

Year Ended 30th June 2013

Annual Report & Financial Statements

In Search of Better Health



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In Search of Better Health



In Search of Better Health

Kenya Medical Research Institute

ISO 9001 : 2008 Certified



KEMRI

THE TEAM

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Chairperson's Foreword



**The Hon. Cabinet Secretary,
Ministry of Health,
P.O.BOX 30016 - 00100
Nairobi.**

Dear Sir,

It is with great pleasure that I submit to you, on behalf of the Board of Management, The Kenya Medical Research Institute's (KEMRI) Annual Report and Financial Statements for the year ended 30th June 2013 in accordance with the provision of Section 20 of the Science and Technology (Amendment) act of 1979 (Cap 250 of the Law of Kenya).

This report gives an account of the achievements of the Institute in her core business of research, capacity building and service delivery.

We remain grateful to the government of Kenya, local and external partners for their continued support to the activities of KEMRI. The Board is also grateful to the Director and CEO, KEMRI and all staff for their invaluable efforts and commitment in serving the Institution.

I remain,

Yours faithfully,

**Prof. Ruth Nduati
Chairperson, Board of Management**

Director's Statement



Following a rigorous audit exercise of processes and systems, we are pleased that the Institute was awarded ISO 9001:2008 certificate on 30th May 2013 in the specific category of provision of human health research. I wish to congratulate all members of staff and the Institute collaborators following this phenomenal achievement. What remains is to walk the talk by ensuring that this achievement is reflected in the quality of services offered in pursuit of the Institute's mission and vision.

The year 2013 also witnessed the successful completion of the development of a Strategic Plan covering the period 2013-2017. Some of the highlights in this new Plan, launched on 20th December 2013, include a clear identification of seven Key Performance Areas and their strategic objectives, complete with Strategies, Expected Outcomes and Key Performance Indicators. The plan re-defines our core values into a PICTURE that we should uphold at all times, embracing Purity, , Customer focus, Teamwork, Uprightness/Integrity, Respect and fairness, and Excellence. The Plan also provides a clear framework on devolution of health research by proposing seven regional clusters from which the Institute will serve the country's forty-seven (47) counties.

The Board is fully committed to provision of a conducive work environment, and will continue to pursue with the relevant government authorities approvals it has already granted on harmonization of terms and conditions of service, and other matters of general well being for members of staff. Lastly, I wish to appreciate our collaborators and partners for their immeasurable support in research, towards achieving our mandate in pursuit of our motto ***In Search of Better Health.***

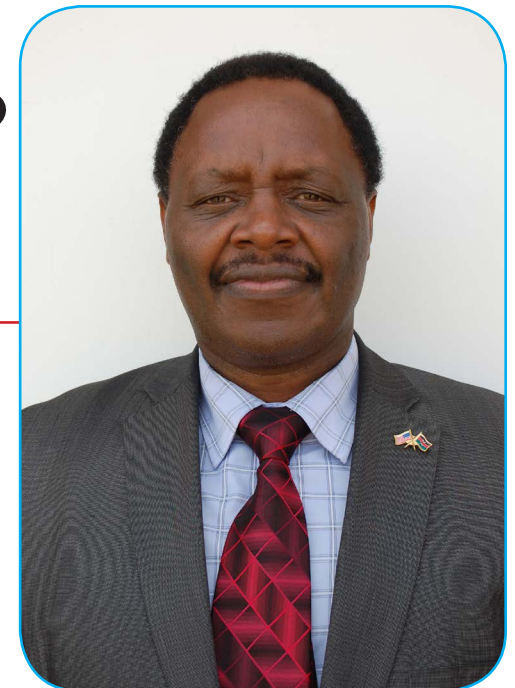
On dissemination of scientific information, the 3rd KEMRI Annual Scientific & Health (KASH) Conference was held from 6th-8th February, 2013, bringing together over 500 researchers from KEMRI and other institutions to share and exchange scientific information, as well as establish useful collaborative linkages on current and emerging issues in human health research. This conference continues to be an important forum for dissemination of research findings, being one of the core mandates of the Institute.

**Solomon Mpoke, Phd, MBS
Director, KEMRI.**



Prof. Ruth Nduati
Chairperson,
KEMRI Board of Management

Kemri Board of Management



Prof. Solomon Mpoke
Director, KEMRI and Secretary to
the Board of Management



Prof. Kihumbu Thairu
Member



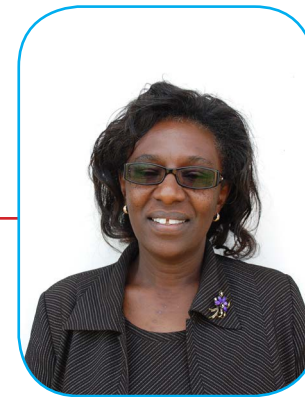
Prof. Wilson Kipngeno
Member



Dr. Anisa Abdulrahim
Bashir
Member



Dr. Peter N. Omboga
Memeber



Ms. Joan W. Riitho
Member



Ms. Carol Kasiva
Member



Mr. Ibrahim Maalim Rep.
Ministry of Health



Ms. Jane Weru
Rep. Inspector General,
State Corporations



Mr. Tom Odede State Law
Council, Office of Attorney
General



Mr. James M. Gatere
Rep. Principal Secretary The
National Treasury

STATEMENT OF THE RESPONSIBILITIES OF BOARD OF MANAGEMENT

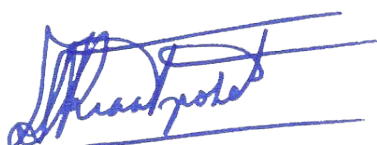
The Act requires that the Board of Management prepares financial statements for each financial year which give a true and fair view of statement of affairs of the Institute as at the end of financial year. It also requires the Board of Management to ensure the Institute keeps proper accounting records which disclose with reasonable accuracy at any time the financial position of the Institute. They are, as well, responsible for safeguarding of the Institute's assets.

The Board accepts responsibility for the financial statements, which have been prepared in conformity with appropriate accounting policies. These are supported by prudent judgments' and estimates, and are consistent with previous years. The financial statements also conform to International Financial Reporting Standards (IFRS). The Board is of the opinion that financial statements give a true and fair view of the state of the financial affairs of the Institute as at 30 June 2013 and of its surplus for the year ended. The Board further confirms the accuracy and completeness of the accounting records maintained by the Institute, which have been relied upon in the preparation of the financial statements, as well as on the adequacy of the internal financial controls.

No information has come to the attention of the Board to indicate that the Institute will not remain a going concern for at least twelve months from the date of this statement.

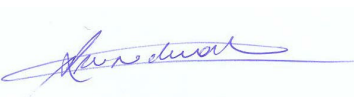
This statement is approved by the Board and is signed on its behalf by:

Solomon, Mpoke, PhD
Director KEMRI & Secretary,
Board of Management



Date: 30 July 2014

Prof. Ruth Nduati
Chairlady,
Board of Management



Date: 30 July 2014

Institutional Background

1. ESTABLISHMENT OF THE INSTITUTE

The Kenya Medical Research Institute was established in 1979 through the Science and Technology (Amendment) Act Chapter 250 laws of Kenya.

2. REGISTERED OFFICE

Kenya Medical Research Institute (KEMRI)
Off Mbagathi Road
P.O. Box 54840 – 00200
NAIROBI
KENYA

3. BANKERS

Kenya Commercial Bank Ltd, Kipande House Branch - Nairobi
Cooperative Bank Limited - China Centre Ngong Road Nairobi
Family Bank - Centre Branch, Nairobi Kilimani.

4. AUDITORS

Auditor General - Kenya National Audit Office (KENAO)

FUNCTIONS OF THE INSTITUTE

- To conduct research in human health.
- To co-operate with other organizations and institutions of higher learning in training programmes and on matters of relevant research.
- To liaise with other relevant bodies within and outside Kenya carrying out research and related activities.
- To disseminate and translate research findings for evidence-based policy formulation and implementation.
- To co-operate with the Ministry Health, the national commission for science, Technology and innovation. (NACOSTI) and the Medical Science Advisory Research Committee on matters pertaining to research policies and priorities.
- To do all such things as appear necessary, desirable or expedient to carry out its functions.



RESEARCH PROGRAMMES



Infectious & Parasitic Diseases Programme



Schistosoma parasite as seen under a microscope



Prof. Elijah Maritim Songok
Head Infectious & Parasitic Diseases
Programme



Professor Elijah Maritim Songok, Chair of Infectious and Parasitic Diseases Research Program (IPDRP) is a principal research scientist at KEMRI and an Assistant Professor at the Department of Medical Microbiology, University of Manitoba Canada. He is also cross appointed as an Adjunct Professor at the Department of Virology and International Health, Kanazawa University, Japan.

Prof. Songok holds a BSc and MSc in Biochemistry from the University of Nairobi, a PhD in Virology from Kanazawa University Japan, and a postdoctorate in genomics from University of Manitoba. Prof. Songok has published more than thirty research articles in peer reviewed journals, most as a first or corresponding author. He has won more than twenty research grants and fellowships as principal investigator from diverse grant making organizations as Bill and Melinda Gates Foundation, Glaxo Smith Kline (GSK), Canada Institutes of Health Research (CIHR), Japan International Cooperation Agency (JICA), Third World Academy of Sciences, Canada International Development Research Centre (IDRC) among others. On mentorship and supervision, Prof Songok has supervised 13 doctoral students (PhDs), 14 Master of Science (MScs) and 4 Master of Public Health (MPH). On patents and innovations, Prof, Songok has three potential innovations/products under trials.

Objective of the Programme

To conduct research aimed at developing tools and technologies for reduction of diseases burden due to infectious and parasitic agents.

Flagship Project/areas in this programme are:

- Bacterial, fungal & Viral diseases
- Parasitic diseases
- HIV/AIDS, TB & Malaria
- Neglected tropical diseases

Developing Uji Meal Snack that also deworms children



Kenyan school-going children will in the near future be served with a different type of porridge snack, if a research by KEMRI is successful.

The Institute is in the process of developing an uji (porridge) school meal that is fortified with locally available natural deworming substances that will radically boost efforts towards the elimination of roundworms and hookworms in children.

Prof. Maritim Songok, Head of KEMRI's Infectious and Parasitic Diseases Research Programs and his team are involved in the study aimed at developing the Uji snack with deworming properties among school children in Kenya.

"We have carried out the first pilot test among school children in Western Kenya and the result is encouraging. Not only is the acceptance rate among parents, pupils and teachers very high, but also its effects go beyond deworming. The nutritive effect on the children is astounding," says Prof. Songok.

Intestinal worms have been noted as one of the major causes of sickness among children. It is estimated that one billion children and adults around the world are infested with worms with the most common ones being ascaris (roundworms) and hookworms.

Children with worms often have stunted growth, are anaemic and may have diarrhoea. Additionally, their nutrition status is deteriorated as the worms compete with the body for ingested food. Similarly it is has been confirmed that children infested with worms have a low academic performance and a slow cognitive development.

In this regard, the Kenya Ministry of Health and indeed most countries in Africa began a large scale mass deworming program. Dubbed the National School Deworming Program, the strategy is delivery of deworming medicines through the school system. Currently, millions of children in Kenya schools are being dewormed regularly.

Though this approach has been effective and safe, it may not be sustainable in the long term especially considering the large children populations and that the drugs used for the deworming are donations from developed countries and depends on the goodwill of the donors.

Similarly there are fears that the worms may develop resistance to these drugs. There is hence an urgent need for a homegrown solution that will be sustainable affordable and easier to implement in the long term.

Prof. Songok's research has received a pilot grant of 8.2 Million Kenya Shillings from the Bill and Melinda Gates Foundation for the revolutionary study. Prof. Songok is partnering with a local food processing company- Homeland Foods Ltd, to develop the snack. The first conclusive results of the pilot project are expected in June 2014.



schools uji programme

An “oral contraceptive” to reduce densities of the male Anopheles Mosquitoes

Scientists at the Kenya Medical Research Institute (KEMRI) are conducting innovative research which if successful will significantly diminish mosquito densities and reduce incidents of malaria in endemic areas through the introduction of “an oral contraceptive” for male mosquitoes.

The research by Dr. Luna Kamau, a Principal Research Officer at the Institute’s Centre for Biotechnology Research and Development (CBRD) and the Head of the Biotechnology Programme is developing an “oral contraceptive” for male *Anopheles gambiae* and *Anopheles arabiensis* mosquitoes.

The goal is to reduce mosquito densities in malaria-prone areas by incorporating the contraceptive into sugar meals that male mosquitoes feed on; unlike the female mosquitoes which need to feed on blood in order to produce eggs, males feed exclusively on sugar.

Female *Anopheles gambiae* and *Anopheles arabiensis* mosquitoes are among the most important vectors of malaria in subtropical Africa. This is an innovative and unconventional approach since most conventional mosquito vector control methods aim at killing the mosquitoes, either at the adult or larval stage.

So, why target the male mosquito’s fertility rather than simply killing the mosquitoes? The reason is that such an approach would have an exponential impact on vector densities. Here is why:

The biology of *Anopheles* mosquitoes is such that female are highly monogamous, generally mating only once in their lifetime. The seminal secretions received from males are then stored a special sac known as the spermatheca and utilized for future fertilization of several batches of eggs that the female lays in its lifetime. There is evidence that refractoriness to subsequent mating in female *Anopheles* mosquitoes occurs even when the first mating encounter was with a spermless male. Additionally, females do not appear to tell between sterile and fertile males. What this means therefore is that a female mosquito mated with a sterile male will virtually not have a chance at reproduction.

“Research from Kenya and indeed other regions of

the world indicates that vector control is a critical component of any successful malaria control programme”, explains Dr. Kamau and adds, “we are excited with this study which though unconventional, has the potential to contribute immensely towards reduction of the malaria deaths”.

In recognition of the role that vector control plays, the World Health Organization (WHO) recommends three primary interventions that must be scaled up towards the achievement of the Millennium development Goal six (6), which is to “Halt and begin to reverse the incidence of malaria and other major diseases by 2015.

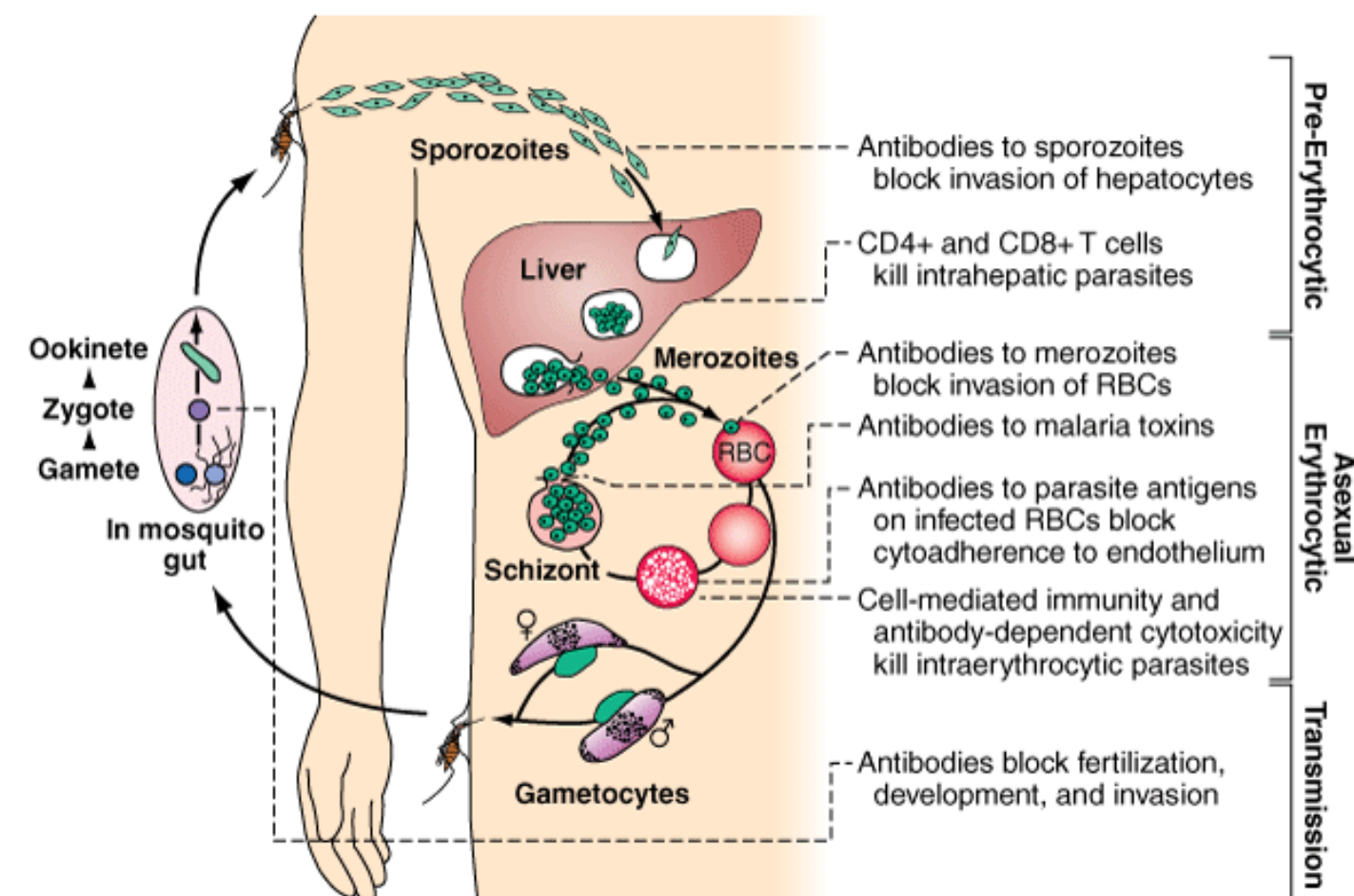
Two of these interventions, namely Distribution of Insecticide-Treated Nets (ITNs) to achieve full coverage of populations at risk of malaria and Indoor Residual Spraying (IRS) of insecticides, target the mosquito vector of malaria and employ insecticides. The third is Prompt Diagnosis and Treatment with effective medicines.

There is however increasing evidence of resistance to most of the insecticides recommended by WHO for mosquito control and this has stimulated the search for other tools and strategies of control, including “unconventional” ones such as the one being explored by Dr. Kamau and her team, all in an effort to control malaria.

Funding for this research is from the Bill and Melinda Gates Foundation under that Grand Challenges Explorations funding stream that seeks to reward innovative ideas.



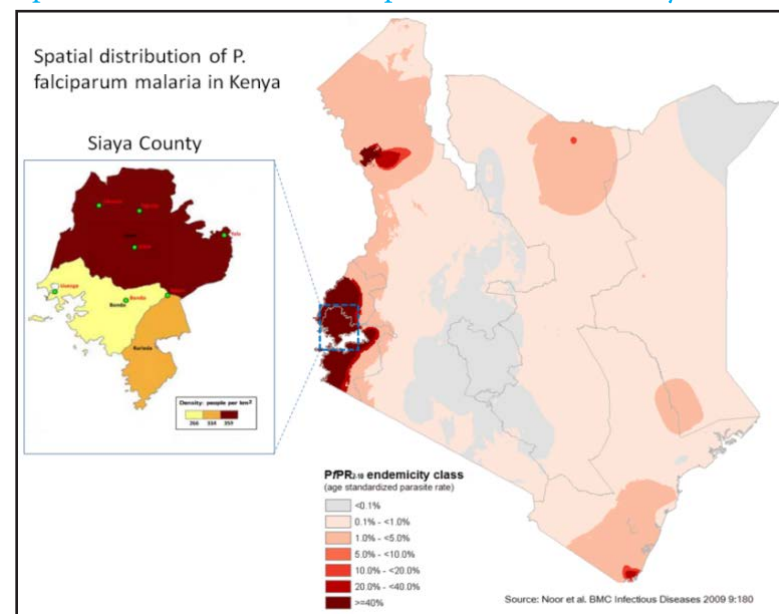
Eunice Nduati, a research scientist working with Kenya Medical research Institute (KEMRI) in Kilifi, working in one of the Institute’s laboratories. Kenya Medical Research Institute scientists are testing a contraceptive expected to boost the war on malaria by reducing the population of the male mosquito.



The malaria transmission cycle from mosquito to human. RBC, red blood cell.

Scientists adopt new innovative ways to combat malaria in Western Kenya

Spatial distribution of *P. falciparum* malaria in Kenya



Researchers working on malaria in Western Kenya have been forced back to the drawing board following a stagnation of the malaria prevalence despite a cocktail of interventions.

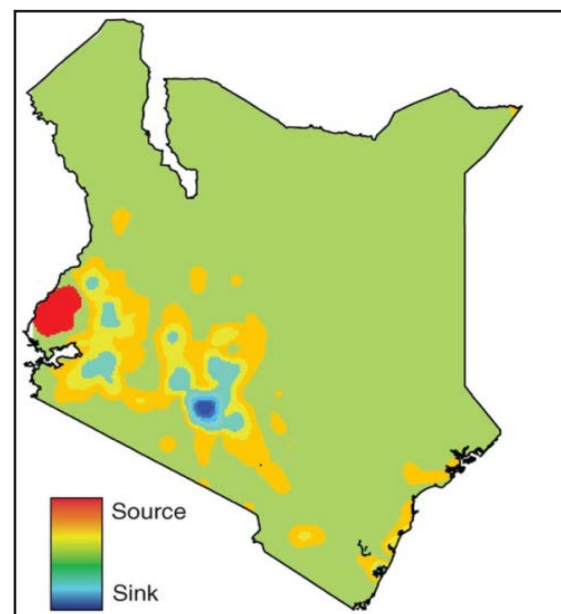
Data collected by the Kenya Medical Research Institute (KEMRI) in collaboration with US Centers for Disease Control and Prevention (CDC) in 2013 show that the number of people carrying parasites in their blood is still approximately 35 percent in children aged below 5 years, 56 percent in those aged 5-15 years and 22 percent in those above 15 years old.

These results make western Kenya region retain the unfortunate distinction of not only having the highest burden of malaria in Kenya, but also the most important source of malaria nationally, for example, when persons living in Nairobi travel to visit relatives in western Kenya.

Following the widespread introduction of long-lasting insecticide-treated nets (LLINs), the burden of malaria has significantly reduced in many parts of the country.

However, malaria transmission in western Kenya remains high. For over 30 years, the KEMRI and CDC have been conducting malaria research and surveillance in Siaya, western Kenya.

Parasite sources and sinks



In this area, the community prevalence of *P. falciparum* parasitemia (number of people with parasites in their blood) among children below 5 years of age declined from over 70 percent in 1997 to around 40 percent in 2008.¹

But since 2008, transmission intensity (amount of malaria passed on by mosquitoes) and malaria prevalence has stagnated. Now researchers contend that for malaria rates to drop further, scaling-up and optimization of current control strategies and introduction of new strategies are needed.

Many organizations internationally and nationally are strongly motivated to help in this endeavour. "If malaria can be tackled in Siaya County, experts think there is a chance that malaria can be tackled not only in Kenya, but also around the world, and can eventually be eliminated, like smallpox, guinea worm, and polio", says Dr. Simon Kariuki, a senior scientist at the Kisumu-based Centre for Global Health Research (CGHR) in KEMRI.

For this reason, the Malaria Elimination Consortium, Western Kenya (MEC-WK) has been recently established. The consortium includes Siaya County Health team, supported by the Ministry of Health's National Malaria Control Unit (MoH-MCU), KEMRI,

CDC, Liverpool School of Tropical Medicine (LSTM), and the Malaria Control and Elimination Partnership in Africa (MACEPA), an initiative under the Program for Appropriate Technology in Health (PATH). Internationally, PATH/MACEPA has supported efforts to control malaria in Zambia, Senegal and Ethiopia, and are now expanding their activities to western Kenya.

Through support from USAID, the President's Malaria Initiative, and the Bill and Melinda Gates Foundation, malaria researchers and control staff in Siaya County can work with international experts from the CDC, and from LSTM and partner universities in the UK, to try to eliminate malaria in Siaya County and eventually expand to surrounding areas in western Kenya.

Each partner brings a unique set of skills and expertise in malaria control and research. The idea behind this initiative is to optimize the existing interventions while introducing new strategies based on strong scientific evidence, creating ownership of malaria control in the community and County Government, and having a coordinated approach to malaria control in the area.

The MEC-WK started activities in 2013, and is gearing up to begin large-scale malaria control activities in Siaya County. Activities planned in the next year include the scaling up and evaluation of combined community and health facility interventions such as the provision of treated bednets, uninterrupted access to malaria diagnostics, and a constant supply of effective medicines to prevent and treat malaria.

Community health workers (CHWs), backed-up by strong support supervision, will be the driving force behind this strategy.

An important part of this strategy will be to ensure malaria cases in the community are detected early and treated promptly and correctly by CHWs. Information on these cases will be sent to the MOH using smart phones to allow experts to see where malaria 'hotspots' are so that additional help can be channelled to these areas. Maps of malaria areas will be made so that the MEC-WK can see where strongholds of malaria still exist and additional efforts are needed.

At the same time, extra effort will be put into reducing the amount of malaria parasites people have, even when they do not suffer from malaria disease.

Getting rid of the parasites in humans is essential as it stops the malaria being passed on to other people who are not infected and to small children who have no immunity and cannot fight the disease. Individuals with parasites in their blood but have no symptoms play an important role in sustaining malaria transmission.

Western Kenya has a high number of people with parasite but have no symptoms (asymptomatics) and up to 50 percent of parasitemic individuals in community-based cross-sectional surveys report not having fever anytime during the previous two weeks.

"Because these people do not have symptoms, they do not seek medical care or receive treatment to clear parasites. These people act as sources (reservoirs) of parasites that are picked by mosquitoes during blood feeding and therefore sustain the transmission of malaria", explains Dr. Meghna Desai, Malaria Program Director, CDC-Kenya.

According to the researcher, one main way to reduce malaria parasites in people is to give everyone an antimalarial drug through mass screening and treatment of those who are positive or mass drug administration (MDA) in communities, homes, and schools regardless of whether they have parasites.

Simultaneously, removing mosquitoes that transmit malaria to humans is another strategy that will be important if we are to reduce the burden of malaria in Siaya County.

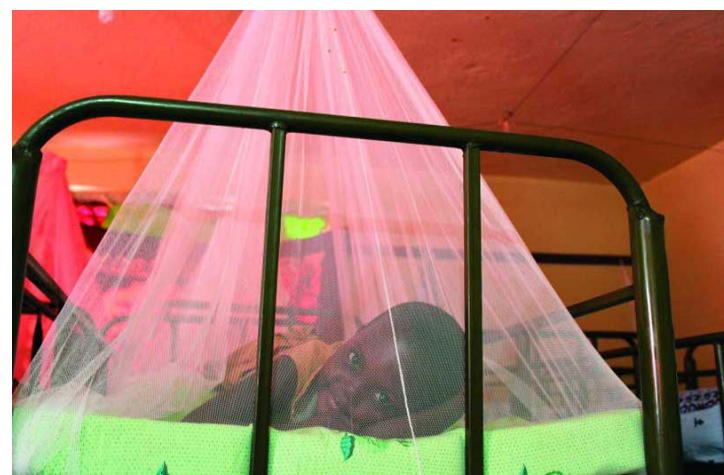
This is best done through spraying the inside of houses and other structures with effective insecticides, i.e. indoor residual spraying (IRS). Traditionally, IRS has not been a malaria control strategy in this area. However, based on available scientific evidence, experts believe that IRS represents an important additional way of controlling malaria in this region.

Scientists involved in this new initiative believe that although this is expensive and funding to help to do this is still needed, IRS will play a significant role if we are to reduce the malaria burden in western Kenya.

Other ways to get rid of mosquitoes that are being studied include a treatment called ivermectin that is given to people to kill worms causing eye diseases. When malaria mosquitoes then take a blood meal from people who have been treated with ivermectin,

the mosquito is weakened and dies more quickly. This reduces the amount of malaria that can be passed on by the mosquito to humans.

In summary, available scientific evidence shows that reducing the malaria burden in western Kenya from the current level will require scaling up existing interventions and introducing new ones that target parasites in humans and mosquito vectors while tracking progress using latest technology. Community ownership of the program will also be crucial if we are to reduce malaria in western Kenya and move towards elimination. If malaria is controlled at the source, we will be making progress towards realizing the National Malaria Strategy of making Kenya a “Malaria Free” Country.



KEMRI signs collaborative research MOU with the Leading International Fungal Education (LIFE)

Research to establish the burden of disease caused by fungal infections in the country was intensified during the year under review following the signing of a Memorandum of Understanding between the the Kenya Medical Research Institute (KEMRI) and the UK-based, Leading International Fungal Education (LIFE).

The two organizations agreed on academic and research cooperation aimed at complimenting their respective roles towards the improvement of quality human health through research.

The agreement signed by Director KEMRI, Prof. Solomon Mpoke and the founder of LIFE, Prof. David Denning established a joint collaborative research in the epidemiology of Mycotic infections and also involve exchange of faculty, researchers and other administrative staff.

The landmark agreement was sealed before the Institute's Center for Clinical Research (CCR) Director, Dr. Juma Rashid, scientists Dr. Veronica Manduku, Dr. Christine Bii and Dr. Priscilla Nyakundi.

In addition, through collaboration, the researchers are also involved in defining the burden caused by fungal infections and assessing laboratory capacity needs for the diagnosis of some of common fungal diseases in Kenya.

Prof. Denning is a world renowned authority in fungal diseases, a director of the Aspergillus Centre in the UK and founder of LIFE, a non-profit international movement for education and advocacy for patients with fungal infections. LIFE has a global goal of addressing infections caused by fungal diseases, improving diagnosis and access to appropriate antifungal therapies.

Under the partnership, LIFE is implementing the agreement on behalf of USM while KEMRI scientists, Dr. Manduku from the Center for Clinical Research (CCR) and Dr. Bii from Center for Microbiology Research (CMR) are lead researchers in the project. Dr. Nyakundi from CCR and Dr. Jeremiah Chakaya from CRDR are also involved in the studies.

Both institutions in addition agreed to develop collaborative research activities in academic areas of mutual interest on a basis of equality and reciprocity, while at the same time, complement each other's efforts in these areas.



Researcher's sound alarm over increasing trends of Viral Hepatitis in Kenya

Researchers working in KEMRI are sounding alarm bells at the run-away increase of Hepatitis B, an infectious virus in the country. According to Prof. Elijah Songok, Head of KEMRI's Infectious and Parasitic Diseases Research program, statistics now indicate that prevalence rate of Hepatitis B (HBV) is approximately 10 percent among pregnant women, and more than 30 percent among Liver clinic attendees in Kenya.

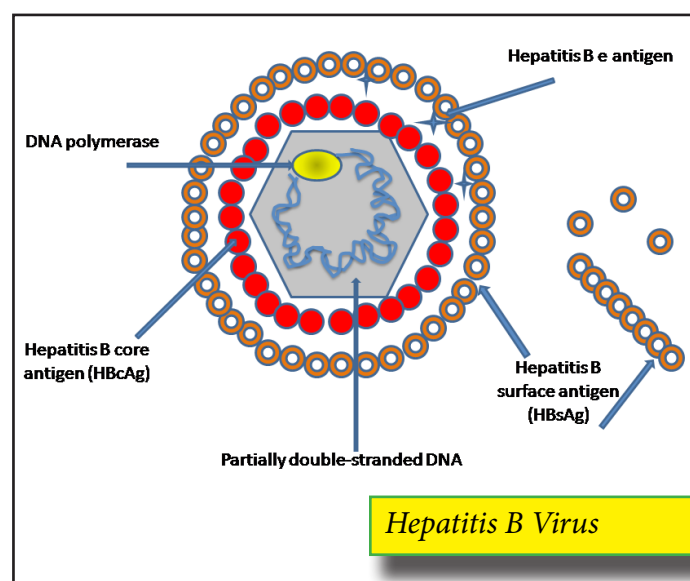
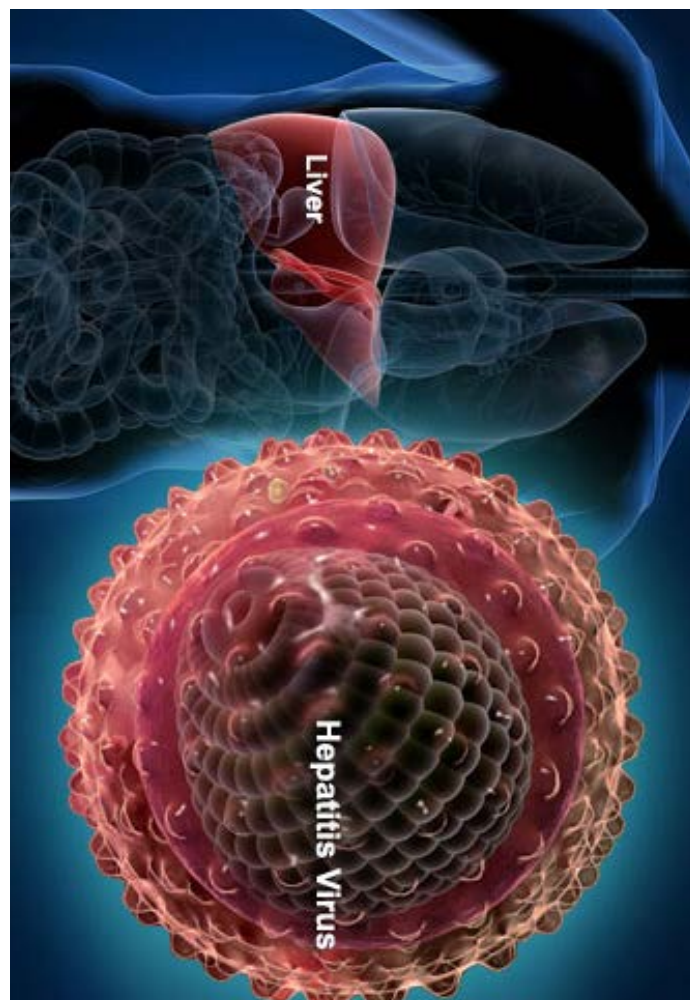
If untreated, HBV may lead to liver cirrhosis and other liver cancers. The modes of transmission are similar to HIV- sexual transmission, contaminated blood products and mother to child transmission. During the past two years for instance, the prevalence of HBV among blood donors has been rising surpassing the prevalence of HIV three fold.

In 2013 for instance, about 1,200 blood donations out of approximately 150,000 screened were found HIV positive nationwide as compared to 3,000 who were HBV positive. "Given that blood donors are a very highly selected population, researchers and stakeholders now content that the prevalence in the general population may be much higher", Prof. Songok says.

This should be cause for alarm, as similar high data is being registered among HIV infected persons, showing a rising prevalence of co-infection with HBV. Co-infected persons have an increased rate of liver disease, higher HBV and HIV viral loads, and poor response to antiretroviral drugs. World Health Organization recommends that persons who are co-infected with HBV and HIV should immediately be initiated on antiretroviral therapy irrespective of CD4+ count.

"It is hence important that HIV infected persons also seek HBV testing", says the Researcher. This trend is consistent with the global picture. HBV is one of the most common viral infections globally. It is estimated worldwide that 2 billion people have been exposed of which 150 million are chronically infected. However, HBV is 50 - 100 times more infectious than HIV and health workers who accidentally succumb to needle stick injuries have a very high chance of infection from HBV than from HIV.

Majority of persons infected with HBV suffer acute infection and clear the virus within weeks, however a proportion lead to a long term chronic infection and later to liver cancer. Despite the presence of a HBV vaccine, not all vulnerable populations have access.



Hepatitis B Virus

KEMRI Kicks off a week long Hepatitis testing and vaccination in Nairobi and Uashin Gishu counties to commemorate the 2014 World Hepatitis Day.

The Infectious and Parasitic Disease Research Program (IPDRP) has kicked off a one week campaign of free Hepatitis testing and vaccination in Nairobi and Uashin Gishu counties to mark the World Hepatitis Day which falls on 28th July 2014.

IPDRP in collaboration with the County Governments of Nairobi and Uashin Gishu began the campaign on Monday 21st July at Riruta Health Centre, Mama Lucy Hospital and the Bomb Blast Site at the Central Business District in Nairobi and at Reale Hospital and Moi Teaching and Referral hospital in Eldoret. Other partners involved in the exercise are the Ministry of Health, who are providing free Hepatitis vaccines; Gastroenterological Society of Kenya, Roche pharmaceuticals, Sanofi Pasteur, Bloodlink Foundation, World Hepatitis Alliance, Regional Society for Blood Transfusion Kenya and the Kenya Red Cross. The theme of this year's World Hepatitis Day is Think Hepatitis, Get Tested, Get Vaccinated, Get Treated.

"We are seeing an overwhelming response by Nairobi and Eldoret residents to get tested and vaccinated" says Prof. Elijah Songok, Head of Infectious Disease Programme, KEMRI. Hepatitis B is a silent killer and not many people know about it or their status. This campaign has provided an opportunity for information on this very infectious diseases and those who wish to know their status. Anybody testing HBV negative is vaccinated on site.

In the campaign, KEMRI is providing the KEMRI Hepcell Rapid Test kits, and similar to a HIV VCT, members of the public get their results immediately.



HEPATITIS B

Hepatitis B, a liver disease caused by a virus. Causes for anemia include... Centers for Disease Control... 1,000 people in the United States...

Children infected at birth have... shows no symptoms, people...

For in vitro diagnostic use only
Rapid Lateral Immunochromatographic Test Kit

HEPCELL Rapid®
One step Hepatitis B test cassettes (Serum/Plasma)

20 Test Kit



Public Health & Systems Research Programme



Unclean water has led to a number of waterborne diseases and public health issues.



Dr. Charles FL Mbakaya
Head, Public Health and Health Systems
Research Programme



Dr. Charles FL Mbakaya holds a BSc Degree in Chemistry from the University of Nairobi and an MSc Degree in Advanced Analytical Chemistry from the University of Bristol, UK. He obtained an Advanced Diploma in Occupational Health and Safety in Practice from the Swedish National Institute for working Life. He graduated with a PhD in Analytical/Food Chemistry from Kenyatta University.

His thesis has contributed to new knowledge by showing that the body physiologically lowers serum zinc levels to produce HIV antibodies necessary in significantly reducing viral load. Consequently, this has led him to re-defining the scientifically contentious cause of AIDS.

He is a Chief Research Officer with the Kenya Medical Research Institute (KEMRI) where he heads the Public Health and Health Systems Research Programme.

He lectures to and supervises many MPH and PhD students and has over 20 papers in reputed journals and has presented papers in 30 local and international conferences. His work has impacted public health across many areas including giving evidence based direction on health effects of pesticides among agricultural workers in East Africa, the role of nutrition in immunity and management of HIV & AIDS subjects in Kenya and he Chairs the Ministry of Health (MOH) Technical Working Group (TWG) on harmonization of regulations for Herbal Products and Technologies in Kenya.

Objective of the Programme

To conduct multidisciplinary epidemiology, biostatistical, environmental, social, dental population and health systems and policy research.

Flagship Project/areas in this programme are:

- Epidemiology
- Behavioral & Social Sciences
- Nutrition
- Environmental/occupational health
- Oral health
- Health care financing, HRD, information, governance & leadership, service delivery

CONSULTATIVE FORUM CALLS FOR ENHANCED FOOD SAFETY

Is the meat product we consume daily at our dinner tables safe? How safe is that chicken or pork? These and other related questions were on the minds of researchers at a consultative forum examining the level of food safety in poultry, pork and meat products in Kenya and which immediately recommended for an urgent review of existing policies that would enhance levels of safety while minimizing chances of contamination along the value chain.

The forum, that brought together policy makers, researchers and other stakeholders in the meat industry, further recommended that the current management practices be improved to guarantee high standards of hygiene at all levels of the meat handling to minimize existing possible contamination.

Members of the consultative forum include representatives from the World Health Organization (WHO), Food and Agriculture Organization of the United Nations (FAO), Kenya Medical Research Institute (KEMRI), Ministry of Health and the Ministry of Livestock and Development (MoLD) among others.

Armed with research findings of a study that sought to examine the levels of safety in the beef, poultry and pork meat value chain in Kenya and especially the microbiological contamination, the forum painted a worrying picture if no action is taken.

The study undertaken by KEMRI, FAO and the WHO also examined the possible occurrence and patterns of Antimicrobial Resistant (AMR), antimicrobial use patterns; assessments of existing data and information on safety and current knowledge and attitudes on antimicrobial use in animal production in Kenya.

The group also called for an urgent review of the National food safety management practices at abattoirs which tend to be aligned with the traditional approach of 'post-mortem inspection' and detection of pathological lesions and indicators of animal disease rather than microbiological food safety.

The meeting also recommended that further training and the introduction of a public health risk based approach be initiated in order to improve microbiological safety and the enhancing of education and basic good hygiene at abattoirs and during storage, transport and retail of meat products.

Some of the findings in the report include the presence of high levels (in nearly a third of samples) of multiply resistant *E. coli* and *Campylobacter* from poultry, and *E. coli* from beef and pork meats from slaughter and retail sources.

The findings are consistent with situations in most developing countries where the meat value chains are largely fragmented in management, regulations and policy.

However, there was an assurance from the government that not only is the government addressing the identified gaps in quality and safety standards, but has also put in place an elaborate surveillance system of all food products to determine any contamination that may occur along the food chain given that over 10 million households in Kenya rely on meat production.



Biotechnology Research Programme





Dr. Luna Kamau
Head, Biotechnology Research Programme



Academic and Professional Qualifications:

PhD (Molecular Entomology), MSc. (Immunology), BEd. (Botany & Zoology) - Kenyatta University
Dipl. (Leadership & Management) - Strathmore University

• Current Appointments

Substantive: Chief Research Officer

Others:

- (i) Head, Molecular Entomology & Ecology Section, 1996 - Present
- (ii) Coordinator, Biotechnology Research Programme, 2011 – Present
- (iii) Part-time Lecturer, Institute of Tropical Medicine and Infectious Diseases (ITROMID) /Jomo Kenyatta University of Agriculture and Technology (JKUAT), 2004 – Present

• Research Interests

Malaria vector ecology, surveillance and insecticide resistance studies
Vector behavior in response to different interventions
Population genetic studies of malaria vectors
Linkage mapping of genes associated with vector potential for malaria
Development of new tools for vector identification and control

Objective of the Programme

To promote, harness and apply biotechnology for the discovery and development of tools and strategies for use in medicine and health care.

Flagship Project/areas in this programme are:

- Vaccine development
- Diagnostics
- Genetic engineering
- Bioinformatics

Biotechnology Research Programme

The Biotechnology Research Programme was established as a co-ordination mechanism for activities in biotechnology at the institute. This was in recognition of the great opportunities that biotechnology offer to provide solutions in medicine and healthcare and for sustained economic growth. Biotechnology research is a major component of the research activities at the institute.

Flagship area of research in biotechnology

1. Vaccine development
2. Diagnostics
3. Genetic engineering
4. Bioinformatics

Our Vision

To be a model programme that is harnessing biotechnological tools for the improvement of human health toward KV2030 and beyond.

Our Mission

To promote, harness and apply biotechnology for the discovery and development of tools and strategies for use in medicine and health care.

Objectives of the Biotechnology Research Programme

1. Promote the use of biotechnology for the discovery and development and/or improvement of tools and strategies for disease diagnosis, management or prevention.
2. Strengthen human resource capacity and infrastructure for biotechnology research and innovation in the Institute.
3. Promote the protection and commercialization of biotechnological innovations arising from the Institute's research.
4. Coordinate biotechnological research and innovation activities in the Institute.
5. Liaise with national and international regulatory bodies on policy issues concerning health-related biotechnology, its exploitation and biosafety.
6. Support any other activity that promotes application of health-related biotechnology for the benefit of mankind.

Key activities of the programme during the year

The following is a highlight of key activities that the programme has undertaken.

I. Director's Biotechnology and Innovations Award

The Director's Biotechnology and Innovations Award was introduced under the auspices of the KEMRI Annual Scientific and Health (KASH) conference. The aim is to recognize outstanding work in Biotechnology and Innovations at the institute as a way of motivating research in that area.

During this year's KASH conference held from 5-7 February 2014, the award attracted 6 abstracts and two were recognized. The top prize went to Ms. Beatrice Ongadi of the ICT Department for her work on the development of an interactive web portal for designed primers and molecular markers of disease. Though still under development and validation, this portal will not only allow scientists working in Molecular Biology and Biotechnology to access the said primers and markers but also contribute to it. Ms. Ongadi is working closely with scientists for the Centre for Biotechnology Research and Development. The runner-up prize went to Mr. Ochwoto Missiani of the KEMRI Production Department for his work on the development of a locally produced DNA extraction kit. The key advantages of this kit are easy access and affordability.

II. Capacity Development and Networking Efforts

i. Molecular Biology Summer Course and networking

Ms. Damaris Muhia participated in a two-week Molecular Biology summer course at Smith College Northampton, Massachusetts, USA, organized and facilitated by New England Biolabs from 29 June – 12 July 2014 with partial support from the programme. Course participants were drawn from diverse backgrounds and countries and were taken through intensive sessions of both lectures and hands-on laboratory analyses and data interpretation. State-of-the art technologies in molecular biology such as Next Generation DNA sequencing and microarray analysis as well as other techniques and procedures including DNA cloning and fingerprinting, quantitative RT-PCR and bioinformatics were covered. Participants formed a network for interaction, knowledge-sharing and intellectual exchange.

ii. Capacity Building and networking in Cell Biology and Regenerative Medicine

The African Academy of Sciences, AAS, has in recent times organized and spearheaded training and networking in the emerging field of regenerative medicine. In November 2013, the first activity that brought together experts and trainees was in the form of a workshop held at the AAS offices in Nairobi. The workshop sought to link young health professionals in Africa with experts in cell biology/regenerative medicine from India, Brazil and China for Capacity Building in Cell Biology and Regenerative Medicine. Long-term activities planned include other workshops and short-term research visits to Bangalore, Sao Paolo and Beijing by the young professionals. Already a second workshop entitled “Training and Mentorship in Stem Cell Research and Regenerative Medicine” is slated to take place here in Nairobi on 4-6 August 2014. KEMRI is represented on the local organizing committee for these workshops by Dr. Christine Wasunna. Ms. Dorcas Wachira who has been a keen participant in the workshop and networking efforts has officially been selected and designated as a Focal Point Person for future activities of the network in Stem Cell Research by the AAS.



A laboratory session during the Molecular Biology Summer course at Smith College Northampton, MA. On the front bench, left, is Ms. Damaris Muhia.



A lecture session at the Cell Biology and Regenerative Medicine workshop at the African Academy of Sciences offices in Karen. Front, Right is Dr. Christine Wasunna.

Research on use of saliva to detect malaria

Research on use of saliva to detect malaria is underway at the Center for Biotechnology Research & Development in KEMRI. Using saliva from patients suspected of having malaria, the researchers are hoping to develop an innovative diagnostic kit that they hope will be used while detecting malaria.

Laboratory tests based on microscopy are currently the gold standard for diagnosis of malaria mainly because it can quantify parasite density and distinguish between the different plasmodium species.

However this type of test has limitations. “It is not easily adaptable particularly in the field and in rural areas where there are no laboratory facilities and the accuracy varies with the skill of the person handling the microscope”, says Eva Aluvaala, the lead researcher of this innovative study.

“While one would have thought that these limitations would have been addressed by the introduction of rapid diagnostic kits because they are easy to use and adaptable to field situations, they unfortunately cannot quantify parasite density, which is important when trying to assess the severity of disease and whether or not a patient is responding to therapy”, intimates Aluvaala, adding that “use of saliva would be popular because the procedure is not invasive furthermore the diagnostic tool under development would be capable of quantifying parasite density”.

Aluvaala’s research brings to the fore increased interest in the use of saliva for malaria diagnostic purpose. The results from this study will not only increase knowledge on the use of saliva in malaria diagnostics, but may also lead to the development of a rapid malaria diagnostic kit by the Institute.



using saliva to detect malaria

Non-Communicable Diseases Research Programme



Dr. Samuel Gatherer
Head, Non-Communicable Diseases Research
Programme (NCD-RP)

Dr Samuel Gatherer, MMED (UON) is a Senior Research Officer in KEMRI based at CCR and is the acting head of NCD program since July 2012 to date. He has also been a Consultant to the Cancer Registry work based at KEMRI. He is a trained head and neck surgeon from the University of Nairobi and is currently pursuing a PHD in public health from JKUAT. He has also trained locally and abroad in cancer epidemiology and research and in allergy and rhinitis.

Dr Gatherer has published and presented papers in nasopharyngeal cancer and head and neck cancers both locally and abroad.

He was instrumental in convening the 1st and the 2nd KEMRI National Stakeholders meeting on Non - Communicable diseases (NCD) in 2012. This later led to the formation of the NCD Knowledge Sharing Network (KSN) by the Ministry of Health, APHRC, KEMRI, AMREF and other organizations.

Dr. Gatherer is a member of Steering Committee of the African Caribbean Cancer Consortium (AC3) besides being a member of other international and local professional organizations.

Objective of the Programme

To conduct basic, clinical, operational, implementation and applied research in all matters related to non-communicable diseases.

Flagship Project/areas in this programme are:

- Life style diseases: obesity, diabetes, hypertension, drug and substance abuse, cardiovascular.
- Cancer (Breast, Cervix, prostate, throat, stomach, ovaries and skin)
- Road traffic accidents, Domestic/Occupational injuries
- Mental Health

NON - COMMUNICABLE DISEASES: THE NEW THREAT TO DEVELOPMENT.

Non communicable diseases popularly known as NCD's present a major health problem in this country. This poses a risk to development such as achieving Vision 2030 in Kenya. NCD's are a problem not only in Kenya but also in the sub-Saharan countries. Estimates by the MOH and WHO project a grim picture; it is estimated that the burden of NCDs has already surpassed the burden of communicable diseases. Morbidity levels will be over 60% but the year 2020 and half of the hospital beds will be occupied by the NCD patients. In the past the country was dealing mainly with communicable diseases that included infectious diseases like HIV/AIDS, Tuberculosis and other infection like malaria.

The major NCD's include cardiovascular diseases like hypertension and stroke; diabetes, chronic respiratory conditions and Cancers. In our set up locally, we include to this global NCD list other chronic conditions such as sickle cell anaemia, arthritis and chronic low back pain(LBP) and mental illness and substance abuse. The combined mortality or deaths from NCD's will by the year 2030 surpass all the deaths from HIV/AIDS, Tuberculosis and malaria. It is time indeed for all of us to act quickly on this matter. What are the possible solutions to this? There are several solutions to the menace of NCDs.

One of it is prevention. It has been shown that the risks factors of NCD's can be mitigated upon early enough in the primary and primordial stages.

The first target risk is the prevalence reduced physical inactivity. A recent report by the MOH showed that 40% of Kenyan urban dwellers are obese. There are more people motorising in urban and rural centres than two decades ago. This include the new 'boda boda' mode of transport in Kenya. As such there is less physical activity by the majority resulting in increased weight and obesity.

To counter this there is a need to encourage people to exercise. Walk up the stairs instead of taking the lift. Walk to the supermarket or to the neighbourhood shopping centre. Stretch out in the office after hours of sitting down. Walk in the estate or jog or join a gym nearby. In short, move your body as often as possible. It must be noted that the rapid infrastructure developments have their downside as major contributors to NCDs. No longer are there available play grounds within communities. It is risky to jog or run since most roads do not have proper pedestrian pathways. And even though cycling is very healthy, cycling lanes are not delineated in most urban centres putting the poor cyclist at risk of motor injuries; another major NCD in our set up. Community and public engagement in these endeavours is therefore important but above all the government and government agencies need to embrace both expert community participation in these projects.

The second target risk to avoid getting an NCD is poor intake of fruits and vegetables. Nutritionists have long advise that a minimum of three to five servings of fruits and vegetables is very important daily. It is obvious from various studies that this is not possible to many people. Some rarely are able to access fruits or vegetables. But even for those that can afford, it is easier said than done. The typical Kenyan diet is a large portion of carbohydrate like Ugali ; a protein like meat or fish and a splattering of vegetables. Fruit intake is more during our meal times. From impeding cultural practices where some say vegetables are for rabbits, to affordability and access are to blame. Concerted effort by the Ministries of Agriculture and Health including other stakeholders is needed to encourage people to increase their fruits and vegetable intake.

Studies on diet and cancers especially of the digestive system show that increase in intake of fruits and vegetable is inversely proportional to the cancer prevalence. In other words, the more the fruits and vegetables intake the less the cancer risk.

The other major risk to NCDs is smoking of tobacco. It has been proven in many studies that smoking increases the risk to almost all major NCD's. Although there is commendable regulation in banning of smoking in the public places, a lot still remains to be done. Newer ways of imbibing nicotine have emerged threatening to

reverse the gains so far. Locally , the trendy habit of taking " shisha" ; which is smoked through pipes in a shared pot, has taken root like a craze among the youths. It is deemed harmless but studies show that shisha smoking is as harmful as recreational smoking of cigarettes. This intake of tobacco is a major health risk that needs urgent redress by authorities. The other global vogue is the electronic cigarette, otherwise called e-cig. Recently WHO and NHS (National Health System) of UK has warned that e-cig is not as indolent as its proponents have opined. Indeed, apart from the risk of increased nicotine addiction, studies show it may lead to other drug addictions.

With the rampant deaths from alcohol intake, it is imperative that proper advise is given on the dangers of alcohol. Almost all NCD's have alcohol intake as a major risk factor. This includes diabetes, hypertension and all types of cancers. Education on reduction of alcohol intake and control should not be done by NACADA alone but concerted efforts should be by all and sundry.

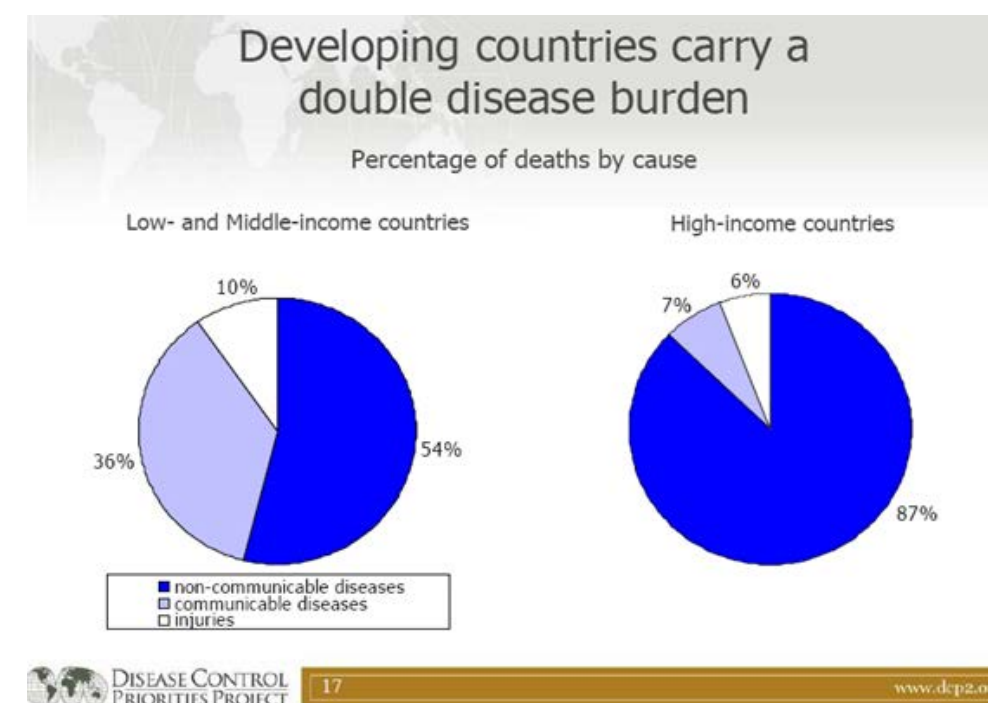
KEMRI FIGHTS NCDs through Research and Partnerships.

KEMRI is playing a major role in NCD control. Recently KEMRI released the latest data from its flagship NCD project of the Nairobi Cancer Registry. The Nairobi Cancer registry is one the two Kenyan population registry that has continued to contribute useful data in the status of cancer in Kenya.

KEMRI has also continued to participate in the National Stakeholders forum on NCDs. KEMRI is also involved with the Ministry of health and other stakeholders in developing the National NCD Control Strategy. Indeed in the year 2012, KEMRI hosted two National Stakeholders Forum that have continued to drive the fight against NCD's.

KEMRI is involved in various research and training efforts in the areas of Cancer Research, chronic respiratory diseases, Diabetes and Hypertension. KEMRI has partnered in these endeavours with local and international parties. Recently KEMRI has partnered with County Governments that are ready to address NCD's in their backyards with KEMRI's help. We anticipate to help in developing screening programs, guidelines and policies and to establish causes of the NCD's in various counties and how they can be managed.

With all these efforts, the fight against NCD's shall be won.



Impact of nutrition in the evolving lifestyles in Kenya

The nutrition situation in a large segment of the Kenyan population is wanting, with both over- and under-nutrition being of concern. Poor dietary habits and lack of appropriate information are partly to blame. As Kenya strives to become a middle level income country, non-communicable diseases (NCDs) are taking a toll on its population.

Non-communicable diseases account for more than 50 percent of all hospital admissions in the country with evidence showing that certain NCDs such as diabetes, hypertension, cancer and renal diseases are on the rise, particularly in urban areas. Forty percent (40 percent) of hospital mortality is attributed to NCDs, with up to 12.7 percent caused by cardiovascular diseases. The mortality rate due to NCDs is 780/100,000 population in males and 575/100,000 in females. Most NCDs are due to common risk factors that cause physiological effects and finally disease outcome. Available data on risk factors show marked increase in NCDs, reflecting epidemiologic transition; with prevalence of hypertension being 44 percent.

According to researchers at KEMRI's Center for Public Health Research (CPHR), migration studies show a rise in blood pressure within one month from migrating from rural to urban areas, a rise that is sustained for two years. He notes that diabetes prevalence ranges from 5-10 percent, and contributes up to 27.3 percent to the total 53 percent of hospital admissions due to NCDs.

The cancer annual incidence is at 28,500 cases with data from the Nairobi Cancer Registry showing that the three leading cancers in men are prostate, oesophagus and stomach cancers, while in women, breast, cervical and uteri-cancers take the top three positions. Obesity prevalence is between 13 and 30 percent, while tobacco use is at 8 percent and 7 percent in urban and rural areas respectively. There is limited data on dyslipidaemia and heart failure, while significant chronic diseases such as rheumatic heart disease (27 percent) do not fall in the degenerative paradigm. Cardiomyopathies and pericardial disease are high in the younger population.

Previously in Kenya and world-over, there has been more focus on communicable diseases like TB, HIV,

pneumonia and malaria by stakeholders, than on NCDs which are mainly lifestyle diseases. However, with the rapidly rising prevalence of NCDs, Kenya is now facing the double burden of both phenomena. "Our modern lifestyles have hyped the consumption of highly processed foods e.g. foods with a high content of refined sugars like cakes, consumption of fast foods like French fries and fatty meats, alcohol consumption and smoking. There is reduced consumption of healthy non-refined/processed foods that were usually eaten in the past. This problem is compounded by sedentary lifestyles and lack of physical activity with more people using motorized transport even over relatively short distances and using lifts instead of taking stairs," says Dr. Charles Mbakaya, Ag. Director at CPHR.

Consumption of fats

While consumption of fats is sometimes regarded as bad, the body actually requires fats for energy. However, it must be the right kind of fat. Fats/oils are made of fatty acids some of which are saturated and others are unsaturated. Unsaturated fatty acids are good for the body while saturated fatty acids are not. Sources of good fats/oils include: fish, nuts, avocados, coconut, olive, peanuts, sunflower and corn among others. Fats are a source of fat soluble vitamins like A, D, E and K. They also are a source of essential fatty acids that are critical in reproduction, immunity and many other biological processes that sustain life. Nevertheless, high intakes of fats can be harmful to the body. Both the amount and quality of dietary fat may modify glucose tolerance and insulin sensitivity leading to obesity and Type 2 Diabetes Mellitus. Some fats are converted in the body to bad cholesterol which is harmful to the body.

Consumption of carbohydrates

Carbohydrates are the main source of energy for the body, and they include rice, maize and maize flour, cassava, millet, sweet potatoes, arrow roots and sorghum. While these provide energy for the body, when eaten in excess they can be harmful. There are simple carbohydrates and complex carbohydrates. Sugars such as glucose and sucrose (table sugar) are simple carbohydrates. Complex carbohydrates include starches and fibers and root vegetables like

potatoes. Carbohydrates may be refined or unrefined. Refined carbohydrates are highly processed, with the fiber and bran, as well as many of the vitamins and minerals they naturally contain having been stripped. The body tends to process these carbohydrates quickly and provide about the same number of calories but very little nutrition. A diet high in simple or refined carbohydrates tends to increase the risk of obesity and diabetes.

If more carbohydrates than needed are consumed, the body stores some of these carbohydrates within cells (as glycogen) and converts the rest to fat. Glycogen is a complex carbohydrate that the body can easily and rapidly convert to energy. Glycogen is stored in the liver and the muscles. The Glycemic Index (GI) of a carbohydrate is also an important consideration during carbohydrate intake. Glycemic Index represents how quickly the consumption of a carbohydrate increases blood sugar levels. Values of GI range from 1-100, where 1 is the slowest and 100 is the fastest, and the index of pure glucose. The glycemic index tends to be lower for complex carbohydrates than for simple carbohydrates, but there are exceptions.

Protein Intake

Proteins are required for body building. Sources of proteins include: meats, milk, cheese and eggs. Plant based proteins include: legumes like beans, cowpeas, lentils and peas. Overconsumption of proteins is bad for health as the excess is stored as lipoproteins which can cause obesity that is associated with metabolic syndrome that is often characterized by dyslipidemia, raised blood pressure, insulin resistance and glucose intolerance; all of which raise the risk for NCDs. Consumption of less than required protein is also bad for health. Proteins are made up of amino acids, some of which are essential and cannot be made by the body and have to be obtained from dietary sources. The quality of protein consumed is therefore important.

Measures to improve human diets in Kenya

There should be awareness creation on healthy diets including the importance of diet diversification, sources of macronutrients and micronutrients, the importance of consumption of fruits, vegetables and water. This can be achieved by use of mass media, offering talks in different gatherings like in churches,

barazas and various other forums like work places.

Government policies and guidelines on good dietary practices, including issues of food security and food safety and Good Manufacturing Practices (GMP) should be embraced. Enforcement of guidelines including those on food labelling, food security and food safety should be given high priority. Fortification of staples as well as conduct of research to provide evidence-based information for policy and decision making should be prioritized in Kenya.

Challenges likely to be met and way forward

Food acceptability of suggested foods may be a stumbling block as old habits may be hard to change. Behavioural impediments e. g. craving for some unhealthy foods as well as competing and contradicting messages given to the public from diverse source may be another impediment. Challenges in depth of information that can be covered in press releases may lead to misunderstanding of the nutrition messages. Furthermore, the political goodwill for policy and guidelines development and implementation is often inadequate.

Finally, for the Kenya Vision 2030 (KV2030) to be met and to achieve Millennium Development Goals (MDGs), we must endeavor to kick malnutrition (both under and over nutrition) out of Kenya. There is need to mainstream nutrition interventions at all levels to be able to make a dent in the rising associated morbidity and mortality. The importance of research in this endeavor cannot be overemphasized to provide evidence-based information for policy formulation and monitoring of unfolding scenarios in the population. There is need to improve resource allocation and to target the most vulnerable in the population, especially children, women and the elderly.

Article by Dr. Charles Mbakaya, Dr. Lydia Kaduka, Dr. Violet Wanjihia and Mr. Phillip Ndemwa.

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The energy requirements for different physiological/ population groups are:



nutrition

Calories Requirements for Males/ day:

Age	Sedentary Level	Low Active Level	Active Level
2-3 y	1100	1350	1500
4-5 y	1250	1450	1650
6-7 y	1400	1600	1800
8-9 y	1500	1750	2000
10-11 y	1700	2000	2300
12-13 y	1900	2250	2600
14-16 y	2300	2700	3100
17-18 y	2450	2900	3300
19-30 y	2500	2700	3000
31-50 y	2350	2600	2900
51-70 y	2150	2350	2650
71 y +	2000	2200	2500

Calories Requirements for Females/ day:

Age	Sedentary Level	Low Active Level	Active Level
2-3 y	1100	1250	1400
4-5 y	1200	1350	1500
6-7 y	1300	1500	1700
8-9 y	1400	1600	1850
10-11 y	1500	1800	2050
12-13 y	1700	2000	2250
14-16 y	1750	2100	2350
17-18 y	1750	2100	2400
19-30 y	1900	2100	2350
31-50 y	1800	2000	2250
51-70 y	1650	1850	2100
71 y +	1550	1750	2000



Sexual, Reproductive, Adolescent and Child Health Research Program





Dr. Nelly Rwamba Mugo
Head, Sexual Reproductive Adolescent & Child Health Research Program (SRACH-RP)



Obstetrician Gynecologist with 25 years of practice, currently working at KEMRI

Actively involved in HIV and cervical cancer prevention research for the last 15 years, as a site investigator for the Thika 'Partners in Health Research and Development' study, led studies on HIV-serodiscordant couples. This site was one of 9 sites for the Partners PrEP study that was one of 4 studies that contributed to unequivocal scientific evidence that antiretroviral drugs 'Truvada and Tenofovir' can effectively prevent HIV infection among HIV-uninfected individuals.

Currently head the KEMRI SRACH RP, directs PHRD-Thika site studies and is a member of the IPM-Dapivirine ring DSMB, sits on the World health organization guideline committee on STIs, National AIDS Control Council and NASCOP working group, Reproductive Health maternal unit –ministry of health

Objective of the Programme

To conduct basic, clinical, operational, implementation and applied research in all matters related to Sexual, Reproductive and Child health.

Flagship Project/areas in this programme are:

- Maternal Health
- Child health
- Adolescent health
- STIs
- Gender Based Violence (GBV)
- Infertility
- Sexual dysfunction
- Family planning
- Harmful traditional practices
- Aging and sexual and reproductive health
- Gender & human rights

Committee Membership and Affiliate Institutions

	Name	Institution	Position
1	Dr. Nelly Rwamba Mugo	KEMRI-CCR	Head, Sexual Reproductive Adolescent Health Research Program
2	Dr. Elizabeth A. Bukusi	KEMRI	Deputy Director Research and Training
3	Dr. Phelgona Otieno	KEMRI –CCR	Pediatrician and Epidemiologist
4	Dr. Elizabeth Echoka	KEMRI-CPHR	Senior Research Officer
5	Dr. Maricianah Onono	KEMRI- CMR	Research Scientist, KEMRI-RCTP Nyanza Research coordinator.
6	Dr. Anthony.K. Wanyoro	Kenyatta University	Chair, Department Obstetrics & Gynaecology
7	Prof. Edwin Were	Moi University of Medicine	Professor , Department of Reproductive Health
8	Dr. Elly B.Odongo	CDC	Technical Advisor PMTCT Maternal Health
9	Dr. Bernadette N. Ng'eno	CDC	Technical Advisor - Pediatric/ Adolescents, PMTCT
10	Dr. Agnes Langat	CDC	Technical Advisor-Pediatric /Adolescents TB /HIV
11	Joseph Mwangi	KEMRI- CVR	Research Officer –CVR Program Coordinator - HIVCOP
12	Dr. Wangira Musana	Aga Khan University	Head, Sexual and Reproductive Health Department of Obstetrics and Gynaecology
13	Dr. Beatrice Kihara	University of Nairobi College of Health Sciences	Senior Lecturer Department of Obstetrics and Gynecology,
14	Dr. Timothy Abuya	Population Council	Senior Analyst
15	Dr. Agatha Olago	NASCOP	Program officer in the PMTCT program
16	Dr. Abdulrahman Kassim	NACC	Programme Officer Development Partners and Global Fund Focal Person
17	Dr. Pamela Godia	Program Officer	Reproductive Health Maternal Services, Ministry of Health

Following an earlier proposal by program committee members, SRACH_RP held a retreat on the 27th June 2014 at the Lukenya Getaway.

Proceedings from SRACH-RP Retreat

The agenda was to review on-going activities, review and discuss program mandates, assess achievements in 2013-14, discuss challenges and opportunities, define what the members would consider as success in 2014-2015 program year, strategies and prioritize activities for 2014-15.

On-going activities:

- 1.) Scooping study 'Inventory of Sexual Reproductive, Adolescent & Child Health Research in Kenya -2008-2013' Data is gathered from Ethics Review Committee inventory, transcribed to a tools developed by the SRACH RP committee
 - i. Updates: Established contact with KNH-UoN, KEMRI, Moi Teaching and Referral Hospital, AMREF, Aga Khan University Hospital ERCs and preliminary analysis.
 - ii. Pending activities: complete data collection from KEMRI, MTRH and KNH_UoN ERC, analyze, generate report and upload on program website
- 2.) In partnership with the ministry of health-reproductive health and maternal health services unit (RHMSU) we have conducted 'A Review of the Implementation of Maternal and Perinatal Deaths Surveillance and Response at Facility and Community Level in Selected Counties in Kenya – 2014.' In recognition of the lack of progress in maternal and perinatal deaths and lack of appropriate traction reporting maternal and perinatal deaths from facilities and communities, RHMSU-MoH with partners has conducted a systematic review to assess factors that contribute to lack of reports.
 - i. Project led Ministry of Health-Reproductive Health and Maternal Services Unit in partnership KEMRI, UNICEF, UNFPA, Measure Evaluation, World Health Organization-Kenya office
 - ii. Collection of quantitative and qualitative data from 15 selected counties is complete and project is in the phase of data analysis,
 - iii. Initial dissemination of preliminary results expected 5th August 2014 to a forum with County governors, other avenues of dissemination will follow, with an aim to advocate for improvement of services and reduction in both maternal and perinatal deaths
- 2) 'Maternal Nutrition Status Among Women attending routine ANC in selected health facilities in Nairobi, Kenya'
 - i. Affiliate institutions: KEMRI, Aga Khan University, Department of Obstetrics and Gynaecology, Danone Baby Nutrition Africa Overseas
Study aims at assessing nutritional status of women in the 2nd trimester attending antenatal clinics at the Aga Khan University Hospital, Mama Lucy Hospital and St. Mary's Mission Hospital, Nairobi, Kenya. It is a cross sectional survey, nutrition status will be measured using anthropometry, biochemical and dietary measurements.
- 3) East Africa Community Open Health Initiative: SRACH-RP committee members have participated in several forums, organized by the East Africa community addressing issues of maternal mortality in the East Africa region.
- 4) Program members are involved in many reproductive health activities, which will be outlined once we generate a comprehensive record

At the 27th June retreat, the committee members reviewed program mandates and discussed opportunities and feasibility of meeting the goals of the mandate

Proposed program activities for 2013-14/15

The program will carry on pending activities initiated in 2013 and continue with proposed activities for 2014-2015. This activities include: Identifying ongoing research and research priorities; Advocacy for capacity building and implementation of identified program priority areas; Evaluate research reports for best practices and Capacity Building for SRACHR.

Identifying ongoing research and research priorities: To achieve this objective, the program will create a list of National SRACH technical working groups in the country and identify or initiate program representation in the identified TWG. In addition, a directory of experts on various program areas will be developed to provide a resource for partnerships and increased visibility of ongoing work in SRACH. The expected output of this activity include a map of SRACH program and research activities in Kenya indicating who is doing related work and in which regions. This will be uploaded in the SRACHRP website and continuously updated.

Advocacy for capacity building and implementation of priority areas: The program will identify KEMRI personnel and members from other organizations who are currently involved/interested in sexual reproductive adolescent child health activities with view to build capacity, generate interest and enhance program research and activities in Kenya and beyond. To achieve this, the program will organize a forum in September 2013 in which presentations of ongoing work and program activities will be done. The program will also organize at least two symposia on focal SRACH area in the current financial year. The outcome of these activities will be created opportunities for collaborative work, program membership expansion, a data base of current individuals involved in SRACH related activities within and outside of KEMRI and expanded interest in SRACHR. This activity will also help Collect and collate ongoing research activities and individuals conducting research.

The program proposes to carry out a review of the maternal perinatal death surveillance report and assess gaps for intervention and additional research

Assess how the program can contribute to addressing gaps coming from the MPDSR project
Recognize the best performing providers in maternal and perinatal health in counties, in partnership with professional (Kenya Obs/Gynae Assoc and the Paed Assoc and Nursing Council) bodies: best performing unit (determine a criteria for nomination) in an effort to stimulate health care workers to improve maternal and perinatal outcomes

Capacity Building: Provide mentorship opportunities by profiling current projects that SRACH program members are involved in and posting opportunities for interest young scientists (mentorship, research and publication opportunities)
Identify research questions within different activities that members are currently working on and engage students and junior scientist

Evaluate research reports for best practices for adolescent health

Assess and identify research and knowledge gaps in adolescent health research, propose a package on comprehensive sexual education- source for personnel or identify a PHD student with an interest in this area
Assess and identify opportunities to respond to adolescent sexual reproductive challenges in Kenya and determine a comprehensive sexual education package that is culturally sensitive and acceptable.

Challenges identified and proposed solution

Members recognized the challenge in finding personnel to carry out proposed activities and proposed that the program source for an intern (unpaid but mentored position)

Sample of program activities conducted by Program Committee Members

Dr. Phelgona Otieno is a paediatrician posted to the Centre for Clinical Research. She is currently engaged in several research projects in addition to providing mentorship to 3 masters in public health students. Two of her studies target nutrition in young children, one on-going study is examining the role of goat milk in infant feeding. The investigators are comparing nutrition and health outcome among breast fed infants who are supplement fed with goat milk compared to those supplemented with cow's milk. A 2nd study which is currently in analysis phase was coined 'Shamba Maisha' and assessed 'agricultural intervention to improve health and nutritional status of children in Kenya'.

Dr. Maricianah Onono: Leads a community reproductive health program in Nyanza

Dr. Nelly Mugo and Dr. Elizabeth Bukusi are both currently site investigators in, respectively, Thika and Kisumu, in the 'Partners PrEP Demonstration Project' that is assessing the feasibility and acceptance of pre-exposure prophylaxis using Truvada to prevent new HIV infections among HIV-discordant couples in a none clinical trial setting. Among other reproductive health research studies, the full list will be compiled for the next report.

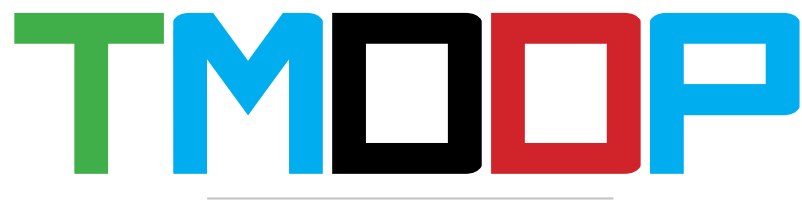
Strengths and Way forward

- A committed and dedicated program committee
- Requires increased membership to assist carry out proposed activities
- Working on the annual workplan to guide program activities for current calendar year



The Traditional Medicine and Drug Development Programme (TMDDP)





Dr. Festus M. Tolo, Ph.D.,
Ag. Head, TMDDP, KEMRI

Dr. Festus M. Tolo is a Principal Research Officer in KEMRI stationed at the Centre for Traditional Medicine and Drug Research (CTMDR). He is a Medicinal Phytobiologist holding a Ph.D. in Medicinal Phytochemistry, of Jomo Kenyatta University of Agriculture and Technology (JKUAT). He is a fellow at the African Scientific Institute (ASI) and heads the Biological Sciences Unit at CTMDR. He is a WHO Special Program for Research and Training in Tropical Diseases (WHO SPR-TDR) trained trainer of trainers in Good Laboratory Practice (GLP). Dr. Tolo's engagements in medicinal plants research spans over two decades where he has been involved in various research projects. Notably, the JICA sponsored Infectious Diseases Research Project of KEMRI where he played a key role in the "Plant Drug Research Group for Antiviral Agents" leading to the innovation of an anti-herpes herbal product, ZedupexTM. He is the acting Head of the Traditional Medicine and Drug Development Programme (TMDDP).

Objective of the Programme

To identify and develop safe and effective traditional/alternative medicines and drugs for use against human diseases.

Flagship Project/areas in this programme are:

- Traditional medicine
- Conventional medicine
- Alternative medicine

Programme vision

To be a leading programme in the promotion of Traditional Medicine and Drug Development.

Programme mission

To improve human health and quality of life through promotion and development of safe, efficacious and quality Traditional Medicines and Drugs.

Programme establishment

The Traditional Medicine and Drug Development Programme (TMDDP) is one of the six research programmes of the Kenya Medical Research Institute (KEMRI). The Programme was established in the 2011/2012 financial year and is aligned to the Institute's Strategic Master Plan and the Kenya Vision 2030.

Programme purpose

To identify and develop effective traditional/alternative medicines and drugs for use against human diseases in partnership with relevant institutions and Government ministries. In addition, the programme is also intended to provide information on quality of selected drugs in the Kenyan market.

Programme strategies

1. To coordinate the identification, documentation and conservation of Medicinal Plants in Kenya.
2. To coordinate the determination of the quality, safety and efficacy of Traditional Medicines (TM) in Kenya.
3. To coordinate pilot production of validated Traditional Medicines.
4. To strengthen capacity building and training in the area of Traditional Medicine for research and drug development.
5. To play a role in the advisory and policy formulation in Traditional Medicine in Kenya.
6. To support the determination of the quality of drugs in the Kenyan market.

Programme goals and objectives

Goal 1: *Identify and develop sustainable safe and effective TM for use against human diseases.*

Objectives:

- i. Facilitate the identification and documentation of TM used for various diseases.
- ii. Promote development of relevant policies & legal frameworks of TM.
- iii. Facilitate determination of quality, safety and efficacy of TM.
- iv. To promote conservation of medicinal plants used to make TMs.
- v. To act as advisory body to the MOH on TM.
- vi. To establish and strengthen partnerships with other stakeholders.
- vii. To translate research into model phytomedicines.
- viii. To initiate and support human development (capacity building) on TM research.

Goal 2: *Identify factors that influence quality of pharmaceutical products in Kenya.*

Objectives:

- i. Identify problematic drugs whose qualities easily deteriorate.
- ii. Determine factors that contribute to the deterioration.

Expected programme outputs

1. Increased documentation of medicinal plants and traditional medicines.
2. Pilot production of validated phytomedicines.
3. Increased research development, dissemination and utility of TM.
4. Increased resource mobilization.
5. Strengthened partnerships with other stakeholders.
6. Increased human resource capacity in the area of TM.

Programme contribution to goals & objectives of the Health Sector-Kenya Vision 2030, National development agenda

1. Promote use of safe and effective TM.
2. Increased knowledge, attitude and practice on TM.
3. Influence policies on TM.
4. Increased alternative sources of health care.

Partners and Collaborators

Government departments: Ministry of Health, Ministry of Culture and Social Services, ministry of Higher Education, NACOSTI, KIRDI, NMK, KCDA, IPR and KARI.

Non-governmental Organizations: ANAMED & PROMETRA

Institutions of higher learning: JKUAT, KU, UoN, Maseno University, Makerere University, University of Dar es Saalam, Muhimbili University, University of Ibadan, Cameroon University.

International organizations: (ICIPE), Japan International Cooperation Agency (JICA), World Health Organization (WHO), IPR and others.

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KENYA NATIONAL AUDIT OFFICE

REPORT OF THE AUDITOR-GENERAL ON KENYA MEDICAL RESEARCH INSTITUTE FOR THE YEAR ENDED 30 JUNE 2013

REPORT ON THE FINANCIAL STATEMENTS

I have audited the accompanying financial statements of Kenya Medical Research Institute set out on pages 7 to 25 which comprise the statement of financial position as at 30 June 2013, and the statement of comprehensive income, the statement of changes in equity and statement of cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information in accordance with the provisions of Article 229 of the Constitution of Kenya and Section 14 of the Public Audit Act, 2003. I have obtained all the information and explanations which to the best of my knowledge and belief, were necessary for the purpose of the audit.

The Board of Management’s Responsibility for the Financial Statements

The Board of Management of Kenya Medical Research Institute is responsible for the preparation and fair presentation of these financial statements in accordance with the International Financial Reporting Standards and to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

The Board is also responsible for the submission of the financial statements to the auditor-General in accordance with the provisions of Section 13 of the Public Audit Act, 2003.

Auditor-General Responsibility

My responsibility is to express an opinion on these financial statements based on the audit and report in accordance with the provision of Section 15(2) of the Public Audit Act, 2003 and submit the audit report in compliance with Articles 229(7) of the Constitution of Kenya. The audit was conducted in accordance with International Standards on Auditing. Those standards require compliance with ethical requirements and that the audit be planned and performed to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depended on the auditor’s judgement, including the assessments of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity’s preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Institute’s internal control. An Audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the board of management, as well as evaluating the overall presentation of the financial statements.

I believe that the audit evidence obtained is sufficient and appropriate to provide a basis for my qualified audit opinion.

Basis for Qualified Opinion

1. Property, Plant and Equipment

(i). Land

As previously reported, the property, plant and equipment balance of Kshs. 3,511,435,332 as at 30 June 2013 includes various parcels of land valued at Kshs.227,642,500, situated at KEMRI Headquarters (8.083 ha),

Kenyatta National Hospital (1.34 ha), Kilifi (2.705 ha), Kwale (2.023 ha), Mbagathi Road (2.4282 ha) and Taita Taveta (4.047 ha) whose respective title documents were not availed for audit verification. Om the absence of the title documents, it has not been possible to confirm the ownership status of the parcels of land and that the property, plant and equipment balance of Kshs. 3,511,435,332 as at 30 June 2013 is fairly stated.

(ii). Residential Staff Housing

As similarly reported in 2011/2012, the property, plant and equipment balance of Kshs. 3,511,435,332 as at 30 June 2013 also includes a staff housing project valued at Kshs. 476,001,556 located on a 2.4282 ha area along Mbagathi Road-Nairobi and against which a developer had used the title documents as collateral to borrow funds from the National Bank of Kenya. In an effort to have the documents discharged and as similarly reported in 2011/12 the Government spent a sum of Kshs.280 million in the year 1993 and a further amount of Kshs.142 million in 2000 towards settling the developer account with the Bank. However, and in spite of payments totaling Kshs. 422 million having been made, thus settling the debt in full, the documents had not been discharged as at 30 June 2013.

In the circumstances, it has not been possible to ascertain the ownership status of the parcels of land and that the property, plant and equipment balance of Kshs. 3,511,435,332 as at 30 June 2013, is fairly stated.

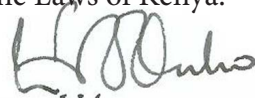
2. Trade and Other Receivables

(i). As reported in 2011/12, the trade and other receivables balance of Kshs. 374,469,494 as at 30 June 2013 is net off an amount of Kshs.120,000,000 in respect of a deposit placed with the Institute lawyers in year 2000 while the Institute was following up issues related to the stalled residential staff housing project. Although according to information available the lawyers have since refunded the amount of Kshs. 119,871,608 and retained as fee a sum of Kshs. 128,392, the amount of Kshs. 120,000,000 is still reflected as provision for bad and doubtful debts. A further review of the statements indicates that the interest accumulated over time on the amount of Kshs. 120,000,000 may not have been taken account of during the year.

(ii). Further, the trade and other receivables of Kshs. 374,469,494 as at 30 June 2013 includes temporary imprests amounting to Kshs. 7,931,450 which are over one year old. In addition, the trade and other receivables balance of Kshs. 374,469,494 as at 30 June 2013 also include over remitted statutory and staff deductions of Kshs. 913,676 whose collectability is in doubt. In the circumstances, it has not been possible to confirm the validity and accuracy of the trade and other receivables balance of Kshs. 374,469,494.00 as at 30 June 2013.

Qualified Opinion

In my opinion, except for the effect of the matters described in the Basis of Qualified Opinion paragraph, the financial statements present fairly, in all material respects, the financial position of the Institute as at 30 June, 2013, and of its financial performance and its cash flows for the year then ended, in accordance with the International Financial Reporting Standards and comply with the Science and Technology Act, Cap 250 of the Laws of Kenya.



Edward R.O. Ouko, CBS
AUDITOR-GENERAL

Nairobi
15 May 2014

MANAGEMENT TEAM

1. Dr. Solomon Mpoke, Director, Kenya Medical Research Institute
2. Dr. Elizabeth Bukusi, Deputy Director, (Research and Training)
3. Linah C Boit, Deputy Director (Administration & Finance)
4. Dr. Charles Mwandawiro, Assistant Director , (Partnership and Collaborations)
5. Dr. Gerald Mkoji, Assistant Director, (Training &Communication)
6. Anne N. Wangombe, Assistant Director, (Human Resource)
7. Mr. John N. Kariuki, Assistant Director (Research & Administration)
8. Dr. Monique Wasunna Assistant Director, (Research)
9. Dr. Rashid Juma, Director, Centre for Clinical Research
10. Dr. Kimani Gachuhi, Director, Centre for Biotechnology Research & Development
11. Dr. Evans Amukoye, Director, Centre for Respiratory Diseases Research
12. Dr. Samuel Kariuki, Director, Centre for Microbiology Research
13. Dr. Jenniffer Orwa, Ag Director, Centre for Traditional Medicine & Drug Research
14. Dr. Yeri Kombe, Director, Centre for Public Health Research
15. Dr. John M. Vulule, Director, Centre for Global Health Research
16. Dr. Omar Sabah, Centre for Geographical Medicine Research – Coast
17. Dr. Fredrick Okoth, Director, Centre for Virus Research
18. Dr. Sammy Njenga, Director, Eastern & Southern Africa Centre for International Parasite Control
19. Dr. Michael Kiptoo, Coordinator, KEMRI Graduate School of Health Sciences
20. Dr. Matilu Mwau, Director, Centre for Infectious and Parasitic Diseases Control Research

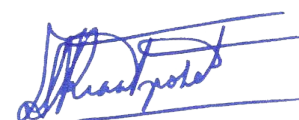
STATEMENT OF COMPREHENSIVE INCOME FOR THE YEAR ENDED 30TH JUNE 2013

Income Statement			
	Note	2013	2012
		Kes.	Kes.
Income			
Grants	3(a)	7,982,654,833	8,001,385,171
Other Income	3(b)	322,364,581	272,905,320
Total Income		8,305,019,414	8,274,290,491
Expenses			
Staff Cost	4(a)	4,454,358,505	4,725,649,533
Administrative cost	4(b)	358,723,724	351,246,985
Operating Cost	4(c)	3,276,519,710	3,013,752,030
Boards Expenses	4(d)	11,009,894	10,497,728
Financial Costs	4(e)	3,180,995	3,144,789
Total expenses		8,103,792,830	8,104,291,065
Surplus		200,226,584	169,999,426

STATEMENT OF FINANCIAL POSITION AS AT 30TH JUNE 2013

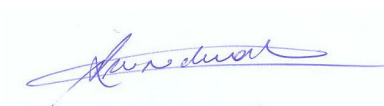
ASSETS	(1)	Note	2012/2013	2011/2012
Non-Current Assets			Kes	Kes
Property, Plant & Equipment	2		3,511,435,333	3,447,945,229
Current Assets				
Trade and other Receivables	5		374,469,490	149,287,596
Collaborators Funds	7(b)		151,338,174	275,907,178
Short Term Deposits			173,474,846	259,797,571
Cash and Cash Equivalent	8(a)		965,767,658	1,384,169,553
Total Current Assets	(2)		1,665,050,168	2,069,161,898
Total Assets	(1+2)		5,176,485,501	5,517,107,127
Equity and Liabilities				
Equity				
Capital Reserve			2,823,414,037	3,601,318,682
Revenue Reserve			1,626,009,968	113,725,574
Surplus			-	482,458,198
Total Equity			4,449,424,005	4,197,502,454
Current Liabilities				
Trade and other Payables	6		60,715,106	81,858,007
Bank overdrafts	8(b)		-	1,793,464
Collaborators Funds	7(a)		666,346,390	1,235,953,202
Total Current Liabilities			727,061,496	1,319,604,673
Total Equity and Liabilities			5,176,485,501	5,517,107,127

SOLOMON MPOKE, PhD
DIRECTOR KEMRI & SECRETARY,
BOARD OF MANAGEMENT



Date... 13th May 2014

PROF. RUTH NDUATI
CHAIRMAN,
BOARD OF MANAGEMENT



13th May 2014
Date.....

STATEMENT OF CHANGES IN EQUITY FOR THE YEAR ENDED 30TH JUNE, 2013

	Capital Reserve (Kes)	Revenue Reserve (Kes)	Total (Kes)
Opening Balance 01.07.2011	2,778,605,757	1,227,144,429	4,005,750,186
Surplus for the year	-	169,999,426	169,999,426
Development grant directly funded	22,411,104	-	22,411,104
Adjustment for Post Balance sheet events	-	(658,262)	(658,262)
Closing Balance 30.06.12	2,801,016,861	1,396,485,593	4,197,502,454
Opening Balance 01.07.2012	2,801,016,861	1,396,485,593	4,197,502,454
Adjustment for Prior year depreciation	-	22,790,962	22,790,962
Adjustment for prior year	-	5,506,829	5,506,829
Restated Balance as at 01.07.2012	2,801,016,861	1,424,783,384	4,225,800,245
Surplus for the year	-	201,226,584	201,226,584
Development grant directly funded - Note 10	22,397,176	-	22,397,176
Closing Balance 30.06.13	2,823,414,037	1,626,009,968	4,449,424,005

Notes

The opening accumulated fund has been restated to Kes 4,225,950,511 on account of the following.

- In the prior year, depreciation was provided on computers which had fully been depreciated hence adjustment for Kes 22,790,962.
- The prior year adjustment of Kes. 5,506,829 is Kes. 5,602,829 net of Kes 96,000. The amount of Kes. 5,657,095 was interest earned on the fixed deposit in the 2011/2012 Financial Year which had not been recognized in the accounts hence this adjustment and restatement of opening balances. Similarly an amount of Kes. 600,000 was accrued audit fees whereas actual invoice amount paid was 696,000 hence restating prior year revenue reserves with the Kes. 96,000.
- In the prior year, the accumulated fund of KES 4,005,450,186 was combined. However, in the current year we have separated the capital fund and revenue fund in compliance with IFRS Number 1

STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 30TH JUNE, 2013

	Year ended 30.6.2013 Kes.	Year ended 30.6.2012 Kes.
Cash Flows from Operating Activities		
Surplus for the year	201,226,584	169,999,426
Adjustments for:		
Depreciation	86,076,932	77,672,526
Surplus before working capital changes	287,303,516	247,671,952
Working capital changes		
Increase/Decrease in receivables	(225,181,898)	5,042,478
Decrease/Increase Collaborators Funds (debits)	124,569,005	(208,045,208)
Adjustment for post balance sheet event		(658,262)
Adjustment of prior Year items	5,506,829	447,365
Decrease/Increase in Short term deposits	86,322,725	(259,797,571)
Increase /Decrease in payables	(21,142,901)	32,275,705
Increase /Decrease in bank overdraft	(1,793,464)	1,793,464
Increase/Decrease in Collaborators Funds (credits)	(569,606,812)	374,642,927
Net cash generated from operating activities	(314,023,000)	193,372,885
Cash Flows from Investing Activities		
Purchase of fixed assets	(104,378,898)	(93,711,757)
Net Cash used in Investing Activities	(104,378,898)	(93,711,757)
Cash Flows from Financing Activities		
Increase in cash and cash equivalents	(418,401,897)	99,661,129
Cash and cash equivalents at the beginning	1,384,169,552	1,284,508,424
Cash and cash equivalent at the end of period	965,767,655	1,384,169,553

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 30TH JUNE 2013

1. SIGNIFICANT ACCOUNTING POLICIES

a. Statement of compliance

The financial statements have been prepared in accordance with the requirements of International Financial Reporting Standards (IFRS).

b. Historical cost convention

The historical cost convention has been adopted in the preparation of these financial statements which are denominated in Kenya Shillings.

c. Depreciation

Depreciation on fixed assets is calculated to write down the cost over their estimated useful lives on a straight-line basis at the following rates.

Office and residential buildings	-	1.0%
Office and medical equipment	-	2.5%
Office furniture	-	2.5%
Motor vehicles	-	5%
Computers and related equipment	-	25%
Boat	-	5%

d. Amortization

Intangible assets are amortized at 25% on straight line basis.

e. Revenue Recognition

Revenue is recognized in the accounts when earned and when it is probable that future economic benefits will flow to the Organization and these benefits can be measured reliably.

f. Translation of Foreign Currencies

Transactions denominated in foreign currencies during the year are converted into Kenya shillings at rates ruling at the transaction dates. Assets acquired during the year denominated in foreign currencies are converted into Kenya shillings at rates ruling at the balance sheet date.

g. Donor grants

The capital expenditure incurred by our collaborating partners have been recognized in our balance sheet while the operation and maintenance expenses have been credited to the income statements in the same period in which they are incurred. The unexpended cash balances are treated as both current asset and current liability in the balance sheet.

h. Retirement Pension Schemes

The Institute operates a defined contribution scheme for its employees. The scheme operated by a Board of Trustees, is funded by contributions from both the Institute and the employees. The Institute's contribution to the scheme is charged to the income and expenditure statement.

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 30TH JUNE 2013 (Cont'd)

Both the Institute and the employees contribute to a statutory defined contribution scheme, the National Social Security Fund.

i. Consolidation of Accounts

The financial statements incorporate the accounts of the Semi autonomous graduate school and the Revenue Generating Activities

j. Comparatives

Where necessary, comparative figures have been adjusted to conform to changed presentation in the current year.

k. Currency

The currency used in the financial statement is Kenya shillings.

l. Foreign currency translation

Foreign currencies are translated to at the rate ruling on the transaction date.

Property plant and equipment

ITEM	LAND	OFFICE BUILDING	RES. BUILDING WIP	RESIDENTIAL BUILDING	MOTOR VEH.	MOTOR BOAT	OFFICE & MEDICAL EQUIP	OFFICE FURNITURE	INTANGIBLE ASSETS	COMPUTER	TOTAL
2012/2013											
COST											
1st July 2012	227,642,500	2,164,766,358	440,781,091	1 91,505,825	190,852,323	2,638,103	700,923,261	45,581,649	23,288,932	79,801,707	4,067,781,748
Additions	-	2,614,125	35,220,465	-	5,793,182	-	8,226,527	5,350,299	32,613,700	36,957,775	126,776,074
Fully Depreciated Assets	-	-	-	-	-	-	-	-	-	(38,574,732)	(38,574,732)
30th June 2013	227,642,500	2,167,380,483	476,001,556	191,505,825	196,645,505	2,638,103	709,149,788	50,931,948	55,902,632	78,184,750	4,155,983,091
DEPRECIATION											
1st July 2012	-	194,628,403	-	28,640,215	71,713,203	131,905	232,118,743	11,279,126	5,822,233	75,502,691	619,836,519
Excess provision for Depn	-	-	-	-	-	-	-	-	-	(22,790,962)	(22,790,962)
Depreciation Restated	-	194,628,403	-	28,640,215	71,713,203	131,905	232,118,743	11,279,126	5,822,233	52,711,729	597,045,557
Charge for the year	-	21,673,805	-	1,915,058	9,832,275	131,905	17,728,745	1,273,299	13,975,658	19,546,188	86,076,932
Fully Depreciated Assets	-	-	-	-	-	-	-	-	-	(38,574,732)	(38,574,732)
30th June 2013	-	216,302,208	-	30,555,273	81,545,478	263,810	249,847,488	12,552,425	19,797,891	33,683,185	644,547,758
2011/2012											
COST											
1st July 2011	227,642,500	2,164,766,358	392,011,647	191,505,825	181,388,168	-	696,625,319	39,088,485	-	58,630,585	3,951,658,887
Additions	-	-	48,769,444	-	9,464,155	2,638,103	4,297,942	6,493,164	23,288,932	21,171,122	116,122,861
30th June 2012	227,642,500	2,164,766,358	440,781,091	191,505,825	190,852,323	2,638,103	700,923,261	45,581,649	23,288,932	79,801,707	4,067,781,748
DEPRECIATION											
1st July 2011	-	172,980,739	-	26,725,157	62,170,587	-	214,595,661	10,139,585	-	55,552,264	542,163,993
Charge for the year	-	21,647,664	-	1,915,058	9,542,616	131,905	17,523,082	1,139,541	5,822,233	19,950,427	77,672,526
30th June 2012	-	194,628,403	-	28,640,215	71,713,203	131,905	232,118,743	11,279,126	5,822,233	75,502,691	619,836,519
NET BOOK VALUE											
30TH June 2013	227,642,500	1,951,078,275	476,001,556	160,950,552	115,100,027	2,374,293	459,302,300	38,379,523	36,104,741	44,501,565	3,511,435,333
30th June 2012	227,642,500	1,970,137,955	440,781,091	162,865,610	119,139,120	2,506,198	468,804,518	34,302,523	17,466,699	4,299,016	3,447,945,229

Note 3		
INCOME		
a) Grants	2013	2012
	(Kes.)	(Kes.)
Recurrent exchequer	1,213,000,001	1,213,000,001
Development Exchequer	262,800,000	143,000,000
Deposits and special accounts	6,506,854,832	6,645,385,171
Subtotal (1)	7,982,654,833	8,001,385,171
b) Others		
Sundry Income	111,531,619	133,473,183
Interest on Investment	20,363,010	-
Rental Income	34,002,268	23,563,802
Revenue Generating Activities	54,380,384	21,618,577
Graduate Program (ITROMID)	102,087,300	81,905,200
Miscellaneous Income	-	12,344,557
Subtotal (2)	322,364,581	272,905,320
Total Income (1+2)	8,305,019,414	8,274,290,491
Note 4		
a) Staff costs		
Personal emoluments	607,839,784	542,037,416
Gratuity & pension contribution	94,519,567	73,644,776
House allowance	250,692,825	235,126,163
Other allowance	175,877,212	164,305,954
Medical allowance	17,571,636	16,693,625
Passages & leave	6,980,200	5,946,600
Staff Insurance	18,568,291	17,934,786
Medical & Ex-gratia	27,245,758	18,318,364
Deposits and special accounts	3,255,063,234	3,651,641,849
	4,454,358,505	4,725,649,533
b) Administrative expenses		
Transport	15,928,666	16,318,369
Travelling & accommodation	19,549,110	17,369,425
Legal expenses	4,947,321	7,095,160
External travelling & accommodation.	11,055,849	8,999,327
Postal & telegrams	197,024	458,590
Telephones	4,078,709	3,379,452
Official entertainment	5,865,549	2,842,207
Conferences	8,448,066	8,235,287
Electricity	40,946,221	65,917,784
Water & conservancy	1,507,792	5,687,277
Purchase of consumable stores	2,930,078	5,761,045
Publishing & printing	3,018,240	6,382,631
Purchase of uniforms & clothing	222,045	1,314,000
Library Expenses	1,524,590	945,387



Purchase of stationery	8,338,111	7,003,061
Advertising, publicity & shows	7,317,021	5,495,596
Industrial Diesel	1,846,112	2,707,205
Rents and rates	67,633	500,495
Computer Expenses	14,757,800	14,551,253
Miscellaneous	6,414,778	2,702,867
Audit Fees	700,000	600,000
Fees Commission & Honoraria	2,363,067	6,840,322
Training	7,126,479	4,356,305
Insurance - Fire and burglary	1,171,726	1,161,641
Insurance - Motor Vehicle	6,619,130	5,986,130
Security Expenses	26,701,278	22,433,720
Maintenance. -Plant, mach.& equip.	1,814,699	3,484,705
Maintenance - buildings & stations	13,907,234	26,495,152
Maintenance of Water & Sewer	-	75,450
Prevention of Drugs & Substance Abuse	617,000	-
Contracted Services - Cleaning	25,732,682	-
Staff Clinic	1,832,950	-
Staff Welfare	1,319,089	6,193,279
Strategic Initiatives	19,764,005	9,372,684
Strategic Plan & Vision 2030	1,591,409	1,507,000
Subscriptions & Membership Fees	1,408,505	280,915
Gender Mainstreaming	315,090	1,120,740
Disability Mainstreaming	701,735	-
Depreciation	86,076,932	77,672,526
	358,723,724	351,246,985
c) Operating costs		
Laboratory reagents & supplies	9,356,225	13,235,055
Purchase of drugs & dressings	3,172,904	4,443,688
Food and rations	-	43,210
Purchase of animal feeds	487,263	473,936
Research Programs -Internal	18,524,227	3,955,036
Deposits and special accounts	3,244,979,092	2,991,601,107
	3,276,519,710	3,013,752,030
d) Boards Expenses		
Sitting Allowance	6,093,065	3,682,171
Travel & Accommodation	1,582,479	4,346,018
Official Entertainment	2,259,240	1,416,621
Insurance	20,918	960,000
Honoraria	72,000	72,000
Telephone	11,009,894	10,497,728
e) Financial Costs		
External	2,032,341	1,002,574
Main	1,148,654	2,142,215
Bank Charges	3,180,995	3,144,789

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 30TH JUNE, 2013 (cont'd)

NOTE 5

Trade and other receivables

	2012/2013	2011/2012
Category	(Kes)	(Kes)
Advances to Centers	405,164	574,617
Staff advances	17,932,860	16,218,850
Graduate school – Outstanding Fees	149,512,015	66,176,615
Caution Money	-	76,000
Staff Debtors	-	1,767,079
Sande Makhandia & Co. Advocates	120,000,000	120,000,000
Over remitted Staff Deductions	366,930	5,103,138
Over remitted Statutory Deduction	546,746	6,249,953
Donor – Accrued Income	94,591,343	45,588,909
Customers Control Account	794,436	4,330,353
Retention Money		3,202,082
Attachment fee CMR	181	
Incineration	109,670	
Pharmacy-Staff clinic	562,822	
Xray-outpatient	62,461	
Suspense Account	109,584,860	
Total	494,469,490	269,287,596
Less Provision for bad debts	120,000,000	120,000,000
	374,469,490	149,287,596

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 30TH JUNE, 2013 (cont'd)

NOTE 6

Trade and other payables

	2012/2013	2011/2012
Category	Kes	Kes
Advances to Centers	7,302	-
Unremitted staff deductions	369,986	10,496,427
Un-remitted Statutory Deductions	1,557,344	6,473,580
Provision for audit fees	700,000	600,000
Retention Money	5,987,659	16,784,611
Fines and Surcharges	-	2,500
Advance Tuition Fees	12,475,988	3,107,301
Graduate school - Prepayments	25,383,357	-
Family bank	135,471	-
Research Fees	2,079,462	2,080,740
Staff Over deductions	1,078,322	2,007,280
Other Deposits	5,996,220	-
Caution Money	4,612,000	2,492,000
Suppliers Control Account	331,996	16,262,230
Suspense Control account	-	21,551,338
Total	60,715,106	81,858,007

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 30TH JUNE, 2013 (cont'd)

NOTE 7 (a)

COLLABORATIVE PROGRAMMES STATEMENT OF FUNDS AS AT 30TH JUNE 2013

	Opening balance	Movement	Adjusted opening balance	RECEIPTS	EXPENDITURE	Closing Balance
American Embassy	158,153,868	(114,532,638)	43,621,230	851,935,122	857,707,090	37,849,262
Case western	666,701	-	666,701	3,720,400	2,637,740	1,749,361
DNDI	3,609,388	-	3,609,388	12,992,153	15,279,972	1,321,569
Elizabeth Glazer Foundation	71,995	-	71,995	-	-	71,995
Government Treasury - USA	475,801,454	(40,104,936)	435,696,518	1,559,919,062	1,821,282,897	174,411,069
NIH	21,321,480	(3,942,248)	17,379,232	11,439,142	8,961,610	19,856,763
UNICEF	906,001	-	906,001	-	-	906,001
IDRC	859	(16,521)	(15,662)	44,154	11,363	17,128
University of California	108,426,916	3,132,099	105,294,817	89,423,161	92,444,070	102,273,908
University of Georgia	1,356,329	1,553	1,354,776	6,891,684	8,022,964	223,496
University of Texas	4,493,457	-	4,493,457	2,555,155	2,983,128	7,739,270
University of New Mexico	169,145	29,534	139,611	4,102,921	3,746,201	496,331
University of Washington	7,445,845	3,826,420	3,619,425	11,115,000	7,925,273	7,348,344
JH PIEGO CORP	4,395,424	-	4,395,424	-	931,724	3,463,699
Welcome Trust Research Labs	3,112,751	467,809	2,644,942	3,145,777	500,800	5,289,919
University of Oxford	17,652,096	15,184,250	2,467,846	6,906,270	5,670,023	3,704,093
WHO	36,140,242	2,634,354	33,505,889	23,392,985	26,791,824	30,107,050
European Union	4,255,288	-	4,255,288	-	4,237,858	17,430
University of Columbia	340,579	-	340,579	-	-	340,579
Global Forum for Health	62,112	-	62,112	-	-	62,112
Global Development Network	27,681	-	27,681	-	-	27,681
M.A.C. AIDS Programme	100,298	-	100,298	-	-	100,298
CRDF	4,161,793	4,161,793	-	-	-	-
PATH	144,141,347	130,821	144,010,525	138,449,161	273,162,519	9,297,167
AVAC-USA	8,214,860	-	8,214,860	-	6,067,823	2,147,037
Bill and Melinda Gates	9,542,192	167,050	9,375,142	20,213,545	13,692,935	15,895,752
World Food Programme	185,428	-	185,428	-	-	185,428
Food Agriculture Org of U.N	3,402,707	-	3,402,707	4,355,915	7,758,574	48
Global Alliance Against TB	4,406,115	-	4,406,115	13,591,674	12,930,744	5,067,045
School of Tropical Medicine	4,714,144	-	4,714,144	4,033,280	7,981,764	765,661
University of Liverpool	7,887,589	-	7,887,589	-	1,971,564	5,916,025
EMORY University	-	323,156	(323,156)	11,808,487	10,347,893	1,137,438
ITM - Belgium	1,574,543	-	1,574,543	-	-	1,574,543
VesterGaard Frandsen(SA)	694,540	-	694,540	-	606,932	87,608
Inter-University Council of E.A	40,902	-	40,902	475,113	40,600	475,415
(IPM)	18,034,033	-	18,034,033	10,044,956	12,813,396	15,265,593
Partnership For Child Devp	627,141	-	627,141	1,110,236	90,019	1,647,358
Children Investment Funds	7,380,594	-	7,380,594	8,845,454	14,020,403	2,205,645
Volkswagen Foundation	2,975,326	-	2,975,326	3,810,536	4,973,415	1,812,447
SUNY	124,006	-	124,006	6,550,949	6,448,594	226,361
Imperial College of Sciences	5,720,247	5,720,247	-	-	-	-
EARAS -	22,860,268	-	22,860,268	54,307,484	3,742,215	73,425,537

EDCTP	31,621,633	604,467	31,017,166	23,700,193	32,133,738	22,583,620
African Pop. Health Research	30,581	-	30,581	-	20,000	10,581
ULM University	129,581	-	129,581	-	-	129,581
Garp - Kenya	0	-	0	1,487,160	806,002	681,158
NCST-2	2,510,166	-	2,510,166	19,212,754	16,695,625	5,027,295
Universal Corporation Ltd	3,834	-	3,834	-	-	3,834
University of Cape Town	-	319,610	(319,610)	2,484,674	2,030,694	134,370
University of Wageningen	15,625	-	15,625	-	-	15,625
University of Munich	1,986,299	-	1,986,299	595,300	2,581,599	-
Other Collaborative Agencies	57,034,963	-	57,034,963	950,404,247	948,274,913	59,164,297
Local Grants	<u>47,422,836</u>	-	<u>47,422,836</u>	<u>70,347,262</u>	<u>73,683,535</u>	<u>44,086,563</u>
	<u>1,235,953,199</u>	<u>195,299,506</u>	<u>1,040,653,692</u>	<u>3,933,411,366</u>	<u>4,312,010,031</u>	<u>666,346,390</u>

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 30TH JUNE 2013 (Cont'd)

Note 8(a)

	Opening balance	Movement	Adjusted opening balance	RECEIPTS	EXPENDITURE	Closing Balance
SOURCE	KES	KES	KES	KES	KES	KES
American Embassy	(114,532,638)	114,532,638				
DNDI	(38,803)	-	(38,803)	8,570,006	8,568,625	(37,422)
Government Treasury - USA	(32,105,183)	-	(32,105,183)	1,659,856,766	1,652,056,496	(24,304,914)
NIH	(1,942,041)	(3,942,248)	2,000,207	1,512,000	4,476,159	(963,952)
IDRC	(16,521)	(16,521)	(16,521)	-	-	-
University of California-	(3,132,099)	(3,132,099)	(3,132,099)			
University of Georgia	(1,553)	(1,553)	(1,553)	-	-	-
University of New Mexico	(29,534)	(29,534)	-	1,443,121	1,455,899	(12,778)
University of Oxford	-	(15,184,251)	15,184,251	216,307,974	234,967,658	(3,475,433)
WHO	-	(2,219,398)	2,219,398	-	2,732,122	(512,724)
Imperial College of Sciences	-	(5,720,247)	5,720,247	8,450,000	14,908,341	(738,095)
CRDF	-	(4,161,793)	4,161,793	45,000	4,486,531	(279,738)
University of Washington	(3,826,420)	(3,826,420)	-	-	-	-
University of Cape Town	(319,610)	(319,610)	-	-	-	-
Welcome Trust Labs	(60,620,974)	(18,107,896.00)	(78,728,870.00)	205,093,423	176,436,393	(49,604,032)
WHO	(414,955)	(414,955)	-	-	-	-
PATH	(130,821)	(130,821)	-	-	-	-
Bill and Melinda Gates	(167,050)	(167,050)	-	-	-	-
University of Massachusetts	(5,652)	-	(5,652)	5,050,252	5,544,603	(500,004)
EDCTP	(604,468)	(604,468)	-	-	-	-
NCST-1	(249,543)	-	(249,543)	-	331,000	(580,543)
EMORY University	(323,156)	(323,156)	-	-	-	-
UBS Optimus F/D	(38,000)	-	(38,000)		66,000	(104,000)
NCST-2	(26,293)	-	(26,293)	-	-	(26,293)
Boston	(37,244)	-	(37,244)	37,244	-	-
Other Collaborative Agencies	(43,432,536)	(3,772,695)	(39,659,841)	49,721,291	67,494,357	(57,432,907)
Local Grants	(13,912,084)	(11,707,258)	(2,204,826)	5,786,908	16,232,595	(12,765,339)
Total	(275,907,178)	(152,566,628)	(123,340,550)	2,161,873,985	2,189,756,779	(151,338,174)

		2012/2013	2011/2012
	Account Number	Kes.	Kes.
Cash	1104161362	32,745	621,493
	1104161966	25,000	10,020
	1104174529	25,000	187,493
	1104167611	9,742	-
	1104158574	10,907	187,372
	1128126178200	-	40,980
	Total	103,394	1,047,358
	Kenya Commercial Bank		
Exchequer and A-I-A	1104161362	197,194,857	302,495,539
	1104167611	116,477,503	104,662,699
	1104174529	24,645,603	14,362,838
Collaborators Funds Fund	1104158574	383,193,847	473,097,780
	1110258925	6,449,794	2,896,577
	1104175975	26,251,847	307,092,669
	1104161966	6,848,426	30,829,615
	1123818088	913	40,104,936
	1123818177	47,705,351	57,382,883
	1110259204	113,642	3,535,902
	1101722291	6,116,086	-
	Family Bank		
	046000014289	112,424,034	
	04600012346	7,820,554	17,656,900
	Cooperative bank		
	1128126178201	142,646	2,638,389
	1128126178200	1,155,838	9,615,160
	1128126178202	262,063	2,245,521
	1128126178203	4,142,827	-
	1128126178700	2,332,796	4,337,796
	1128126671100	21,623,281	10,160,408
	1141126178800	0	6,584
	1128127558400	599,357	-
		965,767,658	1,384,169,553
Note 8(b)	Overdraft		
	1101722291	-	(1,579,944)
	1128127558400	-	(213,520)
		-	(1,793,464)

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 30TH JUNE 2012 (Cont'd)

9. DEPOSIT ACCOUNT

The family bank deposit account is analyzed as follows.

	2011/2012	2012/2013
	kes	kes
Call Deposit Account	30,000,000	
Term Deposit	143, 474,846	259,797,571
Total	173,474,846	259,797,571

10 DEVELOPMENT EXPENDITURE DIRECTLY FUNDED

Non-current assets acquired from collaborators totaled Kes. 22,397,176 and have been added to the institutes assets base

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 30TH JUNE 2013 (Cont'd)

Note II

	STAFF COSTS	BANK CHARGES	TRAINING	LAB /OFF SUPPLIES	TRAVEL/ ACCOMOND	MOTOR VEH / EXPEN	PURCHASE OF ASSETS	OVERHEAD EXPENSES	OTHER OPERAT EXP	TOTAL
	Kes	Kes	Kes	Kes	Kes	Kes	Kes	Kes	Kes	Kes
American Embassy	396,859,966	2,000	-	-	-	-	-	56,649,699	460,845,124	857,707,090
Case western (DNDi)	1,253,107.80	-	-	-	-	-	-	169,632	1,384,632	2,637,740
	9,384,572	1,200	-	771,218	4,480,402	163,908.00	64,714	-	8,982,583	23,848,597
Government Treasury - USA	2,248,406,955	721,738	527,783	7,257,801	34,733,650	12,286,057.54	6,064,608	19,949,702	1,163,340,801	3,473,339,393
(NIH)	4,397,091	55,783.40	1,588,739	246,761	5,135,570	562,375	316,490	1,044,327	1,134,960	13,437,769
IDRC	-	11,363	-	-	-	-	-	-	-	11,363
University of California-	51,659,185	51,071	921,702	5,563,789	8,472,722	1,329,715	3,571,863	5,383,549	20,874,022	92,444,070
University of Georgia	6,383,495	17,651	445,300	-	478,803	617,825	-	195,393	79,891	8,022,964
University of New Mexico	50,000.00	1,800.00	559,400	324,594	2,262,166	270,747	101,949	406,757	1,631,444	5,202,099
University of Washington	6,754,359	7,800	-	124,100	82,900	-	58,000	1,246,432	898,114	7,925,273
Welcome Trust	176,100,760	83,625	-	60,000	-	-	-	-	452,009	176,696,393
World Health Organization-	15,620,163	46,490	1,052,280	2,896,434	7,194,387	1,172,500	606,937	470,476	934,755	29,523,946
EDCTP	-	9,549	-	557,263	168,010	113,070	-	188,165	31,285,847	32,133,738
PATH	-	2,400	-	-	-	-	-	8,660,119	273,160,119	273,162,519
Bill And Melinda Gates	8,427,535	4,800	100,000	670,678	1,184,361	-	308,008	763,981	2,997,554	13,692,935
Food and Agriculture Org	2,495,450	600	380,000	1,958,124	2,525,520	255,106	106,500	-	37,274	7,758,574
Global Alliance Against TB	9,265,268	2,400	1,971	884,283	470,980	54,000	163,578	953,401	2,088,264	12,930,744
School of Tropical Medicine	2,428,540	28,123	-	585,671	1,045,890	199,485	32,000	-	3,662,056	7,981,764
Vester Gaard Frandsen(SA)	-	6,932	-	-	-	-	-	-	600,000	606,932
IPM	957,380	22,832	-	-	22,572	-	-	198,665	11,810,612	12,813,396
Volkswagen Foundation	2,033,182	32,766	50,000	623,108	1,030,557	81,320	57,999	-	1,064,482	4,973,415
SUNY	4,234,213	12,690	-	776,695	117,220	858,793	446,919	552,697	2,064	6,448,594
AERAS	3,444,198	2,400	-	-	-	-	152,937	-	142,680	3,742,215
University of Texas	821,324	600	-	599,795	12,600	759,000.00	-	571,372	789,810	2,983,128
Childrens Investment Fund	3,102,823	1,200	169,400	1,799,156	5,345,871	1,087,623.00	87,700	88,819	2,426,630	14,020,403
University of Massachusetts	629,017	58,446	-	18,120	114,680	73,640	-	556,156	4,650,700	5,544,603
University of Oxford	239,654,689	55,283	-	-	121,215	-	124,000	-	682,494	240,637,681
European Union	2,119,986	-	-	267,037	767,750	499,333.40	-	-	583,752	4,237,858
JH PIEGO CORP	266,900	-	-	-	172,046	16,350.00	-	-	476,429	931,724



EMORY University	221,600	1,800	90,000	29,800	-	-	334,100	-	9,670,593	10,347,893
NCST-2	4,644,595	-	-	467,197	2,128,580	637,330.00	147,000	576,383	8,670,923	16,695,625
Garp - Kenya	613,402	600	-	-	-	-	-	50,100	192,000	806,002
AVAC-USA	5,106,801	-	-	-	94,325	-	-	459,102	866,697	6,067,823
CRDF	-	-	-	197,739	3,190,177	14,400.00	155,810	-	928,405	4,486,531
University of Munich	-	2,000	885,290	-	989,679	-	144,630	-	560,000	2,581,599
University of Cape Town	1,662,027	-	-	-	362,139	-	-	-	6,528	2,030,694
University of Liverpool	348,700	-	-	37,027	-	260,575.00	-	-	1,325,262	1,971,564
Imperial College of Sciences	8,049,266	1,200	96,800	518,024	2,158,805	-	256,800	254,704	3,827,446	14,908,341
Other Collaborative Agencies	21,407,414	5,395,970	819,722	4,526,842	12,156,120	1,099,832	6,497,243	12,141,989	964,413,746	1,016,316,888
Local Grants	16,259,271	169,396	6,274,293	35,410,852	27,226,096	2,194,513	1,705,312	-	6,005,218	95,244,951
TOTAL	3,255,063,234	6,812,507	13,962,680	67,172,105	124,245,793	24,607,498	21,505,096	111,531,619	2,881,954,300	6,506,854,832

