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Contents

Wambugu farmer's field day	3
Pensioners AGM	4
Regional training course.....	4
Exhibitions at Agricultural Society of Kenya shows.....	6
The KEFRI choir	9
EMS workshop	10
Field day	11
KEFRI signs MoUs	11
Tribute	13
2012 End of the year party	14

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WAMBUGU FARMER'S FIELD DAY

KEFRI participated in the Wambugu Farmers' Field Day held on July 27th and 28th, 2012 in Nyeri County. The two day's annual event hosted by Wambugu Agricultural Training Centre was organised by the Ministry of Agriculture in collaboration with Nyeri stakeholders. Over 14,941 people comprising farmers, entrepreneurs and students from over 150 high schools and primary schools visited the various exhibitions.



Some of visitors who thronged KEFRI stand.

Display

KEFRI joined over 75 exhibitors from government ministries, research institutions, financial institutions, institutions of higher learning, agro-vet companies, seed companies, manufacturers of farm machineries, SACCOs, NGOs, CBOs, CIGs and individuals that displayed their agricultural technologies, services and products.



Pupils learning pests and diseases that attack trees.

KEFRI displayed various technologies reflecting the County's ecological zone. These included:

- Seed collection and processing
- Tree nursery establishment and management
- Tree improvement
- Integrated pest management
- Wood and non-wood products
- On farm timber sawing
- Demonstration garden with fast growing trees and medicinal plants.

The institute also distributed over 436 publications free of charge.

Collaborators

KEFRI collaborators displayed a range of herbal products developed from roots, barks and leaves of various medicinal trees and shrubs. One of the most captivating displays was the *Moringa oleifera* seeds, seedlings and healthy products from Sustainable Organic Products and Technologies.



Mr. Joseph Kathurima from Nobert Herbal Products with display of medicinal products.

PENSIONERS AGM

The KEFRI Pensioners Annual General Meeting was held on August 23rd, 2012 at the KEFRI headquarters, Muguga. The aim of the AGM was to report on the scheme's progress from the trustees, administrators, fund managers, sponsors and custodian of the fund.



AON Minet representatives addressing KEFRI staff during pension AGM 2012 at Muguga.

In attendance were V C Karani and Associates (Certified Public Accountants), Investment Managers (Genesis), Administrator (AON Minet), Retirement Benefits Authority, trustees and trustee representatives comprising members of staff from both Karura and Nyeri centres and the headquarters.

Dr. Mercy Gichora, thanked members of staff for turning up in large numbers and for electing her the chairperson of the pension scheme. She also lauded the sponsor for efficiency in the remittance of member's contributions.



KEFRI Staff attending pension meeting at the head office, Muguga.

REGIONAL TRAINING COURSE

The 4th Regional Training Course on Mitigating Climate Change in Africa through Social Forestry was held at KEFRI headquarters - Muguga from 29th October to 30th November 2012. The five-week course brought together 23 participants from 14 African countries namely; Botswana, Malawi, Burundi, Eritrea, Ethiopia, Kenya, Lesotho, Namibia, Southern Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.



KEFRI Director Dr. Ben Chikamai speaking during the opening event. On the left is Conservation Secretary Mr. Gideon Gathaara and the Botswana High Commissioner His Excellency Charles Magotsi.

Mr. Gideon Gathaara the Conservation Secretary at the Ministry of Forestry and Wildlife officially opened the course. Mr. Gathaara stated that the course comes at a time when solutions to forest degradation, deforestation and how to cope with the negative effects of climate change are of global concern. He observed further that sustainable management of forests is feasible through social forestry practices.

In Kenya for instance, the forestry sector has initiated programs for forest restoration and conservation to ensure a 10% forest cover as stipulated in the constitution and Vision 2030. This will offer an opportunity to achieve the much needed domestic wood, alternative income generating activities thus reducing pressure on

the remaining natural forest. This in essence will make farmers to turn farms for their good requirements and economic needs.

This course is being implemented by KEFRI on behalf of Kenya Government with support of JICA in response to the demand for capacity development of government staff in adopting and implementing effective and comprehensive solutions to climate change in Africa.

Mr. Hideo Eguchi, Chief Representative of JICA-Kenya Office, noted the forest sector plays an important role in the livelihood of many communities in Africa. However, these opportunities are under threat due to the increasing evidence of climate change and rapid population growth. KEFRI has over the years developed reputable capacity in research and training since 1985, making it suitable to implement South-South cooperation through the Third Country Training Programme.

During the course session, KEFRI Director Dr. Ben Chikamai, in a presentation entitled "State of Forestry in Africa, Opportunities & Challenges" stated that the future of forests in Africa is bright despite challenges such as climate change, deforestation and population increase.

Challenges

Dr. Chikamai noted that processes such as industrialization, deforestation and burning of fossil fuels are some of the human activities which are major sources of carbon emissions which can influence climate change. Rapid population growth increases the demand for forest product consequently damaging the environment and depriving rural areas of their sources of food, fuel and other tree products. It is feared that by 2020, 250 million people, (42%) in Africa, will experience water stress due to climate Change.



Guests and participants during the official opening of the regional course.

The market opportunities for forest products, goods and services, the increasing recognition of role of forests in Carbon Credit mitigation and adaptation – opportunities through the CDM (Kyoto protocol) and REDD (Copenhagen Accord) are major contribution to efforts to reduce the amount of atmospheric carbons.

Dr. Chikamai called upon the participants to engage the populations whose livelihoods is derived from forests to be genuine actors of Reducing Emissions from Deforestation and Forest Degradation (REDD). REDD is a set of steps designed to use market and financial incentives in order to reduce the emissions of greenhouse gases from deforestation and forest degradation.

Way forward

Dr. Chikamai advocated for integration of C4 plants such as perennial grasses, reforestation and planting of trees on farm as a major strategy in mitigating climate change. In addition, the participants visited various ecological zones in Kenya for an interactive orientation with the challenges and efforts in adaption to climate change. Other key areas addressed were sustainable management and utilization of wood and non wood products from natural as well as dryland forests, promotion of tree cover on farm, establishment of industrial plantation and links to information sharing.

EXHIBITIONS AT AGRICULTURAL SOCIETY OF KENYA SHOWS

Nyeri show

KEFRI was ranked third best organisation demonstrating research and development technologies, and herbal medicines respectively in Central Kenya ASK show, held at Kabiru-ini, Nyeri County from 12th to 15th September, 2012.



Dr. Joseph Lelon (centre) officer in charge KEFRI Nyeri Centre with staff during the show.

President Mwai Kibaki opened the show whose theme was "Enhancing Technology in Agriculture and Industry for Food Security and National Growth". The president urged farmers to adopt modern farming technologies as the basis for industrial development and food security in the country. He urged extension agents to help farmers draw both business and management plans for their farming activities.

KEFRI demonstrated various technologies relevant to the region. These included tree seed collection, storage and packaging, soil types found within the central region, challenges that hinder food production, soil fertility improvement skills, tree improvement methods, pest and diseases that hinders tree growth.

Other technologies demonstrated were value added wood products, carvings, fancy items and bamboo products. Non-wood products displayed included Aloe conditioner, shampoo, soap and lotions. Extraction process and use of gums and

resins was also explained while an innovative on farm timber sawing technology and herbal medicine by three collaborators attracted much interest from visitors.

Hundreds of free publications including research notes, technical notes, proceedings of conferences, guidelines and policy briefs, information leaflets, brochures amongst others were distributed to stakeholders, partners and the public.

Nairobi International Trade Fair

KEFRI was among over 170 exhibitors that displayed various technologies at Jamhuri ground, during the Nairobi International Trade Fair, held from 1st to 7th October, 2012. The seven-day event was officially opened by His Excellence the President Hon. Mwai Kibaki.



Show attendants buying seeds at KEFRI stand.

Over 2,000 people visited the stand eager to learn forestry technologies relevant to the theme. Among the displays exhibited were technologies on collection, processing and distribution of tree seeds, skills on propagating trees like *Melia volkensii*, KEFRI-FIX inoculant for improving soil fertility, and technologies to manage pests and diseases.

Entrepreneur

Products from aloe and consumable blends from indigenous fruits like *Tamarindus indica*, *Vitex*

payos and *Adansonia digitata* were exhibited. These valuable trees whose pulpy fruits are rich in vitamins, grow in the dry regions.

Mr. Joseph Kathurima (a herbal practitioner) and Ms. Zainabu Khamis, an entrepreneur from Kitui, displayed products made from forest resources proving KEFRI's commitment to supporting economic development for micro, small scale and medium enterprises.



KEFRI Director Dr. Ben Chikamai (right) interacting with collaborators Joseph Kathurima and Ms Khamis at KEFRI stand.

Speaking to the public at the stand, KEFRI Director Dr. Ben Chikamai, noted that the displayed technologies must be linked to end users. He observed that knowledge is critical to the change required in transforming agricultural practices that promotes industry, household food security, improved income and poverty alleviation.

KEFRI was also represented at the Ministry of Forest and Wildlife stand as a corporate entity where integrated technologies related to forestry, wildlife, agriculture and micro-enterprises were displayed by various parastatals and collaborators. KEFRI choir also entertained visitors at the main arena.

Garissa Show

Hundreds of visitors attended the North Eastern Agricultural show which was held from 20th to 22nd September, 2012 at the Garissa Stadium. Despite the security challenges in the region, the three-day event was well attended. The show was officially opened by the Minister for Defence Hon. Mohamed Yusuf Haji.

KEFRI was ranked the third best parastatal stand from its display of various technologies relevant to the show theme, "Enhancing Technology in Agriculture and Industry for Food Security and National Growth".

KEFRI Eco-regional Director Eastern region Dr. Kamiri Ndufa appealed to communities in the region to plant trees in order to increase tree cover. Quality seeds and seedlings of *Acacia*, *Melia volkensii*, *Senna siamea*, *Moringa oleifera*, *Gmelina arborea*. Bamboo plant and aloes among other assorted plant species that adapt well to dry climatic conditions were exhibited.



Some of KEFRI staff who participated and exhibited at Garissa Show.

The *Melia volkensii* propagating technology attracted a lot of interest from visitors. The tree is ideal for both Eastern and North Eastern regions and is used in industries (timber), as a source of livestock feed (pulpy fruit eaten by goats) while its bark is medicinal. *Melia* is termite resistant and drought tolerant.

The innovative KEFRI on-farm timber sawing technology was demonstrated while one of the institute's collaborators engaged in Bura displayed carvings, fancy items and other products made from *Prosopis juliflora*. Besides, several people requested seedlings of *Saraca asoca* (Ashoka tree), *Moringa oleifera*, *Aloe vera* and solid bamboo.



Students from secondary and tertiary colleges interacting with KEFRI staff at the Garissa Show.

Most of the North Eastern region covering Garissa, Fafi, Ijara, Mandera and Wajir consists of a fragile ecosystem - a barren and vast dry land. The region receives an average rainfall of 300-500 mm per year. Temperatures are high all year round rising to 37°C during the day in the hottest months. Due to the tough terrain the place is still remote and the majority of the people are pastoralists still holding on to traditional lifestyles.

Mitigating desertification is one of the challenges that the KEFRI Garissa sub-centre aims at addressing through use of appropriate technologies for rehabilitating arid to semi-arid lands. The office is located at Bura-Ligi, approximately six kilometres from Garissa town along the Garissa-Hagdera Road.

Mombasa International Trade Fair

Staff of the Coast Eco-region Research Programme Gede could not hide their joy when President Mwai Kibaki presented them with a trophy for first position as the best stand displaying locally manufactured products. This was the first time KEFRI has won a trophy in the Mombasa International Show.

The event which was held from August 29th to September 2nd 2012 showcased value added products made from bamboo, aloe, indigenous fruits, gums and resins as well as fancy items from laminated timber pieces.

Herbal medicines and related products displayed by KEFRI collaborators and a model planted with valuable tree species found in the coastal region attracted a lot of interest from visitors. Also on display were technologies on tree establishment, spacing, silvicultural management and their end use.



His Excellency the President Hon Mwai Kibaki presenting the trophy to KEFRI staff Mr. Chemuku Wekesa at the Mombasa Show.

Some of the high profile visitors to the stand included Forest and Wildlife PS Mr Mohammed WaMwachai and the Kenya Forest Service Senior Deputy Director Ms Monicah Khalenda.

THE KEFRI CHOIR



KEFRI choir master Mr. Charles Mwangi (right) presents one of the trophies to KEFRI Director Dr. Ben Chikamai (left) and former KEFRI chairman Dr. James Onsando.

Barely a year after it was reconstituted, KEFRI choir entertained visitors during Nairobi International Trade Fair held in October 2012 at the Jamhuri Park. Decked in KEFRI corporate colours of green, terracotta, white and black, the choir inspired the crowd with songs which carried the message of cohesion and environmental conservation.

"Wakenya Tudumishe Amani" (Kenyans let's keep peace) was the most captivating song which calls on Kenyans to preach peace and embrace unity especially during the upcoming General Election.

"I am impressed by the choir's performance and promise that management will support them to advance to greater heights," said the Director after the performance.

The Director had earlier received trophies awarded to the choir in a previous competition. The two trophies were awarded by Equity Bank for overall excellence at the Kenya Christian Choirs Association Annual Music Festivals held at St Stephen's Jogoo Road, Nairobi on July 28th, 2012.

"This kind of sterling performance will go a long way in promoting our corporate image,"

said Dr Chikamai. Unknown to the choir, this competition also passed as an audition for invitation to perform at the Nairobi show in the Arena.



Choir master Charles Mwangi conducts the choir during an entertainment at the institutes stand at Jamhuri Show ground

The 40-member choir was established in 2011 and composes both spiritual and secular songs. The choir faced many challenges at the initial stages but these have been gradually overcome with coaching by talented choirmaster Mr. Charles Mwangi.

The choir has composed several songs which the group plans to record soon. As the adage goes, a journey of hundred miles starts with the first step.

EMS WORKSHOP

An Environment Management System workshop which brought together 22 participants from KEFRI head office and regional centres was held at KEFRI - Kitui from 5th - 9th November 2012. The five-day seminar aimed at equipping administrators and section heads with skills necessary to implement and cascade the ISO 14001:2004 EMS requirements. This standard specifies requirements for an EMS to enable an organization to develop and implement a policy and objectives to form an environmental management plan taking into account legal requirements and information about significant environmental aspects.

In the opening remarks, the ISO team leader (EMR) Dr. Jackson Mulatya gave an overview of ISO 14001:2004 standards and KEFRI Environmental Policy. He revealed that KEFRI aims at clean, safe and healthy working environment, and warned that if the conditions were not met will lead to certificate withdrawal by the certifying body (KEBS). The certificate is only given for three years then renewed upon new application.



KEFRI staff/participants during the EMS workshop.

Dr. Mulatya reminded the participants from procurement, accounts as well as janitor sections that they serve in an areas where there are significant environmental aspects and their task will be to champion for conformity and compliance, as well as conducting corrective and preventive actions.



One of the "designer" litter bins at KEFRI Kitui Centre.

There were other presentations which covered competence training, EMS internal audits internal and external communications, control of records, environmental aspects that KEFRI identified as significant towards ISO 14001:2004 EMS adherence, objectives, targets and Environment Management Programmes (EMPs), production and supply of superior tree germ-plasm.

Further, other issues tackled included procedure for addressing non-conformity and conducting corrective and preventive actions, handling and disposal of effluent, phasing out CFCs, handling and storage of fuel, oil and grease, programme for emergency preparedness and response, handling of hazardous materials, detecting and control of radiation emission, handling radioactive particles and procedures for monitoring and measuring of environmental parameters. KEFRI Coast Eco-Region Research Centre - Gede was noted the best Centre adhering to ISO procedures and implementation. The Centre was also recommended as worth visiting to learn how ISO is being implemented.

FIELD DAY

At a field day held at Kamathuri village - Baricho/ Kirinyaga West District on 22nd November 2012 at Mr. Joseph Muthike's 3 acres *Grevilea robusta* woodlot, Mr. Jesse Lugadiru - KEFRI Dissemination Officer from Muguga Regional Research Centre called upon the farmers and stakeholders to plant trees on-farm to increase forest cover and benefit from carbon trade. "Trees provide environmental goods and services, soil, water and biodiversity conservation, carbon sequestration and climate amelioration," he said.



Mr. Jesse Lugadiru addressing farmers and other stakeholders at Kirinyaga County.

Attendance

KEFRI - Muguga Regional Center in partnership with stakeholders organized the event. The aim was to sensitize the community on "Tree growing and management practices at farm level". About one hundred twenty eight (128) community members attended. They included chiefs, foresters, agricultural and livestock officers, youth groups, non-governmental organisations, teachers and pupils from neighbouring schools.

Other subjects covered included tree establishment and management, conservation and utilization of forest resources, research technologies and disseminate of information for social economic development, nursery establishment and seedlings propagation. Three hundred seventy three (373) assorted KEFRI publications were distributed to the farmers.

KEFRI SIGNS MoUS

KEFRI signed a memorandum of understanding (MoU) with Kisii University College (KUC) on 26th November, 2012 at the university's main campus. The MoU was signed between KUC Principal Professor John S. Akama and KEFRI Director Dr. Ben N. Chikamai. During the event, Prof. Akama appreciated KEFRI's contribution to forestry research and development in Kenya. He pointed out the low percentage of forest cover in the country, currently standing at 5.9% and that there is need for partnerships to build the percentage to the international standard of 10%.

He lamented the poor environmental conditions and population explosion in Kisii, which he attributed to, increased pressure on the environment. He also cited poor species selection and site matching as some of the problems facing the Kisii landscape of which KEFRI expertise would come in handy. He pointed out that myths and facts about Eucalyptus need to be articulated as the species has become an important tree crop for revenue generation in the area.



Dr. Ben Chikamai (centre) exchange copies of MoU with Prof. John Akama (left).

Dr. Chikamai emphasized the need for synergy with institutions undertaking similar forestry research. He cited farm forestry, increasing tree cover on natural eco-systems and particularly water towers, information sharing and technology transfer as areas to develop collaborative projects. Present at the ceremony included KUC staff - Professor Philip Owino - Registrar

Academic Affairs, Dr. Nyenze C. M (Registrar Administration), Dr. Tom Nyangau (Chairman department of Natural Resources), Dr. E. Basweti - Senior lecturer and Rose Ogata (Assistant administrative officer). KEFRI staff present were; Dr. Robert Nyambati – Director Lake Victoria Eco-region Research Centre - Maseno, Meshack Muga and Emily Kitheka from Partnership and Networks Programme - Karura.

KEFRI partners with KUCT

KEFRI also entered into partnership with Kimanthi University College of Science and Technology (KUCT) a constituent college of Jomo Kenyatta University of Science and Technology (JKUAT). The MoU was signed between the Principal of KUCT, Prof. P. N. Kioni, and KEFRI Director Dr. Ben Chikamai at KEFRI headquarters, Muguga. Others present were KEFRI Deputy Director of Research and Development Dr. Bernard Kigomo and the KUCT Deputy Principal, Academic Affairs, Professor G. K. Muthora, Dr. J. Mulatya Manager Corporate Affairs and Public Relations - KEFRI and Mr. Meshack Muga - Partnership and Networks Programme among other staff from the two institutions.



Dr. Ben Chikamai (left) and Prof. P. Kioni signing an MoU at KEFRI head office.

technology transfer in order to promote academic excellence. The two CEOs emphasised the need for joint research proposal development in the areas of environmental management and sustainable utilization of biodiversity.



The two principals exchange copies of signed MoU's.

KEFRI Partner with CETRAD

Within the same period, KEFRI signed an MoU with Centre For Training and Integrated Research in Arid and Semi Arid Lands Development (CETRAD), a bilateral organization under the Ministry of Water and Irrigation based in Nanyuki. The Ceremony took place at the Safari Club Hotel and was witnessed by the senior officers from both institutions.

The main objectives of this partnership is to foster collaborative research, capacity building in dry land forestry and natural resources conservation in Kenya.

The purpose of the collaboration is to integrate training and research, information sharing and

Facts about Bamboo

- Bamboo is not a tree but a grass.
- Precisely, Bamboo is a woody perennial evergreen plant belonging to the true grass family Poaceae, subfamily Bambusoideae, tribe Bambuseae.
- It is one of the tallest grasses in the world, fastest growing with some varieties reaching 3 to 4 feet per day.
- Bamboo is found all over the world; in North and South America, throughout East Asia, Northern Australia, and sub Saharan Africa.
- Bamboo varieties grow in different climates, from the cold mountainous regions to the hot tropical areas.
- Bamboo plant is nicknamed "The wonder plant" due to its dynamics. For instance while shoots are tender enough for human consumption, mature bamboo has tensile strength second only to mild steel, hence making it the strongest plant on earth.
- In Kenya, 23 varieties have been introduced from Asia to supplement the only indigenous *Yushania alpina*.



Bamboo variety showing enormous sprouting at Nyeri

Bamboo uses

- Bamboo has diverse uses hence provides engagement to more than 2.2 billion people globally.
- Bamboo is used as framework shelter, buildings, timber, plywood boards, food, furniture, briquettes, charcoal, fancy items among others.
- Some bamboo shoots are edible, eaten mostly by millions of people in the orient.
- Bamboo matures within 3-5 years and can be harvested for up to 40 years.
- 1 acre of land can take up to 100 Bamboo seedlings.
- Each stem can sprout up to 300 plantlets, some varieties reaching size 9 metres in length and 100 cm diameter.
- Today Bamboo is considered as multipurpose plant due to its potential as valuable timber substitute, ecologically as well as reforestation potential.
- In Kenya, bamboo is much sought after for uses in horticultural flower farming, handicraft, residential fencing and other cottage industry where assorted products for instance, toothpicks, baskets, furniture, incense sticks are made.



An enterprenuer admiring Bamboo basket among other assorted products.

TRIBUTE



The Late Ruth W. Macharia

Ruth Wanjiru Macharia, a Principal Administrative Officer, passed on 19th December, 2012 aged 55 years, and was laid to rest on 28th December, 2012.

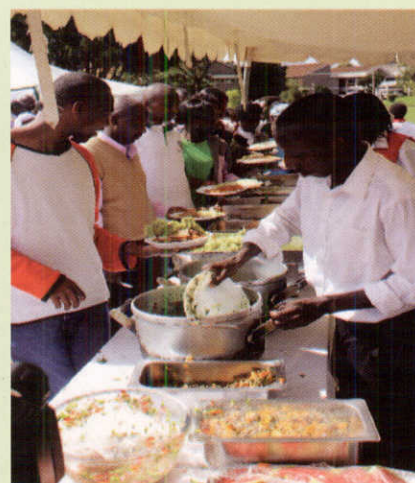
Ruth joined KEFRI as Personnel Officer in 1986 and served in the Human Resource Department. Speaking during the funeral at her farm in Ruai, Machakos County, Mr. Patrick Omesa, Deputy Director Finance and Administration, termed Ruth as a kind and thoughtful person. "She was an inspiration to us all. We learnt a lot from her experience and we are blessed to have interacted with her," he said.

Ruth was social and she served as a member of various Boards including Fairlawn Primary School, Kamangu High school, Kikuyu constituency and chairlady of KARI health Clinic. She was a staunch Christian, and a mother of three children namely Martin, Bryan and Damaris.

May God rest her soul in internal peace.

2012 END OF THE YEAR PARTY

KEFRI held its annual staff party at the headquartes on 14th December 2012. The end of the year party and bonding is part of the staff welfare programme incorporated by the institute to motivate its employees. Members of staff were treated to a sumptuous luncheon, awards and entertainment.



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