



**RESEARCH, INNOVATION AND TECHNOLOGY  
(RIT) SECTOR**

**MEDIUM TERM EXPENDITURE FRAMEWORK**

**2011/12–2013/14**

**REPORT**

**December 2010**

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## LIST OF ACRONYMS

ADBM	Analogue-Digital Broadcasting Migration
ADM	Analogue-Digital Migration
ARV	Anti-Retro Viral
BBC	Bacterial Blight of Coffee
BPO	Business Process Outsourcing
BKB	Brand Kenya Board
CBD	Coffee Berry Disease
CBK	Coffee Board of Kenya
CBO	Community Based Organisations
CCK	Communications Commission of Kenya
CHE	Commission for Higher Education
CLR	Coffee Leaf Rust
CMS	Content Management System
CRF	Coffee Research Foundation
DNA	Di-Nucleic Acid
DMS	Disease Monitoring and Survey
DRSRS	Department of Resources Surveys and Remote Sensing
DSU	District Service Unit
DTC	Digital Television Channel
ECN	Educational Communication Network
E-GOVT	E-Government
ENG	Electronic News Gathering
EMACS	Electronic Messaging and Collaboration System
ESACIPAC	Eastern Southern Africa Centre for Parasite Control
FAO	Food and Agriculture Organisation
FONN	Fibre Optic National Network
FMD	Foot and Mouth Disease
GCCN	Government Common Core Network
GIS	Geographical Information System
GITS	Government Information Technology Services
GJLOS	Governance, Justice, Law And Order Sector
HELB	Higher Education Loans Board
HIV/AIDS	Human Immuno-Deficiency Virus/Acquired Immuno-Deficiency Syndrome
IAEA	International Atomic Energy Agency
ICT	Information Communication Technology
ITROMID	Institute of Tropical Medicine and Infectious Diseases
IP	Internet Protocol
IPRS	Integrated Population Registration System
ISO	International Standards Organisation
ITU	International Telecommunications Union
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KAPP	Kenya Agricultural Productivity Programme
KARI	Kenya Agricultural Research Institute
KBC	Kenya Broadcasting Corporation
KEFRI	Kenya Forestry Research Institute

KESREF	Kenya Sugar Research Foundation
KEMRI	Kenya Medical Research Institute
KFC	Kenya Film Commission
KFCB	Kenya Film Classification Board
KICC	Kenyatta International Conference Centre
KICTB	Kenya Information Communication Technology Board
KIMC	Kenya Institute of Mass Communication
KIPPRA	Kenya Institute of Public Policy Research and Analysis
KIRDI	Kenya Industrial Research and Development Institute
KMFRI	Kenya Marine and Fisheries Research Institute
KTCIP	Kenya Transparency and Communication Infrastructure Project
KNA	Kenya News Agency
KNBS	Kenya National Bureau of Statistics
KRA	Kenya Revenue Authority
KSB	Kenya Sugar Board
KTDA	Kenya Tea Development Authority
KVDA	Kerio Valley Development Authority
KYBB	Kenya Year Book Board
LAN	local Area Network
MCK	Media Council of Kenya
MIS	Management Information Systems
MoHEST	Ministry of Higher Education, Science and Technology
MOIC	Ministry of Information and Communications
MMU	Multi Media University College Of Kenya
MOU	Memorandum of Understanding
MU	Moi University
MTEF	Medium Term Expenditure Framework
MTP	Medium Term Plan
NCRC	National Crime Research Centre
NCS	National Communications Secretariat
NCS&T	National Council for Science and Technology
NDC	National Data Centre
NOFBI	National Optic Fibre Backbone Infrastructure
NGO	Non-Governmental Organisations
OB	Outside Broadcast
PCK	Postal Corporation of Kenya
PRSP	Poverty Reduction Strategy Paper
PSTN	Public Switched Telephone Network
RIT	Research, Innovation and Technology
RSC	Regional Steering Committee
RWA	Russian Wheat Aphid
SNG	Satellite News Gathering
STI	Science, Technology and Innovations
TIVET	Technical, Industrial, Vocational and Entrepreneurial Training
TIVETA	Technical, Industrial, Vocational and Entrepreneurial Training Authority
TEAMS	The East Africa Marine Systems
TRFK	Tea Research Foundation of Kenya
TTI	Technical training Institutes

UK	United Kingdom
UNIPROM	A drug that inhibits mother to child infection
UPS	Uninterruptible Power Supply
USA	United States of America
WAN	Wide Area Network



## EXECUTIVE SUMMARY

The introduction of the Research, Innovation and Technology (RIT) Sector during 2008/09-2011/12 MTEF period marked an important policy decision towards making Kenya a knowledge-based economy. The Sector's main responsibility is to facilitate the process of acquiring new knowledge in a systematic manner in order to produce and improve products and processes. The Sector therefore continues to explore opportunities associated with the convergence of research, innovation and technology to spur economic growth in the country as envisaged in Kenya Vision 2030 (KV30)

The sector's vision is to be *“A global leader in Research, Innovations and Technology”* while the mission is *“To be the leading driver of the Kenyan economy through Research, Innovations and Technology by generating and promoting innovations, research and technologies”*.

The Sector's objectives include; developing and promoting research, innovation and technology for high value products and services; developing modern national ICT infrastructure for sustainable development; developing and strengthening training capacity of higher education institutions; formulating human resource development policies that attract and retain professionals; strengthening systems for the creation, translation of data, knowledge and dissemination of information ; collecting, collating, analyzing, storing, archiving and retrieving data and; developing and strengthening policies and capabilities of Sector institutions.

During the 2009/10 financial year the Sector was allocated a total of **KSHS 28,047,000,000** under recurrent and **KSHS 6, 604,000,000** under development votes against Sector requirements of **KSHS 51,806,518,747** and **KSHS 38,947,268,724** respectively. The allocated funds are being used to fund projects and activities under the following programmes in the order of their priority during the 2010/11 Financial Year:-

1. Human resource development;
2. ICT infrastructure development;
3. Research and Innovations;
4. Information and Communication services;
5. Data Management and;
6. Development of policy, legal and institutional framework.

Development projects in the RIT Sector are an amalgamation of various projects from Information Communications Technology (ICT) and Science, Technology and Innovation (STI) sectors which were on their own during the 2009/10 MTEF period. These projects include national research database, and several strategic collaborations in research, science and technology. In addition, the ST&I sub-sector upgraded several middle level colleges to university colleges.

The ICT sub-sector on the other hand, experienced expansion in telecommunication infrastructure, reduction in communication costs and increased access to information and investment in ICT based industries. The enactment and implementation of the Kenya Communications (Amendment) Act 2009 spurred development of e-commerce in the economy. The sector also completed the pilot Analog-Digital migration in Nairobi and its environs, finalized the provision of high speed broadband infrastructure targeting all major towns, government, social and learning institutions in the country, operationalized the Government Data Centre and acquired 5,000 acres for the establishment of ICT Park. In the period under review the ICT sub-sector also developed several integrated information

systems such as Integrated Population Registration System (IPRS) and digitization of the company registry that have tremendously improved public service delivery. The sector also acquired a specialized plane for Department of Resource Survey and Remote Sensing (DRSRS) to enhance remote sensing and resource surveys mapping.

During the period under review the Sector completed the laying of the under-sea fiber optic cable connecting the Eastern African region to the rest of the world. The sector also carried out the population and housing census through the Kenya National Bureau of Statistics (KNBS), developed innovations that reduced the treatment period for leprosy from 18 months to 1 month, tuberculosis (TB) from 18 months to 3 months, leishmaniasis (Kalazar) from 30 days to 10 days. Other achievements included release of 4 sugarcane varieties, 5 Arabica coffee varieties, 21 assorted food crop varieties, 2 tea varieties and 5 Eucalyptus tree clones. The details of past performance of other sub-sectors are outlined in chapter two of this Report.

By the financial year 2008/2009 the Sector had accumulated a recurrent pending bill amounting to KSHS 3.1Billion mainly due to liquidity problems occasioned by a host of shocks including; post election violence, high food and fuel prices, drought and global financial crisis. The sector has managed to reduce the accumulated pending bill to KSHs 2.72Billion.

To implement the prioritized Programmes in FY 2011/12, the Sector requires a total of **KShs. 104.2 Billion** of which **KShs 68.7 billion** and **KShs 35.5 billion** is to finance recurrent and development expenditures respectively. However due to financial constraints, the Sector has been allocated a total of **KShs 44.2 Billion**, of which **KShs 34.1 Billion** and **KShs 10.1 Billion** will finance recurrent and development expenditures respectively. This implies a financial deficit of **KShs 60 Billion**. The Sector expects to be financed to the tune of **KShs 3.12 billion** from Development Partners and **KShs 16.4 Billion** through internally generated funds. Of these figures **KShs 8 billion** will be used to fund Personnel Emoluments (PE), **KSHS 6.8 billion** to fund use of goods and services, **KShs 26.5 billion** in Grants and transfers and **KShs 22.6 Billion** to fund Capital expenditure.

The Sector faces various challenges that affect smooth implementation of the programmes. These include; funding constraints, lags in the MTEF cycle, slow and low adoption of innovations and technologies and implementation of research findings, brain circulation, protection of intellectual property rights and cyber insecurity among others.

In conclusion, the Sector is on track in implementing its programmes for the MTP 2008-2012. However, there is need to increase the Sector funding to enable it effectively implement its prioritized programmes geared towards the realization of the Kenya Vision 2030.

# CHAPTER ONE

## 1 INTRODUCTION

### 1.1 BACKGROUND

Most modern economies hinge their growth strategies on their resources, research, innovation and technological abilities. The introduction of Research, Innovation and Technology (RIT) Sector during 2008/09-2011/12 Medium Term Expenditure Framework (MTEF) period marked an important policy decision geared towards making Kenya knowledge based economy. The Sector has a major responsibility of facilitating the process of acquiring new knowledge in a systematic way in order to produce and /or improve products and processes. The Sector therefore explores opportunities associated with the convergence of research, innovation and technology to spur economic growth in the country.

A Knowledge based economy relies heavily on innovations to transform resources into products, processes and services. This requires clearly defined and supportive policies, institutional and legal frameworks that effectively address citizens' needs and aspirations. In order to ensure effective exploitation of knowledge, the Sector plans to;

- Provide economic and institutional systems with incentives for efficient use of existing knowledge, new knowledge creation, and entrepreneurship;
- Develop an educated and skilled population that can create, share and use knowledge well;
- Develop a dynamic information and communication infrastructure (ICT), that facilitates collection, processing, storage, retrieval and dissemination of information; and,
- Establish centres of excellence that tap into the growing stock of global knowledge, assimilate and adapt to local needs, while furthering new knowledge and technologies.

The increasing complexities in the business environment, resource scarcity and the rising customer expectations are causing economic shifts that destabilize world economies. Only countries with RIT capabilities can ensure sustainability and development of their economies. The RIT Sector is therefore expected to bring about socio-economic transformation of the country, foster national prosperity and global competitiveness, enhanced efficiency, sustained growth and promotion of value addition in goods and services.

The RIT Sector was borne out of the realization that the country needed to harness talent and other resources that will best position Kenya in the modern world economy. The shift to the knowledge-led economy, the widening digital gap, the need to develop local capacity for research and innovation and the demands for information for growth requires that resource allocation be reviewed to reflect the new strategic policy direction. The three pillars of Kenya Vision 2030 namely; Economic, Social and Political rely heavily on this Sector.

The RIT Sector is an amalgamation of the two sectors of Kenya Vision 30 Medium Term Plan (MTP) 2008-2012 namely; Science Technology and Innovation (ST&I) and Information Communication Technology (ICT) sectors. The Sector comprises of two ministries, five departments and ten research institutions. The Sector is involved in capacity building; generation; processing; and dissemination of information.

The composition of the RIT Sector is as listed below:-

#### Ministries

- Ministry of Higher Education, Science and Technology (MoHEST) and its affiliated Institutions
- Ministry of Information and Communications (MOIC) and its affiliated institutions

#### Departments

- Department of Resource Surveys and Remote Sensing (DRSRS)
- Directorate of E-government (E-GOVT)
- Government Information and Technology Services (GITS)
- Integrated Population Registration System (IPRS)
- Kenya National Bureau of Statistics (KNBS)

#### Research institutions

- Coffee Research Foundation (CRF)
- Kenya Agricultural Research Institute (KARI)
- Kenya Forestry Research Institute (KEFRI)
- Kenya Institute of Public Policy Research and Analysis (KIPPRA)
- Kenya Industrial Research and Development Institute (KIRDI)
- Kenya Marine and Fisheries Research Institute (KMFRI)
- Kenya Medical Research Institute (KEMRI)
- Kenya Sugar Research Foundation (KESREF)
- National Crime Research Centre (NCRC)
- Tea Research Foundation of Kenya (TRFK)

The importance of research, innovation and technology in economic development has been re-emphasized by recent developments in the Sector that include success of mobile telephony, internet business and the ever increasing capability of ICT to transform the economy which has a significant import to policy making and financing. The Government will continue to play a facilitative role through development and implementation of policy and regulation aimed at attracting investments within the Sector. The Sector also acknowledges that information is a resource which must be generated, collected, organized, secured and preserved to enhance national posterity. The Sector will therefore continuously implement the national infrastructure programme to spur the growth of ICT services in the country. The sector intends to facilitate implementation of the Last Mile Technologies to exploit opportunities associated with high speed broadband infrastructure.

The role of tertiary and university education in particular, and the importance of research as key players in the continued growth and development of our country cannot be over emphasized. It is the priority of the government to create an enabling environment for sharing of ideas, knowledge, technology and resources, as well as developing and strengthening the country's research capacity.

## 1.2 SECTOR VISION AND MISSION

**Vision:** *A global leader in Research, Innovations and Technology.*

**Mission:** *To drive the Kenyan economy through development and promotion of research, innovations and technologies.*

## 1.3 SECTOR STRATEGIC GOALS AND OBJECTIVES

### 1.3.1 Strategic Goals

In the MTEF period 2011/12 - 2013/14 the Sector Goals are;

**Table 1.3.1-1: Sector Goals**

<b>Sector Programme</b>	<b>Goals</b>
Research and Innovations	To create new knowledge and technologies
ICT infrastructure development	To develop modern ICT infrastructure
Human Resource development	To build and strengthen human resource capacity
Information & Communication Services	To provide quality, equitable and affordable information and communication services countrywide.
Data Management	To develop a comprehensive and reliable national database
Development of Policy, legal & Institutional framework	To formulate, review and implement appropriate policies, legal and institutional frameworks for the Sector

### 1.3.2 Strategic Objectives

1. To develop and promote research, innovation and technologies for high value products and services.
2. To develop modern national ICT infrastructure for sustainable development.
3. To develop and strengthen training capacity of higher education institutions.
4. To strengthen systems for the creation, translation of knowledge and dissemination of information.
5. To collect, collate, analyze, store, archive and retrieve data.
6. To develop and strengthen policies and capabilities of Sector institutions

## 1.4 SUB-SECTORS AND THEIR MANDATE

### 1.4.1 Ministry of Higher Education Science and Technology (MoHEST)

To formulate, promote and implement higher education, research, science, technology and innovation policy and strategies.

### 1.4.2 Ministry of Information and Communications (MOIC)

To formulate and facilitate ICT, Broadcasting and Film Development Policies, Dissemination of Public Information, Development of National Communications Capacity and Infrastructure, Development of the Film Industry and Public Relation Services

### 1.4.3 Department of Resource Surveys and Remote Sensing (DRSRS)

To collect, store (archive), analyze, update and disseminate data and information on natural resources to facilitate informed decision-making on sustainable management of natural resources with the major aim of supporting development Programmes

#### **1.4.4 Directorate of E-Government**

To facilitate Governments online service delivery through emerging information and communication technologies

#### **1.4.5 Government Information Technology Services (GITS)**

To ensure and maintain ICT standards within Government organizations

#### **1.4.6 Integrated Population Registration System -IPRS**

To establish, operationalise and maintain an integrated population registration database and key supporting systems for Kenya

#### **1.4.7 Kenya National Bureau of Statistics (KNBS)**

Data collection, analysis and production of official statistics, dissemination of results to users and producers and archiving of survey and census data

#### **1.4.8 Coffee Research Foundation (CRF)**

To conduct coffee research and such other crops promoting appropriate coffee husbandry throughout Kenya, including productivity, quality, value addition and suitability of land in relation to coffee farming

#### **1.4.9 Kenya Agricultural Research Institute (KARI)**

To facilitate the modernization of the Agricultural Sector through provision of efficient technologies which improve productivity and promote investment in Agricultural enterprises and Agribusinesses

#### **1.4.10 Kenya Forestry Research Institute (KEFRI)**

Conduct research in forestry, disseminate research findings, collaborate with other research bodies within and outside Kenya carrying out similar research; and, establish partnership with institutions of higher learning in training and in all other areas of forestry research.

#### **1.4.11 Kenya Institute for Public Policy Research and Analysis (KIPPRA)**

Identify and undertake independent and objective Programmes of research and analysis, including macroeconomic, inter-disciplinary and Sectoral studies on topics affecting public policy in areas such as human resource development, social welfare, environment and natural resources, agriculture and rural development, trade and industry, public finance, money and finance, macroeconomic and microeconomic modeling.

#### **1.4.12 Kenya Industrial Research and Development Institute (KIRDI)**

To carry out research and development in industrial and allied Technology including: Civil Engineering, Mechanical Engineering, Textile Technology, Electrical Engineering, Mining, Power Resources, Chemical Engineering, Industrial Chemistry, Food Technology, emerging technologies, Ceramics and Clay Technology and to disseminate the research findings to the Kenyan industries and society.

#### **1.4.13 Kenya Marine and Fisheries Research Institute (KMFRRI)**

To undertake research in marine and freshwater fisheries, aquaculture, environmental and ecological studies; marine research including chemical and physical oceanography, in order to provide scientific data and information for sustainable exploitation, management and conservation of Kenya's fisheries resources and aquatic environment, and contribute to National strategies towards food security, poverty alleviation, and creation of employment

#### **1.4.14 Kenya Medical Research Institute (KEMRI)**

To conduct research in human health, in collaboration with institutions of higher learning in training Programmes and other organizations on matters of relevant research and to disseminate and translate research findings for evidence-based policy formulation and implementation.

#### **1.4.15 Kenya Sugar Research Foundations (KESREF)**

To generate and disseminate technologies and knowledge, through innovative research, for improved production, processing, value adding and marketing of the Kenyan Sugar while conserving the environment.

#### **1.4.16 National Crime Research Centre (NCRC)**

To carry out research into the causes of crime and its prevention and to disseminate research findings to such institutions as the Council may from time to time determine for appropriate action.

#### **1.4.17 Tea Research Foundation (TRF)**

To promote research and investigate problems related to tea and such other crops and systems of husbandry as are associated with tea throughout Kenya including the productivity (yield), quality and sustainability of land in relation to tea planting; and matters ancillary thereto.

## 1.5 AUTONOMOUS AND SEMI AUTONOMOUS GOVERNMENT AGENCIES

The S/AGAS under this Sector are shown in Table 1.4.17-1 below.

**Table 1.4.17-1: Autonomous and Semi Autonomous Government Agencies**

Semi-Autonomous Government Agencies		Parent Ministry
1	Coffee Research Foundation (CRF)	Ministry of Agriculture
2	Tea Research Foundation of Kenya (TRFK)	
3	Kenya Sugar Research Foundation (KESREF)	
4	Kenya Agricultural Research Institute (KARI)	
5	Kenya Forestry Research Institute (KEFRI)	Ministry of Forestry and Wildlife
6	Kenya Marine and Fisheries Research Institute (KMFRI)	Ministry of Fisheries Development
7	Commission for Higher Education (CHE)	Ministry of Higher Education, Science and Technology
8	Public Universities	
9	Higher Education Loans Board (HELB)	
10	National Council for Science and Technology	
11	All Public Technical Training Institutes	Ministry of Industrialisation
12	Kenya Industrial Research and Development Institute (KIRDI)	
13	Kenya Medical Research Institute (KEMRI)	Ministry of Public Health and Sanitation
14	Kenya Broadcasting Corporation (KBC)	Ministry of Information and Communications
15	Kenya Film Commission (KFC)	
16	Kenya Information Communication Technology Board (KICTB)	
17	Postal Corporation of Kenya	
18	Communication Commission of Kenya (CCK)	
19	National Communication Secretariat (NCS)	
20	Communication Appeals Tribunal	
21	Brand Kenya Board	
22	Kenya Year Book Editorial Board	
23	The East Africa Marine Systems (TEAMS)	
24	Fibre Optic National Network (FONN)	
25	Kenya Film Classification Board	
26	Media Council of Kenya (MCK)	
27	Kenya Institute of Public Policy Research and Analysis (KIPPRA)	Ministry of Planning, National Development and Vision 2030
28	Kenya National Bureau of Statistics (KNBS)	State law office
29	National Crime Research Centre (NCRC)	



## 1.6 ROLE OF STAKE HOLDERS

The roles of Sector Stake holders are shown in Table 1.4.17-1 below

**Table 1.4.17-1: Role of Sector Stakeholders**

<b>Stakeholder</b>	<b>Roles</b>
Ministry of Finance	Programme funding and formulation of financial policies
Other Government ministries and agencies	Formulation and implementation of Government policies.
Development partners	Provide funds, technical support and capacity building
The Public	Source of data, tax payers, suppliers and consumers of services
NGOs	Supplement the Government in implementation of social programmes
CBOs	Facilitate and mobilise programme implementation and community advocacy
Academic Institutions	Provision of expertise, professionalism, human capacity building and promotion of science, technology and innovation and knowledge transfer of new innovations
International Research Institutions	Collaborative research, collaboration in programme development, policy guidelines, synergies and capacity building
Industry regulators and marketing agencies.	Marketing and Industry regulation
Private sector	Partnering with the Sector in programme development and implementation

## 1.7 ROLE OF RIT SECTOR IN IMPLEMENTATION OF THE NEW CONSTITUTION

The RIT Sector is committed in implementing the new constitution in its entirety. The sector will collaborate with relevant Ministries, Departments and Agencies to ensure that the new constitution is fully implemented to spur economic growth. The proposed devolved system of government will shorten the decision-making process on RIT. The new dispensation will not only strengthen grassroots' institutions but will also enhance identification, monitoring as well as evaluation of specific projects in various parts of the country. It is envisaged that Research, Innovation and Technology will play a leading role in creation of Knowledge, Information and appropriate technologies to make Kenya a prosperous and a competitive nation.

## 1.8 EFFECT OF ECONOMIC STIMULUS ON RESEARCH INNOVATION AND TECHNOLOGY SECTOR

The economic stimulus package (ESP) was launched in July 2009 to spur economy growth, which had almost stalled, due to the vagaries of weather and the after-effects of the infamous post-election violence. The two problems had impacted negatively on the country's agriculture-dependent economy, resulting in a decline in food production.

In order to accelerate and sustain economic development in the country, the Government introduced Economic Stimulus Programme targeting specific flagship projects. RIT sector benefited from these initiatives by implementing the following projects: construction of fish ponds, establishment of ICT village centers, and promotion of indigenous food crops, forestry management and conservation

## **CHAPTER TWO**

### **2 PERFORMANCE AND ACHIEVEMENTS OF THE SECTOR DURING THE PERIOD 2007/08 – 2009/2010**

#### **2.1 PERFORMANCE OF PROGRAMMES**

The Sector has been implementing the six programmes as shown in Table 2.1.1-1 below.

##### **2.1.1 Key Indicators of the Sector and Sub-Sectors**

The major achievements of the Sector programmes are summarized below. Key indicators of the Sub-sectors are highlighted in Table 2.1.1-1.

Under the ICT infrastructure programme the Sector completed the laying of 5500 KM submarine fiber optic cable and Phase I of terrestrial national fibre optic cable network covering 5000KM. Identified and procured 5000 acres of land for the development of ICT Park.

In Information and Communication services programme the Sector completed pilot test on the Kenyan's analogue to digital broadcasting migration in Nairobi and its environs, introduced Internet Protocol Telephony (IPT), awarded contract for the development of shared ICT service platform, Created 7500 jobs in the BPO, established and operationalized 24 Rural Resource Centres, launched Inside Kenya Today weekly newspaper, established and operationalized Brand Kenya Board and Kenya Year Book Editorial Boards and hosted 2009 & 2010 Kalasha Film & Television Awards.

Through the Data Management programme the Sector facilitated the 2009 National Population and Housing census and subsequent release of results within 12 months. The Sector also operationalised National Statistical System, the National Population Register and Government Data Centre. The Sector further facilitated the mapping of Cherangani water tower, Mt Elgon forests, Nzoia basin and Eldoret municipality to establish the current status of forest cover and land use.

In Human Resource programme the Sector facilitated the establishment of 22 University Colleges, 13 Technical Training Institutes and establishment and operationalization of the National Bio-Safety Authority. In addition public university intake increased from 16,000 to 20,000 and enrolment in technical institutions increased from 39,000 to 62,000. Through HELB the Sector extended loan facilities to students in both public and private universities in East African region. In addition, 4,100 TIVET teachers were employed and 7,320 TIVET students benefited from bursaries.

Under Research and Innovation the Sector developed a new treatment regime for leprosy that has reduced treatment period from 18 months to 1 month, hep cell kit for diagnosis of infectious hepatitis and established two global centers for training in control of parasitic and infectious diseases. Through the agricultural research institutions the Sector released to the public 4 sugarcane varieties, 5 Arabica coffee varieties, 21 assorted food crop varieties, 2 tea varieties and

5 Eucalyptus tree clones. New fertilizer regimes were developed for sugarcane, coffee, Tea and food crops. For value addition and commercialization 188 value added products were developed.

To enhance dissemination and adoption of improved technologies and innovations the Sector produced 163 technical reports and publications, 32 scientific conference papers and 12 papers in referred journal. The Sector established the African Journal of Health Sciences (AJHS) and supported the African Health Sciences Congress (AHSC). The Sector also established 110 demonstration plots, 40 farmer field school and research groups and partnership with key development partners on technology transfer and support.

Under policy, legal and institutional framework programme the Sector trained 12 young professionals drawn from various Government Ministries, Departments, Agencies and the private on public policy formulation, analysis and implementation. The Sector supported liberalization of telecommunications industry leading to lower telephone cost, introduced Technology Neutral Licensing Regime. The Sector facilitated enactment of Kenya Communication (Amendment) Act 2009 and Media Act 2007, the gazzettment of Information and Communications Regulations Guidelines, preparation of 5 Bills on STI, TIVET, University Education, Freedom of Information and National Population Registration.

**Table 2.1.1-1: Performance of Core Programmes and Other Programmes: Key Performance Indicators of Sector and Sub-sector**

<b>PROGRAMME: ICT Infrastructure</b>			
<b>Implementing Agency</b>	<b>Sub-Programmes</b>	<b>Objectives</b>	<b>Achievements/ Performance Indicators</b>
<b>MOIC</b>	The East African Marine Cable System (TEAMS)	To develop and improve ICT Infrastructure	Completed laying of 5500 km submarine fibre optic cable Cost of internet has reduced from KShs. 6000 in 2007 to KShs. 500 in 2010 per mega byte Contract for cable maintenance awarded
	National Optic Fibre Backbone Infrastructure (NOFBI)	To develop and improve ICT Infrastructure	Completion of Phase I of construction of terrestrial national fibre optic cable network (5000KM)
<b>MOIC/KICT BOARD</b>	Business Processes and Outsourcing ( BPO )	To create employment through the growth of BPO	Cabinet Memo to establish ICT park approved, National BPO taskforce launched  5000acres of land identified and purchased Land demarcation around the park done  Bandwidth support to 53 local BPO operators  7,500 dedicated seats created as at June 2010 13 Marketing campaigns carried out in UK, USA and Canada BPO Strategy developed
<b>KICT BOARD/ E-GOVT</b>	Kenya Transparency Communication Infrastructure Programme (KTCIP)	To improve national/ International connectivity and Bridge the digital divide	64 Government Ministries and Departments provided with high capacity bandwidth of 80MBs All University and 210 Technical colleges provided with the bandwidth KICC Networked Digital Village Training Curriculum developed and JKUAT identified as the lead trainer 6 Pilot on government digital villages launched and operationalized 5 Research Institutions Identified to conduct the training 1041 Youths trained in entrepreneurship skills Universal Access Fund for digital villages
<b>MOIC</b>	Public Mass Media establishments' Facilities and Equipment	To enhance capacity Building in ICT	10% of men's hostel construction completed  UON/KIMC degree curricula completed and operationalized

			<p>50% (phase 1) of standby generator installation completed</p> <p>Review of 3 diploma curricular in mass media completed</p> <p>20% of TV studios rehabilitated</p> <p>50% of Radio studios rehabilitated</p> <p>ECN 104.7 MHz station launched</p>
<b>E-GOVT/GITS</b>	Local Area Network and Wide Area Network	To enhance information sharing and improve service delivery	<p>LANs implemented in all the nine District Treasuries</p> <p>GCCN completed connecting thirty Government buildings</p> <p>Repairs and maintenance of ICT equipment carried out twice during the 2009-10 financial year</p> <p>Drawings completed, Excavation works completed and building materials on site</p>
		To change the mode of communication for IFMIS data from using wireless communication to using the GCCN network (fiber optic cables)	Stable and fast data communication through the GCCN network completed
		To upgrade database from version 9.2.0.5 to 10g R2 and application from 11.5.10 to 11.5.10.2	Clean Power to the IFMIS and Pensions Server, UPS and Power Stabilizers installed
		To train 20 officers in various ICT skills and College/University education, Train 10 officers in management	20 officers trained in various ICT skills and College/University education, 10 officers underwent management training, four workshops held for 250 IFMIS users and 100 officers trained on basic computer skills
		To support and maintain GCCN, Sun Microsystems Servers, Oracle Technical Support contracts in all Government ministries	Functional IFMIS system in all Government ministries
		To create an Electronic Funds Transfer (EFT) interface between IFMIS system and the CBK	EFT pilot completed and functioning in Ministry of Finance
<b>MoHEST</b>	Science and Technology Parks	To nurture and incubate innovation for sustainable development.	Business plan drawn on the establishment of the first S&TP around Nairobi

<b>Programme: Information and Communication services</b>			
<b>Implementing Agency</b>	<b>Sub-Programmes</b>	<b>Objectives</b>	<b>Achievements/ Performance Indicators</b>
<b>MOIC</b>	National ICT Policies	To ensure efficient management and regulation of ICT sector.	Liberalized Telecommunications leading to lower telephone cost Introduced Technology Neutral Licensing Regime 4 Bills; ICT Bill, Freedom of Information Bill, Kenya Communication Amendment Bill 2008, Media Bill in the final stages in Parliament
	News and Information services	To enhance Public Access to Information	90,000 KNA stories published 1400 Features aired 900 cinema shows organized 240,000 rural press publications produced and disseminated per year 24 rural resource centers set up and operationalised
	ICT Hardware and software	To provide affordable quality ICT services	Madaraka PC developed and available in the market.
	Analogue-Digital Migration	To ensure smooth transition from Analogue to digital Broadcasting in Kenya	National Taskforce functional  Pilot analogue to Digital Broadcast migration launch by KBC in Nairobi and environs
	Positive Government Image	To brand Kenya and Enhance the positive image of the Government	Brand Kenya Board and Kenya Year Book Editorial Boards established and operationalised Kenya Brand Launched First edition of Kenya Year Book approved by the President Kenya Brand master plan developed and produced Kenya Comprehensive quick read book published
	Film Industry Development	To develop, Promote and Regulate the Film Industry	6000 local and international Film licenses issued, 80 documentaries on Vision 2030 produced 6 regional film offices set up and operationalised  Draft National Film Policy in Place KFCB is now a parastatal  Funded & hosted 2009 & 2010 Kalasha Film & Television Awards in collaboration with other stakeholders 3 Workshops for film makers held Commissioned research on Film development 56 staff trained in film development
<b>E-GOVT/GITS</b>	E-Government	To provide efficient and	E-Government strategy revised

	services	effective internal government communication and information sharing	E-mail addresses have been created for civil servants EMACS Server installation complete
<b>Programme: Data management</b>			
<b>Implementing Agency</b>	<b>Sub-Programmes</b>	<b>Objectives</b>	<b>Achievements/ Performance Indicators</b>
<b>KNBS</b>	Statistical Data Management <ul style="list-style-type: none"> <li>• Surveys</li> <li>• Census</li> <li>• Building of Statistical Capacity (STATCAP)</li> </ul>	To coordinate and supervision of the National Statistical System  To produce High Quality National Statistics	28 Statistical Reports Produced;  National Statistical System in place and operationalized;  Full coverage in cartographic mapping;  Census questionnaire developed and finalized ;  Population and Housing census conducted, Data collection completed, Census returns captured and data analyzed.  4 no. volumes of census results released Digitized EA maps for the Entire country Post enumeration survey
<b>MIRP</b>	Integrated Population Registration System (IPRS)	To operationalized and Mainain National Population Register	A National Population Register database in place.  Civil registration system in progress, 65% completed.  Design of the third generation Identification system completed  Cabinet approval of e-visa and border management system
<b>DRSRS</b>	Environment and Natural Resource Information management	To promote use of geographic Information System (GIS), Remote Sensing, Databases and tools for monitoring, mapping and assessment of natural resources to enhance livelihoods	Mapping of Cherengani and Mt Elgon forests to establish its current status completed  Land use/cover mapping Nzoia basin and Eldoret municipality  Aerial surveys of northern and southern rangelands done  Small format vertical aerial photography for crop production on food security done Research on impact of climate change on small holder farmers in Narok and Laikipia
<b>MOIC / E-GOVT</b>	National Data Centre and	To improve data storage, security	Advertisement for expression of interest done

	Disaster Recovery Centre	access and recovery	Evaluation for successful bidders done The establishment of the centre at the design stage
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<b>Programme: Research and Innovations</b>			
<b>Implementing Agency</b>	<b>Sub-Programmes</b>	<b>Objectives</b>	<b>Achievements/ Performance Indicators</b>
<b>MoHEST</b>	Promotion of Science, Technology and Innovations	To coordinate and harmonize research and development for national development. <b>(NCST)</b>	-Financed 5 young innovators. -180 post-graduate research funded. -Bill to transform the Council to a Commission. -The Council is the National focal point for International Atomic Energy Agency. - Recruited 18 experts. - The Governing Council is now fully operational.
		To promote and ensure safety in development and exploitation of Biotechnology. <b>(NBA)</b>	-Board of Management established. -Biosafety Act developed. -The organizational structure and establishment approved by relevant authorities.
<b>KEMRI</b>	<b>Infectious diseases (RESEARCH &amp; SERVICE)</b>	To reduce disease burden due to infectious agents, in particular, due to HIV/AIDS and related infections, opportunistic infections, tuberculosis, sexually transmitted infections, viral hepatitis, acute respiratory infections.	1. Development of treatment regimens that have reduced the treatment period for leprosy from 18 months to 1 month, tuberculosis (TB) from 18 months to 3 months 2. Development of various formulations for treatment of HIV/AIDS and opportunistic infections. 3. Establishment of P3 laboratory and state-of-the-art laboratory for pediatric HIV diagnosis to support National HIV/AIDS prevention, treatment and Care Program 4. Development of capacity for HIV-Drug resistance testing
	<b>Parasitic Diseases (RESEARCH &amp; SERVICE)</b>	To reduce disease burden due to parasitic infections, particularly due to malaria, Schistosomiasis, leishmaniasis, filariasis and intestinal parasites.	1. Through the Institute's advice the malaria drug Daraprim and chloroquine withdrawn from the market as a first line drug in the treatment of malaria 2. Development of treatment regimens that have reduced the treatment period of leishmaniasis (Kalazar) from 30 days to 10 days. 3. Demonstrated the benefits of Insecticide Treated Bed nets (ITNs) for use in the control of malaria



<b>Biotechnology &amp; Non-communicable Diseases (RESEARCH &amp; SERVICE)</b>	To promote research in modern biotechnology and innovations for application in the promotion of human health; and to promote research in non-communicable diseases including oncology, cardiovascular and renal diseases	<ol style="list-style-type: none"> <li>1. Development of the KEMRI Hepcell kit for diagnosis of infectious hepatitis, the Particle Agglutination (PA) kit for the diagnosis of HIV and the HLA tissue typing techniques for kidney transplants</li> <li>2. Establishment of the Nairobi Cancer Registry</li> <li>3. Establishment of the Production Unit for diagnostic kits and Disinfectant</li> </ol>
<b>Epidemiology, Public Health &amp; Health Systems Research (RESEARCH &amp; SERVICE)</b>	To define and investigate the incidences and prevalence of diseases and health issues of major public health importance and develop strategies for promotion of better health.	<ol style="list-style-type: none"> <li>1. The development of national disease surveillance and rapid response capacity for major disease outbreaks (yellow fever, rift valley fever and viral hemorrhagic fever).</li> <li>2. Developed a comprehensive training module for HIV/AIDS education awareness at the workplace.</li> </ol>
<b>ITROMID (TRAINING)</b>	To collaborate with local universities, to develop postgraduate training in all aspects of tropical medicine and infectious diseases	Establishment in liaison with the JKUAT, a Graduate School (the Institute of Tropical Medicine and Infectious Diseases – ITROMID) for Masters and PhD training in health sciences.
<b>ESACIPAC (TRAINING)</b>	To do capacity building (training) for control of parasitic diseases and operational research networking.	Establishment of two global centers for training in the control of parasitic and infectious diseases respectively, under the Government of Japan Hashimoto and Okinawa initiated.
<b>PRODUCTION (TRAINING)</b>	To produce diagnostic kits for enhancing blood safety and disinfectants for enhancing Infection Prevention	<p>Production and supply of HIV1/2 Rapid testing kit KEMCOM, currently used in National Program for Blood Safety</p> <p>Production and supply of the HEPCELL Kit for Hepatitis B &amp; C testing, being used in National Blood Safety program</p> <p>Production and supply TBCide, a disinfectant currently used in National Institutions for cleaning contaminated surfaces</p>
<b>M&amp;E</b>	To strengthen the framework for monitoring and evaluation on a continuous basis	Established effective Results-based M&E Framework
<b>ICT</b>	To exploit fully the potential of ICT in the	Two megabyte internet link acquired, Router and firewall installed at the

		development and management of health research. Improve and modernize the ICT infrastructure	HQTS The development of an interactive digital map of the KEMRI LAN availed.
	<b>REACH-PI</b>	<ol style="list-style-type: none"> <li>To strengthen systems for disseminating, translating and transmitting research findings for evidence-based policy formulation and implementation.</li> <li>To access, synthesize, package and communicate evidence required for policy and practice and for influencing policy relevant research agendas for improved population health and health equity</li> </ol>	<ol style="list-style-type: none"> <li>Establishment the African Journal of Health Sciences (AJHS) and supported of the African Health Sciences Congress (AHSC)</li> <li>Conducted National Study to Review existing Policy Documents and Identification of upcoming Priority National Health Policy issues in East African Community Partner States: Kenya country report: April to August 2008</li> </ol>
		To strengthen human resource capacity	Developed a critical mass of health research scientists, with 80 scientists with PhD degrees, 140 scientists with master's and bachelor's degrees and 250 highly trained and skilled technical staff
<b>KESREF</b>	Plant Breeding, Agronomy and Crop protection	To generate crop development technologies and innovations for enhancing productivity, value addition and competitiveness of the sugar industry	<p>Released 4 and Pre-Released 3 sugarcane varieties</p> <p>Promoted 35 promising varieties to Advanced Yield Trial (AYT) stage</p> <p>Identified over 400 promising sugar cane clones</p> <p>Developed Nitrogen Recommendation for New varieties</p> <p>Published 26 technical reports Constructed ultra-modern laboratories up to 97 percent completion.</p>
	Technology transfer, Economics and Biometrics	<p>To develop technologies that enhance productivity, value addition and competitiveness of the sugar industry</p> <p>To develop technologies that enhance productivity, value addition and competitiveness of the sugar industry</p>	<p>Promoted and up-scaled newly released sugarcane varieties</p> <p>Supplied farmers with over 400 tons of treated seed cane of the new sugarcane varieties</p> <p>135 hectares of healthy seed canes established</p> <p>25 demonstration plots developed 30 Farmer's Research Group (FRG) registered 5 technical reports published on sugarcane irrigation</p>

			<p>Documented ISO 17025: 2005 procedure</p> <p>Established Geographical Information System</p> <p>Developed crop model for synchronization of establishment and crushing for Mumias and Nzoia</p>
<b>COFFEE RESEARCH FOUNDATION</b>	Technology development and innovation	To improve yield and quality of the resistant selections	<p>Selection, development and release of 5 high yielding, quality Arabica coffee varieties</p> <p>8 Research projects undertaken</p> <p>Produced over 5.5 million coffee seedlings</p>
		To enhance and sustain coffee Productivity	<p>Developed fertilizer regimes for various coffee farming systems across the agro-ecological zones</p> <p>Development of coffee establishment protocols and soil map</p> <p>10 Research projects undertaken</p> <p>Developed coffee quality monitoring guidelines</p>
		To study different water placement methods for small holder coffee farmers	5 Research projects undertaken
		To train and disseminate information on best practices in coffee growing and processing	<p>Establishment of field advisory and training system</p> <p>51 scientific publications and reports produced</p> <p>25 strategic collaborative initiatives signed</p> <p>260 CDs on coffee produced and distributed, one Radio programme and 10 articles in print media</p> <p>135 trainers trained on coffee production, processing and value addition</p>
<b>KARI</b>	Food, horticulture and industrial crops	To generate and promote crops and crop health knowledge, information and technologies that respond to client's demands and opportunities.	<p>21 crop varieties released and 23 placed under National Performance Trials (NPT)</p> <p>11 tons of assorted crop seed produced</p> <p>26 crop varieties undergoing evaluation on-station</p> <p>7 horticultural packages developed for end-users.</p>

		<p>To generate and promote livestock knowledge, information and technologies that respond to client's demands and opportunities</p>	<p>106 farmer training workshops/demonstrations held and 14 animal production technologies disseminated  12 papers presented in scientific conferences  2 papers published in refereed journals  100 cattle and 100 pigs availed to farmers as breeding stock  2 training manuals developed  1 forage suitability map developed  Training and infrastructure improvement for IEC 17025 certification process of animal health diagnostic laboratories at Muguga was carried out.  6,500 field samples tested at the Muguga regional reference laboratory for various livestock diseases.  11,000 samples tested for pleuropneumonias.</p> <p>A cooperative agreement signed between KARI and United States Department of Agriculture (USDA) for testing Rift Valley fever vaccine.</p> <p>The safe food - safe dairy' project on aflatoxins in partnership with University of Nairobi initiated. Partnership established with Korea on agricultural technology transfer.</p> <p>25,000 female flies maintained at the mass rearing facility at TRC, Muguga.</p> <p>The 'Infectra' device prototype fabricated in collaboration with Private Sector.  10 refereed journal papers published while 20 published in conference proceedings.</p> <p>5MSc, 1 MA and 2Bsc sponsored students completed studies.  84 Common <i>Interest Groups</i> (CIGs) in the southern and northern rangelands of Kenya trained on range grass seed production.</p> <p>51 acres planted with four indigenous pasture species in Kiboko.</p> <p>Pasture demonstration plots set up in 8 cluster districts  29hc of farmers land reseeded with recommended grasses.  1000 kg of grass seeds grown by farmer groups and sold.  Use of jerry cans wrapped in water-</p>
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			<p>soaked hemp in ASALs confirmed to maintain milk quality and hygiene during transport.</p> <p>Hive products value chain in southern rangelands mapped, constraints and opportunities identified and report written.</p> <p>9 conference papers presented</p> <p>Eight (8) papers submitted for publication in international refereed journals.</p> <p>31 farmer training workshops on various technologies held</p> <p>10 farmer educational tours conducted.</p> <p>61 <i>on-farm</i> demonstrations and field days involving about 2000 beneficiaries and 15 technologies held.</p> <p>7 farmer field schools involving 105 beneficiaries established in Marsabit and Isiolo districts.</p>
<b>TEA RESEARCH FOUNDATION</b>	Tea Research	To improve and sustain productivity and quality of tea in the smallholder and large estate sub-sector.	<p>Released 49 high yielding and quality tea varieties for utilization in black and green tea processing.</p> <p>Developed and availed Fertilizer utilization techniques for use by tea farmers.</p> <p>Smallholder tea farmers sensitized on economic land units for tea.</p> <p>Mechanized tea pruning and plucking technologies developed and disseminated.</p>
		To increase productivity and quality of tea in the smallholder and large estate sub sectors improved and sustained	<p>A catalogue for all released and commercialized Kenyan tea varieties published and availed.</p> <p>Cost effective and environmentally friendly techniques of identifying and managing pests and diseases developed and availed.</p>
		To promote product diversification and value addition in the Kenyan tea industry.	<p>Cost-effective biochemical analytical techniques developed and availed.</p> <p>Good agricultural practices (GAP) and good manufacturing practices (GMP) developed and disseminated to the tea industry.</p>
		To enhance the institutional capacity of the Foundation.	<p>TRFK Strategic Plan for period 2010-2015 developed and being implemented.</p> <p>1 training held in preparation of ISO 9001:2008 Quality Management Systems</p>

		To enhance partnerships and linkages	5 MOU signed and operationalized on capacity building and research
<b>KIPPRA</b>	Public Policy Research	To provide advisory and technical services on public policy issues to the Government and other agencies.	- Supported the national planning and development in the production of the Vision 2030 and Medium Term Plan - Participated in at least 15 Government taskforces
		To communicate the findings and recommendations of its research programmes to the agencies of Government concerned with the implementation of public policy.	- Distributed over 30,000 copies of research publication every year to Government ministries, departments, agencies, universities, embassies etc. - Held at least 10 research dissemination workshops annually. - Prepared the first inaugural Kenya Economic Report (KER) in October 2009. To prepare KER on annual basis.
		To identify and undertake independent and objective programmes of research and analysis.	Publication of 20 research papers annually: Policy Papers, Policy Briefs and Client Reports <b>2.1.1.1</b>
		To develop capacities in public policy research and analysis and assist the Government in the process of policy formulation and implementation.	- Trained 12 Young Professionals on public policy. - Trained 100 Government officers on public policy/research methods course.
<b>NCRC</b>	Crime Research	To reduce crimes and enhance efficacy and adequacy of criminal investigations and prosecutions thus public security and creation of enabling business environment.	Secretariat in place Policy documents drafted and finalized on human resource and Finance and Accounting manual, NCRC strategic Plan 2008/09-2012/13 developed  Partnered with international centre for crime prevention, GJLOS programme, UN Habitat's – safer cities project, the National steering committee on peace building and Conflict management
<b>KMFRI</b>	Fisheries Research	To enhance fisheries production through research	Technical reports on 4 distinct prawn fisheries produced and used in fisheries management decisions  - Drafted prawn fishery management plan
	Aquaculture research	To ensure appropriate collection, dissemination and archiving of information products	Adaptive aquaculture technology developed and disseminated - A commercial community-based seaweed nursery established at Shimoni in the.
	Value addition and post-harvest research	To develop value added products and reduce post-harvest losses.	Two techniques for reducing post-harvest losses (improved fish smoking ovens and solar driers) have been developed and disseminated

	Environment and ecology research	To undertake environment and ecology research	Biophysical studies undertaken and disseminated
	Information and data management	To ensure appropriate collection, dissemination and archiving of information products	Databases, internet connectivity, GIS, increased networking and information sharing
		To support farmers with sound management and utilization of forest resources	3 species recruited, 3 products developed, 2 policy brief produced
		To assess the status of water towers in the country	Report done on 5 water towers status Demonstration plots established 100 clients/stakeholder trained on rehabilitation techniques
<b>KEFRI</b>	Forestry Research	To support farmers with sound management and utilization of forest resources	5 Eucalyptus species clones and various species popularized , 3 products developed, 2 policy brief produced
		To undertake Bamboo tree Research	3 products developed Two publicity forums held Two guidelines produced 10 artisans trained
		To conserve and manage Mangroves	One technical report Guidelines on mangrove extraction Guidelines on rehabilitation
		To conserve Medicinal Plants	An Extraction report from one forest Two demonstration plots established and monitored Two reports on management and utilization 10 herbalists trained
		To undertake policy analysis in natural forests conservation and management	A status report done
		To develop technologies to improve woodlands management and conservation.	3technical reports 2communities linked to four traders/marketers, 1 guideline on efficient charcoal processing technologies, report on distribution and impacts of prosopis, 4demonstrations established, 1guideline on piloted integrated management approaches 1Scientist trained in eco-physiology and tree breeding Five demonstrations with various species planted.

		To undertake genetic improvement of the main plantation species, demonstrate alternative plantation species, develop integrated strategies for management of new insect pests and develop guideline for plantation species on wood characterization.	6 species identified and demonstrated 300 plus trees of 5 species selected and progenies tested 5 hybrids developed 10 rogeny trials established introduced
		To expand seed sources, improve their management and protection.	2 seed orchards established each for : Grevillea, Cypress, P. patula, Vitex and E. grandis 2 ha of seed woodlots/stands planted by farmers in each of the 5 centers, 6000 kg of seed produced, 5 Seed stores constructed, 10 drying beds constructed, 20 sets of climbing equipment procured, 8 Foresters and 30 Seed Collectors trained, 5 sets of lab equipment purchased, Cold storage equipment replaced at Muguga,
		To improve dissemination of technologies by developing databases, improving documentation, integrating users needs in research	Internet services provided at 4 centres, a Computer Server in every Regional Research Centre, database enabled and updated KEFRI website, 20 scientists trained, 10 dissemination office, 1 scientific conference held
		To strengthen synergies and collaborate with development partners on management of forestry and allied resources	2 MOUs signed
		To strengthen Human Resource Capacity	11 scientists trained, and other 232 support staff trained
		To improve physical facilities	6 office blocks built

<b>Programme: Human Resource Development</b>			
<b>Implementing Agency</b>	<b>Sub-Programmes</b>	<b>Objectives</b>	<b>Achievements/ Performance Indicators</b>
<b>MoHEST</b>	<b>Quality Assurance and Standards</b>	To prepare a handbook for assessment of TIVET institution and assess TIVET institutions within 60 days from the date of application  To review TIVET curriculum	-Handbook developed and subjected to review by key stake-holders -TIVET institutions assessed as within 50 days from the date of application  -Curriculum for seven courses reviewed namely;



<b>MoHEST</b>	<b>General Administration and Support Services</b>	To give support services to the technical departments	<ul style="list-style-type: none"> <li>-Created 22 university Colleges.</li> <li>-Initiated the establishment of the Open University of Kenya.</li> <li>-Initiated the establishment of Pan African University.</li> <li>-Established 13 Technical Training Institutes.</li> <li>-Established the National Bio-Safety Authority.</li> <li>-Prepared 3 Bills on ST&amp;I, TIVET and University Education.</li> <li>-Entered into MOU with German Government for the provision of 20 scholarships per year.</li> </ul>
<b>MoHEST</b>	<b>TIVET</b>	To promote access to technical education and training.	<ul style="list-style-type: none"> <li>-7,320 students given bursaries.</li> <li>-4 Libraries built.</li> <li>-Increased enrolment from 39,000 in 2007/08 to 62,000 in 2009/10.</li> <li>-Increased external funding from zero in 2005/06 to 6 billion in 2010/11</li> </ul>
<b>MoHEST</b>	<b>HIGHER EDUCATION SUPPORT SERVICES</b>	To increase access to higher education through provision of loans, bursaries and scholarships. (HELB)	<ul style="list-style-type: none"> <li>-Increased the beneficiaries from 38,864 in 2003/04 to 54,025 in 2008/09.</li> <li>-Expanded loan facilities to self sponsored students in both Private and Public Universities.</li> <li>-Expanded provision of loans to students in East Africa Universities (EAC)</li> <li>-Increased funding of PHD students from 4 in 2008/09 to 10 in 2009/10.</li> <li>-Increase loan recovery from Ksh1.3 billion in 2006/07 to Ksh 2.9 billion in 2009/10.</li> </ul>
		To promote quality in provision of higher education (CHE)	<ul style="list-style-type: none"> <li>-Increased accredited Private Universities from 20 in 2008/09 to 23 in 2009/10.</li> <li>-Inspected 3 University Colleges for upgrading into full fledged Universities.</li> <li>-Financed 56 Research Proposals in 2009/10</li> </ul>
<b>MoHEST</b>	<b>TEACHER MANAGEMENT</b>	To provide qualified teaching personnel in the Technical Institutions.	<ul style="list-style-type: none"> <li>-4,100 teachers employed.</li> </ul>
<b>MoHEST</b>	<b>University Education</b>	<p>To expand access to university Education</p> <p>To promote Research and</p>	<ul style="list-style-type: none"> <li>-Increased A i A from Ksh 6billion in 2005/06 to 14 Billion in 2010/11.</li> <li>-Increased annual admission through JAB from 10,000 students in 2005/06 to 22,000 in 2009/10.</li> <li>-Completed 60 % of stalled projects by 2009/10.</li> </ul>

		Training	-Increased external funding for Research from Ksh 1.6 billion in 2007/08 to Ksh 3 Billion in 2009/10
<b>MOIC</b>	ICT and Mass Media Skills development	To build human resource capacity within the ICT Sub-Sector.	KIMC signed MoU with University of Nairobi to offer degree in Mass Media  KCCT upgraded to Multi Media University College status.
<b>MOIC</b>	Broadcasting reforms	To modernize the exiting transmission network and ensure a smooth migration from analogue to Digital Broadcasting switch-over	12 new transmitting stations in place  85 percent of Kenyans sensitized on Analogue to Digital broadcasting Migration requirements by 2012

<b>Programme: Development of policy, legal and institutional frame-work</b>			
<b>Implementing Agency</b>	<b>Sub-Programmes</b>	<b>Objectives</b>	<b>Achievements/ Performance Indicators</b>
<b>MOIC</b>	ICT & Media Policy	To ensure efficient Management and regulation of ICT sector	<p>Liberalized Telecommunications leading to lower telephone cost</p> <p>Introduced Technology Neutral Licensing Regime</p> <p>4 Bills ICT Bill, Freedom of Information Bill, Kenya Communication Amendment Bill 2008, Media Bill drafted</p>
<b>KIRDI</b>	<p>Promotion of Industrial Research and Development</p> <p>Promotion and Development of Small Scale Enterprises</p>	<p>To ensure product and process development for loss reduction, improved varieties and competitiveness</p> <p>To promote advancement of Research and Technology</p>	<p>Various leather processing and utilization technologies have been developed in KIRDI through R&amp;D. The process of transferring these technologies to the entrepreneurs to support value addition to hides and skin through production of wet blue from hides is in progress. 20 SMEs including community based tanneries such as Kakuma, and Dadaab have benefited.</p> <p>The R&amp;D and Pilot plant facilities for leather processing have been adapted to support SMEs to convert semi processed leather wet blues from their enterprises to process finished leather for production of various finished leather products for local and export markets. 80 SMEs have benefited.</p> <p>Various Fruit processing technologies have been developed in KIRDI through R&amp;D, reverse engineering and prototyping to support SMEs to add value to fruits and vegetables. The main objective is to reduce post harvest losses through value addition. KIRDI is already working with 50 SMEs in this line.</p> <p>Various honey processing technologies have been developed in KIRDI through R&amp;D, reverse engineering and prototyping to support SMEs to add value to honey, honey products and by-products. The honey processing technologies are being disseminated to support honey farmers on value addition including production of export honey based products. KIRDI has already transferred these technologies to more than 8 SMEs.</p> <p>The laboratory facilities used for R&amp;D are also being used to provide analytical testing and quality control</p>

			<p>services to SMEs. KIRDI has in the past provided the above services to about 2000 SMEs.</p> <p>The R&amp;D facilities and pilot plants for extraction and analysis of essential oils and medicinal active ingredients have been adapted to support SMEs in export business. Already these technologies have been disseminated to 5 SMEs</p> <p>Through research and publications, KIRDI has published the Sources of Industrial and Technological Information in Kenya, Kenya Directory of Manufacturing Industries and Sectoral Technology Assessment Reports. These have been disseminated through various channels.</p> <p>Various Traditional Foods processing technologies have been developed in KIRDI through R&amp;D, reverse engineering and prototyping to support SMEs to add value to various traditional foods such as tomatoes, sorghum, millets, roots and tubers, legumes etc. KIRDI has transferred these technologies to more than 25 MSEs.</p> <p>Various grain processing technologies have been developed in KIRDI through R&amp;D, reverse engineering and prototyping to support SMEs to add value to various grains. KIRDI has transferred innovative maize and rice processing technologies such as the maize Sheller, Master Mill, dehurler, rice thresher etc</p>
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## EXPENDITURE ANALYSIS

### 2.1.2 ANALYSIS OF RECURRENT EXPENDITURE

During the FY 2009/10 the total recurrent expenditure for the sector was **46.1 billion** as indicated in the Table 2.1.2-1 below.

**Table 2.1.2-1: Analysis of Sector Recurrent Expenditure, FY2007/08–2009/10 (KSHS Million)**

Sub-Sectors	Printed Estimates			Revised Estimates			Actual Expenditure		
	2007/08	2008/09	2009/10	2007/08	2008/09	2009/10	2007/08	2008/09	2009/10
MoHEST	3,610.0	18,828.0	21,616.0	15,875.0	19,335.0	23,469.0	15,716.0	19,084.0	23,245.0
MOIC	752.1	1,144.2	1,136.7	840.1	1,235.2	1,447.5	750.0	1,124.3	1,424.5
DRSRS	137.6	149.1	159.5	127.8	147.4	158.5	137.6	148.8	154.2
E-Government	63.5	61.4	68.1	70.6	66.4	64.3	59.8	61.0	47.1
GITS	563.7	584.7	352.2	0.0	0.0	352.2	533.7	553.7	352.2
IPRS	298.4	135.2	104.5	0.0	0.0	96.5	219.2	156.8	78.4
KNBS	710	880	4,799	600	1,380.00	7,499	582.5	1,165.2	7,327.1
CRF	255.2	288.7	457.0	248.2	435.2	467.0	43.7	503.9	436.0
KARI	1,600.0	1,750.0	1,806	1,650.0	1,750.0	1806	1,679	1,769	3,030.2
KEFRI	639.0	639.0	710.6	639.0	639.0	710.6	632.0	639.0	710.6
KMFRI	353.1	352.8	418.8	353.1	352.8	418.8	379.8	377.1	432.5
KEMRI	956.0	993.0	1025.0	956.0	993.0	1025.0	1,041.0	1,119.0	1136.2
KIPPRA	164.0	191.0	235.5	164.0	191.0	235.5	181.2	205.5	245.9
KIRDI	179.4	237.4	290.0	247.8	237.0	310.0	184.9	237.4	248.6
KESREF	233.0	265.0	357.0	0.0	0.0	357.0	213.0	258.0	357.0
NCRC	0.0	9.8	18.8	0.0	7.1	18.8	0.0	5.4	18.8
TRF	355.3	230.0	239.6	120.8	132.0	239.6	120.8	132.0	162.4
<b>Total Recurrent</b>	<b>10,870.3</b>	<b>26,739.3</b>	<b>33,984.4</b>	<b>21,892.4</b>	<b>26,901.1</b>	<b>38,665.4</b>	<b>22,474.2</b>	<b>27,540.1</b>	<b>37,890.2</b>

### 2.1.3 Analysis of Sector Development Expenditure

During the FY 2009/10 the total development expenditure for the sector was 6.9 billion as indicated in Table 2.1.3-1 below. This development expenditure constituted only 15.2 percent of the total allocation to the Sector

**Table 2.1.3-1: Analysis of Sector Development Expenditure**

Sub-Sectors	Printed Estimates			Revised Estimates			Actual Expenditure		
	2007/08	2008/09	2009/10	2007/08	2008/09	2009/10	2007/08	2008/09	2009/10
MoHEST	1,163.0	3,812.0	4,046.0	1,164.0	3,386.0	3,748.0	985.0	3,234.0	3,432.0
MOIC	3,188.0	2,517.6	3,264.3	3,783.2	2,017.6	1,299.3	1,607.5	1,426.2	1,343.8
DRSRS	126.4	182.0	177.4	56.4	182.3	177.4	126.4	182.3	177.3
E-GOVERNMENT	80.0	2,867.8	1,296.3	74.7	2,867.8	1,233.0	39.4	1,510.7	1,118.6
GITS	140.0	410.6	764.7	140.0	410.6	764.7	628.7	410.6	764.7
IPRS	45.0	141.0	385.0	45.0	141.0	164.7	0.0	121.0	139.5
KNBS	278.0	700.5	728.5	517.3	558.8	883.2	133.4	271.0	246.0
CRF	18.2	13.2	20.0	18.2	149.0	20.0	4.1	88.3	14.0
KARI	1607	695	805.3	1,359.2	467.3	565.37	1,382	1,401	1,224.2
KEFRI	77.5	46.6	44	77.5	16.0	44	84.3	16.0	44
KMFRI	40.0	126.5	104.4	126.5	115.8	42.4	40.0	50.8	42.4
KEMRI	150.0	150.0	75.0	75.0	150.0	75.0	206.0	319.0	27.2
KIPPRA	8.9	13.6	30	8.9	13.6	30	10.3	13.6	0
KIRDI	39.0	270.0	254.0	50.9	286.0	254.0	42.7	238.5	100.5
KESREF	174.0	118.0	175.0	0.0	0.0	175.0	158.0	113.0	0
NCRC	0.0	0.0	20.5	0.0	0.0	20.5	0.0	0.0	20.5
TRF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total Development</b>	<b>7,135</b>	<b>12,064.4</b>	<b>11,405.2</b>	<b>7,744.80</b>	<b>10,989.70</b>	<b>10,956.0</b>	<b>5,447.80</b>	<b>9,396.00</b>	<b>6,987.1</b>
<b>Total Expenditure</b>	<b>18,660.1</b>	<b>38,803</b>	<b>46,194.9</b>	<b>29,637.2</b>	<b>37,890.8</b>	<b>50,626.7</b>	<b>27,922.0</b>	<b>13,344.9</b>	<b>46,101.5</b>
<b>Rec. as % of Total</b>	58.3	68.9	75.3	73.9	71.0	78.4	80.5	64.0	84.8
<b>Dev as % of Total</b>	41.7	31.1	24.7	26.1	29.0	21.6	19.5	36.0	15.2

## 2.1.4 Analysis of Externally Funded Programmes

The Sector received a total of 2.8 billion for externally funded projects to meet recurrent expenditure and 1.3 billion to meet development needs of the Sub-Sectors during the FY 2009/10. Tables 2.3.3 and 2.3.4 below show the breakdown of the expenditure for externally funded programmes. The percentage expenditure on recurrent is 64 percent while development is 36 percent.

### 2.1.4.1 Analysis of Recurrent externally funded programmes

During the period under review on KEMRI had recurrent externally funded programmes

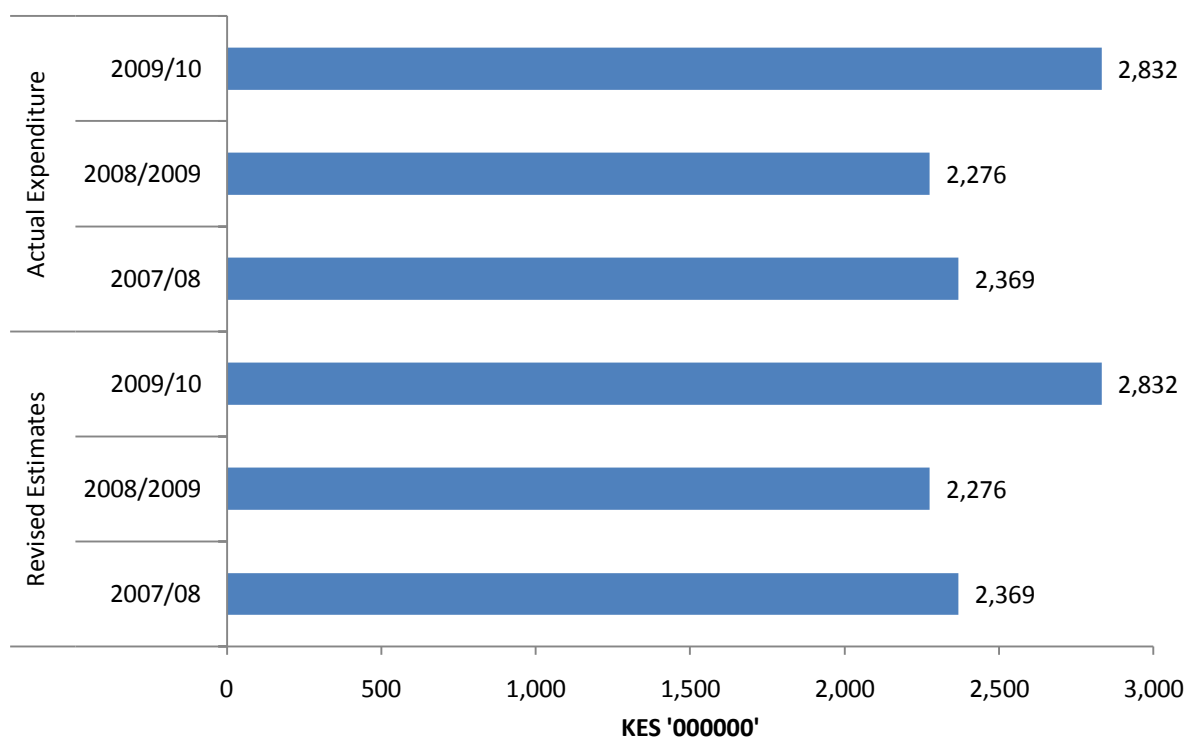


Figure 2-1: Sector externally funded recurrent programme

Table 2.1.4-1 Analysis of Development externally funded programmes

Sub-Sectors	Revised Estimates			Actual Expenditure		
	2007/08	2008/2009	2009/10	2007/08	2008/2009	2009/10
MoHEST	0.0	0.0	400	0.0	0.0	400
MOIC	947.9	1,947.9	3,246	350.0	0.0	3,246
DRSRS	0.0	0.0	11.8	0.0	0.0	11.8
E-GOVERNMENT	0.0	0.0	1,296	0.0	0.0	1,070.3
GITS	0.0	0.0	0.0	0.0	0.0	0.0
IPRS	0.0	0.0	0.0	0.0	0.0	0.0
KNBS	52.3	82.3	0.0	195.61	94.85	0.0
CRF	0.0	0.0	212.0	0.0	0.0	168.0
KARI	1,359.20	467.20	565.4	1,297.7	429.94	422.8
KEFRI	0.0	0.0	0.0	0.0	0.0	0.0
KMFRI	86.5	86.5	0.0	24.6	50.2	0.0

KEMRI	0.0	0.0	3,322.3	443.0	1,176.5	3,322.3
KIPPRA	0.0	0.0	0.0	0.0	0.0	0.0
KIRDI	0.0	0.0	0.0	0.0	0.0	0.0
KESREF	0.0	0.0	0.0	0.0	0.0	0.0
NCRC	0.0	0.0	0.6	0.0	0.0	0.6
TRFK	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total Development</b>	<b>2,445.9</b>	<b>2,583.9</b>	<b>5,394.7</b>	<b>2,310.91</b>	<b>1,751.49</b>	<b>4,983.4</b>
<b>Total Recurrent</b>	<b>2,369.0</b>	<b>2,275.9</b>	<b>2,831.7</b>	<b>2,369.0</b>	<b>2,275.9</b>	<b>2,815.1</b>
<b>Total Expenditure</b>	<b>4,762.60</b>	<b>4,777.50</b>	<b>8,226.4</b>	<b>4,484.30</b>	<b>3,932.54</b>	<b>7,815.1</b>
<b>Dev as % of Total</b>	50.3	52.4	65.6	47.2	42.1	64.0
<b>Rec. as % of Total</b>	49.7	47.6	34.4	52.8	57.9	36.0

## 2.2 REVIEW OF PENDING BILLS

The Sector has accumulated recurrent pending bills amounting to **KSHS 2.72 Billion** due to lack of liquidity in the FY 2010/11.. These pending bills include non remittance to pension schemes, personal claims, statutory deductions, unpaid tax, utilities and creditors. The sector has been working on clearing up its pending bills as evident in the FY 2008/09 bills of **KSHS 3.1 Billion**. The Sector has no development pending bills.

### 2.2.1 Recurrent Pending Bills

**Error! Reference source not found.**below shows the summary of the Sector recurrent pending bills by sub-sectors.

**Table 2.2.1-1: Summary of Sector pending bills**

Sub-Sectors	Due to lack of Liquidity		
	2007/08	2008/09	2009/10
MoHEST		570.0	492.6
MOIC		798.6	653.1
DRSRS		16.1	11.7
E-Govt		0	0
GITS		0	0
IPRS		0	0
KNBS		0	0
CRF		78.8	55
KARI	670	749.7	623.6
KEFRI		0	0
KMFRI		59.2	57
KEMRI		797.8	797.8
KIPPRA		0	0
KIRDI		0	0
KESREF		0	0
NCRC		0	0
TRF		25.4	24.7
<b>TOTAL</b>		<b>3,095.6</b>	<b>2,715.0</b>

#### 2.2.1.1 MoHEST

The Ministry's total pending bills as at 30<sup>th</sup> June 2010 amounted to KShs 492.6 million from the universities. This is 31% decline from the previous amount of KShs 713 million in the FY 2009/10.



### 2.2.1.2 MOIC

The Ministry SAGAs have pending Bills totaling to KShs. 653.1million. Kenya Broadcasting Corporation with is the major debtor with pending bill totaling to KShs. 453.1million. The treasury is negotiating with the KBC on ways of paying these pending bills.

**Table 2.2.1-1: Summary of MOIC pending bills for 2009/2010**

	<b>DI&amp;PC</b>	<b>KIMC</b>	<b>KYEB</b>	<b>KICT</b>	<b>KBC</b>
Tax	0	0	0	0	315.9
Foreign Programmes					137.2
Electricity	0	5.32	0	0	0
Water	0	0.24	0	0	0
Personal Claims	2.2	29.4	24.5	39.0	0
<b>TOTAL</b>	<b>2.2</b>	<b>35.0</b>	<b>24.5</b>	<b>39</b>	<b>453.1</b>

### 2.2.1.3 KEMRI

The institute has accumulated a pending bill of KShs 797,723,422. An actuarial valuation of staff pension scheme showed an underpayment of KShs 30,723,422 in the financial year 2007/2008. The institute further owes the pension scheme a total of KShs 767 million. The institute is requesting the government to bail it out by injecting a total of KShs 797,723,422 to save the staff pension scheme from collapse.

### 2.2.1.4 KARI

The Institute has a pending bill totaling to KShs 623.6M for the FY 2009/10 relating to pension and NSSF contributions which has reduced from FY 2008/10. KShs 749.7M. This bill accumulated between the period 1994 – 2000 when the flow of funds both from Donors and Government was irregular and intermittent. The Institute has been making efforts to have the bills paid through seeking funds from the Government, Internal savings and from Internal Revenues. It is expected that by the end of 2010/2011 FY the Pension outstanding bills will have been cleared

The Institute embarked on saving strategy to offset its pending bill, this has led to 17% reduction of its pending bill from KShs 749.6 Million to KShs 623.6 Million.

### 2.2.1.5 CRF

The coffee Research Foundation has pending bills amounting to KShs 55.0 M as follows;

- (a) Statutory dues (Tax on staff emoluments, penalties, Pension contributions) as a result of the levy payable to CRF not paid by Kenya Planters Cooperative Union as a marketing agent from 2004
- (b) Outstanding dues to staff (current and retrenched) after retrenchment in 2002 due to non -payment of coffee proceeds by Coffee Board of Kenya in 2002 when it was the sole marketing agent

### 2.2.1.6 TRF

The Tea Research Foundation currently has pending bills totaling to KShs 24.7 M The pending bills have accrued because of nonpayment to the suppliers, electricity, telephone and personal claims. The bills have accumulated due to insufficient funding of research activities.

### 2.2.1.7 KMFRI

The pending bills of the institute emanated from unpaid salary increment to staff, outstanding land rates and creditors as follows;

- Unpaid salary increments for staff in Job Group “A” to “N” amounting to KShs.57, 000,000 in 2007/08 and 2008/09 FYs. The Civil Service was awarded a salary increase of 16% two years ago but the Institute was not allocated funds to implement the award.

- Outstanding payment to suppliers of goods and services e.g. KShs.2.2 million is required to pay a consultant who conducted surveys on customer satisfaction, employ satisfaction, work environment and drug and substance abuse as required by Performance Contracting.

#### **2.2.1.8 DRSRS**

The total recurrent pending bills of KShs 11.7M accrued from unpaid bills for water, telephone and creditors.

#### **2.2.2 Development Pending Bills**

The Sector has no development pending bills for the period under review.

## CHAPTER THREE

### 3 MEDIUM TERM PRIORITIES AND FINANCIAL PLAN

The RIT medium term priorities of harnessing best human resources, reduction of communication costs, increase internet accessibility and affordability, and improving productivity through research will be achieved through implementation of 6 programmes.

#### 3.1 PRIORITIZATION OF PROGRAMMES AND SUB-PROGRAMMES

During the 2011/12 - 2013/14 MTEF period, the Sector will implement the following programmes.

- 1 Development of policy, legal and institutional framework
- 2 Information and Communication services
- 3 Research and Innovations
- 4 ICT infrastructure development
- 5 Human resource development
- 6 Data Management

These programmes will be supported by forty four Sub Programmes as indicated in section 3.1.4 below. The Programmes and Sub Programmes have been prioritized using the following criteria

- 1 **Linkage of the programme/sub programme with Vision 2030 Objectives;** the programme is consistent with the strategic objectives for achieving the Vision 2030 and is directly linked to one or more of the Vision 2030 objectives or flagship project.
- 2 **Degree of addressing Core Poverty; programme/sub programme** is a direct intervention to core poverty reduction as outlined in the criteria for selection of core poverty interventions.
- 3 **Degree to which the programme/sub programme is addressing the objectives of the Sector/ Core mandate of the Ministry/department;** programme is consistent with the strategic objectives of the Sector or Core mandate of the Ministry/department.
- 4 **Expected output or results from a programme/sub programme;** the programme demonstrates its ability to achieve the Vision 2030 strategic objectives through the expected output.
- 5 **Linkage with other Programmes; programme/sub programme** has direct linkages (forward and backward) with other programmes
- 6 **Sustainability of the programme; programme/sub programme** demonstrates high level of sustainability. Among the factors considered include, human capacity, future costs of implementation and source of funding.
- 7 **Cost Effectiveness;** The **programme/sub programme** is the most cost effective in comparison with the other competing programmes i.e. the programme is able to achieve *the intended objectives at minimum cost possible.*

#### Scoring Method

- All the above 7 criteria carry an equal score of 1 mark.
- A programme that meets the above 7 criteria scores 7 marks
- Degree to which the programme meets criteria is awarded 0.25, 0.5, 0.75 or 1marks

**Table 3.1-1: Prioritization of programmes and sub-programmes**

	Programme	Criteria/Score							Score	Rank
		1	2	3	4	5	6	7		
1	Development of policy, legal and institutional framework	1.00	0.50	1.00	1.00	1.00	1.00	1.00	6.50	1
2	Information and Communication services	1.00	0.75	1.00	1.00	1.00	0.75	0.75	6.25	2
3	Research and Innovations	1.00	1.00	1.00	1.00	1.00	0.50	0.5	6.00	3
4	ICT infrastructure development	1.00	1.00	1.00	1.00	1.00	0.5	0.25	5.75	4
5	Human resource development	1.00	1.00	1.00	1.00	1.00	0.25	0.25	5.50	5
6	Data Management	1.00	0.75	1.00	1.00	1.00	0.50	0.25	5.50	5

### 3.1.1 Programmes and Their Objectives

The sector formulated necessary and sufficient objectives to meet its mandate. The objectives are listed in

**Table 3.1.1-1: Programmes and their Objectives**

	Programme Name	Objective
1	Development of policy, legal and institutional framework	To formulate, review and implement appropriate policies, legal and institutional frameworks
2	Information and Communication services	To collect ,collate and disseminate credible information to promote knowledge based society
3	Research and Innovations	To develop and promote research, innovation and technology development for high value products and services
4	ICT infrastructure development	To ensure the availability of accessible, efficient, reliable and affordable ICTT services in Kenya
5	Human resource development	To build and strengthen human capacity
6	Data Management	To strengthen systems for the creation, translation of data, knowledge and dissemination of information.

### 3.1.2 Programmes, Sub-Programmes, Expected Outcomes, Outputs and Key Performance Indicators for the Sector

In this section, the report highlights key outputs and performance indicators for the Sector and subprograms report.

**Table 3.1.2-1: Programmes Outputs and Key Performance Indicators**

<b>Program: Development of Policy, Legal and Institutional Framework</b>				
<b>Outcome: Well regulated, harmonized and efficient RIT Sector</b>				
	Sub-Programmes	Delivery Unit	Key Performance Indicator (KPI)	Key Output (KO)
1	MoHEST STI coordination	MoHEST	No. of bills drafted	1
2	ICT & Media Policy	MoIC	No. of bills drafted	5
3	Sector Monitoring & Evaluation Framework	KEMRI	No. M&E Sector Reports	3

<b>Program: Information and Communication Services</b>				
<b>Outcome: Increased universal access to quality information and communication Services</b>				
	<b>Sub-Programmes</b>	<b>Delivery Unit</b>	<b>Key Performance Indicator (KPI)</b>	<b>Key Output (KO)</b>
1	E-government services	E-GOVT	Number of e-Government applications adopted	10
2	News & Information Services	MoIC	Number of copies of Inside Kenya Today published	1.56million
3	Film Services	MoIC	Number of documentaries and films shot in Kenya	1104
4	BPO and ICT Services	MoIC	Number of Jobs generated	16,000
5	Brand Kenya Initiative	MoIC	Number of products branded	10
6	Kenya Year Book Initiative	MoIC	Number of year book produced	3
7	Media Initiatives	MoIC	Percentage media dispute resolved	95%

<b>Program: Research and Innovations</b>				
<b>Outcome: Increased productivity and environmental sustainability</b>				
	<b>Sub-Programmes</b>	<b>Delivery Unit</b>	<b>Key Performance Indicator (KPI)</b>	<b>Key Output (KO)</b>
1	Medical Research	KEMRI	Number of technologies and innovations developed	5
2	Industrial Research	KIRDI		7
3	Agricultural Research	KARI		115
4	Forestry Research	KEFRI		15
5	Sugar Research	KESREF		10
6	Crime Research	NCRC		1
7	Tea Research	TRF		4
8	Coffee Research	CRF		6
9	Marine & Fisheries Research	KMFRI		4
10	Public Policy Research	KIPPRA		2
11	Media Research (MOIC)	MoIC		3
12	STI Research (MoHEST)	MoHEST		20

<b>Program: ICT Infrastructure Development</b>				
<b>Outcome: Reduced digital divide</b>				
	<b>Sub-Programmes</b>	<b>Delivery Unit</b>	<b>Key Performance Indicator (KPI)</b>	<b>Key Output (KO)</b>
1	BPO/ICT Park	MoIC	ICT park established	1
2	Analogue-Digital Migration	MoIC	Percentage migration	100
3	NOFBI (Phase II)	MoIC	Number of kilometers of fibre optic cable laid	2000
4	KTCIP	MoIC	Number digital villages created	110
5	Rural Resource Centre	MoIC	Number of Rural Information Resource Centre	23

6	Public Mass Media Establishments' Facilities and Equipment	MoIC/ KEMRI	Number of buildings constructed	5
			Number of electronic systems upgraded	233
7	LANs & WANs (MOIC)	MoIC	Percentage connectivity of MOIC field stations	100
8	LANs & WANs (E-Government)	E-GOVT	Percentage connectivity of district headquarters	100
9	Government Tele-Presence	MoIC		
10	PSTN_IP Switch Over	MoIC	Percentage of PSTN lines converted to IP platform	30

**Program: Human Resource Development**  
**Outcome: Increased skilled manpower**

	Sub-Programmes	Delivery Unit	Key Performance Indicator (KPI)	Key Output (KO)
1	University Education	MoHEST	Number of Students absorb by public universities	59,000
2	Human Resource Skills development and quality Assurance	MoHEST	Percentage of learning institutions accredited	100
3	TIVET	MoHEST	Number of students absorb by tertiary institutions	130,000
4	ITROMID	KEMRI	Number of students absorb by ITROMID	300
5	ESACIPAC	KEMRI	Number of students trained by ESACIPAC	150
6	ICT & Mass Media Skills(EGOV)	E-GOVT	Percentage of ICT officers trained	50
7	ICT & Mass Media Skills(MOIC)	MoIC	Number of students absorbed by KIMC	1500

**Program: Data Management**  
**Outcome: Secure and reliable statistical data**

	Sub-Programmes	Delivery Unit	Key Performance Indicator (KPI)	Key Output (KO)
1	IPRS	IPRS	Percentage completion IPRS project	98
2	National Data Centre & Disaster Recovery Centre	MOIC	Percentage of completion of National Data Centre & Disaster Recovery	70
3	Statistical data management	KNBS	Number of statistical reports generated	110

### 3.1.3 Programmes by Order of Ranking

- 3.1.1.1 Development of policy, legal and institutional framework
- 3.1.1.2 Information and Communication Services
- 3.1.1.3 Research and Innovations
- 3.1.1.4 ICT infrastructure development
- 3.1.1.5 Human resource development
- 3.1.1.6 Data Management

## 3.2 ANALYSIS OF RESOURCE REQUIREMENTS

### 3.2.1 Analysis of Resource Requirements By Sector

The RIT Sector requires **KShs. 104,208 Million** for the 2011/12, **KShs. 109,168 Million** for 2012/13 and **KSHS. 118,534 Million** for 2013/14 financial year. These resources will enable the Sector realize its targets as envisaged in the Kenya Vision 2030.

**Table 3.2.1-1: Sector Requirements (KShs. Millions)**

RIT SECTOR	Gross Estimates		Projected Estimates	
	2010/11	2011/12	2012/13	2013/14
<b>TOTAL</b>	<b>67,178</b>	<b>104,208</b>	<b>109,168</b>	<b>118,534</b>

### 3.2.2 Analysis of Resource Requirements By Sub-Sectors

**Table 0 Gross Resource Requirements by Sub-Sectors (KShs. Millions)**

**Table 3.2.2-1: Gross resource requirements for the Sector and Sub-sector for 2010/11 to 2013/14**

Sub-Sectors	Gross Estimates		Projected Estimates	
	2010/11	2011/12	2012/13	2013/14
Ministry of Higher Education Science and Technology	49,233	58,360	59,841	61,199
Ministry of Information and Communications	7,020	24,685	28,230	35,749
Department of Resource Survey and Remote Sensing	351	404	411	456
Directorate of E – Government	148	338	322	262
Government Information Technology Services	699	1,116	1,107	997
Integrated Population Registration System	252	459	389	353
Kenya National Bureau of Statistics	1,700	2,690	2,401	2,646
Coffee Research Foundation	359	453	471	593
Kenya Agricultural Research Institute	2,820	4,550	4,344	4,181
Kenya Forestry Research Institute	849	1,427	1,763	2,100
Kenya Marine and Fisheries Research Institute	551	2,190	1,745	1,807
Kenya Medical Research Institute	1,349	4,776	5,198	5,379
Kenya Institute of Public Policy Research and Analysis	254	484	508	369
Kenya Industrial Research and Development Institute	773	988	1,057	1,117
Kenya Sugar Research Foundation	545	576	615	614
National Crime Research Centre	46	176	199	253
Tea Research Foundation	230	536	567	460
<b>TOTAL</b>	<b>67,178</b>	<b>104,208</b>	<b>109,168</b>	<b>118,534</b>

### 3.2.3 Analysis of Resource Requirements by Programmes and Sub Programmes

Table 3.2.3-1 outline resource requirement by programmes and sub-programmes in the Sector

**Table 3.2.3-1: Resource Requirement by Programmes**

	Programme Name	Resource Requirement (KShs. Millions)			
		2010/11	2011/12	2012/13	2013/14
1	Human Resource development	48,710	57,333	58,909	60,868
2	ICT infrastructure development	4,944	14,257	15,568	17,881
3	Information & Communication Services	900	6,859	8,759	12,583
4	Data Management	3,102	6,568	5,964	6,015
5	Development of Policy, legal & Institutional framework	983	1,980	2,189	3,010
6	Research & Innovations	8,539	17,211	17,778	18,177
	<b>Total</b>	<b>67,178</b>	<b>104,208</b>	<b>109,168</b>	<b>118,534</b>

**Table 3.2.3-2: Development and Implementation of Policy, Legal and Institutional Frame-work**

	Sub Programme Name	KShs. Millions			
		Printed Estimates 2010/11	Estimates 2011/12	Projected Estimates	
				2012/13	2013/14
1	MoHEST STI coordination	476	485	494	503
2	ICT & Media Policy (MOIC)	507	1,495	1,695	2,507
3	Sector Monitoring & Evaluation Framework (KEMRI)	-	-	-	-
	<b>TOTAL</b>	<b>983</b>	<b>1,980</b>	<b>2,189</b>	<b>3,010</b>

**Table 3.2.3-3: Information and Communication Services**

	Sub Programme Name	(KSHS.. Millions)			
		Printed Estimates 2010/11	Estimates 2011/12	Projected Estimates	
				2012/13	2013/14
1	E-government services	70	154	173	187
2	News & Information Services	382	3,367	4,678	6,984
3	Film Services	80	958	1,198	1,584
4	BPO and ICT Services	111	565	765	1,506
5	Brand Kenya Initiative	147	1,358	1,428	1,567
6	Kenya Year Book Initiative	60	234	247	509
7	Media Initiatives	50	223	270	246
	<b>TOTAL</b>	<b>900</b>	<b>6,859</b>	<b>8,759</b>	<b>12,583</b>

**Table 3.2.3-4: Research and innovations**

	Sub Programme Name	(KSHS.. Millions)			
		Printed Estimates 2010/11	Estimates 2011/12	Projected Estimates	
				2012/13	2013/14
1	Medical Research	1,281	4,469	4,834	4,971
2	Industrial Research	773	988	1,057	1,117
3	Agricultural Research	2,820	4,550	4,344	4,181
4	Forestry Research	849	1,427	1,763	2,100
5	Sugar Research	545	576	615	614
6	Crime Research	46	176	199	253
7	Tea Research	230	536	567	460



8	Coffee Research	359	453	471	593
9	Marine & Fisheries Research	551	2,190	1,745	1,807
10	Public Policy Research	254	484	508	369
11	Media Research (MOIC)	17	31	34	46
12	STI Research (MoHEST)	815	1,331	1,641	1,666
	<b>TOTAL</b>	<b>8,539</b>	<b>17,211</b>	<b>17,778</b>	<b>18,177</b>

**Table 3.2.3-5: ICT Infrastructure**

	Sub Programme Name	(KSHS.. Millions)			
		Printed Estimates 2010/11	Estimates 2011/12	Projected Estimates	
				2012/13	2013/14
1	BPO/ICT Park	700	2,209	3,450	5,284
2	Analogue-Digital Migration	300	3,739	3,867	4,346
3	NOFBI (Phase II)	1,100	1,554	1,828	1,986
4	KTCIP	2,317	2,094	1,684	1,432
5	Rural Resource Centre	100	123	267	309
6	Public Mass Media Establishments' Facilities and Equipment (MOIC)	138	3,937	3,839	3,966
7	Public Mass Media Establishments' Facilities and Equipment (KEMRI)		168	233	261
	LANs & WANs (MOIC)	63	62	79	47
8	LANs & WANs (E-Government)	77	179	143	70
9	Government Tele-Presence	38	69	60	56
10	PSTN_IP Switch Over	111	123	118	124
	<b>TOTAL</b>	<b>4,944</b>	<b>14,257</b>	<b>15,568</b>	<b>17,881</b>

**Table 3.2.3-6: Human Resource Development**

	Sub Programme Name	(KSHS.. Millions)			
		Printed Estimates 2010/11	Estimates 2011/12	Projected Estimates	
				2012/13	2013/14
1	University Education	37,154	44,189	44,872	45,730
2	Human Resource Skills development and quality Assurance	5,737	6,715	6,841	6,971
3	TIVET	5,051	5,639	5,993	6,329
4	ITROMID	29	113	126	141
5	ESACIPAC	39	26	5	6
6	ICT & Mass Media Skills(EGOV)	2	5	5	6
7	ICT & Mass Media Skills(MOIC)	699	646	1,067	1,686
	<b>TOTAL</b>	<b>48,710</b>	<b>57,333</b>	<b>58,909</b>	<b>60,868</b>

**Table 3.2.3-7: Data Management**

	Sub Programme Name	KSHS.. Millions			
		Printed Estimates 2010/11	Estimates 2011/12	Projected Estimates	
				2012/13	2013/14
1	IPRS	252	459	389	353
2	National Data Centre & Disaster Recovery Centre (MOIC)	100.7	1898	1656	1564
3	Data Centre & Disaster Recovery Site (GITS)	699	1,116	1,107	997
4	Statistical data management	2,051	3,095	2,812	3,101
	<b>TOTAL</b>	<b>3,102</b>	<b>6,568</b>	<b>5,964</b>	<b>6,015</b>

### 3.2.4 Analysis of Resource Requirement by Devolved Levels – Counties/Districts

In the sector only one sub-sector disburses AIE's to districts treasuries as shown in the table below.

Sub-Sector	2010/11 Printed Estimates	2011/2012 Sector Requirement
Ministry Of Information And Communications	250.4	1,237

### 3.2.5 Analysis of Resource Requirement by Economic Classification

**Table 3.2.5-1: Sector Resource Requirements by: (Economic Classification: KShs. Millions)**

Economic classification		Estimates		Projections	
		2010/11	2011/12	2012/13	2013/14
<b>1</b>	<b>Current Expenditure</b>	<b>50,439</b>	<b>68,715</b>	<b>70,323</b>	<b>74,163</b>
	Compensation to Employees	32,753	36,375	37,528	38,760
	Use of goods and services	2,472	8,219	9,869	10,594
	Subsidies, Grants and Other Transfers				
	Current Transfers Govt. Agencies	11,952	19,996	18,684	20,444
	Other Recurrent	3,261	4,124	4,241	4,364
<b>2</b>	<b>Capital Expenditure</b>	<b>16,739</b>	<b>35,493</b>	<b>38,846</b>	<b>44,372</b>
	Compensation of Employees	5,233	6,499	7,596	9,813
	Use of Goods and Services	857	6,513	6,610	7,783
	Acquisition of Non-Financial Assets	8,702	19,635	21,912	24,401
	Capital Transfers to Govt. Agencies	642	681	681	694
	<b>Net Total expenditure by Sector</b>	<b>67,178</b>	<b>104,208</b>	<b>109,168</b>	<b>118,534</b>

### 3.3 ANALYSIS OF RESOURCE REQUIREMENTS VERSUS ALLOCATION

#### 3.3.1 Analysis of Recurrent Resource Allocation versus Requirement for the Sub-Sectors for Fy2011/12

**Table 3.3.1: Recurrent resource allocation versus Requirement for the sub-sectors for FY2011/12**

	<b>2010/11 Printed Estimates</b>	<b>2011/2012 Sector Requirement</b>	<b>2011/12 Sector Allocation</b>
Ministry Of Higher Education Science And Technology	26,037	47,634	26,207.4
Ministry Of Information And Communications	1,482	8,157	1,296.1
Department Of Resource Survey And Remote Sensing	155	193	162.2
Directorate of E – Government	72	159	78.7
Government Information Technology Services	301	426	309.0
Integrated Population Registration System	75	106	81.7
Kenya National Bureau Of Statistics	641	962	651.1
Coffee Research Foundation	30	385	36.4
Kenya Agricultural Research Institute	1,984	2,500	2,002.0
Kenya Forestry Research Institute	804	1,210	815.0
Kenya Marine And Fisheries Research Institute	468	977	477.0
Kenya Medical Research Institute	1,200	4,394	1,213.4
Kenya Institute Of Public Policy Research And Analysis	105	270	111.9
Kenya Industrial Research And Development Institute	463	522	472.0
Kenya Sugar Research Foundation	100	436	106.8
National Crime Research Centre	26	126	39.9
Tea Research Foundation	30	260	36.4
<b>TOTAL</b>	<b>33,973</b>	<b>68,715</b>	<b>34,097</b>

### 3.3.2 Analysis of Development Resource Allocation versus Requirement for the Sub-Sectors for Financial 2011/12

**Table 3.3.2: Development resource allocation versus requirement for the sub-sectors for FY 2011/12**

	<b>2010/11 Printed Estimates</b>	<b>2011/12 Sector Requirement</b>	<b>2011/12 Sector Allocation</b>
Ministry Of Higher Education Science And Technology	7602.0	10,726	6155
Ministry Of Information And Communications	2131.0	16,528	2049
Department Of Resource Survey And Remote Sensing	195.0	211	71
Directorate of E – Government	60.0	179	58
Government Information Technology Services	312.0	690	300
Integrated Population Registration System	176.0	353	169
Kenya National Bureau Of Statistics	200.0	1,728	192
Coffee Research Foundation	0.0	68	10
Kenya Agricultural Research Institute	276.5	2,050	266
Kenya Forestry Research Institute	44.0	217	42
Kenya Marine And Fisheries Research Institute	40.0	1,212	145
Kenya Medical Research Institute	149.0	381	143
Kenya Institute Of Public Policy Research And Analysis	70.0	214	67
Kenya Industrial Research And Development Institute	310.0	467	298
Kenya Sugar Research Foundation	80.0	140	77
National Crime Research Centre	20.0	51	19
Tea Research Foundation	30.0	277	29
<b>TOTAL</b>	<b>11,695.5</b>	<b>35,493</b>	<b>10,090</b>

### 3.3.3 Analysis of Resource Requirement by Devolved Levels – Counties/Districts

	<b>2010/11 Printed Estimates</b>	<b>2011/12 Sector Requirement</b>	<b>2011/12 Sector Allocation</b>
Ministry Of Information And Communications	250.4	1,237	250.4

### 3.3.4 Resource Requirement and Allocations by Semi Autonomous Government Agencies

Resource requirement by Semi Autonomous Government Agencies for the MTEF period are as indicated on the tables.

#### MOIC SAGAs Recurrent and Development

	2010/11 Printed Estimates	2011/12 Sector Requirement	2011/12 Sector Allocation
Kenya Broadcasting Corporation	200	952	0
Kenya Film Commission	97	135	107
Brand Kenya Board	147	1,358	167
Kenya Year Book Editorial Board	60	234	70
Media Council of Kenya	50	223	60
Kenya ICT Board	70	370	150
Kenya Film Classification Board	124	150.6	134
<b>Total</b>	<b>748</b>	<b>3,422.6</b>	<b>488</b>

### 3.3.5 Analysis of Resource Requirements versus Allocation by Programmes and Sub Programmes

**Table 3.3.5 Resource allocation by Programmes and Sub Programmes**

	Programme Name	Resource Allocation (KShs. Millions)			
		2010/11	2011/12	2012/13	2013/14
1	Human Resource development	1304	1119.6	1172.5	1233
2	ICT infrastructure development	3781	4722.8	8144.3	9008.8
3	Information & Communication Services	1137.3	944.0	981.7	1,089.7
4	Data Management	5280.2	4462.5	5866.2	5573.0
5	Development of Policy, legal & Institutional framework	32,311	31036.1	32583.2	33585.7
6	Research & Innovations	1,855.00	1,902.7	1,986.2	2,142.1
	<b>Total</b>	<b>45,668.5</b>	<b>44,187.7</b>	<b>50,734.01</b>	<b>52,632.24</b>

**Tables 3.3.5** below outline resource requirement by programmes and sub-programmes in order of priority.

**Table 0-1: Development and Implementation of Policy, Legal and Institutional Frame-work**

	Sub Programme Name	KShs. Millions			
		Printed Estimates 2010/11	Estimates 2011/12	Projected Estimates	
				2012/13	2013/14
1	MoHEST STI coordination	815	816	856.8	882.5
2	ICT & Media Policy (MOIC)	489	303.6	315.7	350.5

	<b>TOTAL</b>	<b>1304</b>	<b>1119.6</b>	<b>1172.5</b>	<b>1233</b>
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**Table 3.3.5-1 Information and Communication Services**

	Sub Programme Name	(KShs. Millions)			
		Printed Estimates 2010/11	Estimates 2011/12	Projected Estimates	
				2012/13	2013/14
1	E-government services (EGOV)	72	78.68	81.8	90.8
2	News & Information Services	317.9	317.9	330.6	367
3	ICT/BPO Services	70	70	72.8	80.8
4	Film Services	220.4	220.4	229.2	254.4
5	Brand Kenya Initiative	147	147	152.9	169.7
6	Kenya Year Book Initiative	60	60	62.4	69.3
7	Media Council	50	50	52	57.7
	<b>TOTAL</b>	<b>937.30</b>	<b>943.98</b>	<b>981.70</b>	<b>1,089.70</b>

**Table 3.3.5-2 Research and innovations**

	Sub Programme Name	(KSHS.. Millions)			
		Printed Estimates 2010/11	Estimates 2011/12	Projected Estimates	
				2012/13	2013/14
1	Medical Research	1,349	1,356.36	1,410.61	1,565.78
2	Industrial Research	773	769.99	800.79	888.88
3	Agricultural Research	2,261	2,268.00	2,358.72	2,618.18
4	Forestry Research	848	857.01	891.29	989.33
5	Sugar Research	180	183.84	191.19	212.22
6	Crime Research	46	58.9	61.26	67.99
7	Tea Research	60	65.43	68.05	75.53
8	Coffee Research	30	46.43	48.29	53.60
9	Marine & Fisheries Research	508	622.02	646.90	718.06
10	Public Policy Research	175	178.87	186.02	206.49
12	STI Research (MoHEST)	815	816	856.8	882.5
	<b>TOTAL</b>	<b>7,045</b>	<b>7222.9</b>	<b>8144.3</b>	<b>9008.8</b>

**Table 3.3.5-3 ICT Infrastructure**

Sub Programme Name	(KES. Millions)			
	Printed Estimates	Estimates	Projected Estimates	
	2010/11	2011/12	2012/13	2013/14
BPO/ICT Park	440.0	900.0	954.0	906.3
Analogue-Digital Migration	-	-	-	-
TEAMS	100.0	-	-	-
NOFBI	1,000.0	768.0	814.1	773.4
KTCIP	3,370.0	2,580.7	2,735.5	2,598.8
Public Mass Media Establishments' Facilities and Equipment(MOIC)	269.0	269.0	285.1	270.9
LANs & WANs (MOIC)	5.0	10.0	10.6	10.1
LANs & WANs (E-Government)	60.0	58.0	61.8	58.9
Government Tele-Presence	1.0	12.0	12.7	12.1
PSTN_IP Switch Over	2.0	10.0	10.6	10.1
ICT Infrastructure Development (KEMRI)	55.6	47.8	51.0	48.4
<b>TOTAL</b>	<b>5302.6</b>	<b>4,655.5</b>	<b>5866.2</b>	<b>5573.0</b>

**Table 3.3.5-4 Human Resource Development**

	Sub Programme Name	(KSHS.. Millions)			
		Printed Estimates	Estimates	Projected Estimates	
		2010/11	2011/12	2012/13	2013/14
1	University Education(MoHEST)	26,799	25,517	26793.3	27597.1
2	Human Resource Skills development and quality Assurance (MoHEST)	159	160	168.0	173.0
3	TIVET(MoHEST)	5,051	5,053	5305.7	5464.8
4	ITROMID(KEMRI)	30.1	32.0	33.3	36.9
5	ESACIPAC(KEMRI)	6.9	7.3	7.6	8.4
6	ICT & Mass Media Skills(EGOV)	138.2	139.2	143.7	159.5
7	ICT & Mass Media Skills(MOIC)	127.2	127.2	132.3	146.8
	<b>TOTAL</b>	<b>32,311</b>	<b>31036.1</b>	<b>32583.2</b>	<b>33585.7</b>

**Table 3.3.5-5 Data Management**

	Sub Programme Name	KSHS.. Millions			
		Printed Estimates	Estimates	Projected Estimates	
		2010/11	2011/12	2012/13	2013/14
1	IPRS	251	250.6	264.0	264.4
2	National Data Centre & Disaster Recovery Centre (MOIC)	150.00	200.00	212.00	201.40
3	Data Centre & Disaster Recovery Site (GITS)	613.00	609.00	633.36	703.03
4	Statistical data management	841.00	843.07	876.79	973.23
	<b>TOTAL</b>	<b>1,855.00</b>	<b>1,902.67</b>	<b>1,986.15</b>	<b>2,142.05</b>

### 3.3.6 Analysis of Resource Requirement versus Allocation by Economic Classification

Table 3.3.6-1: Sector Resource Requirements by: (Economic Classification: KSHS. Millions)

Item	Estimates		Projections	
	2010/11	2011/12	2012/13	2013/14
<b>1 Current Expenditure</b>	<b>50,439</b>	<b>68,715</b>	<b>70,323</b>	<b>74,163</b>
Compensation to Employees	32,753	36,375	37,528	38,760
Use of goods and services	2,472	8,219	9,869	10,594
Subsidies, Grants and Other Transfers				
Current Transfers Govt. Agencies	11,952	19,996	18,684	20,444
Other Recurrent	3,261	4,124	4,241	4,364
<b>2 Capital Expenditure</b>	<b>16,739</b>	<b>35,493</b>	<b>38,846</b>	<b>44,372</b>
Compensation of Employees	5,233	6,499	7,596	9,813
Use of Goods and Services	857	6,513	6,610	7,783
Acquisition of Non-Financial Assets	8,702	19,635	21,912	24,401
Capital Transfers to Govt. Agencies	642	681	681	694
<b>Total expenditure by Sector</b>	<b>67,178</b>	<b>104,208</b>	<b>109,168</b>	<b>118,534</b>

#### 3.3.6-1 Sector Resource Allocations by (Economic Classification: KSHS. Millions)

Item	Estimates		Projections	
	2010/11	2011/12	2012/13	2013/14
<b>1 Current Expenditure</b>				
Compensation to Employees	7,712.20	7,963.60	<b>8,306.70</b>	<b>9,229.25</b>
Use of goods and services	2,076.40	2,144.90	<b>2,237.31</b>	<b>2,485.79</b>
Acquisition of Non-Financial Assets	3,612.20	3,616.30	<b>3,772.10</b>	<b>4,191.03</b>
Current Transfers Govt. Agencies	20,572.20	20,372.20	<b>21,249.89</b>	<b>23,609.93</b>
<b>Net Current Expenditure</b>	<b>33,973.00</b>	<b>34,097.00</b>	<b>35,566.00</b>	<b>39,516.00</b>
<b>A-in -A</b>	<b>15,586.00</b>	<b>16,366.00</b>	<b>17,184.00</b>	<b>18,043.00</b>
<b>Gross Current Expenditure</b>	<b>49,559.00</b>	<b>50,463.00</b>	<b>52,750.00</b>	<b>57,559.00</b>
<b>Total</b>	-	-	-	-
<b>2 Capital Expenditure</b>				
Compensation of Employees	-	-	-	-
Use of Goods and Services	786	830.4	<b>903.6</b>	<b>857.31</b>
Acquisition of Non-Financial Assets	3,235.00	3,084.00	<b>3356.0</b>	<b>3183.95</b>
Capital Transfers to Govt. Agencies	6,475.00	6,175.60	<b>6720.3</b>	<b>6375.74</b>
<b>Net Capital expenditure</b>	<b>10,496.00</b>	<b>10,090.00</b>	<b>10980.0</b>	<b>10,417.00</b>
<b>Loans</b>	5393	2246	2246	2165
<b>Grants</b>	1,493.00	1,166.00	1,166.00	1,124.00
<b>Gross Capital Expenditure</b>	<b>17,382.00</b>	<b>13,502.00</b>	<b>14,392.00</b>	<b>13,706.00</b>
<b>Gross Sector Expenditure</b>	<b>66,941.00</b>	<b>63,965.00</b>	<b>67,142.00</b>	<b>71,265.00</b>



## **CHAPTER FOUR**

### **4 CROSS - SECTOR LINKAGES**

#### **4.1 INTRODUCTION**

The RIT Sector has linkages with ten sectors these include the Agriculture and Rural Development sector; Tourism, Trade and Industry sector; Governance, Justice, Law and Order sector; Public Administration and International relations sector, National Security, Human Resource Development sector; Physical Infrastructure sector and Environment; Water and Irrigation sector; Special Programme sector and Macro working group.

RIT provides avenues where information, research findings and innovations are exchanged using appropriate technologies to foster national development. The RIT sector has a direct linkage to all other sectors and is therefore crucial for their operations. New technologies and innovations have led to increased production, cost reduction and improved efficiency in service delivery in all sectors of the economy.

#### **4.2 AGRICULTURE AND RURAL DEVELOPMENT SECTOR**

Rapid growth and high performance of the Ministries of Agriculture, Livestock Development and Fisheries heavily rely on Research and Development under taken by the Kenya Agricultural Research Institute, Kenya Marine and Fisheries Research Institute, Kenya Forestry Research Institute, Kenya Sugar Research Foundation, Kenya Industrial Research and Development Institute, Tea Research Foundation and Coffee Research Foundation which are key members of the RIT Sector. On the other hand, the Forestry and Wildlife sub-sectors of the Agriculture and Rural Development Sector heavily rely on and benefit from collaborations with the Department of Resource Survey and Remote Sensing. The ongoing international and national ICT connectivity will open up rural areas to the rest of the world. The planned establishment of digital villages will offer employment to the rural people as well as facilitate the rolling out of e-government services. The planned digitization of Lands registry will result in improved efficiency in the Ministry of Lands and Cooperative Development. The RIT sector will also rely on the Ministry of Lands as its key enabler for the development of Business Processes Out-sourcing.

#### **4.3 TRADE, TOURISM AND INDUSTRY SECTOR**

Innovations in the RIT Sector will boost the Kenyan industries by making available locally, most industrial spare parts and ICT parts /software at affordable prices. The development of ICT infrastructure will lead to reduced cost of doing business. The Kenya Communication Amendment Act 2009 is expected to spur the growth of e-commerce in the economy. By exploiting the liberalized airwaves and high- tech information systems, the Trade and Tourism sub-sectors can prosper through media marketing. Their collaboration with RIT in

the areas of film services, information and communication services will be beneficial to them therefore effectively marketing Kenya as a leading tourism and industrial destination.

The planned works of Brand Kenya and Kenya Year Book Boards are expected to change the country's image internationally hence further boost tourism and local investments. This will spur economic development through global partnership hence opening employment opportunities in the country.

The role of higher education and industrial research in trade and industry cannot be overemphasized. The Institutions of higher learning have been providing expected skills to all sectors and will continue linking skills development with actual requirements of the market. The Sector is pursuing the development of science and technology parks which are expected to spur the growth of trade and industry and the use of local materials.

#### **4.4 PHYSICAL INFRASTRUCTURE SECTOR**

The key processes in this sector for instance transport, roads, buildings and energy designs can greatly be enhanced by employing relevant ICT. The Physical Infrastructure Sector benefits from linkages with the RIT Sector by incorporating research findings and innovation on use of local materials. The e-weather forecasting using modern satellite technology by Kenya Meteorological Department (KMD) is now a possibility. A new e-transport network analysis by the Department of Resource Surveys and Remote Sensing (DRSRS) has enabled the provision of Sector services efficiently.

#### **4.5 ENVIRONMENT, WATER AND IRRIGATION SECTOR**

RIT provides information and technology that contribute to improvement of the environment. This will include provision of better technologies that can be adopted in environment management to mitigate effects of climatic change and other environmental concerns. After the enactment of land policy, the focus has shifted to drafting of the land use policy. Land utilization has a direct impact on the management of the environment. Hence, its formulation requires sectoral-wide stakeholder involvement that is in tandem with existing laws particularly land policy.

The DRSRS plays a role on formulation and review of geospatial data and information on infrastructure that infiltrates various institutions involved in different forms of land use and environmental interventions which include waste management, pollution control, water catchment degradation, soil erosion and forest degradation among others. Information on wildlife numbers, distribution and trends is used by various conservation agencies such as KWS, NGOs, research institutions, private organizations and individuals. Generation of this information using modern techniques of remote sensing has assisted resolution of conflicts in wildlife conservation sector and enhanced decision making at policy level.

Water security has been worsened by climate variability and lack of investment in water storage. During the year under review, a water storage strategic plan is now developed that

aims at implementing 25 large dams over the next ten (10) years most of which in ASAL areas. Furthermore measures are being put in place for rainfall harvesting as part of the plan. These efforts will increase per capita storage from 5m<sup>3</sup> to 80m<sup>3</sup> (16 times). This capacity will buffer the country from perennial water shortage and also act as an enabler in the realization of the objectives of Vision 2030 and in particular the economic and social pillars. For this reason, the agricultural sector is likely to continue performing averagely well as it is expected that more land is going to be put into use specifically through irrigation farming hence increasing output farming and spur economic growth.

#### **4.6 HUMAN RESOURCE DEVELOPMENT SECTOR**

A healthy human resource is key to all sectors. The RIT Sector provides research, innovation and technology information on health and human resource development. RIT provides human resource to serve in all sectors of the economy. To accomplish the economic goals anticipated in Vision 2030, the RIT sector through Medical Research and services will play a critical role in maintaining a healthy working population, which is necessary for the increased labor production that Kenya requires in order to match its global competitors. Research Institutes and Universities will link and integrate research, training and specialized services as well as providing skilled manpower to support National development Priorities as identified in the Vision 2030.

The activities of RIT Sector will contribute significantly to the scientific information necessary for policy formulation and enhance service delivery for Kenyans. Increased interactions and exchange of technical information with Ministry of Medical services; Ministry of Public Health and Sanitation; Ministry of Labor; Ministry of Higher education Science and Technology; Ministry of Agriculture, Ministry of Information, and Communication will contribute significantly to human development and overall improvement in the social, political and economic pillars of vision 2030.

#### **4.7 GOVERNANCE, JUSTICE, LAW AND ORDER SECTOR (GJLOS)**

The RIT sector plays key role towards efficiency in public service delivery. The GJLOS relies on the RIT sector for the implementation of government services and provision of security by providing the required population data and communication infrastructure. The implementation of the integrated population registration system which will house a national population register and the operationalization of the National Crime Research Centre will enable the GJLOS sector to safeguard the country from infiltration by criminals from outside the country. Further, the automation of the company registry, court registry, and integrated financial management Information System (IFMIS) will improve service delivery and improve government transactions.

The new constitution is likely to influence governance more so with regard to provision of information for all under the chapter on rights. Nevertheless RIT will greatly help in speedy hearing and determination of cases through the establishment of “court tele-presence”..

#### **4.8 PUBLIC ADMINISTRATION AND INTERNATIONAL RELATIONS SECTOR (PAIRS)**

The RIT Sector serves the public administration sector through the provision of national information, statistics and policy advice through Kenya National Bureau of Statistics (KNBS). The RIT sector is also the official government mouth piece where government development policies are communicated to the citizens through print and electronic media. The sector further provides both human resources and capacity building services for the sector. In return the RIT sector, like other sectors relies on the PAIRS for administration. Improved communication, harnessing of development information and prioritized national human resource capacity development efforts of the RIT Sector contribute to the general improvement of public administration in the country. RIT has improved flow of information both regionally and internationally especially through the ICT sector.

#### **4.9 SPECIAL PROGRAMMES SECTOR**

Accurate information on gender imbalance, vulnerable groups, youth talents and viable areas of investment for wealth creation will be critical for proper planning in the Special Programmes Sector. Video documentaries and news highlights on the areas of need will easily be availed by RIT. Data and historical information on whichever group will be readily availed through RIT Sector. The sector is also on the forefront to provide human capital and experts on disaster management. This has led to one public university-Masinde Muliro University which is offering a degree course on disaster management.

#### **4.10 NATIONAL SECURITY SECTOR**

The world has witnessed an upsurge in cyber crime and other technology related crime. The RIT sector is a key enabler to the maintenance of national security and hence it provides communication and other security equipment such as the CCTV cameras to the security sector for it to combat crime. The national preparedness to combat new and emerging crime will rely on the RIT Sector for prevention and vigilance through National Crime Research Centre that will research more on new emerging crimes that are being perpetrated by the elite-young and savvy in ICT knowledge

#### **4.11 MACRO WORKING GROUP**

The RIT Sector links with the Macro Working Group in all areas of Medium Term Expenditure Framework cycle. RIT Sector will also rely on the Macro Working Group for technical advice on prioritization of programmes and projects. On the other hand RIT shall be providing informative reviews of expenditure to inform the annual economic review publication as well as provide accurate indicative budgetary requirements to inform the Budget Outlook Paper (BOPA) ceilings. Moreover the RIT expects that the Macro Working Group shall take the reviews and suggestions provided by the sub-sectors.

On the other hand, monitoring and evaluation is now regarded as key to ensuring that the RIT sector delivers. RIT and the collaborating institutions/organizations shall therefore undertake

internal and external programme reviews over the period and the results of the reviews widely circulated to the relevant subsectors and key stakeholders. In order to institutionalize the monitoring and evaluation process, RIT shall develop and operationalize a suitable monitoring and evaluation system/mechanisms capable of tracking the implementation of projects and activities. The monitoring and evaluation system shall include the use of work plans, field visits, quarterly and annual reports and end of term external evaluation and collaborate with the Macro working Group for efficient service delivery to all sectors of the economy.

#### **4.12 INTRA-SECTOR LINKAGES**

RIT is inter-linked within itself in that the education sector, medical services sector and ICT sector complement each other through providing innovations and technologies to each other. For instance, the agricultural sector and medical sector rely on ICT infrastructure to provide efficient services to the economy. The agricultural sector is relying on scientific solution to farmers through the Kenya Agricultural Research Institute on better farming methods using the new technologies whereas the Medical sector is relying on higher education institute to provide them with skilled manpower.

## CHAPTER FIVE

### 5 SECTORAL EMERGING ISSUES AND CHALLENGES

The RIT Sector has faced various challenges during implementation of its activities. In addition, there have been emerging issues which could hamper achievement of the sector's core activities undertaken by sub-sectors. The broad challenges and emerging issues experienced by all sub-sectors under the sector have been highlighted as follows:

#### 5.1 EMERGING ISSUES

- ▶ Implementation of the new constitution dispensation: Realignment of sector targets to the new constitution.
- ▶ Business process re-engineering and reforms for the sector.
- ▶ Establishment of a realistic unit cost of higher education.
- ▶ Operationalization of an integrated and compatible technology platform for the sector to ensure timely use of information.
- ▶ Knowledge Management Information System to serve as a centralized source of information on the sub sectors for public use.
- ▶ Information security to address cyber security, fraud and IT crimes.
- ▶ Socio-economic development issues requiring urgent attention including outbreaks of new diseases.
- ▶ Privatization of state-owned companies thus creating uncertainty on their future.

#### 5.2 CHALLENGES

##### Funds

- ▶ Inadequate funding leading to stalled projects and slow implementation of priority flagship projects.
- ▶ Delayed disbursement of funds hence untimely implementation of the projects and programmes of the sector.
- ▶ The high dependence on donor funding for sector programmes.
- ▶ Low loan recovery as a result of unemployment causing a challenge on the sustainability of the HELB revolving fund.
- ▶ Low participation of the private sector in funding RIT sector programmes lengthening the completion period of programmes.

##### Policies

- ▶ Lack of definite policy on institutional and legal framework for research in order to support reforms in the sector. Open policies have been abused in the past leading to low productivity in the sector. This has also affected the recruitment system for technical experts in research and technical institutions.
- ▶ Inadequate capacity for research for development in emerging areas and dissemination of research findings including translation into policies.
- ▶ Rapidly increasing demand for policy research and advice to meet the demands placed on education and research by the knowledge economy
- ▶ Lack of pursuance on matters of intellectual property rights.

##### Human Resource

- ▶ High staff turnover of core cadres.
- ▶ Unclear procedures to guide succession management. This is coupled with the issue of an ageing staff in the sector.

- ▶ Mismatch between education and the labour market requirements.

### **ICT**

- ▶ Low adoption of ICT in the sector.
- ▶ Inadequate and costly technologies.
- ▶ Inability to cope with the fast changing technology.
- ▶ Non incorporation of ICTs in new building designs at on-set.
- ▶ Lack of harmonized data management system.
- ▶ Lack of centralized ICT coordination structure.

### **Land and Environment**

- ▶ Unpredictable environmental changes. Challenges of climatic change which are usually unforeseen affect cost estimation of projects and programmes in the sector.
- ▶ Over dependence on levies on agricultural produce as a source of income.
- ▶ Rapid change of land use from agricultural to other activities.
- ▶ Poor Infrastructure.

### **Production**

- ▶ High costs of production and processing.
- ▶ Inadequate extension services.
- ▶ Low prices for products.
- ▶ Bureaucracy in procurement procedures.

### **Awareness and Socio-economic factors**

- ▶ Inadequate public awareness of the sector's activities.
- ▶ Impact of HIV/AIDS pandemic.
- ▶ Inadequate information centers in the rural areas.
- ▶ Decaying moral values in society.

## **CHAPTER SIX**

### **6 CONCLUSION**

Kenya Vision 2030 recognizes that there is urgent need to shift Kenya to a knowledge based economy, and the only way is to confront challenges of global competitiveness for national prosperity. The growth of the RIT sector will make it possible for Kenya to harness in a coordinated manner the best possible human capital, research technology and innovation to position the country in a modern world economy.

In order to achieve the objectives of the sector, it is important to adequately fund the sector by creating a capital venture fund, national research trust fund, address partnership coordination and relationships and optimize resource allocations. In addition, there is urgent need to develop a strong national research and innovation policy, strictly implement intellectual and property rights law; create a comprehensive national remuneration policy for research scientists.

If the above recommendations are addressed, Kenya's economy will achieve the 10% annual GDP growth as envisaged in the Vision 2030, making Kenya a prosperous nation with a high quality of life.

The RIT sector receives about half of the actual funds it requires, with the big portion being allocated to personnel emolument. There is need to review the Sector ceilings upward to facilitate its growth.



## CHAPTER SEVEN

### 7 RECOMMENDATIONS

As stated in the Vision 2030, this sector is the driver of the whole economy. Consequently, the Sector recommends the implementation of the following;

- Increased funding for RIT Sector
- Create a National Research Trust Fund.
- Launch Capital Venture Fund to finance sector investment
- Development, implementation and compliance with policy, institutional and legal framework to stimulate growth of the Sector
- Building capacities to increase the national pool of skills and talents in research, innovation and technology
- Carry out awareness campaigns to improve appreciation of the benefits of RIT and intellectual property rights.
- Launch Scientific Journals and other related publications to improve dissemination and application of research findings
- Improve remuneration packages to counter “Brain circulation”
- Improve linkages and develop a national network model for extension services.
- Carry out awareness campaigns to improve interest by the youth in embracing ST&I
- Create a comprehensive and harmonized scheme of service which will establish a national database for research scientists.
- Consultative and comprehensive approach to BOPA drafting

## **8 REFERENCES**

- 1.0 Treasury Circular No. 17/2009 of August 2009
- 2.0 Kenya Vision 2030 (2007 Edition)
- 3.0 Kenya Vision 2030- First Medium Term Plan 2008-2012
- 4.0 2008/09 Indicative Programme Based Budget (December 2008 Edition)
- 5.0 Sub Sectors' Strategic Plans 2008-2012
- 6.0 Science, Technology and Innovation Sector Medium term Plan 2008-2012
- 7.0 Budget Outlook Paper for 2010/11-2012/13 MTEF Period of 24<sup>th</sup> December 2009.

## **9 APPENDICES**

### **APPENDIX 1: CHALLENGES BY SUBSECTORS**

#### **CRF**

- Unforeseen environmental changes affecting cost estimation.
- Legal policies which are left open to abuse.
- Over dependence on coffee levy as a source of income.
- High staff turnover
- Competition for the use of land by other enterprises
- Low adoption of ICT in the sector

#### **KEFRI**

- Lack of definite policy on institutional and legal framework on forestry research especially pertaining to access to the country's forests reserves to establish experimental plots.
- Inadequate funds and technologies to contribute and increase forest/tree cover, species diversity and productivity of industrial plantations and trees on farms.

#### **KESREF**

- High costs of sugarcane production and processing
- Unpredictable weather patterns
- Lack of incentives and low farmer morale through better market prices
- Poor crop management practices due to high costs of fertilizers
- Food insecurity in cane growing areas
- Inadequate extension services
- Declining cane land units
- Increasing poverty in cane farming areas:
- Poor Infrastructure
- Under-utilization of resource facilities resulting in low crushing capacity
- Inadequate capital funds for rehabilitation, expansion, and/or modernization of the factories
- Heavy indebtedness - Large debts to creditors including farmers:
- Lack of synchrony in sugarcane supply mechanism between factories and farmers
- Privatization of state-owned sugar mills creating uncertainty on future of KESREF

#### **KNBS**

- Insufficient allocation of resources.
- Late disbursement of funds.

#### **TRF**

- Lower prices/earnings for Kenyan tea.
- Rising cost of farm inputs.
- Sustainability of wood as a source of energy and environmental conservation.
- Lack of a research factory to support product diversification and value addition.
- Continued sub-division of land into small fragments that are below economic units.
- The cost of developed technology is high above the ability of resource poor farmers, hence low levels of adoption leading to low productivity.

### **GITS-SWGP**

- Inability to cope with the fast change in technology.
- Unclear procedures to guide succession management.
- Inadequate capacity both in terms of skills.
- Lack of a comprehensive legal framework to guide e-Government initiatives.
- Inadequate Government-wide ICT awareness that fosters cultural and attitudinal change.
- Process restructuring, business process re-engineering, integration and reforms.
- Lack of integrated and compatible technology platforms.
- Financial Constraints.

### **KIPPRA**

- Rapidly increasing demand for policy research and advice.
- High *ad hoc* demands for support from Government.
- High staff turnover especially at the higher level.
- Weak long-term sustainability due to high rent and other operational costs.

### **MoHEST**

- Inadequate supply of funds for an open university, 22 new University colleges, 10 public universities on double intake, loans and bursaries from the Government and physical infrastructure and equipment.
- Low loan recovery resulting from unemployment.
- Unrealistic unit cost of higher education.
- Impact of HIV/AIDS pandemic.
- Legal bottlenecks.
- Weak ICT infrastructure.
- Low corporate/private sector participation in funding higher education.
- Improper recruitment system for technical experts in technical institutions.
- Lack of harmonized university education data management system.

### **KARI**

- Climate change.
- Release of resources for implementation of Government policy changes (e.g. salary reviews) by Treasury is not harmonized.
- KARI's pending bill.
- The high dependence on Donor funding for research.

### **KIRDI**

- Lack of high-level technical staff.
- Inadequate pay to attract technical staff.
- Low recurrent funding.
- Lack of funds to buy research equipment.
- Weak linkages between consumers and research providers in the market.
- Lack of clear policies on pilot plants.
- Lack of awareness on intellectual property rights thus hindering innovation in the manufacturing sector.

## **MoIC**

- Analogue to Digital Broadcasting migration.
- Extensive promotion of the use of ICT as a key to environmental and social Improvement.
- Extending access to ICT services through extensive partnership between private and public Sectors.
- Non incorporation of ICTs in new buildings designs at on-set.
- In adequate credible information sources in the rural areas.
- 2012 General Elections adequate coverage.
- Lack of Budgetary Allocations for Budget Preparation Works by the Sub-Sector.
- Decaying moral values by the youth due to insufficiently controlled Broadcast and Internet information content.
- Lack of a screen culture among Kenyan audience with majority preferring DVDs and home theatres.
- Inadequate exposure of Kenya to the world as a Filming Destination of choice.

## **DRSRS**

- Ageing fleet of field vehicles which is costly to maintain
- Untimely acquisition and replacement of vital tools and equipment, hardware, software associated accessories and multi-temporal high and medium resolution satellite imagery
- They include Delay in release of funds in the beginning of every financial year
- Under-allocation of funds to some items that are essential for normal operation

## **E- Government**

- Cyber security ,fraud and IT crimes
- Under utilization of available and new technologies.
- Integration of ministry wide application into a single shared platform
- Connecting counties to the last mile
- Uncoordinated Business process reengineering in ministries
- Too much concentration and resource wastage on procurement of ICT equipments.
- Lack of supporting e-commerce and e-transaction legislation.
- Inadequate working space  
The ICT personnel continue to suffer from inadequate working space. As stop gap measure, additional space is being rented to accommodation and good working environment

## **KEMFRI**

- Some laboratories have rudimentary (or no) equipment.
- The Institute also lacks efficient motor vehicles and some important laboratory equipment for specialized analyses in its Marine and Coastal Division as well as most of its Inland water Stations.
- Adjust staff salaries to be at par with the mainstream civil service.

## **NCRC**

- Inadequate professional and support staff. The staff present are on partial secondment.

- Inadequate office space, equipment and other working tools.
- Lack of information about the existence of NCRC by majority of the members of the public.
- Delay in development and approval of appropriate mechanisms for project implementation.
- Poor linkage of the department of prosecution with other criminal justice agencies.

#### **KEMRI**

- Delays in disbursement of funds caused delays in the implementation of planned activities.
- Inadequate budget for the completion of the stalled staff housing project leading to delay in the completion of the project and an increase in the cost of implementing the project.
- Unexpected general increase in costs occasioned by the economic situation in the country resulting in failure to implement the projects fully.
- Inadequate funding to promote all the staff due for promotion leading to the promotion of only 40.
- Challenges posed by outbreaks of new diseases (bird flu, swine fever).
- Infrastructure - Health systems and research Infrastructure
- Funding – research funds not sustainable because of dependence on donors
- Funding priorities for Vision 2030 First Medium Term Plan 2008 – 2012 (FMTP)
- Non-competitive terms of service for research scientists
- Translation of research findings into policy (push –pull mechanisms not enough)
- Human Research legal and regulatory frame work
- Institutional frame work