



Introduction

KIRDI is a national industrial research institute whose mandate is to undertake industrial research technology and innovation and disseminate findings that will have an impact on national development.

Background

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

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

Vision

To be a centre of excellence in Industrial Research, Technology and Innovation.

Mission

To undertake Industrial Research, Technology and Innovation and disseminate findings that will have a positive impact on National Development.

Core Functions

The core functions of the institute as outlined in the Science and Technology Act Cap 250, Laws of Kenya are:

- To carryout research and developement in the fields specified in the Fifth Schedule of the Act
- To cooperate with other organizatins and institutions of higher learning in training programmes on matters of relevant research
- To liaise with other research bodies within and outside Kenya in carrying out similar research
- To cooperate with the responsible Ministry (currently Ministry of Industrialization), the National Council for Science and Technology and relevant Research Committees, on matters pertaining to research policies and priorities.

The institute's core objectives are handled by the Research, Technology and Innovation Department. The major Research, Technology and Innovation divisions include;

- Engineering;
- Energy and Environment;
- ICT;
- Leather;
- Textile;
- Food Technology; and
- Chemical Engineering

The current technologies and products being developed and transferred through KIRDI Pilot Plants include;

- Fish Leather Processing in Kisumu
- Mini Tannery in West Pokot
- Mini Tannery in Garissa
- Honey Processing in West Pokot
- Biogas Plant in Bungoma
- Pineapple Processing Plant in Bureti
- Biogas Plant in Homabay
- Banana Processing Plant in Kisii
- Brick Manufacturing in Nandi
- Biogas Plant in Nyongara, Dagoretti
- Mango Processing Plant in Malindi
- Tomato Processing Pilot Plant in Kirinyaga
- Wamunyu Mini Tannery in Machakos
- Sunflower oil Processing in Kimilili
- Mukurweini Ceramics Pilot Plant

Message from the Minister Ministry of Industrialization

It gives me great pleasure and honor today to officiate on the laying of the foundation stone for the proposed Research, Technology and Innovation laboratories in, Kisumu.

This is a great milestone for KIRDI as it prepares to play its rightful role in the industrialization process through Industrial Research, Technology and Innovation.

The construction of the proposed Research Technology and Innovation Laboratories facility is a clear demonstration of the commitment of the parastatal on delivering on one of its core mandate of Research, Technology and Innovation.

For the successful implementation of Vision 2030, the Ministry of Industrialization is spearheading the operationalization of projects under manufacturing sector. The sector's vision is to contribute to the socio- economic development of the country by creating jobs, generating wealth and encouraging and attracting both local and foreign investors.

Indeed most developed countries and emerging economies have recorded rapid economic development through embracing industrialization. It is for this reason that the vision 2030 aims at making Kenya a newly industrializing, "middle income country providing high quality life for all citizens by the year 2030".

Manufacturing activities are heavily dependent on the types of technologies locally available. There is a wide disparity in technological capacity and capability between the country and the industrialized nations; making competitive production and participation by Kenyan companies in the globalized market difficult. This is partly due to inadequate assessment of the potential technological areas that Kenya can competitively participate in and develop market niches for her products.

Equally, the bulk of Kenya's manufacturing sector, use relatively old technologies with a paltry 7% of manufacturing technologies being

sourced locally. Therefore, for manufacturing sector to become competitive, there is an urgent need for the establishment of modern engineering designs and development units. There is also need to create more awareness to entrepreneurs as a way of improving linkages between providers of technology, research and the market.

The role of Science, Technology and Innovation (STI) is recognized globally as being a critical cog in the wheel of economic growth. It constitutes key components of social integrations and sustainable development. It is therefore key to poverty reduction and enhancing access to basic needs for majority of Kenyans.

In view of this great importance of STI, KIRDI must play its rightful role of not only developing new designs and products through enhanced research and development but also making sure the same reaches the market for commercialization.

KIRDI's role in Kenya Vision 2030 is developing of technologies, products and services that support: Value addition to agro-products, increasing industrial competitiveness of local industries, and Support the development of micro, small and medium industries.

I am aware that KIRDI Western Region Centre (KWRC) opened its doors for operation in July, 1991 as a Pilot Plant for Sorghum and Millet Processing Technologies targeting groups in the Western Region of Kenya. The research project was then funded by International Development Research Centre of Canada (IDRC) for a period of three years. Among its popular products were Supa Mtama, Brown



Hon. Minister Amason Jeffa Kingi, EGH, MP Ag. Minister for Industrialization

Sorghum Meal, Composite finger millet flour and White Sorghum Meal.

In 1995, the Centre was restructured to accommodate Research Laboratories. The Centre however, maintained the commercial operations of the pilot plant as a business enterprise. To date, the centre has undergone tremendous transformation and specializes in a wide range of services.

In order to meet continued growth and demand for research outputs around the country, KIRDI has found it necessary to expand the infrastructure at KWRC. The proposed facility for

industrial research and development comprises the following facilities; Leather Pilot Plant and Research Labs, Food Processing Research Labs, Natural Resource Processing Research Labs and Administration offices & Business Incubation Unit. These facilities occupy a total area of 9189m at a cost of **Ksh 600 million**.

Upon completion of this facility in May 2014, a lot more opportunities will be opened to local communities in adding value to the traditional crops in the region but also will provide an avenue for enhanced business through the business incubation.

With the manufacturing sector as one of the six sectors expected to contribute 10% to the GDP, through implementation of Vision 2030, Research, Technology and Innovation will be more critical in developing new technologies, production processes and products. Therefore, construction and equipping of the laboratories is coming at an opportune time.

Further, I would like to assure you of my Ministry's continued support to KIRDI to ensure successful completion of the project. It is expected that the gains made and lessons learnt shall be replicated in other resource rich areas. We therefore congratulate the KIRDI Board, Management and the entire organization for this great contribution to the industrial process.

Message from the Assistant Minister, Ministry of Industrialization

It gives me great pleasure to be part of this celebration, as we mark the laying of the foundation stone for the proposed Research, Technology and Innovation (RTI) laboratories in KIRDI, Kisumu.

The Ministry of Industrialization has the mandate of providing a policy framework and an enabling environment for industrial activities in the country.

The National Industrial Policy developed by the Ministry, is a framework for the Industrialization process in Kenya. This policy covers a five (5) year period from 2011 – 2015 and beyond. It provides a solid foundation upon which past interventions towards industrialization, are merged with current efforts, to formulate policies that foster the industrialization process. This policy is consequential to the promulgation of the new constitution and previous efforts to generate Kenya's Industrial Master Plan.

In line with this policy, industrialization is for the first time considered a core determinant of economic development. The government has therefore earmarked specific industries for strategic direct support. Investment in these industries is expected to have positive spill-over effects within the economy, which will result

in an overall improvement of non-targeted sectors.

Strategic direct support through the Ministry of Industrialization includes facilitating the functioning of intermediary organizations, as go-betweens in policy implementation. Such organizations are run as parastatals under the Ministry. These have various mandates such as; offering finance for start-up firms or for expansion; advance indigenous manufacturing technology; assist in technology transfer; promote industries that use locally available raw materials and stimulate linkage formation.

KIRDI is a key parastatal organization under the Ministry of Industrialization that is responsible for research and development in industrial and allied technologies, and commercializing such findings through MSMs.

The institute therefore inevitably contributes to policy, by enacting two broad industrialization strategies that have been in place since



Hon. Ndiritu Muriithi, MP Assistant Minister for Industrialization

independence. These are; Import substitution strategies and export promotion strategies. This approach focuses on the primary challenges of development in Kenya i.e. employment creation and poverty eradication.

It is therefore an honor to witness this milestone in the growth of the institution. It signals a bid to become a leader in the area of Industrial Research and Development, not only in Kenya but in the region.

As a Ministry, we therefore will continue to support the institute as we cohesively ensure the industrialization of this nation. I would like to congratulate the KIRDI

Board of Directors and Senior Management, for this very bold step in steering the institute towards meeting the aspirations envisaged under the Vision 2030.

I would further like to urge all Kenyans to support the national industrialization initiative and create synergistic relationships amongst like-minded organizations for the benefit of our beloved country.



MINISTRY OF INDUSTRIALIZATION

RESEARCH, TECHNOLOGY AND INNOVATION LABORATORIES FOR KENYA INDUSTRIAL RESEARCH AND DEVELOPMENT INSTITUTE (KIRDI) – KIRDI WESTERN REGION CENTRE (KWRC) PROJECT INAUGURATION – 1ST FEBRUARY 2012



Message from the Permanent Secretary, Ministry of Industrialization

On behalf of the staff in My Ministry and on my own behalf, I would like to congratulate KIRDI on the laying of the foundation stone for the proposed Research Technology and Innovation laboratories in, Kisumu.

Industrialization has been singled out by the Government as a key component for the realization of Kenya Vision 2030. This is because, Industrialization the world over, is regarded as the most viable and tested strategy for accelerating economic development and addressing many of the socio-economic development challenges confronting many countries today.

The Ministry of Industrialization has developed a National Industrialization Policy Framework for Kenya, which identifies 21 key sub-sectors for industrial growth. We believe development of these subsectors will catalyze the economic growth in the country. They include; iron and steel, automotive industry, agro-machinery and machine tools and spares, require sound infrastructural support.

The Ministry provides requisite infrastructural development through programmes such as the 'Industrial Development Centers' programme that aims at anchoring growth of the Micro Small and Medium Industries (MSMIs) in every constituency in Kenya. This includes promoting policies both in the government and private sector that create market linkages for MSMIs products.

The Kenya Industrial Research and Development Institute (KIRDI) undertakes activities geared towards the development of these priority sub-sectors. The institute is mandated to undertake research and development in industrial and allied activities and commercialize findings for national development



Dr. (Eng) Karanja Kibicho,
CBS Permanent Secretary,
Ministry of
Industrialization.

As a parent Ministry, we have partnered with KIRDI in establishing this state of the art Research, Technology and Innovation laboratories in Kisumu. This is a project that has potential of transforming research and up-scaling both quality and capacity of Industrial Research in the country and the region.

The facility will provide advanced infrastructure and common manufacturing, to support start up of MSMIs in various subsectors. It will provide incubation services where users shall overcome bottlenecks such as workspace, equipment, training and access to markets.

In realization that different regions of the country are suitable for different types of industrial and manufacturing activities, the proposed laboratories will serve as a focal point for supporting innovation and commercialization of Industrial Research and Technology for the entire Western Kenya region. This will increase productivity and competitiveness in the manufacturing sector and promote the concept of value addition as envisaged in vision 2030.

The Ministry has over time put effort in using KIRDI as the focal point for realizing the country's stated aspirations as far as manufacturing, wealth and job creation are concerned. In order for KIRDI to spur economic growth its capacity, the Research and Development facilities need to be expanded. I hereby note with satisfaction that the laying of the foundation stone to this proposed RTI laboratories, is a step in the right direction.

As a Ministry, we congratulate the Board, Management and the entire project team for a job well done. As a Ministry we pledge our support and take cognizance of this incredible contribution to the realization of industrialization in Kenya.

Message from the Chairperson, Kenya Industrial Research and Development Institute (KIRDI)

It is with great pleasure that I take this opportunity to invite you to the laying of the foundation stone ceremony, for the Research, Technology and Innovation (RTI) Laboratories at KIRDI, Kisumu.

The Research, Technology and Innovation Laboratories shall establish a concrete foundation upon which research findings can be used as a source of value addition, in the exploitation of resources within this region. The need to industrialize Kenya by the year 2030 enhances the importance of research as a key engine of economic growth. Upon completion, it is envisaged that this centre will exponentially, enhance the socio-economic growth of this region.

Kisumu city is the first officially designated United Nations Millennium City in the world. It is a transit point for business within the EAC - fully accessible by road, air and water; and among other attributes, a regional hub that contributes in excess of 93% of all fish landed in Kenya. Currently, fish processing industries along the lake region annually produce an estimated 180,000 metric tons of fish. This translates to 60,000 metric tons of fish skin which implies an increased potential for the fish leather processing industry. Further, we are yet to fully utilize the production of livestock feed from the same fish resource, as well as the other abundant resources in the region.



Eng. Dr. Siphila W. Mumenya
Chairperson KIRDI, Board
of Directors.

Therefore, in order to maximize on the prevailing favorable conditions, it is important that the Research, Technology and Innovation efforts strike the right balance between fundamental research and product development. It is expected that these laboratories shall be focal point for determining this balance in Kisumu and its environs.

At KIRDI, such investments position us to better fulfill our mandate of undertaking Research, Technology and Innovation and commercializing outputs for National Development. This is in line with our strategic plan, Vision 2030 and the Medium Term Plan for National Development.

In fulfilling our mandate, we empower the Kenyan people by enabling them to optimize the entrepreneurial environment in which they live, and equip them with specialized skills and knowledge to generate product-solutions for today's market. Subsequently, we provide linkages to those markets, both local and international.

In conclusion, I wish to remind us all of the common mandate that we share. As Stakeholders to KIRDI, both internal and external, it is our responsibility to usher in an industrialized Kenya. This responsibility is in support of the Vision 2030 promise, pledged by H. E. the President and a response to the opportunities and threats posed by globalization.

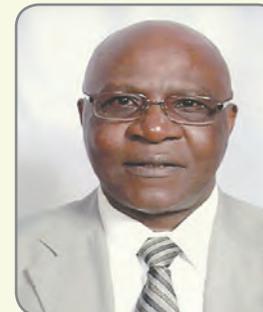
KIRDI Board of Directors



Eng Dr. Siphila Mumenya,
Chairperson, Board of
Directors



Dr. M. Charles Moturi
Director/ Secretary to the
Board



Prof. Tuikong D.K Serem,
Director



Dr. Wycliffe Alusiola,
Director



Mr. John Migiro,
Director



**Prof. Wambui Kogi
Makau, Director**



Mr. Fila Elema Isako,
Director



Mr. Benjamin Mitei,
Director



Mr. David M. Githendu,
Director



Ms Pamela Dede,
Alternate to PS, Ministry
of Industrialization



Mrs. Margaret Onyimbo,
Alternate to PS, Ministry
of Finance



**Arch. Dr. Gideon
Mulyungi, Alternate to PS,
Ministry of Public Works**



Mr. David Gichuhi
Alternate to Inspector
General, State Corporation



**Dr. David Njubi, Alternate
to Executive Secretary,
NCST**



Message from the Director, Kenya Industrial Research and Development Institute (KIRDI)

As we celebrate the laying of the foundation stone for the Research, Technology and Innovation Laboratories in KIRDI Western Region Centre in Kisumu, we take pride in the major strides that KIRDI has made as we support the national industrialization agenda.



**Dr. M. Charles Moturi,
Director, KIRDI**

KIRDI is a national industrial research institute whose mandate is to undertake industrial research, technology and innovation and disseminate findings that will have an impact on national development, a mandate that KIRDI continues to pursue aggressively for the benefit of this great nation of Kenya.

The transformation of KIRDI into a reputable and competitive research institution under Vision 2030, can only be realized through deliberate capacity building initiatives, attracting and retaining high caliber professionals, upgrading quality of our Research, Technology and Innovation programmes and modernization of the institute's infrastructure in line with the demands and expectations of industry, among others.

KIRDI Western Region Centre (KWRC)

The infrastructure development of the Research, Technology and Innovation laboratories in Kisumu represents the largest investment of the institute outside Nairobi. When complete the labs will serve as the Research, Technology and Innovation hub targeting value addition of the raw material resources in the North and Central Rift, Western and Nyanza regions of Kenya.

In line with Vision 2030 and support to Micro-Small and Medium Industries (MSMIs), the institute envisages its presence in all the 47 counties in order to disseminate technologies developed through its Research, Technology and Innovation programmes; and those adapted and adopted through reverse engineering for the purpose of supporting the industrialization process.

It is on this basis that the institute found it necessary to expand the infrastructure at Kisumu, in order to extend support to MSMIs through manufacturing, value addition and technology and business incubation programmes. All these are targeting value addition of the raw material resources in the region in line with Vision 2030.

The infrastructure development that is the basis for the laying of the foundation stone, will facilitate Research, Technology and Innovation in the areas of leather, food technology, energy, natural products and in technology and business incubation, so as to nurture and grow potential entrepreneurs who will in turn generate wealth and employment for the youth in the region. As well, the Research, Technology and Innovation laboratories will extend their consultancy, quality control and product development services to existing upcoming industries in the region.



The transformation of KIRDI into a reputable and competitive research institution under Vision 2030, can only be realized through deliberate capacity building initiatives, attracting and retaining high caliber professionals, upgrading quality of our Research, Technology and Innovation programmes

Message from the Project Team

PROJECT MANAGERS & ARCHITECTS	- HABITECH CONSULTANTS
QUANTITY SURVEYORS	- KANJUMBA CONSULTANTS
CIVIL STRUCTURE ENGINEER	- ENGICONSULT LIMITED
ELECTRICAL MECHANICAL ENGINEERS	- GEDOX ASSOCIATES
ENVIRONMENTAL MANAGEMENT CONSULTANTS	- PROF. GEORGE N. NJUGUNA ASSOCIATES
MAIN CONTRACTORS	- VAGHIYANI ENTERPRISES
ELECTRICAL SUB CONTRACTORS	- PHILAFE ENGINEERING
PLUMBING, DRAINAGE, FIREFIGHTING	- ATLAS PLUMBERS & BUILDERS (K) LTD



Proposed Model for Research, Technology and Innovation Laboratories

The project Designs started in 2009, with very clear objectives from the client; Provision of modern Laboratories and innovation centre of industrial development for the western part of Kenya. The facilities provided are;

- Leather development, with emphasis on fish. Leather unit - 1381m²
- Food processing Research, with emphasis on the grains and other food products found in the regions - 2295m²
- Energy Recourse unit - 1342m²
- Natural products units - 1342m²
- Administration block - 2494m²

TECHNOLOGY

The project has been designed to use locally available materials, appropriate, and easy to maintain technology over 50% of all the construction materials are locally sourced hence contribute to the economic growth of the region. Direct employment of local people stands at an average of 300 people per day. This also contributes to technology transfer.

ENVIRONMENTAL & ENERGY MANAGEMENT

A full environmental study was carried out, submitted to the National Environmental Management Authority (NEMA), and a license issued. Preservation and promotion of the environment is given a high priority during the construction and operation; with the design of the various blocks oriented to respect the existing vegetation, as well as providing for introduction of fresh vegetation at strategic positions within the scheme.

The project is also designed to employ forward- thinking sustainable features in; the Effluent treatment plant for effective disposal of grey water from the proposed processing facilities. In addition the various blocks are designed to accommodate photovoltaic solar panels on the roof.

QUALITY MANAGEMENT

The construction process continues to employ stronger quality management systems

including material testing, certifications, monitoring and improvement of all the processes, to minimize wastage and achieve high quality product at the lowest possible cost. The project implementation is on schedule, at 26% completion with 24.68% time lapsed. We therefore intend to have the facilities completed on time, to quality specified and within cost.

We are thankful to the Government of Kenya for funding the project fully and efficiently.