opportunities that should be exploited. However, there are obvious threats that would curtail development of and uptake of industrial research, hampering Kenya's economic and industrial development agenda, as stipulated in the Vision 2030 and in the medium-term government strategies.

Aspect	Issues
Strengths	<ul style="list-style-type: none"> • KIRDI Legal mandate (Cap 250, laws of Kenya). • Strategic location and proximity to key stakeholders. • Functional Demonstration Units, Pilot Plants and Centres. • Qualified and Skilled Staff. • Appropriate operational policies and Management Systems. • Established linkages with National, Regional and International R&D Organizations leading to sharing of best practices and benchmarking • Strong linkages and support from Development Partners. • Long industrial R&D experience with MSMEs and other industries. • Expertise on EIA/EA/IPA/quality management systems. • ISO Accredited laboratories for Water and Waste Water Analysis • Established incubation and common manufacturing facilities • Experience and capacity in technology development and reverse engineering • Performance Contract System in the country • Registration with Directorate of Industrial Training as a Training Institution
Weaknesses	<ul style="list-style-type: none"> • Weak strategies for engaging the industry. • Inadequate pilot plants, common manufacturing and incubation facilities.

	<ul style="list-style-type: none"> • Lack of specialized application software and capacity to support R&D, reverse engineering and prototype development • High technical staff turn-over. • Inadequate technical capacity for R&D • Weak M & E and impact assessment strategies • Inadequate budgetary support from the Government • Low national/regional visibility • Inadequate modern equipment. • Lack of self sustainability strategy • Weak organizational structure.
Opportunities	<ul style="list-style-type: none"> • Vision 2030 drive to industrial growth and competitiveness. • Demands for R&D/consultancies derived from Performance Contracting requirements. • Requirements of the Environmental Management Coordination Act (EMCA, 1999). • Economic stimulus and other government initiated projects and programmes (devolved funds). • Training for industry (DIT register) • Existence of institutional networks and linkages. • Increased demand for R&D products, processes and services • Requirements for KEBS standardization/certification. • Emerging new technologies • Existence of commercial marketing blocks such as COMESA and EAC. • Expanding population (local, regional and the globe). • Changing consumer tastes and preferences.
Threats	<ul style="list-style-type: none"> • Inadequate funding of industrial R&D by government and development partners compared to other sectors. • Low absorption of R&D outputs. • Increased competition from other RTOs and technology service providers. • National culture/mindset towards foreign goods and services • Corruption, economic crimes, insecurity and other vices • Changing consumer tastes and preferences. • Dumping of cheap technologies in the local market

	<ul style="list-style-type: none"> • Rapid technological changes • Brain drain in industrial research areas
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3.3 Stakeholder Analysis

As an R & D Institute in the industrial sector, KIRDI has strong linkages with various Government Ministries and Agencies; the Private Sector; Universities; Research Institutes; and Development Partners. Each of these stakeholders has certain expectations which they hope will be fulfilled through their association with KIRDI. KIRDI also, recognizes the fact that these Stakeholders can either facilitate or impede its work, and hence the need to build good working relationships and clarify expectations.

The following is a stakeholders' analysis which highlights their expectations as well as the Institute's expectations:

NO	NAME OF STAKEHOLDER	STAKEHOLDERS' EXPECTATIONS	KIRDI's EXPECTATIONS
1.	Industrial Sector (Customers)	<ul style="list-style-type: none"> • Provision of quality industrial technological solutions • Information exchange and linkages with other technology providers • Capacity building 	<ul style="list-style-type: none"> • Adequate and accurate information on their needs and requirements • Compliance to KIRDI's policies and guidelines on programmes and activities
2.	Ministry of Industrialization (MOI)	<ul style="list-style-type: none"> • Implementation of the Institute's mandate and relevant government policy guidelines • Participation in Industrial policy formulation and implementation • Effective delivery of service to Industry • Achieve financial 	<ul style="list-style-type: none"> • Provide enabling policy, legal and regulatory framework, • Provide technical, management and financial support

		<p>sustainability</p> <ul style="list-style-type: none"> • Participate in the realization of Vision 2030 	
3.	National Council of Science & Technology (NCST)	<ul style="list-style-type: none"> • Contribute to the formulation and implementation of research policies and priorities • Provide Industrial Information • Capacity to undertake industrial research 	<ul style="list-style-type: none"> • Development of a conducive legal mandate that guides scientific research • Support implementation of research policies and priorities • Technical support and networking
4.	Micro, Small and Medium Industries (MSMIs)	<ul style="list-style-type: none"> • Upgrade their innovations, products and technologies to international standards • Provide information on the programmes, services and products offered • Facilitate market linkages • Capacity building • Provide R & D services • Assistance in IP registration • Common manufacturing and service facilities and Incubation 	<ul style="list-style-type: none"> • Grow, expand and be competitive • Commitment and participation in the Institute's MSMI's programmes and activities • Adherence to terms of engagement • Provide support and feed back
5.	Kenya National Federation of Jua Kali Associations (KNFJA)	<ul style="list-style-type: none"> • Upgrade existing innovations and technologies to international standards • Provide information on the programmes, services and products offered • Facilitate market linkages for MSMIs 	<ul style="list-style-type: none"> • Commitment in participation to Institute's programmes and activities • Compliance to KIRDI's policies and guidelines on programmes and activities • Provide support and feed back • Support MSMIs

6.	Kenya Bureau of Standards (KEBS)	<ul style="list-style-type: none"> • Participate and contribute to the development of standards • Development of processes and products; and provision of services compliant to national standards • Support MSMI's improve and achieve products standards • Play role in 4K⁷ initiative 	<ul style="list-style-type: none"> • Timely provision of certification services • Development of competitive standards • Play role in the 4K initiative • Ease of access to information • Create awareness on standards
6.	Kenya Industrial Property Institute (KIPI)	<ul style="list-style-type: none"> • File patent applications • Assist and support MSMI's in IP applications • Play role in the 4K initiative 	<ul style="list-style-type: none"> • Timely provision of IP services • Assist to develop and implement IP Policies • Share information on IP • Create awareness • Build capacity in drafting IP applications • Play role in the 4K initiative
7.	Development Partners (UNIDO, DANIDA, JICA, UNDP, UNEP)	<ul style="list-style-type: none"> • Efficient & effective implementation of projects/ programmes • Capacity to deliver on projects/ programmes 	<ul style="list-style-type: none"> • Technical & financial support • Information sharing and networking • Timely release of funds • Feedback
8.	Research Institutes and Institutions of Higher Learning	<ul style="list-style-type: none"> • Collaboration in research and training • Dissemination of Research Outputs • Development of MSMI's using local innovations and inventions • Collaboration in 	<ul style="list-style-type: none"> • Collaboration in research and training • Support in development of MSMI's using local innovations and inventions • Collaboration in Commercialization of their research outputs

⁷ 4K is an initiative involving KIRDI, KEBS, KIPI and KNFJKA in revolution and modernising the MSE Sector.

		Commercialization of their research outputs	
9.	Other Government ministries/ Departments ⁸	<ul style="list-style-type: none"> • Collaboration and networking in development of niche products • Implement relevant policies, projects and programmes 	<ul style="list-style-type: none"> • Participation and collaboration in relevant projects and programmes • Sharing of resources and infrastructural support
10.	Kenya Industrial Estates (KIE)	<ul style="list-style-type: none"> • Support towards growth and development of MSMI's • Provision of industrial & incubation services to MSMIs 	<ul style="list-style-type: none"> • Provision of financial and infrastructural support to growth oriented MSMI's
11.	Industrial Development Bank (IDB) Capital	<ul style="list-style-type: none"> • Support towards growth and development of MSMI's • Provision of industrial & incubation services to MSMIs 	<ul style="list-style-type: none"> • Provision of financial and infrastructural support to growth oriented MSMI's
12.	Other Business Development Service Providers (KenInvest, EPC, ICDC)	<ul style="list-style-type: none"> • Provide relevant information and collaboration • Contribute to increased investment portfolio • Provide linkages to MSMI's 	<ul style="list-style-type: none"> • Provision of quality business support services • Catalyze enabling environment for business growth and capital
13.	Suppliers of goods and services	<ul style="list-style-type: none"> • Provision of business opportunities • Timely payments • Fair procurement processes • Provision of clear specifications 	<ul style="list-style-type: none"> • Supply of goods and services as per specifications • Prompt and efficient delivery of goods and services
14.	Board of Directors (BOD)	<ul style="list-style-type: none"> • Implementation of policies and guidelines • Continually Improved performance 	<ul style="list-style-type: none"> • Provide policy guidance • Provide support on resource mobilisation

⁸ Some of the key partner Ministries and departments are listed in chapter 2. they include: MOHEST, MOT, MOA, Min of Planning & Vision 2030, MOLA, MOLD, Min of labour, and others listed in chapter 2.

15.	Members of Staff	<ul style="list-style-type: none"> • Conducive working environment • Competence and skills development • Equal opportunities for career development • Recognition and reward 	<ul style="list-style-type: none"> • Commitment and professionalism • Achievement of targets
16.	Community	<ul style="list-style-type: none"> • Quality and timely industrial Services • Regional expansion (devolution) • Industrial transformation of the country (realization of vision 2030) • Corporate social responsibility 	<ul style="list-style-type: none"> • Support and feedback • Uptake of research outputs • Improved entrepreneurship spirit

CHAPTER FOUR

4.0 STRATEGIC ANALYSIS

Strategic analysis encompasses clear definition of Vision, Mission, Core Values and Strategic Objectives from which activities for the entire strategic duration are derived. The statements are also aligned to the aspirations of the parent ministry and Government.

4.1 Vision

To be a centre of excellence in industrial Research & Development

4.2 Mission

To undertake Industrial Research and Development and disseminate findings *that* will have a positive impact on national development.

4.3 Core Values

KIRDI's core values are:

1. Customer focus
2. Innovativeness and creativity
3. Integrity and professionalism
4. Quality
5. Partnerships and teamwork
6. Environmental protection

4.4 Strategic Objectives

In order to improve the quality of output, and in line with the findings of the SWOT analysis, five (5) strategic objectives have been identified, which the Institute will pursue during the plan period;

- I.To undertake and improve industrial research and development
- II.To improve, dissemination, transfer and commercialize R&D outputs.

III.To establish strategic partnerships and networks

IV. To enhance institutional financial sustainability & infrastructure development

V.To strengthen institutional capacity in human resource and administration

STRATEGIC OBJECTIVES	SPECIFIC OBJECTIVES
1. To undertake and improve Industrial Research and Development.	1. To improve capacity for value addition to raw and semi-processed materials
	2. To develop Technologies for utilization of Agro & industrial wastes
	3. To Improve indigenous technologies and processes
	4. To improve development of electrical, electronic and ICT products
	5. To improve capacity for energy and environment management
	6. To increase capacity for local manufacture of agro-machineries
	7. To increase capacity for reverse engineering
	8. To adopt and adapt local and global knowledge base (IP and innovations)
	9. To acquire modern R&D equipment and facilities
2. To Improve, dissemination, transfer and commercialize R&D outputs.	1. To Promote creation and growth of technology based MSMEs
	2. To establish Business Incubation and Common Manufacturing facility
	3. To establish Industrial Pilot Plants
	4. To undertake Marketing and Promotion programmes
	5. To carry out a national Audit and Impact Assessment on the Transfer, Dissemination and Commercialization of technology
3. To establish strategic partnerships and networks.	1. To promote business growth and development opportunities
	2. To expand industrial service delivery mechanisms
	3. To strengthen relationships with current business

	partners
	4. To increase KIRDI's visibility
	5. To increase opportunities for incubation and business funding for MSMEs
	6. To increase technology sources for local adoption
	7. To improve access to business opportunities and support services for MSMEs
4. To enhance institutional financial sustainability & infrastructure development	1. To establish and operationalise a Business Enterprise entity
	2. To develop and construct a ultramodern Technology and business centre at South B
	3. To modernize production facilities infrastructure to respond to market needs
	4. To establish strategic linkages and networks with industry players
	5. To enhance resource mobilization effort
	6. To develop Business / entrepreneurship capacity
5. To strengthen institutional capacity in human resource and administration	1. To Review and rationalize the organization structure
	2. To review various management and operations documents & Policies
	3. To improve staff motivation, growth, safety, health and general wellbeing levels
	4. To improve on customer service and response mechanisms
	5. To strengthen financial management strategies
	6. To mainstream ICT throughout the operations
	7. To ensure compliance with statutory requirements
	8. To upgrade the current infrastructure and acquire/expand/develop modern facilities
	9. To promote application of quality management systems especially ISO and other relevant standards
	10. To upscale accountability and governance

	structures and programmes
	11. To ensure implementation of the strategic plan
	12. To improve on monitoring and evaluation system and structures

CHAPTER FIVE

5.0 IMPLEMENTATION, MONITORING AND EVALUATION

Implementation of strategic plans largely depends on commitment of management, discipline and consistent leadership. It also requires involvement of all staff so that every day is lived implementing the plan. Therefore cascading this plan will be necessary. While the managers have the operational plan, there will be need for sensitization and planning at various levels for ease of implementation.

5.1 Strategic Plan Dissemination

The Strategic Plan will be disseminated to all the stakeholders. An implementation committee that will ensure effective dissemination, implementation and M&E, audit performance, review strategies and ensure consistent ownership of the Strategic Plan will be established. Recruitment of a consultant or appointment of a specific officer to head the implementation (compare to ISO implementation) is advisable. Management will establish an ad hoc quality circle to ensure effective sensitization and cascading of the strategic plan, to create ownership at the widest level.

5.2 Resource Mobilization

As mentioned earlier in chapter two, inadequate financial resources is one of the main challenges that KIRDI has faced and has had to grapple with over the years, coupled with the low priority given to R&D in national and Ministry budgets, as well as among development partners. Resource mobilization for assured financial sustainability is a fundamental concern during this strategic plan period. This is particularly important when the government subvention keeps on continually being inadequate, due to the increased competition for the funds among competing priorities.

The Institute largely relies on the government funding for its recurrent and development activities. Development partners have supported KIRDI in capacity

building of staff for specific projects and other limited activities. Funds from the two sources and nominal fees charged for services rendered have proved unsustainable as most of it goes to payment of personnel costs and very little is left for operations or development. KIRDI will therefore adopt strategies that are aimed at achieving financial adequacy and sustainability.

5.2.1 Resource Mobilisation Strategies

To improve on this current situation, KIRDI will seek to expand its sources of revenue through various activities. These include;

- Broadening product and service base,
- Establishment of stronger networks and partnerships and
- Creation of an Enterprises Entity to manage all KIRDI commercial centres and other income generating activities including consultancy, the pilot plants and common manufacturing centres.

Based on the past trends with respect to Government funding levels and priorities, KIRDI must intensify resource mobilization and expand the resource base to include; the Government, industry, development partners, collaborative activities with other institutions and private public partnerships in order to attain financial self-sustenance.

Past experience with some local and international institutions has indicated that KIRDI can mobilize significant amount of resources through efficient commercialization of her technologies, effective management of her income generating centres, fund raising and networking. Indeed the potential for this is great given the strong linkages KIRDI has with private sector, development partners and other international organizations.

Key mobilization approaches that will be applied during this strategic duration will be:

- Lobbying for increased government funding; KIRDI with its parent Ministry will develop relevant budget estimates incorporating components of key

industrial research areas in support of the vision 2030 flagship projects. Increased engagement with Development partners for support; this will be multifaceted incorporating research skills support and use of laboratory and other equipments for research, undertaking and lobbying for international and regional research assignments and partnering with international research institutions for industrial research

- Establishment of an Enterprises Entity to coordinate and manage the commercialization of KIRDI's Technologies and all the income generating activities including Consultancy, Commercial Centres, Pilot Plants and other relevant programmes that can enhance the revenue base.
- Increased Public Private Partnerships; certain sector players will be involved in identifying industry sectors of their interest and aligning them to the broader government development strategy and appropriate partnerships established for recovery of their input when commercialization of research is achieved. Other Innovative partnerships will be pursued.

It is envisaged, therefore, that KIRDI will carry out internal reorganizations and procedures in order to align operations for enhanced and prudent management of financial and human resources. Cost control and management will be given priority. Core areas of the Institutes mandate with potential for commercialization will be given focus.

5.3 Monitoring & Evaluation

Each functional area/unit will develop an annual work plan with appropriate performance indicators, targets, outputs and budgets. These units will be required to submit periodic progress reports to the management for consolidation. These will be:

- Quarterly reports
- Project specific reports
- Annual reports

- Any other relevant reports developed to aid in monitoring plan implementation

For the Strategic plan to be effectively implemented KIRDI management will also establish a Monitoring and Evaluation Committee composed of senior staff. Moreover, appropriate linkages will be established to ensure relevant follow-ups and control systems.

Quarterly strategic plan review meetings will be undertaken between management and the Board to evaluate the progress made on key strategic objectives. This process will ensure continuous learning and development within the organization and consistency in the implementation of the strategic plan. Appropriate indicators and measurements will be established for an effective appraisal system.

As its common with strategic plans, Management will undertake annual reviews and approval of budgets. An interim internal evaluation will be carried out at the end of 3rd year. It is anticipated that there will be recasting of the Medium term implementation plan of the Vision 2030. New provisions can be incorporated into the last 2 years of this plan. There will be end of term evaluation that may also undertake impact assessment. It will require an independent evaluator in an exercise that should also identify hindrances to implementation and lessons learnt that will be incorporated in the preparation of the subsequent plan.

5.4 Performance Management and Appraisal.

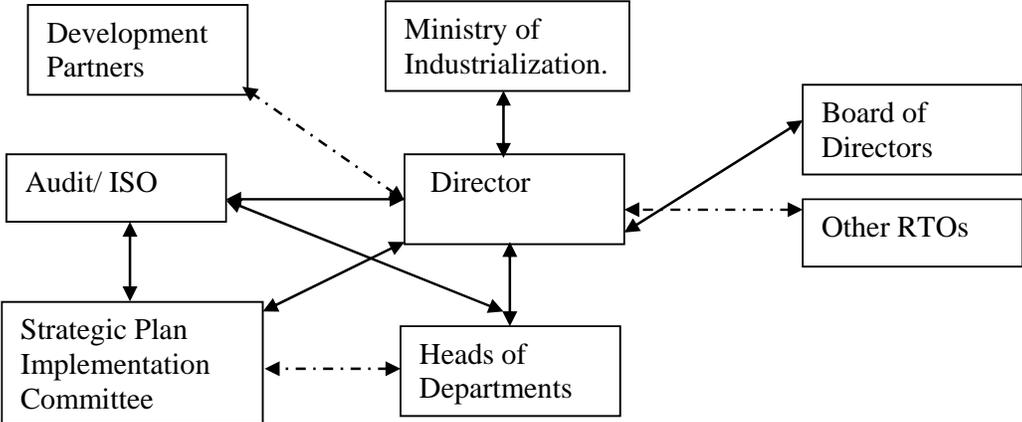
Performance Management is the systematic process of planning work and setting expectations, continually monitoring performance, developing capacity to perform, rating performance and rewarding it. It is the process through which employees' performance is guided and rated within a given period based on mutually agreed targets and performance standards.

In tandem with government guidelines and practice, the implementation of this strategic plan will be linked to the Performance Contracting that is signed between

KIRDI and the Permanent Secretary, the Director and the Board of KIRDI and between the Director and KIRDI staff. It will also be linked to individual staff performance evaluation.

5.5 M & E Framework

Below is a proposed M & E framework that will be applied in the implementation of this strategic plan;



Implementation Framework

APPENDIX I: LOGICAL FRAME & IMPLEMENTATION MATRIX

Strategic Objective 1

To undertake and improve Industrial Research and Development.

Specific objectives	Activities	Outputs	Verifiable Indicators	Means of Verification	Assumptions	Responsibility	Budget (Ksh M)	2010/11	2011/12	2012/13	2013/14	2014/15
1. To improve capacity for value addition to raw and semi-processed materials ¹	Undertake technology needs assessment on potential for value addition of selected raw and semi-processed materials ¹	Technology needs of selected raw and semi-processed materials ¹ established	Technology needs assessment reports	Sectoral technology needs assessment reports	Capacity to undertake technology needs assessment for identified sectors	DD RTI	35	X	X	X	X	X
	Design, develop and package products and processes	No of Products and processes developed. No of Technology profiles developed. No of Publications.	Certified products and processes. Technology profile Publications.	Certified products and processes developed Technology profiles developed Publications	Demand for products	DD RTI	46	X	X	X	X	X

Strategic Objective 1

To undertake and improve Industrial Research and Development.

2. To develop technologies for utilization of agro and industrial wastes ²	Undertake technology needs assessment on potential for utilization of agro and industrial wastes ²	Technology needs of selected agro and industrial wastes ² established	Technology needs assessment reports	Sectoral technology needs assessment reports	Capacity to undertake technology needs assessment for identified sectors	DD RTI	12	X	X	X	X	X
	Design, develop and package products and processes	No of Products and processes developed No of Technology profiles developed No of publications	Products and processes Technology profiles	Products and processes developed Technology profiles developed Publications	Demand for waste management technologies	DD RTI	21	X	X	X	X	X
3. To improve indigenous technologies and processes	Map out and document existing technologies and processes	Database of indigenous technologies and processes established	Reports on indigenous technologies	Databases developed	Willingness to share knowledge	DD RTI	30	X	X	X	X	X
	Improve indigenous technologies and processes	No of Improved processing and production technologies developed No of publications	Technology profiles	Improved indigenous technology Publications	Identification of indigenous technologies with commercialization potential	DD RTI	37.5					
4. Development of electrical, electronic and ICT products	Design, develop and package electrical and electronic products	No of Products developed No of Technology profile reports No of IPs	Products Technology profiles	Products developed Publications IPs registered	Technical personnel Necessary infrastructure	DD RTI	15			X	X	X

Strategic Objective 1
To undertake and improve Industrial Research and Development.

		registered										
	Establish software and hardware infrastructure	Software developed Hardware developed	Hardware, software and developed	No. of hardware and software developed	Technical personnel Necessary infrastructure	DD RTI	20	X	X	X	X	X
5. To improve capacity for energy and environment management	Establishment of national and regional test centres	No of Test centres established	Test centres	Test centres	Necessary infrastructure	DD RTI	41	X	X	X		
	Undertake pilot evaluations	No of Pilot evaluation certificates No of case studies No of publications	Certification parameters Documented and published case studies	Test certificates Publications Case-study reports	Technical capacity	DD RTI	3.2			X	X	X
	Collaborate with stakeholders to promote environment friendly technologies	No of Environment friendly technologies adopted No of industries using & complying with EMCA	Environment friendly technologies	Environment friendly technologies Data on industries using KIRDI environmental technologies		DD RTI	7.2	X	X	X	X	X
6. To increase capacity for local manufacture of agro machineries	Undertake baseline survey on agro machinery utilisation, production and needs in the country	National status of the agro machinery sector	Data base of agro machinery used, produced and required	Status Report	Existence of policies and demand for home-grown technologies	DD RTI	6		X	X		

Strategic Objective 1
To undertake and improve Industrial Research and Development.

	Develop strategy for manufacture of prioritized agro machinery	Strategy for manufacture of agro machinery developed	Strategy documented	Strategy plan document	Opportunities for agro machinery development	DD RTI	1				X	
	Design, develop and test prototypes of prioritized agro machinery	No of Designs developed No of Prototypes developed No of Prototypes tested No of publications	Designs developed Prototypes developed Field Test reports	Designs Prototypes Field test reports Publications	Technical capacity available	DD RTI	40				X	X
7. To increase capacity for reverse engineering	Develop human resource capacity for reverse engineering	No of Certified technical personnel	People trained on reverse engineering	Training reports	Personnel interested in reverse engineering	DD RTI	1.2	X	X			
	Establish a CAD /CAM design centre Acquire software, hardware and rapid prototyping equipment Install and commission the equipment	Operational design centre Operational reverse engineering plant	Design centre	Design centre Inventory of facilities & equipments Commissioning certificate	Technical capacity for reverse engineering	DD RTI	35	X	X			
	Reverse engineer prioritized technologies	No of Reverse engineered technologies	Technologies Manuals developed IPs	Reverse engineered technologies technology	Demand for reverse engineered technologies	DD RTI	22		X	X	X	X

Strategic Objective 1

To undertake and improve Industrial Research and Development.

		No of publications & manuals		manuals IP filed								
		No of IPs filed										
8. To adopt and adapt local and global knowledge bases (IP and innovations)	Establish structures for access to IP and innovations	Structure established No of Signed agreements, contracts and MoUs	Agreements, contracts and MoU's	Structure Agreements, contracts and MOUs	Willing partners	DD RTI	3		X			
	Develop tools for viability assessment	Assessment tools developed	Assessment tools	Assessment tools report		DD RTI	1		X			
	Assist innovators to exploit their patents	No of Patents commercialized	Commercialized products	Commercialized patents	Registration of industrial patents	DD RTI	18		X	X	X	X
9. To acquire modern R & D equipment and facilities	Undertake gap analysis of R&D equipment and infrastructure	Gap analysis established	Audit Report	Report		DD RTI	1	X				
	Develop acquisition, installation and commissioning plan	Status and needs of R & D equipments established	Needs Report	Approved plan		DD RTI	1	X				
	Procure R&D equipment as per plan	R&D equipment and facilities acquired	Equipment and facilities Inventories	Equipment and facilities Inventories	Sufficient funds	DD RTI DD FIN,HR &ADM.	520		X	X	X	X
Total							917.1					

¹Includes agro-processing, textiles, leather and leather products, ceramics and building materials

²Includes agro-processing waste products (such as rice husks, coconut shells, sorghum stalk), plastic waste, waste from leather industry, and electronic waste

Strategic Objective 2

To improve, dissemination, transfer and commercialize R & D Outputs.

Specific objectives	Activities	Outputs	OVI	MOV	Assumptions	Responsibility	Budget (Kshs M)	2010/11	2011/12	2012/13	2013/14	2014/15
1.Promote creation and growth of technology based MSMEs	Conduct sectoral baseline surveys	No of priority sectors identified Sectoral needs documented	Priority sectors identified Sectoral needs report	Survey reports Sectoral needs reports	Disclosure and participation by MSMEs	DD RTI	10		X			
	Develop databases for national industrial research outputs	Database for national industrial research developed	Database available	Database	Participation by key stakeholders	DD RTI	2		X			
	Facilitate establishment of linkages and networks for market access	No. of partnerships and networks established	Partnerships, MOUs	MoUs signed, scheduled activities	Ditto??	DD RTI/ DD KESCO/ DD CS	5		X	X	X	X
	Training MSMEs	Training needs assessment	Training needs Identified	Training needs report	Training capacity Opportunities for skills development among MSMEs	DD KESCO/DD RTI	1		X			
		Training tools and materials developed	Training tools and materials	Training manuals, curriculum		DD KESCO/DD RTI	2.5		X			
		MSMEs trained	No of MSMEs trained	Reports Certificates	Reasonable no of MSMEs on board	DD KESCO	20	X	X	X	X	X
		Provision of Quality Assurance Services to	Improve LSC ISO (17025 : 2005) Accreditation	Surveillance audits undertaken	Surveillance reports	Quality is maintained and improved	DD KESCO	2.5	X	X	X	X

Strategic Objective 2

To improve, dissemination, transfer and commercialize R & D Outputs.

MSMIs	Expand ISO Accreditation scope for LSC	ISO Scope expanded to include food, chemical, leather, textile and ceramic labs	Reports Certifications	Meeting of standards Commitment to maintain and upgrade facilities	DD KESCO	25		X	X	X	X
	ISO certify EDSC on (ISO 14000)	EDSC ISO certified	Reports Certifications	As above	DD KESCO	5		X	X	X	X
	ISO certify LDC (ISO 14000)	LSC ISO Certified	Reports Certifications	As above	DD KESCO	5		X	X	X	X
	Quality assurance services offered to MSMIs	No. MSMIs benefited from Quality assurance services	Certificates, reports of AQ conducted	Established form of quality assurance programme	DD KESCO/ DD RTI	13			X	X	X
Facilitate subcontracting and partnership exchange (SPX) between MSMIs and large industrial enterprises	No of MSMIs and large industries linked	Subcontracting linkages established	Contracts, reports	Interest by the large industries to take up & do business with big MSMIs	DD KESCO/DD RTI	5		X	X	X	X
Technology upgrading and implementation / transfer on the (4K initiative)	No of MSMI technologies upgraded and products improved	MSMIs supported in technology Products upgraded	Reports Products & technologies	Uptake only what KIRDI can support	DD KESCO/DD RTI	60	X	X	X	X	X
Promote networks and linkages between the MSMIs, Donors, MFIs, Government	No of Key stakeholders identified No of Appropriate networks established	Linkages identified & established	Reports Activity plans	Interest by donors and other financial institutions in supporting MSMIs	DIR / DD KESCO	5		X	X	X	X

Strategic Objective 2

To improve, dissemination, transfer and commercialize R & D Outputs.

	Departments and other stakeholders for financial access	Financial levels reached											
	Design and branding of niche products	No of niche products identified No of branded niche products	Products identified Products branded	Products Reports	High quality products with high market demand	DD CS/ DD KESCO / DD RTI	4		X	X	X	X	
2. To provide Business Incubation and Common Manufacturing services	Upgrade Business Incubation and Common Manufacturing facilities	Facilities upgraded	Facilities upgraded	Reports	Policy on incubation MSMLs willing to take facilities	DD KESCO	32.5	X	X	X	X	X	
	Provide business Incubation services to MSMLs	No. of MSMLs incubated	List of incubatees	Reports	MSMLs willing to take facilities	DD KESCO	4	X	X	X	X	X	
	Provide Common manufacturing services to MSMLs	No of Common manufacturing services Offered to MSMLs	MSMLs on Common manufacturing	Reports	MSMLs willing to take facilities	DD KESCO	6	X	X	X	X	X	
	Facilitate linkages of MSMLs to Industrial, Science parks and Digital villages	No of MSMLs facilitated No of industrial & village parks on programme	MSMLs using village and science parts	Reports Products produced	MSMLs willing to participate Partners in establishment of digital and science parks	DD KESCO	6		X	X	X	X	
3. To increase opportunities for incubation and business	Identify business service providers and	Business service providers and funding agencies identified	-Business service providers and funding	Lists of donors & partners Lists of	Partners willing to fund or partner with MSMLs	DD KESCO	1		X				

Strategic Objective 2

To improve, dissemination, transfer and commercialize R & D Outputs.

funding for MSMLs	funding agencies	No of incubators supported	agencies Incubators supported	incubators funded									
	Organize donor, MSMLs and other stakeholder round table business conferences	Donors/ business service providers meetings held No of MSMLs participating	MSMLs supported Funding contracts completed	Reports of MSMLs supported Minutes of meetings Funding contracts	Donors and development partners willing to support MSMLs	DIR/ DD KESCO/ DD RTI/ DD CS	2		X	X	X	X	
4. To establish Industrial Pilot Plants	Undertake regional resource mapping and feasibility studies	Resource mapping undertaken	Sectors mapped	Resource mapping reports	Supportive policy & consistent government commitment	DD KESCO/DD RTI	9.4		X	X			
	Establish pilot plants	No of Feasibility studies for establishment of pilot plants undertaken	Feasibility studies undertaken	Feasibility studies reports		DD KESCO/DD RTI	24		X	X	X	X	
		Business plans for establishment of pilot plants developed	Business plans developed	Business plans	Business plans	High Commercial opportunities identified	DD KESCO/ DD RTI	24		X	X	X	X
		No of Pilot plants established	Pilot plants established	Pilot plants reports			DD KESCO/ DD RTI	400	X	X	X	X	X
	3. Provide "after sale service" technical support services to MSMLs	"After sales" technical service packages developed	MSMLs supported	Technical service reports		DD KESCO/ DD RTI	2.5		X	X	X	X	
5. To undertake Marketing and	Conduct Market	Niche markets identified for R&D	Niche markets & products	Products	High quality products from	DD CS	3.5	X	X	X	X	X	

Strategic Objective 2

To improve, dissemination, transfer and commercialize R & D Outputs.

Promotion programmes	intelligence/ research to identify niche markets	outputs & MSMIs products	identified	Market reports	MSMIs								
	Establish market linkages and strategies	Market linkages and plans established	Marketing strategy	Marketing Plan		DD CS/ DD KESCO	1.6		X	X			
	Develop marketing and promotional packages	Marketing and promotional materials and packages developed	Marketing and promotional packages	Marketing and promotional packages		DD CS/ DD KESCO	10	X	X	X	X	X	
	Carry out marketing and promotional activities	No of marketing and promotional activities undertaken	Marketing and promotional activities	Marketing activity reports		DD CS	10	X	X	X	X	X	
	Establish Marketing information management systems	MIMS established	MIMS in place	MIMS		DD CS	1	X	X				
6. To enhance Innovation/ inventions registration and dissemination	Enhance IP application and management of IP for KIRDI	No of IP applications and registered	IP registered	IP Documents and reports	Products will be commercialized to qualify as IP	DD CS	5	X	X	X	X	X	
	Enhance Application and management of IP for MSMIs	No of Application and management of IP	IPs registered	IP Documents & reports	MSMIs follow-through on IPs	DD CS	3.5	X	X	X	X	X	
7. To carry out Monitoring & Evaluation and Impact Assessment	Establish M&E and Impact Assessment unit	M & E unit / committee established	M & E unit	Reports	Involvement of Management in M&E	DD CS	0.1	X					
	2. Constitute an M & E committee	M & E committee	Members of M&E appointed and launched	List of committee members	As above	DD CS	0.2	X					

Strategic Objective 2

To improve, dissemination, transfer and commercialize R & D Outputs.

	3. Training of M&E staff	Trained M&E staff	Training undertaken	Training manual Reports	Above	DD CS	1	X				
	4. Develop tools, benchmarks and standards	Tools Benchmarks and standards developed	Tools, Benchmarks and standards	Tools Benchmarks Reports	Above	DD CS	1	X				
	5. Undertake M &E	No of M&E undertaken	M&E undertaken	M&E reports	Serious commitment to audit & delivery	DD CS	10.9	X	X	X	X	X
	6. Undertake Impact Assessment	Impact Assessment Lessons learnt Documentation	Impact Assessment undertaken	Impact Assessment reports		DD CS	9.4			X		X
Total							733.6					

Strategic Objective 3

To establish strategic partnerships and networks.

Specific objectives	Activities	Outputs	OVI	MOV	Assumptions	Responsibility	Budget (Ksh.M)	2010/11	2011/12	2012/13	2013/14	2014/15
1. To establish strategic partnerships for business growth and development	Conduct a survey to identify strategic partners and their capacities	Database of networks and partnerships	Database	Database	Availability of partners	DD RTI	1		X			
	Facilitate establishment of linkages and networks	No. of partnerships and networks established No. of joint projects	Partnerships and linkages in place	MoU's signed Projects for engaged in	As above	DD RTI	2		X	X	X	X
2. To expand service delivery mechanisms	To review and implement Customer service delivery charter	Customer service delivery charter reviewed	Customer Service delivery charter	Customer charter	Establishment of high standards for customer service	DD KESCO/ DD CS	1	X			X	
	Develop Institute marketing and promotion plan	Marketing and promotion plan developed	Marketing Plan	Marketing plan		DD CS	0.5	X				
	Undertake Customer feedback mechanism	Customer satisfaction levels established	Customer satisfaction feedback	Customer satisfaction report		DD CS	3.5	X	X	X	X	X
3. To strengthen relationships with business partners	Review and update existing linkages	Linkages status updated	Review report	Review report	Willing by various partners	DD KESCO	5		X			
	Participate in joint strategic projects/ activities	No of Joint projects and activities undertaken	Projects participation	Project reports	Joint opportunities	DD RTI	5	X	X	X	X	X
	Organise meetings and business fora with partners	No of meetings and fora organised	Fora, connections & linkages	Reports New networks		DD RTI/DD KESCO/DD CS	5	X	X	X	X	X
4. To increase KIRDI's visibility	Develop Knowledge	KSCP & IEC packages	Packages in place	IEC Strategy	Identification of products based on	DIR /DD CS	40	X	X	X	X	X

Strategic Objective 3

To establish strategic partnerships and networks.

	Sharing and Communication Packages (KSCP); Information, Education and Communication (IECs).	developed		reports	various projects & technologies							
	Organize and participate in conferences, exhibitions, workshops, trade fairs and open days	No of events participated in	Various levels of participation	Reports and proceedings Budget reports	Selection of relevant & strategic events Organize others	DIR /DD KESCO/DD RTI/DD CS	20	X	X	X	X	X
	Join professional/ membership bodies	No of Registered Memberships	Professional memberships	Membership Certificates	Strategic membership	DIR /DD KESCO/DD RTI/DD CS	5	X	X	X	X	X
	Sponsorship & participation in various community initiatives and development projects	No. of events in CSR Committee to guide CSR established	Meetings, projects & other initiatives Committee	Committee minutes Reports of projects & events	Opportunities & linkages with strategic initiatives	DIR /DD KESCO/DD RTI/DD CS	10	X	X	X	X	X
	Products and technologies launches	No of launches	Launches	Budgets Programmes Guests		DIR / DD KESCO/ DD CS	20		X	X	X	X
	Launch of the Strategic plan	SP launched No of guests	Launch	Budgets Programmes Guests	Need for launch	DIR/ DD CS	2	X				
Total							120					

Strategic Objective 4

To enhance institutional financial sustainability & infrastructure development.

Specific objectives	Activities	Outputs	Verifiable Indicators	Means of Verification	Assumptions	Responsibility	Budget (Kshs M)	2010/11	2011/12	2012/13	2013/14	2014/15
To establish & operationalise a Business Enterprise entity	Undertake a feasibility study and documentation of commercial enterprise	Viability status established	Feasibility report	Feasibility report	Opportunity for commercializing & opening new avenues for revenue generation	DIR/ BOD/ Management	3	X	X			
	Registration of semi autonomous entity (KESCO)	Entity registered	Registration	Registration certificate	Approval	As above	1.5		X			
	Provide office and office equipments	Office established Equipment provided	Functional office	Office Inventory	Approval	As above	5		X			
To develop & construct a ultramodern industrial Technology centre at South B	Develop physical & architectural designs	Designs	Designs	Designs		As above	100		X			
	Construct facility	Industrial park constructed	Industrial building	Industrial building	Donors support/ funding agency or partnerships	DIR/ BOD/ SCM	500		X	X		
	Install & Commission	Installations of modern facilities & their commissioning	Modern facilities	Commissioning report Inventory of facilities	Partners/ adequate funding	As above	100				X	X
	Establish incubators	No of incubators established	Incubators	Incubators Facilities reports	Demand for space by industry	DD KESCO	55				X	X
	Initiate a technology training centre	Centre established Training programmes & manuals	Technology centre	Centre Inventory of equipments & facilities Manuals Training reports	Demand for training courses	As above	25				X	X

Strategic Objective 4

To enhance institutional financial sustainability & infrastructure development.

To modernize production facilities infrastructure to respond to market needs	Construction of leather & food laboratories in Kisumu	Modern laboratory	Laboratory	Laboratory Inventory	Capital income Development partners/ funding agencies	DIR/ SCM/ CONTRACTOR	600	X	X	X		
	Modernize Engineering Development & Service centre (EDSC)	Modern equipment & improved services	Equipments	Inventory Installation reports	As above	As above	120		X	X		
	Modernize Leather development centre (LDC)	As above	As above	As above	As above	As above	75		X	X		
	Modernize Laboratory Services Centre (LSC)	As above	As above	As above	As above	As above	250		X	X		
To establish strategic linkages & networks with industry players	Identify & map possible strategic local & international partners	Partners identified	Partners	Partners MOUs	Business opportunities across the world	DIR/ DD RTI/ DD CS	1	X				
	Develop business models for revenue generation	No of models developed and piloted	Models	Models Feasibility	Capacity and resource to explore on various models & opportunities	As above	2.5	X	X	X	X	X
To enhance resource mobilisation effort	Develop a resource mobilisation strategy	Strategy developed	Strategy	Strategy plan		DIR/ BOD/ AD RM	1	X				
	Develop business/ fund raising proposals	No of proposals prepared and funded	Proposals	Proposals Level of funding	Partners and willing industry players	DIR/ BOD/ AD RM	5	X	X	X	X	X
	Undertake local and international resource mobilisation	No of engagements undertaken	Engagements	Reports Levels of funding	Willing partners	As above	10	X	X	X	X	X

Strategic Objective 4

To enhance institutional financial sustainability & infrastructure development.

	engagements											
	Organise technology/ educational exchange programmes	No of exchanges undertaken	Exchanges	Reports Level of involvement	Industry players willing to learn from others	As above	10	X	X	X	X	X
To develop Business / entrepreneurship capacity	Business training for staff & management	No of staff trained in business & other strategic programmes	Staff trained	Training reports		DD KESCO	20		X	X	X	X
	Educational Visits	No of visits undertaken	Visits	Reports		As above	4		X	X	X	X
	Train on governance issues	Capacity of built on governance	People trained	Training report		As above	3			X		X
	Automate operations	Automated operations	Automation	Automation reports	Connection infrastructure will be established during construction & office establishment	As above	10			X	X	X
Total							1,901 ⁹					

⁹ The budget for Strategic Objective 4 is rather huge and is an extraordinary item. It is viewed as the most strategic of the directions that KIRDI would like to take for future growth and development as well as sustainability. Fundraising and government support in this area will reverse dependence on the exchequer once income levels grow

Strategic Objective 5
To Strengthen Institutional Capacity in Human Resource and Administration.

Specific objectives	Activities	Outputs	Verifiable Indicators	Means of Verification	Assumptions	Responsibility	Budget (Kshs M)	2010/ 11	2011/ 12	2012/ 13	2013/ 14	2014/ 15
1. To review & rationalize organizational structure	Work out a rational organization structure	Proposed structure	Approved structure	Organogram	Approval of the new structure by the BOD	DD FIN, HR &ADM	2.5	X				
2. To ensure review of management , operational and policy documents	Identify & review specific operational manuals, procedures, policies and other documents	Reviewed documents, policies and manuals	Documents, policies and manuals	Documents, process reports		DD FIN, HR &ADM	5.5	X	X	X	X	X
3. To improve staff competence, motivation, growth, safety, health and general wellbeing levels	Undertake a skills and competence needs assessment	Skills & competences assessed	Skills inventory	Skills inventory report		DD FIN, HR &ADM	3.6	X		X		X
	Recruit staff in line with new SP & expanding capacities	No of staff recruited	Staff	Staff	Drastic change and demand for technical staff	DD FIN, HR &ADM	5	X	X	X	X	X
	Undertake skills development for staff	Training for various technical, academic and overseas training undertaken	Trained staff	Reports	Necessary policy	DD FIN, HR &ADM	50	X	X	X	X	X
	Undertake training impact assessment	Impact & skills transfer determined	Training impact	Training Impact report	Linkage of PC & other strategic trainings	DD FIN, HR &ADM	3.3		X		X	
	Undertake a Training Needs Assessment	Training needs determined	Training needs	TNA report	As above	DD FIN, HR &ADM	3.3		X		X	
<i>H & S</i>	Undertake the annual health and safety audit	Health and safety concerns highlighted	Audit findings	Audit report	As above	DD FIN, HR &ADM	6	X	X	X	X	X
	Train on H & S	No of people trained	People trained	Training report	As above	DD FIN, HR &ADM	4.5	X	X	X	X	X

Strategic Objective 5
To Strengthen Institutional Capacity in Human Resource and Administration.

<i>HIV & AIDS</i>	Undertake HIV & AIDS counselling and testing sessions (VCT)	No of Counselling and Testing cases undertaken	VCT services	Reports	Above	DD FIN, HR &ADM	2.5	X	X	X	X	X
	Review HIV workplace policy	HIV workplace policy	HIV policy	Policy	As above	DD FIN, HR &ADM	1	X		X		X
	Conduct awareness training & distribute IEC materials	No of workshops & staff trained IEC materials	Trained staff IECs	Reports IECs	As above	DD FIN, HR &ADM	2.5	X	X	X	X	X
	Establish counselling unit	No of Staff trained in VCT counselling	Trained staff	Report	As above	DD FIN, HR &ADM	0.5		X			
<i>Gender</i>	Implementation of Gender Policy	Gender Policy developed	Implementation report Document	Report	As above	DD FIN, HR &ADM	0.5	X		X		X
	Review Policy on gender	Reviewed policy.	Documents	Report	As above	DD FIN, HR &ADM	1		X		X	
<i>Disability</i>	Train & sensitize on disability	No of people sensitized	People trained	Training reports	As above	DD FIN, HR &ADM	2.5	X		X		
	Assessment on disability	Assessment report	Assessment report	Assessment report	As above	DD FIN, HR &ADM	1		X		X	
<i>Alcohol & substance abuse</i>	Establish alcohol and drug abuse prevention unit	Unit set	Unit	Report	As above	DD FIN, HR &ADM	0.5		X			
	Undertake awareness training	No of awareness sessions No of staff trained or supported	Staff trained	Training Reports	As above	DD FIN, HR &ADM	2.5	X				
4. To improve employee & customer satisfaction	Conduct employee satisfaction survey	Employee needs highlighted	Survey findings	Survey and report	As above	DD FIN, HR &ADM	4		X		X	
	Undertake customer satisfaction survey	Customer needs highlighted	Survey findings	Survey & report	As above	DD FIN, HR &ADM	4		X	X	X	X
	Undertake	No of staff	Staff trained	Training	Approval to	DD FIN, HR	4	X	X	X	X	X

Strategic Objective 5
To Strengthen Institutional Capacity in Human Resource and Administration.

	customer care training	trained		reports	train all staff on Customer service	&ADM						
5. To strengthen income generation	To recruit train and retain staff on all the income/cost centre.	No of recruited No of staff, trained	Staff recruited People trained	Recruitment reports Training reports	Motivation by staff to increase & be prudent on resource utilization	DD FIN, HR &ADM	6	X	X	X	X	X
6. To strengthen the financial management system	To automate the accounting system	Fully automated accounting system	Functional Automated system	Installation & commission status report	Control will lead to effective management of costs	DD FIN, HR &ADM	3	X	X	X		
	To automate supply chain management system and integrate with the accounting system	Fully automated supply chain management system	Functional Automated system	Installation & commission status report	As above	DD FIN, HR &ADM	3	X	X	X		
	To upgrade accounting and supply chain management systems	Upgraded systems	Functional upgraded system	Installation & commission status report	As above	DD FIN, HR &ADM	2		X	X		
	Train staff on cost reduction and prudent financial management	No. of staff trained	Staff trained	Training Report & Level of cost reduction/ savings made		DD FIN, HR &ADM	4		X			
7. To Mainstream ICT throughout the organization	Undertake hardware and software audit	Status of computer needs established Level of networking & ICT established	Audit findings	Audit reports	Approval to undertake complete automation of KIRDI	DD FIN, HR &ADM	2		X	X	X	X
	Equip the institution with computer	No of computers and software acquired	Computers acquired	Inventory/ Reports of installation	All are computer literate	DD FIN, HR &ADM	3		X		X	

Strategic Objective 5
To Strengthen Institutional Capacity in Human Resource and Administration.

	hardware and software											
	Undertake computer training on various packages & programmes	Improved computer literacy No of training sessions/ programmes and staff trained	Literacy level No. of staff trained	Competence assessment and training reports	Facilitators	DD FIN, HR &ADM	5		X		X	
	Automate the entire institute operations	Complete automation of institute	Automated systems & operations	Installation and Commissioning reports		DD FIN, HR &ADM	35		X	X	X	
8. To upgrade current infrastructure and acquire/expand/develop modern facilities	Undertake repair and maintenance audit of the infrastructure	Status of infrastructure established	Repairs & maintenance undertaken	Report and schedule of maintenance Inventory of infrastructure	Approval & partners resource for undertaking repairs	DD FIN, HR &ADM	2	X	X	X	X	X
	Develop schedule & purchase of various modern equipments	Equipment to be bought	Equipments	Equipments bought Purchase documents & verifications reports		DD FIN, HR &ADM	200		X	X	X	X
9.To implement management systems (Quality, Environment, OHS, etc)	Establish status of Quality Management systems (QMS)	Status established	Status	Status report	Readiness to undertake QMS Modernization of equipment	DD CS	1	X				
	Undertake implementation of the QMS	QMS Implemented No of trainings conducted QMS documentation undertaken	Staff trained QMS documentation	Training reports Manuals/ documents	As above	DD CS	5	X	X	X	X	X
	Implement other Management systems	Other management systems	Staff trained Documentation developed	Training reports Documents/		DD CS	10			X	X	X

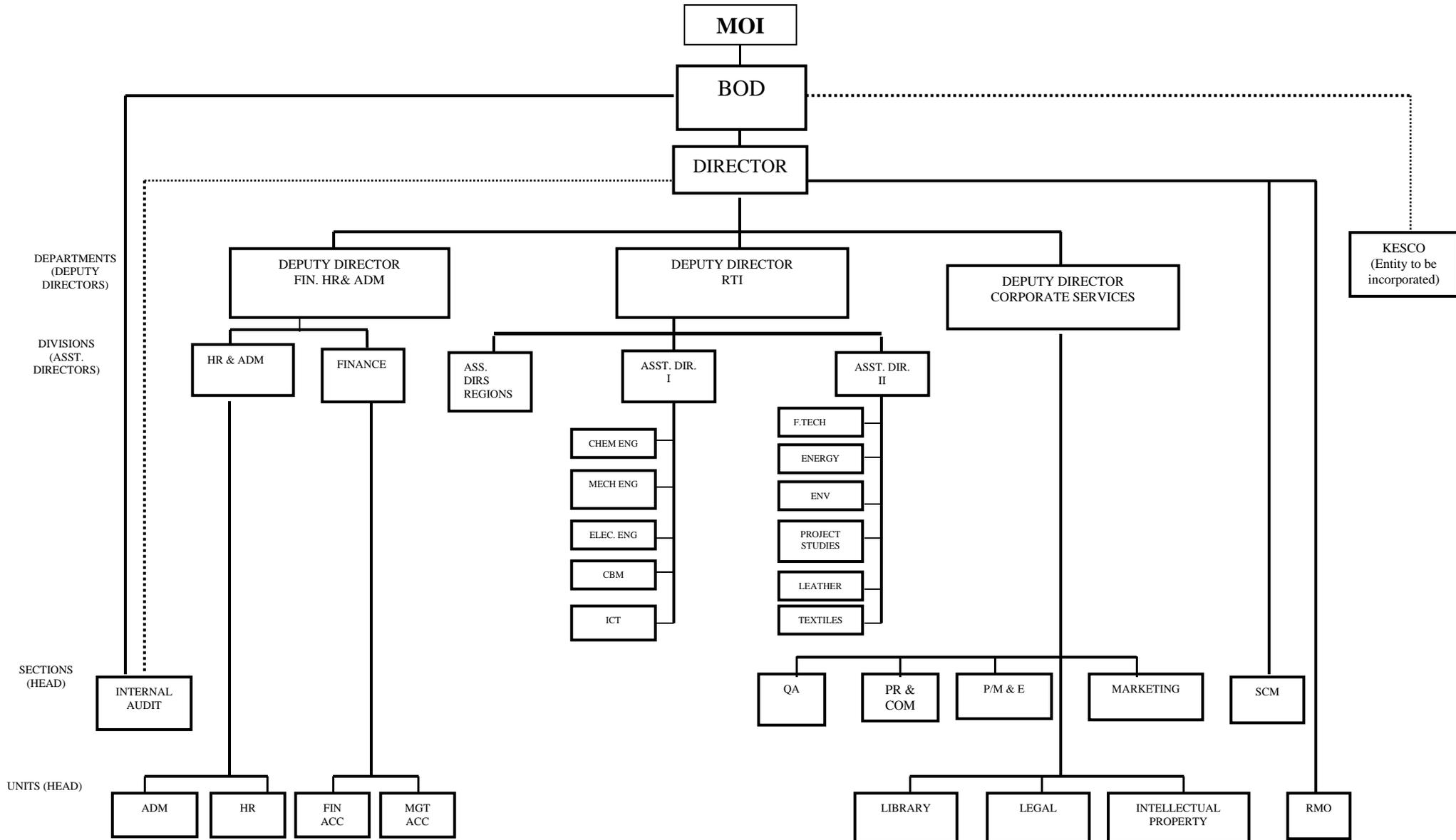
**Strategic Objective 5
To Strengthen Institutional Capacity in Human Resource and Administration.**

		identified Documentation carried out Training undertaken		reports								
10. To upscale accountability & governance structures and programmes	Undertake corruption perception survey and situation analysis	Levels of corruption established	Survey findings	Survey report	Requirements in PC	DD FIN, HR &ADM	1	X				
	Undertake corruption prevention awareness programmes	No of people trained No of awareness programmes	People trained Courses conducted	Training reports	As above	DD FIN, HR &ADM	2		X			
	Apply ICT for monitoring of corruption prone areas	Monitoring framework developed & implemented	Monitoring Framework	Monitoring reports Cases reported	As above	DD FIN, HR &ADM	2		X			
	Train Board & management on relevant programmes	Corporate governance, Public Financial Management & Public Procurement & Disposal Act & regulations requirements	Board & management trained	Training reports	As above	DD FIN, HR &ADM	3		X		X	
11. To ensure implementation of the strategic plan (SP)	Establish SP implementation committee	Committee established	Committee	Letter of appointment Records of plans & minutes		DD CS	0.5	X				
	Develop rollout plan including cascade to staff on Key Result	Cascade and rollout plan	Rollout Plan Departmental to individual roles and involvement	Implementation reports Implementation		DD CS	2	X				

**Strategic Objective 5
To Strengthen Institutional Capacity in Human Resource and Administration.**

	Areas, M & E and individual roles		developed & disseminated	Plans								
	Undertake Annual review of SP	Reviews	Reviews	Reviews Reports		DD CS	3		X	X	X	X
	Undertake Mid-term and end of term evaluations	Evaluations	Evaluations and recommendations	Reports		DD CS	3			X		X
12. To improve on monitoring and evaluation system and structures	Development of an M & E framework	M & E framework	Framework	Document		DD CS	1	X				
	Develop of Key performance Indicators, reporting tools and training on M & E	Indicators developed Reporting tools developed No of staff trained on M & E Unit established to drive M & E	Indicators Tools- forms and measures Trained staff M & E unit	Reports Documents	Commitment to implementation & evaluation of reports	DD CS	4	X	X			
	Undertake M & E	M & E status	M & E	Reports Documents Plans	As above	DD CS	5	X	X	X	X	X
Totals							415.7					

APPENDIX 2 | ORGANOGRAM



KEY:

FIN	-Finance
HR&ADM	-Human Resources & Administration
ADM	- Head Administration
HR	- Head Human Resources
FIN ACC	- Financial Accounting
MGT ACC	- Management Accounting
RTI	- Research Technology & Innovation
ASS.DIR	- Assistant Director
CHEM. ENG.	- Chemical Engineering
MECH ENG	- Mechanical Engineering
ELEC. ENG	- Electrical Engineering
CIVIL (CBM)	- Civil (Ceramic & Building Materials)
ICT	- Information and Communication Technology
Food Tech	- Food Technology
ENV	- Environment
Planning/M&E	- Planning/Monitoring & Evaluation
PR&COM	- Public Relations & Communication
QA	- Quality Assurance
RES MOB	- Resource Mobilization
SCM	- Supply Chain Management
KIRDI ENT. Services	- KIRDI Enterprise Services