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KEFRI *Newsletter*

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KEFRI is ISO 14001:2004 Environmental Management Systems certified



His Excellency the President Hon. Uhuru Kenyatta presenting a trophy to the KEFRI show committee organising Chairperson, Mrs. Nellie Oduor, at the Jamhuri showground on October 3rd, 2013.

Kenya Forestry Research Institute has made a mark in research and innovation development following acquisition of various awards in the agricultural show exhibitions. At the Nairobi International Trade Fair held from September 29th to October 6th, 2013 KEFRI was awarded first prize for the Best Stand to Finish Trade Fair Preparations. Under the current show theme "Enhancing Technology in Agriculture and Industry for Food Security and National Growth", the institute showcased forestry technologies and their impact on national development.

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Information Centre at Muguga headquarters

Call for Newsletter articles

KEFRI newsletter is a quarterly publication that contains news of interest to members of staff and other stakeholders. The first five newsletters have been received with appreciations from the readers due to its content and presentation. However, this publication could be improved.

The editorial team thanks those who have contributed and supported this initiative, and is therefore looking for variety of articles with information about research findings, solutions to problems faced by society in socio economic engagements.

We are confident that each staff member-scientist, technical or administrator has substantial information to contribute to the newsletter.

Get involved and tell your story now!

Send your articles to:

info@kefri.org,
stevegatonga@yahoo.com,
smwangi@kefri.org

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Contributors:

Dr. J. Mulatya, S. Mwangi, S. Gitonga, M. Njenga, D. Munyao, R. Siko, J. Okumu, S. Kamonde, E. Oroni and Juliana Mutua.

Editors:

Dr. Jackson Mulatya, Stephen Mwangi, Stephen Gitonga, Margaret Njenga

Layout and Design:

Charles Nyogot

Printed by:

Print Maxim

KEFRI Shines in 2013 ASK Shows

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President Uhuru Kenyatta officially opened the trade fair at Jamhuri showground on October 2nd, 2013. The President was accompanied by the Cabinet Secretary Ministry of Agriculture and Livestock Mr. Felix Koskei and ASK officials. The Head of State urged the youth to embrace technologies offered by the event to transform agriculture into commercial and beneficial activity.



It was all excitement as KEFRI staff received news performance from ASK officials

KEFRI was among 540 exhibitors mainly from government ministries, international organisations, civil society, entrepreneurs, development partners and farmers from East Africa who displayed their products and services during the event.

Thousands of showgoers from different countries and locals visited KEFRI stand and shared their ideas and experiences, and sought establishment of linkages with technologies on display.

Collaborators

KEFRI supported the participation of three collaborators who have adopted KEFRI technologies. One of them, Mr. Jonathan Kituku Mungala, a farmer from Kibwezi County, demonstrated techniques of propagating and growing *Melia volkensii* in semi-arid areas. He acquired nursery practices and tree management skills from KEFRI and engaged in tree initiative since 2005. In 2008, he was awarded The Order of Golden Heart (OGH) by his excellency the President, for his work in tree planting and environmental conservation.

(Read more about Mr. Kituku in the upcoming Newsletter No. 7).

In the last ten years, KEFRI has successfully worked on various forest technologies and disseminated information for development to stakeholders thus contributing positively towards agricultural development and food security.

Central Highlands

KEFRI participated at the Central Kenya ASK show from September 11th to 14th, 2013 at Kabiru-ini grounds in Nyeri. Deputy President Hon. William Ruto officially opened the event accompanied by the Nyeri County Governor Mr. Nderitu Gachagua.

Hon. Ruto noted that farming has been left to the elderly people in the rural areas. He urged the youth to engage in agriculture and promised that the

Government will allocate tractors to counties in order to enhance agricultural productivity. "Embracing irrigation and modern farming technologies would soon put to an end the recurrent hunger in Kenya particularly in semi-arid areas," he noted.



KEFRI staff interacting with show-goers

In this show, KEFRI displayed technologies and products including high quality tree seeds, soil improvement, tree improvement (with emphasis on Osyris and Camphor), integrated pest management, non-wood products (Aloe, gums and resins) and assorted fancy wood products.

A model of Mt. Kenya and Aberdares ranges, two distinct water towers, depicting their contribution to energy, tourism and agriculture.

Mr. Jonathan Njuguna, a KEFRI scientist based at Nyeri station, linked the model output to on-farm forestry development, which has the potential to improve livelihood of communities in Central Kenya highlands. Collaborators namely, Kongassis and Nettle World, beneficiary of KEFRI technologies displayed assorted value added medicinal and aromatic products respectively.

Achievements

KEFRI was awarded two 2nd positions in theme interpretation and Research development categories.

Coast region

KEFRI was among 190 exhibitors who participated in Mombasa International ASK show from August 27th to September 1st, 2013 at Mkomani grounds in Nyali. President Uhuru Kenyatta, who was accompanied by Uganda President Yoweri Museveni and President Kagame of Rwanda, officially opened the show.

President Kenyatta urged entrepreneurs to take advantage of the East African States cross border trade agreement to exploit the larger market opportunities created to trade in agricultural and industrial products. On his part, President Museveni said that it is time to change our mindset and move from peasant to commercial farming. President Kagame emphasized that farmers in East African Community to take advantage of the expanded trading opportunities created by the leaders.

Display

KEFRI exhibited in its newly constructed permanent structure which was appreciated by show goers. The displays covered various technologies relevant to coast region forestry development as in line with the show's theme.

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The displayed technologies included fast growing timber species: *Gmelina arborea*, Eucalypts, *Casuarina equisetifolia*, and *Melia volkensii*. High value tree seeds, value added non wood products, indigenous fruit (Baobab and *Tamarindus indica*), gums and resins were also displayed. Additionally, wood sawing technology for timber processing on farm was demonstrated.

KEFRI publications were issued to visitors. Some visitors requested training on processing of aloe products and indigenous fruits. In the six day event KEFRI recorded 1000 visitors, who were urged to plant trees on their farms to rip benefits and conserve the environment.



Show goers from the local communities outside KEFRI newly constructed stand at Mombasa show ground

Rift Valley region

KEFRI exhibited at the Nakuru ASK show between July 4th and 8th 2013 and was ranked 2nd position in the best stand exhibiting Research and Development.

KEFRI uses Nakuru show as a platform to reach out to its stakeholders and other beneficiaries at the Rift Valley Eco-region and its environs.

As part of its outreach programme, KEFRI displayed various products and services with emphasis to bridge the gap between technology development and its utilization by stakeholders in the forestry and environmental sectors.

These technologies included seed collection, processing and sales, breeding of superior commercial species such as Eucalyptus, Pines and Cypress, rehabilitation of degraded areas in particular Mau Forest Complex, pests and diseases (Cypress aphids and their bio-control agents), agroforestry practices and their benefits, management, utilization and control of an invasive tree species *Prosopis juliflora*.

Show attendants were exposed to various dissemination methods that KEFRI apply to share research findings. These channels include field days, open days, agricultural shows, demonstration plots, CRAC, seminars/workshops, radio programmes etc.

Achievements

KEFRI was ranked 2nd best Medium Government Stand. The stand recorded 2475 visitors including farmers, students, entrepreneurs, service providers, government officials and stakeholders in Rift Valley and other parts of the country. 20kg of assorted tree seeds were sold.

Eastern region

KEFRI spearheaded by Kitui Centre participated at the Eastern branch ASK show at Machakos grounds from June 26th to 29th 2013. The show was officially opened by Machakos County Governor Dr. Alfred Mutua.

KEFRI stand registered a high number of visitors including farmers, entrepreneurs, students and public servants. Many of them took the opportunity to learn about management of trees, seeds and seedlings.

Tree seeds and seedlings displayed and sold included melia, bamboo, payos and osyris. On the display also were the improved charcoal burning kilns, demonstration of briquettes making and value addition to non-wood products for cottage industries.

The products included jam and juice from *Tamarindus indica*, *Vitex payos* and *Adonsonia digitata* which also produces Baobab instant Uji (porridge) flour.

KEFRI has developed technologies on production of charcoal briquettes using dry organic waste, improved charcoal techniques and use of micro-gasifier which are cheaper to end user and are environmental friendly.

Information dissemination

KEFRI incorporated collaborators who have benefited from training on value addition to indigenous fruit and herbal products to support information dissemination.

Kenya's arid and semi-arid lands comprise more than 88% of the total land surface. Every tree counts in environmental conservation. The following are some challenges faced by communities in dry land areas as expressed by the show-goers:

- Poor seed collection practices and storage by locals
- Overgrazing that is endangering regeneration of important bushes and tree species.
- Lack of buffer stocks to stabilise the timber and non timber market which makes buyers take advantage of traders as the latter are not able to supply the market consistently.
- Traders are concerned with delay in certification of products, particularly for export e.g. gums and resins.

Achievements

The institute entered in the four judgment categories and won a trophy in the best Medium Government stand, second best stand in Research and Development, and 3rd best stand to display locally manufactured products.

KEFRI joins Global Seed Initiative

Tree Seed National Programme Coordinator Mr William Omondi and former KEFRI Chairman of the Board, Dr James Onsando, represented Kenya at the annual meeting of the mission of the Organisation for Economic Co-operation and Development (OECD) in Paris from September 25th to 26th, 2013.



Mr. William Omondi (left) and Dr. James Onsando (second left) are received by OECD officials during the recent meeting in Paris France

The OECD Scheme for the Certification of Forest Reproductive Material aims at encouraging the production and use of forest tree seeds or plants that have been collected, processed, raised, branded and distributed to ensure high quality. The OECD scheme contributes in reducing technical trade barriers between developing and developed countries. A complete revision of the Scheme has been undertaken by participating countries to keep in line with new forestry production and tree improvement techniques.

The certified planting materials are intended for use in a variety of forestry functions including timber production, soil protection and other environmental criteria. Seeds and plants that are produced are supposed to be officially controlled according to harmonised procedures.

The certification scheme facilitates international trade in forest seed and plants.

OECD membership

The Scheme is open to all United Nations/World Trade Organisation member countries. The OECD certificates are currently recognised in 25 countries including five non-OECD members (Burkina Faso, Croatia, Madagascar, Rwanda and Serbia). Kenya has just joined and will officially begin to participate after submitting the list of species it intends to have under this scheme. As a start, Kenya will present a provisional list of five species.

KEFRI's membership in this scheme will help Kenya reap the benefits of globalisation and penetrate global markets. KEFRI is mandated to provide adequate quantities of seed and plant material with desired genetic and physiological qualities to meet the demand for tree planting activities in the country hence its membership.

"The OECD Forest Seed and Plant Scheme can facilitate the conservation of species and genetic diversity in forests. Kenya has participated in similar initiatives under the "Seeds for life Project" and, therefore, the scheme will enhance ongoing activities," said Omondi.

KEFRI signs MoUs

KEFRI - PWANI UNIVERSITY

KEFRI signed a memorandum of understanding (MoU) with Pwani University, Kilifi County on June 25th, 2013 between the Vice Chancellor Prof. Mohamed Rajab and KEFRI Director Dr. Ben Chikamai. The memorandum will focus on joint consultancy, capacity building, using facilities such as labs and use of experts where available. Potential areas of partnership include training, joint research on coastal forests and the Kayas to mitigate the effects of climate change and information sharing.

Senior members of staff from both institutions present were DVC-Academics, Head Environmental Sciences Dr. Maarifa Mwakumanya, Dr. Naiya Mohamed and Senior Administrator from the University and from KEFRI, Corporate Affairs Manager Dr. Jackson Mulatya, Assistant Director Natural Forests, Mr. Paul Ongugo, Coastal Region Centre Director Mr. Titus Mbuvi and scientists, Mr. Linus Wekesa and Chemuku Wekesa.

STAKE PROJECT

The Cabinet secretary for Environment and Natural Resources Prof. Judi Wakhungu launched the STAKE Project at the University of Nairobi, Kabete Campus on July 2nd, 2013. The event saw KEFRI, the Wangari Maathai Institute (WMI), Green Belt Movement (GBM) and the University of Copenhagen-Denmark organizations which will embark on forest resources conflict studies in Mau forest complex. The outputs from this project is anticipated to contribute to stability in Kenya through understanding and targeting the underlying factors that lead to conflicts over forest and its diverse resources.

The Danish Development Agency (DANIDA) has funded the 3-year project with 1.5 Million US dollars. The project will contribute to Kenya's long-term development through mentoring and training talented young academicians, as well as provision of scholarships for Masters and PhD training.



Dr. Ben Chikamai (centre) chats with other dignitaries during the launch of STAKE Project.

Prof. Wakhungu congratulated WMI and partnering institutions for the initiative, terming it as a step towards solution to some of the problems Kenya is facing in dealing with environmental conflicts. Kenya has witnessed conflict and violence following in 2007/2008 electoral dispute, much of which took place in the rural areas affecting mostly the underprivileged. Though majority of conflicts are associated with instability and competing claims over natural resources, the factors contributing to conflict and violence remain poorly understood.

Solving these problems is an important contribution to structuring stable nation capable of supporting its development and prosperity, she said. Obviously the two broad areas of conflict prevention mechanisms are proactive engagement to adopt standards of democracy, good governance and the establishment of a functional conflict early warning system.

Prof. Wakhungu further noted that in search of stability and prosperity, the government of Kenya in 2005 enacted a Forest Act aimed at improving forest resources management by decentralizing responsibilities and rights of forest management to various stakeholders amongst them Community Forestry Associations (CFA).



Dr. Ben Chikamai (with a spade) planting a tree at WMI during the STAKE project launch.

Prof. Agnes Mwangombe - Principal College of Agriculture & Veterinary Sciences University of Nairobi, Prof. S. G. Kiama and Wanjira Mathaai-WMI, Prof. Vibeke Vindelov, University of Copenhagen, Dr B. N. Chikamai, Director KEFRI, Dr. Njeri Gakonyo Chairperson, Board of Management, Green Belt Movement, Prof. Karanja Njoroge, Chairman Friends of Karura Forest, Mr. Mahesh Pradhan, head of The UNEP's Environmental Education and Training Unit were some of the dignitaries who attended and spoke during the launch.

The dignitaries also planted indigenous tree species to commemorate the life of the late Prof. Wangari Maathai.

KEFRI - ANU



Prof. Leah Marangu and Dr. Ben Chikamai signing the MoU at KEFRI headquarters

KEFRI has expanded its linkages with institutions of higher learning by signing a 5-year MoU with the African Nazarene University (ANU). The agreement was signed by Dr. Ben Chikamai, Director KEFRI and Prof. Leah Marangu, the Vice-Chancellor Nazarene University at KEFRI head office, on September 16th, 2013. Members present were Dr. Jackson Mulatya, Mr. Paul Ongugo, Dr. Oballa, Mr. Oscar Mayunzu, Mr. Meshack Muga, Mr. Charles Oloo, Ms Violet Oriwo from KEFRI and Prof. Rodney Lee, Prof. Kiratiira, Mr. John Opiyo, Mrs Ruth Omolo from the University.

The implementation of the MoU falls under Partnership and Networks programme and will focus mainly on capacity building, educational and attachment opportunities, research collaborations, joint consultancy services, information exchange, and sponsorship in environmental management and entrepreneurship, said Dr. Chikamai.

We anticipate this partnership will help ANU students touch base with real life experience on forestry matters, thus becoming more functional to serve Kenyans. Over the past years, universities have been criticized for producing half-baked graduates. The partnership will see KEFRI provide hands on skills to supplement theoretical subjects taught at the university, said Professor Marangu.

KEFRI staff who will pursue academic studies at ANU will be awarded tuition discount. The parties will explore use of Information Technology (IT) to reach wider communities, development of E-learning, technical support in the development of knowledge on products beneficial to society, viable enterprises and markets for Aloe products and Moringa.



Prof. Marangu and Dr. Chikamai exchanging copies of MoU as Prof. Rodney (left) and Mr. Meshack Muga (right) cheer up.

Tree Health in Africa

The continued movement of live plant materials from one state to another is the major cause of pests and disease infestation to African natural trees and plantations. Professor Jolanda Roux, microbiology and plant pathology at CABI South Africa, revealed in her presentation to KEFRI scientific colloquium held at head office Muguga on July 16th, 2013. She further noted that in the past two decades there has been substantial increase in plantation forestry development in African embracing non-native tree species mainly Eucalyptus, Grevillea, Pines, Cupressus which are now threatened.

Likewise fungal pathogen *Teratosphaeria* species, a stem canker associated with leaf spots in eucalyptus and spreading in parts of East, Central and South African regions was initially perceived to originate from Africa. However, recent studies using molecular mapping predicts Asia to be the origin of *T. zuluensis* where it is prominent whereas *T. gauchensis* may have originated in South America.

Studies by Luke Jimu, a PhD student at the University of Pretoria, on seeds using micro satellite genotype markers has established that *Teratosphaeria* spp. is being spread through uncertified seeds.



Prof. Jolanda Roux giving a presentation to KEFRI scientific staff colloquium held at head office Muguga

Initially, threats to forest were thought to be mainly caused by deforestation, change of land use and recently by climate change but pests and pathogens are now presenting the greatest threat to tree health globally. "Target pests that include insects, weeds, birds, mammals, nematodes and pathogen are some of the agents that spread diseases. Pine wooly aphid, Cupressus aphid and the Blue Gum Chalcid (BGC) are the most recent examples of pests notable in Kenya", she pointed.

Management of these insect pests and fungi like *Chrysosporthe*, *Mycosphaerella*, *Botryosphaeria*, and *Phytophthora* spp known majorly as pathogens of Eucalypts spp in African is complicated by their genetic diversity and relative documentation in the region. For example, *Chrysosporthe* fungus occurs as *Chr. cubensis* in Cameroon, Congo and DRC whereas in East Africa *Chr. deuterocubensis* is prevalent and *Chr. austroafricana* is found in S. Africa, Zambia and Mozambique.

Forest health is also threatened by adaptation of native fungi to non-native hosts for instance African Myrtaceae - Eucalyptus. *Chrysosporthe austroafricana* one of the most damaging pathogens from native trees such as *Syzygium*, *Warneckia* is attacking Euc. GC clones in S. Africa, after 2 to 3 years with 70 to 80% mortality rate. In Kenya this fungus has been found in the coast region and Laikipia. In summary she noted that increase in pest and pathogens will continue to be noticed unless quarantine is improved and awareness creation prioritized. In mitigating pest and pathogens transfer into Kenya forests and plantations, KEFRI has established insectory and quarantine facility to monitor and undertake insect and pest studies. Prof. Roux is supervising Mr. J. Machua who is pursuing PhD in S. Africa.



Leaves of Eucalyptus sapling disformed by insect pest Blue Gum Chalcid (BGC)



Eucalyptus trunk (left), and a transect of Grevillea wood infected by *Botryosphaeria* canker

Trans-Boundary Timber Commodity Chain Study



Workshop participants and facilitators takes a group photo with KEFRI Director Dr. Ben Chikamai (fifth left) at headquarters -Muguga.

Many countries globally are forming regional blocks solely to promote trade and create larger markets for economic development. East African Community (EAC) and the Common Market for East and Southern Africa (COMESA) are some of the notable blocks.

These economic blocks include countries rich in forestry resources; Tanzania, Democratic Republic of the Congo, Angola, Central Africa Republic, Gabon and Cameroon. Their forest types range from tropical rain forest, moist forests, dry forests, mountain forests, mangrove forests and tropical lowland wood lands with potential to produce a wide range of forest products that can be utilised to drive the economies of partner countries.

Speaking during the inception of the "Socio-economic Study on the Trans-boundary Timber Commodity Chain" at KEFRI headquarters on September 25th, 2013 Director KEFRI Dr. Ben Chikamai said that the study will focus on understanding the socio-economic dynamics along the commodity chain. "This will be done through addressing questions such as who are the key players and their role in the chain," he noted. He added that the study will contribute to ongoing initiatives by the Lake Victoria Basin Commission spearheading management of natural resources in East African region.

The Food and Agriculture Organization (FAO) with support from European Union (EU) and Government of Finland have spearheaded the capacity building of the

EAC experts and member states to carry out awareness creation, policy studies and legislative forums on timber trade in the region.

Recent EU-FAO-FLEGT sponsored studies and forums have recommended the need to record and monitor the flow of timber across borders to enhance legal timber trade in the region.

Studies by KEFRI scientists have also shown that trade in timber and forest products have increasingly become an important economic cross-border activity in the region and other countries including the Democratic Republic of Congo, Uganda, Kenya, Tanzania and Rwanda. COMESA and EAC's population of 860 million people offers a huge market for inter-regional trade. KEFRI views that these initiatives will create employment opportunities, wealth and reduce imports of wood based products from outside the region.

*COMESA began in December 1994 replacing Preferential Trade Area (PTA). It has 19 member sovereign states which co-operate in developing their natural and human resources for large economic and trading unit to overcome some of the barriers that are faced by individual states.

Forestry Society Annual Meeting

Cabinet Secretary in the Ministry of Environment, Water and Natural Resources, Prof Judi Wakhungu (pictured left), opened the 8th Forestry Society of Kenya Dialogue and Policy Conference on September 26th, 2013 at KEFRI headquarters in Muguga. The theme of the conference was "Presentation of Forest Professionals Views to Forest Policy and Legislation".



"Forestry in Kenya is at a crucial period following the enactment of the new Constitution and the current review of forest sector policy and legislation to conform to this constitutional dispensation and that foresters are facing great challenges due to the need for the country to attain the Millennium Development Goals and Vision 2030", noted Prof Wakhungu

She stated that the new law will recognise Forest Ecosystems For Multiple Uses; forest resources as sources of energy and food security; forest professionalism in research and technology dissemination; strengthening forest governance; managing promising forest germplasm; and forest markets, value addition and trade.

Conference participants comprised of forest practitioners and professionals including industrialists, scientists, academicians, civil societies and community representatives from all parts of the country.

Prof Wakhungu noted that her Ministry is committed to developing strategies to promote investment in the forestry sector, which has much potential to support national development and enhance the livelihoods of the people. This includes encouraging entrepreneurship in the sector, especially prioritising commercialisation of tree and bamboo growing, among others.



The face of the forest sector in Kenya as seen in this group photo taken during the conference

Tree Nursery Course to Increase Seedlings for Enhance Tree Cover

For our country to increase tree cover to 10% by 2030, there is need to invest in appropriate seedling production techniques. KEFRI is aware that poor seedling production methods are responsible for the low tree survival.

As we diversify our forest products and services to include high value trees, there is need to enhance the capacity of tree seedling producers to enable them contribute effectively in producing quality seedlings of various trees, shrubs and related plants.

The Tree Nursery Establishment and Management Course is targeted at those engaged in sustaining production of tree seedlings in order to meet the needs and demands of users. It also provides an opportunity for tree nursery practitioners to share experiences and practical skills on appropriate seedling production techniques. This year's one-week course was held from September, 23rd to 27th at KEFRI headquarters - Muguga.



Course participants at the KEFRI Tree Seed Centre in Muguga

Among others, the course seeks to help participants:

- Understand the benefits of trees, shrubs and related plants in relation to products and services derived from them,
- Identify, appreciate and propagate different trees, shrubs and related plants,
- Apply different seedling propagation practices to raise quality planting stock for different needs,
- Manage tree nurseries by maintaining appropriate records,
- Provide advisory services on appropriate seedling establishment.

Other areas covered in the training include:

- Species selection and identification,
- Seed collection, processing and storage,
- Appropriate nursery practices,
- Vegetative propagation methods: Bamboo case study, eucalyptus cloning,
- Visit to different types of nurseries, and
- Communication and entrepreneurial skills.

The training comprises presentations, demonstrations, practical exercises, discussions and excursions. Participants who successfully complete the training are awarded certificates.

ISO 3rd Expo

KEFRI was among 24 ISO accredited institutions that participated at the third ISO Certified Firms Expo held at The Kenyatta International Convention Centre from August 12th to 16th 2013. The Expo which comprised a 5-day workshop and 3-days of exhibitions was organised by Apex Management Systems Consultancy. The event's objective was to show case the role of standards in enhancing operational efficiency and customer satisfaction leading to increased profitability. It brought together a wide range of participants namely professionals, business people, students and the public.

Speaking during the opening ceremony for the expo on August 15th, the Chief guest Dr. Manu Chandaria, a philanthropist and leading industrialist, emphasised that quality is the key ingredient to standards. He further stated that standards have existed since time immemorial citing measurements of grain, Noah's Ark, storage chambers and other products used by Greeks and Jews to maintain quality. "Trade thrives on standards which are either inscribed or perceived. Professionalism therefore entails adopting a culture of embracing quality and doing the right things even when no one is watching", he said.



Dr. Manu Chandaria (centre) accompanied by Ms. Hellen Okioma (left), CEO Apex Management Systems visiting KEFRI stand at the EXPO.

KEFRI displayed products and services under ISO 14001:2004 Environmental Management Systems (EMS), which included quality tree seeds, wood products, bamboo seedlings and fancy items, technologies for rehabilitating water catchment areas, publication, posters amongst other information dissemination materials that carried the message for the expo.

These products and services were developed following EMS standards based on the following procedures:

1. Identification and control of the the environmental impact as a result of research activities
2. Improvement of services and products for suitable environmental performance
3. Measurement, callibration and maintenance of production equipments and updating procedures.

ISFM Changes Farmer's Life

Integrated Soil Fertility Management (ISFM) is a set of agricultural practices adapted to local conditions to maximise the efficiency of nutrient and water use to improve agricultural productivity. ISFM strategies centre on the combined use of mineral fertilisers and locally available soil amendments (such as lime and phosphate rock) and organic matter (crop residues, compost and green manure) to replenish lost soil nutrients.

This technology improves both soil quality and the efficiency of fertilisers amongst other agro-inputs. In addition, ISFM promotes improved germplasm, agroforestry and the use of crop rotation and/or intercropping with legumes, which improves soil fertility.

Mr. Cosmos Oduor of Ugunja Division, Siaya County owns a 2.5 acre piece of land. Previously, he grew kale, tomatoes, bananas, pineapples and kept local poultry. However, in 2009 he diversified to banana and sugarcane production. Following training on ISFM by KEFRI in April 2013, the farmer switched to indigenous vegetables.



Mr. Cosmos Oduor at his farm in Ugunja

Using the gained skills, Oduor has established a 0.25 acre plot of crotalaria with integrated farmyard manure and Diammonium phosphate. Within a 2 month he harvested vegetables worth KSh 31,000 compared to about KSh 17,000 that he would have earned from tomatoes. He used the earning to settle an outstanding bank loan of KSh 20,400 and paid KSh 7,650 in school fees. In addition, the vegetables have improved household nutrition and the rest shared with neighbours. Approximately 12 customers visit his farm every day to buy the vegetables.

Oduor expects to harvest the vegetables up to February, 2014 before planting a different crop. At an average of KSh 12,750 for the next six months, the farmer expects to earn a total of KSh 107,950 from his piece of land. Twenty of his neighbours have already adopted the technology.

The Ministry of Agriculture has so far held two field days on his farm, leading to a tremendous increase in demand for crotalaria seed.

Energy Conservation Jikos

Sixty members of Muguga Community Forest Association (CFA) have benefited with energy saving jikos from Green Zones Development Support Project (GZDSP). The 20 portable jikos and 40 liners were delivered to the group by the the Kiambu County Ecosystem Conservator by Mr. George Njenga on July, 24th 2013.



Muguga CFA members receiving energy conserving jikos

The jikos are known as "Kuni Mbili" as they use only two pieces of wood to cook. The portable jiko is made of clay lining in a tin casing and uses fire wood in the lower compartment and charcoal in the upper compartment. The other type, the liner is clay lining compartment fixed using locally available materials (soil mixed with ash) and uses fire wood only.

In Kenya, it is estimated that 80% of energy supply is fuel wood. GZDSP is therefore assisting communities adjacent forests with the energy saving jiko to enhance forest conservation.

A survey conducted two months later by the group's officials has shown a reduction in firewood usage per household. A head load of firewood previously used to cook for a family of three to five for three days is now used for five days to prepare food for the same household. Therefore, the jiko has reduced consumption of fuel wood almost by half.



The group members have appreciated the donation and are appealing to other donors and well-wishers to support alternative ventures such as biogas, solar energy and on-farm tree growing. These initiatives will contribute to reducing pressure on the forests and mitigating effects of climate change. The group works closely with KEFRI as a stakeholder in management of Gachuthi and Gatwikira forest blocks in Muguga forest estate in Kiambu County.

Staff Tea Forum

At the staff tea forum held on July 5th, 2013 KEFRI Director, Dr. Ben Chikamai, congratulated the institute's choir for the outstanding performance. He said that the choir's profile is rising noting that it had recently entertained the President during the Nairobi environmental clean-up exercise held at Huruma grounds. *(full story on page 12)*



Part of KEFRI staff during the directors tea forum

Job analysis

Dr. Chikamai informed staff that KEFRI has embarked on job and work load analyses for staff to aid in the formulation of KEFRI 5th Strategic Plan (2013 - 2018) which lines with the implementation of the second Medium Term Plan of Vision 2030. According to Evelyn Ong'aria, Chief Human Resource Manager, it was found necessary to undertake the exercise so as to review the organogram, terms of reference for the various cadres, determine the relative worth of the various jobs and to project optimum staffing levels for the next 5 years.

The exercise which included a countrywide sensitization and data collection on staff at the headquarters and regional centres was undertaken by Prestige Management Consultancy from July to September 2013. The Job analysis produced results vital to the review of the institute's current Schemes of Service. Similarly, the workload analysis which evaluated the current human resource structure generated optimal staffing levels required to implement the organization's new strategic plan 2013-2018. The job and workload analyses were both completed by end of September, 2013 and awaiting presentation to the Board of management. Both Dr. Chikamai and Mr. Ndungu were quick to assure staff that the exercise will not jeopardise any job.

Gender Mainstreaming

The Kenya Government in 2009 mandated the Public Sector to incorporate gender mainstreaming activities and submit quarterly reports to the National Gender and Equality Commission as part of the Performance Contracting. The main goal is to ensure gender equality in the workplace and to contribute to poverty reduction and economic development in Kenya.

KEFRI established a Gender Mainstreaming Committee in 2011 to spearhead operation of pertinent issues relating to gender mainstreaming. In September 2013, The National Gender & Equality Commission trained the committee members on gender policy, violence prevention and control as well as handling gender related complaints.

The committee has reviewed KEFRI gender policy and sexual harassment policy as per the Employment Act 2007, Article 6.2 requirements. Both policies were presented to the Executive Committee for their inputs prior to submission to the Board of Management for approval. Members of staff will be sensitized on the two policies within thereafter.



Mr. Eno Akali (left) consulting with Ms. Oroni and Mr. Ndungu at the head office -Muguga



Section of KEFRI staff at the gender meeting

KEFRI Choir



Choir members displaying trophies



Choir entertaining show goes at the KEFRI stand during Nairobi show

KEFRI choir has participated and performed Kexemplary well in four major events within the 1st Quarter 2013/2014. At the Equity Bank sponsored Nairobi Christian Choirs Music Festival held at the KICC Nairobi, on May 25th, 2013, the choir competed against 20 others and gained three trophies i.e. Set Piece, African Own Arrangement and overall performance. The trophies were presented to the Director thereafter.

At The Nairobi County Environmental Clean-up day organized by the Ministry of Environment and was officially launched by H.E. President Uhuru Kenyatta on 29th June, 2013 at Huruma grounds KEFRI participated on the strength of being ISO 14001:2004 EMS certified. The choir entertained the attendants with several songs linked to environmental conservation.

On July 27th, 2013 at the Kenya Christian Choirs Association Annual Festival (KCCAFAF), St. Stephens Jogoo Road-Nairobi, the choir won a trophy for the second consecutive year. It competed in class A against 25 other choirs, ranked 2nd position overall and awarded a trophy courtesy of Equity Bank.

During the Nairobi International Trade Fair held at Jamhuri show grounds, the choir entertained show goes and notably during the official opening by His Excellency, President Uhuru Kenyatta on October 3rd, 2013. Due to its good performance the choir was slotted two more days to entertain. This was a great opportunity to create awareness of KEFRI and its commitment to environmental conservation. Currently the choir is in preparations to record its second series of composed songs.

The choir acknowledges KEFRI management and the entire KEFRI fraternity for support accorded during these events thus enabling them to raise the institute profile through presentation in songs and music.

Staff Retirement Scheme AGM 2013



Part of KEFRI staff during the Annual General Meeting 2013

The KEFRI Schemes' Annual General Meeting for the year ending 30th June 2013 was held at KEFRI Headquarters in Muguga on August 12th 2013. Reports on the schemes audited accounts; administration, investment management and custody of scheme assets revealed the sponsor remitted Kshs. 60,739,581 for the Defined Contribution (DC) Scheme while Kshs. 20,912,652 for the retirement Defined Benefits (DB) scheme. The sponsor also remitted Kshs. 19 million towards settlement of the actuarial deficit as per the actuarial report of 30th June 2011.

KEFRI Board Chairman Prof. Daniel Mugendi assured the members and the Board of Trustees that the sponsor is committed to fund the full deficit by 30th June 2014 as per the remedial action plan of 2011 submitted to the retirement Benefits Authority. He urged members to increase their contributions through additional voluntary contributions.

Members were informed that the scheme assets were split between the two schemes in accordance with the requirements of the law. The Chairperson Dr. Mercy Gichora said the more the members save and the more prudent investments the better the returns upon retirement. Members gave their consent that with effect from 1st July 2014, the contribution rates will be increased to the maximum rate of 10% for the employees and 20% for the employer, the maximum rates provided for by the government.

Also speaking during the meeting Mrs. Grace Wainaina, a family lawyer called upon the staff update the list of their beneficiaries, estate and their wish on disbursement of pension benefits. Mr. Martin Obuba representing the Retirement Benefits Authority (RBA), informed members that RBA will increase the tax exemption on contributions from the current Kshs. 20,000 per month.

Commonwealth Games 2014

PHOTOGRAPHIC COMPETITION



LEGACY 2014
XX COMMONWEALTH GAMES
SCOTLAND



**WIN
A
NIKON D3100
DIGITAL SLR CAMERA**



The CFA in partnership with the Commonwealth Woods, a legacy project of the 2014 Commonwealth Games to be held in Glasgow, calls for photographic images to enter the Woods Photographic competition.

The competition is open to everyone, and the best 25 photographs will be exhibited in Glasgow during the 2014 Commonwealth Games as well as feature on the official Commonwealth Woods website. The best photographer will win a Nikon D3100 digital SLR camera.

Photographs can depict any aspect of trees, woodlands or forests but preference is on images on utilization of forests for production of wood, collection of NTFPs, as an educational resource, for recreation, or any other use.

Please send your photos to cfa@cfa-international.org before December 31st 2013.

Visit this website photo gallery to view some photos contributed by senders including KEFRI staff

Value added products



Assorted bamboo furniture



Aloe fortified shampoo



Aloe fortified handwash



Value addition to honey and packaging by a community group

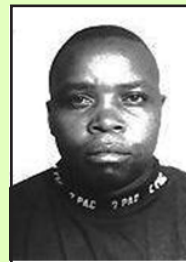
DEMISE

KEFRI newsletter editorial team on behalf of KEFRI fraternity express our sincere condolences to the untimely death of the below mentioned members of staff.



Josephine Atieno Onyoro

Josephine passed on July 8th 2013 and was interred on July 20th 2013 in Uhwaya village, Usenge Bondo County. She joined KEFRI in March 1988 and served at the head office in training and later accounts department.



Josphat Ikutwa Mbalilwa

Josphat passed on September 1st 2013. He was buried on 14th September 2013 at Busakali village, Kakamega County. He joined KEFRI in 1992 and served as a driver in Kitui, kibwezi and Karura station.



Justus H. Mashauri


Justus Mashauri passed on September 22nd, 2013. He was buried on September 27th, 2013 at Gede. Justus was born in 1960 and joined KEFRI in 1986. He served at Hola, Bura, Gede and lastly at Kibwezi station.



John Onyando Obwanga

John Onyando Obwanga alias Rondo, passed on September 22nd 2013. He was interred on October 4th 2013 at Karungu Division, Migori County. John was born in 1954 and joined KEFRI in 1990. He served at Turbo, Maseno and lastly at Kuja River station.

They inspired many and we extend our sympathies to both their families and community. May the Lord grant the deceased everlasting peace and the family - comfort in the absence of these beloved ones.



KEFRI-Kitui centre is a scenic place to be. With a keen eye and ears one may capture a spectacular event; like these green grasshoppers cycling around the floodlight at night. The insects' dance synchronized with the sound as they hit the metal grill is something to cherish.



DO YOU KNOW THIS TREE AMONGST MANY OTHERS?

If Not; read more about tree naming at KEFRI Headquarters in the next Newsletter issue No. 7.

