



KEFRI *Newsletter*

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Cabinet Secretary for Environment and Forestry Keriako Tobiko (Centre) together with KEFRI 10th Board of Directors namely:

1st Row L-R: Mr. Henry Obino; Dr. Anthony Getambu; Dr. Sammy Letema (Chairman); Ms. Maureen Mwangovya; Dr. Mohammed Mahamud Ali; Ms. Margaret Maimba; Ms. Naomi Apali

2nd Row L-R: Mr. Julius Kamau; Mr. Chrislogus Makokha; Mr. Kevin Kihara Kariuki; Mr. Felix Ateng'; Dr. Joshua Cheboiwo (Director KEFRI); Mr. Phillip Kichana (Corporation Secretary)

KEFRI 10TH BOARD OF DIRECTORS



Cabinet Secretary for Environment and Forestry Mr. Keriako Tobiko (centre) addressing media soon after launching KEFRI Board. He is accompanied by Chairman of KEFRI Board of Directors Dr Sammy Letema (right) and KEFRI Director Dr. Joshua Cheboiwo (left)

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Inauguration of KEFRI 10th Board of Directors

Environment and Forestry Cabinet Secretary Mr. Keriako Tobiko has inaugurated KEFRI 10th Board of Directors, whose three years term commenced 1st June, 2019.

Speaking during the inauguration at KEFRI headquarters on 10th July, 2019 the CS congratulated the Board members for their appointment which he stated was competitively done.

“You have the capacity to take this organization to higher level and I have confidence that you will deliver not only to the Government but also to the people of Kenya,” said Tobiko.

“You were appointed due to personal experience in specific fields, management of public resources and also in public service and administration,” said the CS.

CS Tobiko appointed Dr. Sammy Letema as the Non-Executive Chairperson of KEFRI Board for a period of three years with effect from 3rd May, 2019 vide Kenya Gazette Notice No.4373, published on dated 3rd May, 2019.

In the same Gazette Notice the CS re-appointed Maureen Mwangovyva and Kevin Kihara Kariuki as independent members of the KEFRI Board and newly appointed Anthony Njagi Gitambu, Mohammed Mahamud Ali and Naomi Apali. All independent members of the Board were appointed for a term of three years effective from 1st June, 2019.

The Board also consists of other members who represent the interest(s) of crucial government entities: Henry Obino represents the PS in the Ministry of Environment and Forestry; Felix Ateng represents the Cabinet Secretary for the National Treasury; Margaret Maimba represents the Director-General of the National Commission on Science, Technology and Innovation; Chrislogus Makokha represents the Inspector-General, State Corporations; and Julius Kamau, who is the Chief Conservator of Forests (CCF), represents the Kenya Forest Service. The members representing government entities are appointed by the state entity that they represent.

CS Tobiko noted that the Board has come a theright time that the Institute targets to increase seed production from 16 metric tonnes to 24 metric tonnes in the next few years. “This intervention will ensure production of quality tree seeds and seedlings that will contribute to regaining 10% forest cover by 2022,” said Mr Tobiko.

He called on Treasury to allocate more funds to KEFRI and other agencies responsible of environmental protection to increase forest cover to 10% and also realize the Big 4 Agenda.

“The depreciating forest cover had come with adverse effects, such as unpredictable weather, adding that competitive research is required to inform policy and enable people make informed decisions,” the CS said.

The CS also congratulated Dr. Cheboiwo for his appointment as KEFRI Director and Dr. Jane Njuguna the immediate former acting director for successfully leading KEFRI in a time of anxiety. He also expressed confidence with the management and credited the previous Board whose term ended on 30th June, 2019 for good governance, strengthening institutional infrastructure, development of policies and technologies with positive impact on tree cover and livelihood.

The Board Chairman Dr. Letema in his remarks stated that he will spearhead the Board and the institution management in improving governance, resource mobilization and services delivery, not only to benefit the Government but also the people of Kenya.

Environment Parliamentary Committee pledge Ksh 100 million for tree seedlings

The Parliamentary Committee for Environment and Natural Resources has committed Ksh 100 million to KEFRI for research and raising seedlings that will contribute towards realization of 10% tree cover by 2022.

The Committee Deputy Chairperson, Hon. Sophia Abdi made the revelation during a meeting with KEFRI senior management at the headquarters, Nairobi on 26th September, 2019.



Director KEFRI, Dr. Joshua Cheboiwo together with Hon. Eng. Paul Nzengu (left), Deputy Chairperson, Hon. Sophia Abdi, Hon. Washiali and Hon. Peter Kihara among the delegate that visited KEFRI seed extraction and processing unit

The eight committee members also made a familiarization visit to forest entomology reference collection, seed production and distribution facility where they praised KEFRI effort in forestry research and development.

The Chairman KEFRI Board of Directors Dr. Sammy Letema stated that KEFRI is ranked among the best research institutions besides South Africa and Egypt. Dr. Letema requested for ample funding for research and continuous dissemination of findings to various stakeholders.

“KEFRI has qualified scientists and professional support staff, however due to staff turn-over, Ksh 162 million is required to implement succession plan,” said Dr. Joshua Cheboiwo, Director KEFRI.

The Committee’s visit followed a previous dialogue between Director and Marakwet East Member of Parliament (MP) Hon. Bowen David Kangogo on KEFRI’s research and development.



Hon. David Kangogo (5th from left) with KEFRI staff

Hon. Kangogo, who is also a member of Environment and Natural Resources Parliamentary Committee had paid a courtesy call to KEFRI headquarters on 9th September, 2019.

The discussion were the Budget Committee members: Senior Deputy Director Research and Development Dr. Jane Njuguna, Senior Deputy Director Finance and Administration Mr. George Otieno, Deputy Director Finance Ms. Rose Osoro, Senior Accountant Mr. Francis Ochung and Laboratory Coordinator Ms. Sarah Wakesho.

Tree Planting Exercise in North Rift

The Chairman of KEFRI 10th Board of Directors Dr. Sammy Letema accompanied by Director KEFRI Dr. Joshua Cheboiwo, Deputy Director Corporate Affairs and Quality Assurance Dr. Jackson Mulatya, Communication Officers; Messrs Gitonga Stephen, Mr. John Otwoma and Director's personal Secretary Ms. Zaituni Chelangat participated at Tree Planting Exercise for North Rift, held from 18th to 20th July, 2019.



KEFRI board Chairman Dr. Sammy Letema together with KEFRI Director Dr. Joshua Cheboiwo planting *Prunus africana* at Sibor forest

The Chief Administrative Secretary Hon. Mohamed Elmi graced the occasion by leading tree planting exercise at degraded forest sites, launching National Bamboo Demonstration site at Kaptagat Forest block, leading discussions with Moi University and University of Eldoret on collaboration in research, capacity building and implementation of 10% forest cover.

Uasin Gishu Governor Jackson Mandago, his Elgeyo Marakwet and Nandi counterpart Alex Tolgos, and H.E Hon. Stephen. K. Sang, Nandi Deputy Governor Dr. Yulita Chebotip Cheruiyot attended.

KEFRI through Rift Valley Eco-region Research Programme donated 100 bamboo seedlings totalling to 30,000 assorted indigenous trees planted during the event that Kenya Water Towers Agency (KwTA) spearheaded together with County governments and other Ministry Departments and their agencies.



KEFRI Director Dr. Joshua Cheboiwo planting *Juniperus procera* an important timber tree

KEFRI strengthened networking and engagement with universities on collaboration in research and capacity building, and other stakeholders on matters of forest conservation and management

The CAS tasked KEFRI to ensure availability of quality tree seeds and seedlings, engage in capacity building, monitor tree development and empower communities in the region to establish tree nurseries.

KEFRI conducts a clean-up exercise

KEFRI staff at Headquarters and CHERP conducted a roadside clean-up exercise from Zambezi to KALRO gate in Muguga on 24th July, 2019.



Dr. Joshua Cheboiwo together with CHERP Regional Director Dr. Joram Kagombe and staff during the clean-up exercise

The annual event brought together other stakeholders: Kenya Forest Service (KFS), Muguga Ecosystem Research Community Forest Association (MERCFA), Kikuyu Sub-County office, Sigona Ward Representative, Kikuyu, Sigona and Kerwa locations Chiefs, Nderi Uzima Community Health workers who collected solid waste -dominated by plastics and papers, and unblocked drainages.

KEFRI Director Dr. Joshua Cheboiwo officially started the event at Zambezi, where he called upon the staff, members of communities and partnering institution to prioritize cleanliness as prerequisite to a healthy environment.

“Cleanliness starts with you. We should ensure our environment is clean all the time be it at home, work place, schools et cetera,” said. Dr. Cheboiwo

The Sigona Ward Member of County Assembly Hon. Naphtaly Ngugi, Kiambu Ecosystem Conservator Mr. Paul Karanja and Kikuyu Sub-county Environment Officer Mr. Nahashon Kiania also participated in the exercise.

Mr. Karanja praised the stakeholders for collaboration in cleaning the environment but also cautioned the public against polluting the forests.

Hon. Ngugi asked the institution to strengthen relationship with neighboring communities noting “The adjacent community should be the first beneficiary of the institution’s research and other technologies. Institutions that are interacting well with the adjacent communities will always achieve their goal when the community is involved and supportive” said the MCA.

KEFRI’s Central Highlands Eco-regional Research Programme (CHERP), Regional Director Dr. Joram Kagombe thanked volunteers and Kiambu County for provision of garbage truck and personnel, Muguga CFA, alias Muguga Ecosystem Research Community Forest Association (MERCFA) and many other volunteers .

Colloquium:

Pests and Diseases pose a threat to Eucalyptus Clones in Kenya

A research study conducted by KEFRI scientists has found out that Eucalyptus trees including hybrid clones in Kenya can be susceptible to pests and diseases.



Mr. Linus Mwangi, the Principal Investigating Officer and Pathologist

The cutting edge research conducted in six ecological zones countrywide involved documenting incidence, distribution and severity of major insects pests and diseases in clonal Eucalyptus trial sites in Western region, Lake Victoria basin, Central highlands, Eastern drylands, Rift Valley and Coastal region.

The research led by Mr. Linus Mwangi, a senior pathologist, beefed up previous observations published in the Forest Journal - JINAM and KEFRI Technical Report No.7 on Eucalyptus Pests and Diseases in Kenya.

In the two publications, scientists reported Eucalyptus and some hybrid clones were facing growth challenges due to incidences of pests and disease attack.

“Eucalyptus were introduced in Kenya in 1902 to supplement the much needed fuelwood for steam engines. *Eucalyptus saligna*, *E. grandis* and *E. camaldulensis* hybrids dominated the plantations until 1997 when The Tree Biotechnology Programme jointly with Mondi Forest of South Africa introduced clonal materials. Tree Biotechnology Programme hosted the Ramets (clones) at Karura Forest and tree nursery for propagating the Eucalyptus through cuttings,” said Mr. Mwangi during scientific presentation at KEFRI headquarters on 31st July, 2019.

The project promised Eucalyptus hybrid clones with fast and uniform growth, high productivity, resistance to pests and diseases, and straight stems which lead to a good quality, highly marketable products.

KEFRI together with Tree Biotechnology in 2002 established 12 trials in both private and public lands. Monitoring of pests and diseases that commenced in 2006, observed galls on the clonal plants *GC-grandis* and *camaldulensis*, *GU-grandis* and *Urophylla* and TAGS (Pure Eucalyptus grandis) due to attack by Blue Gum Chalcid (*Leptocybe invasa*) commonly called BGC. Early Stem Bright and *Botryosphaeria Canker*, a common fungal disease of trees and woody shrubs was also noted in those clones.

“Preliminary research has now produced data that indicate pure *Eucalyptus grandis*, GC 10, 12, 14, 522, 540 and 796 as well as GU 8 and 21 had the highest mean score of BGC infestation in all trials surveyed countrywide,” said Mwangi.

Some of the Eucalyptus trials had severe attack by *Botryosphaeria*, a major fungal disease that cause stem canker in tropical and temperate regions worldwide.

The canker disease found in *Eucalyptus grandis* and *E. camaldulensis* had an incidence of 18.3% and 14% respectively.

In Meru, *Eucalyptus henrii* was found severely attacked by the disease and may be unsuitable, for growth in that region.

The study also established reappearance of Eucalyptus snout beetle (*Gonipterus scutellatus*) in Central and Rift Valley regions. *Eucalyptus dunii*, GC 522, GC 581 and GU 21 clones were attacked by the insect as well as *E. tereticornis* and GU in Sokoke, Kilifi County.



The study recommend discontinuation of *Eucalyptus henrii* clones to safeguard it from pests and disease attack and spread to other species.

However, Milton Esitubia technologist in at KEFRI oppose eradication of *E. henrii* citing factors

influencing survival of two other trees in Western Kenya should be explored.

“The study should go further and identify species and clones that are tolerant to diseases and pests,” said Esitubi.

According to Linus Mwangi, Eucalyptus hybrid clones were initially meant to produce pulps in the country of origin, however in Kenya they are grown mainly for timber production, fuelwood for industries and domestic use.

This finding casts fear of decline in production, as majority of Eucalyptus plantations and woodlots raised by private farms and local farmers have witnessed this disease in epiphytotic proportions in the recent years.

“The pest and disease attack varies in intensity and was noted in as young as three years old saplings. The performance of trees and incidence of pests and diseases could be influenced by site conditions” says Mwangi.

Dr. Joram Kagombe, Central regional director CHERP noted the results of this study should be advanced into policy document to inform policy makers.

Indigenous Aloe Genetic Diversity and Population Structure in Kenya

A study to determine the geographical distribution of three indigenous Aloe species from selected areas in ASALs of Kenya has revealed high genetic variation in *Aloe secundiflora*, *A. turkanensis*, and *A. scabrifolia* species.



According to Asenath Kandiege, a researcher at KEFRI, the study was conducted to establish Aloe distinct populations, also evaluated molecular characterization of the three Aloe species, mapped their genetic pools and structures using Random amplified polymorphic DNA (RAPD) and intersimple sequence repeat (ISSR) markers.

“In Kenya, five wild Aloe species are commercially exploited for domestic and industrial use. The local communities have a wider use which include medicinal, cultural and aesthetic purposes. Aloe bitter gum is used in pharmaceuticals industries, cosmetics, and nutraceuticals among others.” says Asenath.

The unsustainable extraction of Aloe causes threat to ecological balance and may lead to complete loss of the species. The level and impact of exploitation has raised concern locally and internationally and in 1986 a Presidential decree was declared banning commercial harvesting of Aloes from their natural populations. Climate change, unsustainable harvesting of plants and their products, introduction of exotic species and pollution have been key to unprecedented change in biodiversity worldwide.

The study found out *A. secundiflora* is the most distributed in Kenya among the three Aloe species being dominant in Coast region, Lake Basin and Central regions. *Aloe turkanensis* and *A. scabrifolia* were not reported in coast region, Lake Basin and Central regions. There was high genetic variation among and within the populations studied.

Combined use of ISSR and RAPD revealed high variations among the populations as compared to when either of them used. Genetic variation was highest within *A. secundiflora* species and least within *turkanensis* species. *Maralal secundiflora* population had the highest genetic variation.

The study exhibited a population genetic structure with three major clusters which corresponded to the three Aloe species (*turkanensis*, *scabriflora* and *secundiflora*) with the overall membership proportion showing very minimal reproductive crossing between the Aloe species.

The outcome of this study is key in identifying gene pools, gaps in germplasm collections and in development of effective conservation and management strategies.

Time is ripe to embrace bamboo tissue culture

KEFRI has the capacity to develop superior clones of bamboo from different species, using the available resources.

Ms. Priscila Kimani, an assistant research scientist stated during a monthly colloquium held on 31st August 2019 at headquarters, Muguga.



CHERP Deputy Regional Director Dr. Stephen Omondi, John Ochieng, James Maua and Priscila Kimani interacting after the colloquium

The revelation comes after her one week visit to Grow More Biotech Limited in Bangalore, India, where she made a study tour to expand skills on bamboo propagation using tissue culture.

Grow More Biotech is a 23 year old company providing high quality tissue culture plants to farmers, industries and Government departments in India and exporting to several countries.

“Production of tissue culture materials involves identifying the right species, selection of young tender shoots, incision, rooting in the right media, and hardening up is critical in order to increase the number of plantlet,” said Kimani.

In her presentation, ‘Mass Production of Bamboo: Lesson learnt from India’, Kimani noted that although bamboo can thrive in many ecological zones and has many uses, its propagation, especially in Africa, is narrowed by lack of adequate germplasm.

Asiatic countries have considered bamboo an essential component of rural economy and advanced propagation is done through nodal cutting, rhizome splitting and in vitro multiple shoot culture.

“In Kenya, African Alpine bamboo *Oldeania alpina* (syn. *Yushania alpina*) is the only perennial indigenous bamboo whose habitat is the high altitude natural forest,” said Kimani.

Recent introduction of germplasms in Kenya from Asiatic countries has expanded the bamboo genetic resources, profiling it as a forthcoming crop with potential to create employment amongst other socio-economic and environmental benefits. Bamboo uptake in the forestry sector would create cottage industries in the rural areas, and improve livelihood of the youth, thus contributing heavily in the government Big 4 agenda.

Tree breeding to spur commercial plantations in Kenya

KEFRI scientists are in the process of introducing new germplasm of commercial trees in the Country to enable expansion of the narrow genetic pool estimated at 50 species in the Country.

“So far 112 families of superior germplasm of *Eucalyptus grandis* from Australia, 62 from Venezuela and Colombia have been introduced in the Country and progeny trials established at Turbo and Londiani,” said Dr. Stephen Omondi, (pictured) a lead scientist in tree breeding at KEFRI, during a scientific colloquium held at KEFRI headquarters.



Forest plantations in Kenya play a major role in sustainable forestry management and conserving of the natural forests. These plantations that form 47% of 220,000 hectares established in both public and private sector employs approximately 50,000 persons directly and 600,000 indirectly, thus contributing 1.4% Gross Domestic Production (GDP).

“For these plantations to be more economically viable in future, high quality genetic materials, including seeds and seedlings, are required for tree improvement as well as in production of uniformed genetically appropriate nursery stocks,” Dr. Omondi further stated.



Currently, the quality of plantation materials introduced in the country is limited by narrow genetic base which could have also been contaminated overtime by in breeding. However, ongoing research in KEFRI aims at producing hybrids to spur commercial plantations of Eucalypts, Pines and Cypresses.

Dr. Omondi further states, research has commenced on selection of *Eucalyptus grandis*, *Pinus patula* and *Cypresses lustanica* candidate plus trees to breed quality trees with traits such as resistance to pests and diseases, to eventually spur commercial plantations.

“KEFRI jointly with University of Nairobi is testing use of hormones in the green house setup to overcome cross pollination of trees over 50 metres tall.” said Dr. Omondi.

“So far, collection of pollen and testing viability prior to control pollination, identifying the flowers and cones, matriculating and tagging sources of pollination was done,” Dr. Omondi added.

Similarly, development of protocol on Eucalyptus hybridization is ongoing as well as genetic fingerprinting where molecular markers are ready for genotyping.

Farmers Field Day, Nyeri County

KEFRI through Central Highlands Eco-region Research Programme (CHERP) participated at Wambugu Farmers Field Day at Wambugu Agriculture Training Centre in Nyeri County on 26th and 27th July, 2019.

CHERP Regional Director Dr. Joram Kagombe led staff from Muguga, National Forest Products Development Programme - Karura and Nyeri sub-regional centre in showcasing forestry technologies and disseminating information relevant to the 2-days' event themed: "promoting technologies and innovation in agriculture and trade."



Mr. Wycliff Mauta, (right) a technologist at National Products Development Centre (Karura) interacting with visitors at KEFRI stand

Seed collection, processing and pre-treatment, improvement of multipurpose trees, bamboo propagation techniques, and value addition to wood and non-wood forestry products.

Around 20,000 visitors attended the event. Nyeri County Governor, Mutahi Kahiga, was among the distinguished guests who visited KEFRI stand.

Governor Kahiga commended KEFRI for the ample research it is undertaking to develop forestry in central and neighbouring regions.

"I commend KEFRI for research on tree seeds and Bamboo propagation which are two key products that will help our country realize the 10% tree cover," said Governor Kahiga.

The Governor also urged KEFRI to expedite research results to the farmers who are eager to improve their farming practices and livelihood.

Mr. Mwangi Wanjohi, a farmer from Karatina stated that he has gained skills on seed collection, soil analysis, fertility improvement, and tree pests and diseases control and bamboo propagation.

Dr. Kagombe urged communities to grow bamboo to supplement the much needed wood products.

"KEFRI is responsible for conserving the environment through development and promotion of forestry practices like agroforestry, social forestry and preservation of water catchment areas.

We promote and offer technical knowledge on how to grow different types of tree species and promote products and services that will enhance increased farming production," said Dr. Kagombe.

KEFRI Board of Directors visit Coast region

Mr. Yusuf Hajji, a farmer at Mavuweni area, Kilifi County, practising agroforestry hosted KEFRI Board of Directors during the visit at Coast region. Hajji is growing *Casuarina equisetifolia* and *Melia volkensii* trees on farm for commercial and demonstration.

The Chairman KEFRI Board of Directors, Dr. Sammy Letema, Director KEFRI, Dr. Joshua Cheboiwo and staff from Coast Eco-region Research Programme visited the farm where KEFRI scientists have provided technical expertise on scaling out the tree growing technologies that has been tested and optimized on growth and income. The trees range from nine months to two years.



KEFRI Board members and staff visiting Hajji's farm in Kilifi

The team later visited Komaza, a commercial Tree Planting Company which has enlisted 14,000 farmers who have entered into an agreement to plant trees on their farms for commercial use.

The farmer is growing Eucalyptus clones and *Melia volkensii* in the Coast region. KEFRI has partnered with Komaza and together have planted 8 million trees in the Coast region. This will significantly contribute towards attaining 10% tree cover by 2022.

The team then visited the Rabai Cultural Village and Rabai Museums who have partnered with KEFRI on socio economic work in planting indigenous trees for herbal medicine. The KEFRI scientists have linked the surrounding community to embracing culture and conservation of forests.

KEFRI and World Vision signs agreement on bio enterprise

The Director KEFRI Dr. Joshua Cheboiwo signed a Memorandum of Understanding (MoU) with Tina Mukunda of World Vision Kenya on Restoration of Arid and Semi Arid Lands in Kenya.



The project aims to restore deforested and degraded lands through Forest Land Restoration (FLR) approach and enhance the socio-economic development of local communities.

“World Vision is happy to engage with KEFRI in development of bio-enterprises and other incentives such as non-timber forest products,” said Mukunda.

Tina also pointed out that KEFRI will deal with conflict sensitive natural resource management component.

KEFRI Enrich Medical Cover

KEFRI employees have a reason to smile after the institution enhanced medical cover by more than 95%.

The Director Dr. Joshua Cheboiwo while speaking during the staff interaction forum on 23rd September, 2019 at KEFRI Headquarters, said his pledge to enhance the medical cover he promised earlier during his swearing in ceremony five months ago has been fulfilled.



“The medical premium which commenced 1st October 2012 has since increased gradually from 12 million then to Sh76m starting from 1st October, 2019.” said Dr. Cheboiwo.

“The cover benefits 918 employees and a total population of 3,645 beneficiaries that include spouses and children,” said Ms. Evelyn Oroni, KEFRI Human Resource Deputy Director.

Ms. Oroni, in her presentation with details of the cover explained to staff that the medical cover caters for inpatient, outpatient, Dental, Optic and medical checkup services. The beneficiaries are now classified into four job group categories; Category A has members in job group 11 to 15, Category B job group 8 to 10, Category C has members from job group 6 to 7 while the last category has members in job group 1 to 5.

“Negotiations are on-going for inclusion of children who are above 25years and living with disability and depend on the parent and dully registered with the National Council for Persons with Disabilities,” Ms. Oroni said.

MARA Day Celebration

The Lake Victoria Basin Eco-Region Research Programme Director, Dr. Jared Amwatta headed Kenyan team in celebrating the 8th Mara Day in Mugumo, Serengeti District of Mara Region Tanzania.



Hon. Ken Obura, PC Adam Malika and Dr. Ali Matano visiting information section during the Mara exhibition

The Annual celebration which takes place on 15th of September for the United Republic of Tanzania and the Republic of Kenya was themed 'Mara River-Stand with Me: Mimi Mto Mara, Nitunze Nikutunze'.

Dr. Amwatta who represented the Director KEFRI emphasized on the importance of Mara ecosystem to economies, noting the ecosystem supports livelihood of 100,000 people living in Kenya and Tanzania.

“Mara day celebration coincides with the great migration of wildlife transversing from Serengeti National Park in Tanzania to Maasai Mara National Game Reserve in Kenya every September,” Dr. Amwatta said.

Dr. Amwatta added that, “the Great Migration is in itself a worldwide fame based on such organized exodus of wildebeests to and from the two EAC neighbouring countries.”

The event was graced by East African Community and Regional Development Chief Administrative Secretary Hon. Ken Obura, Provincial Commissioner in Serengeti Tanzania, Adam Malika, as well as the Executive Secretary Lake Victoria Basin Commission, Dr. Ali Said Matano.

KEFRI jointly exhibited under the Ministry of Environment and Forestry together with its state

agencies and shared information on Posters for Natural Forest Rehabilitation Techniques, conservation and domestication of indigenous fruit trees, Bamboo establishment, management, utilization and artisanal products.

In addition several publications produced by the Institute on various subjects and themes such as Strategic Plan 2018-2022, Growing *Melia volkensii* guideline, Technical Notes and Forest Research Programme for Lake Victoria Basin were also distributed.

Mara Day was adopted by the 10th Sectorial Council of Ministers for Lake Victoria Basin on 4th May 2012 in Kigali, Rwanda. The Council's decision aimed at reversing poor water quality, water overuse, and predatory conversion of forests resources for short-term interests and destruction of upstream watershed.

The Mara River is an international river, shared between Kenya and Tanzania covering about 13,750 km², of which about 65% is located in Kenya and 35% in Tanzania. The River pours its water into Lake Victoria, the source of the river Nile and runs through Masai Mara Game Reserve on the Kenyan side and the Serengeti National Park on the Tanzanian side, both ecosystem are of socio-economic significance in terms of conservation and wild heritage.

The leaders from both Countries lamented the increasingly water shortages as well poor water quality and environmental degradation mostly caused by human interference.

“The main competing interests for water resources in the Mara ecosystem include large scale irrigation plantations, the wildlife, small scale farmers and pastoralists on both sides of the basin, the mining industry in Tanzania, small scale fishing activities and urban and rural domestic water supplies,” said Hon. Obura.

He added that further problems are caused by deforestation, loss of vegetation cover in the upper catchments and along rivers, unsustainable agricultural practices (including irrigation), pollution threats from urban settlements and mining.

Kisumu Regional Show 2019

KEFRI's Lake Victoria Basin Eco-Region Research Program staff participated in the Kisumu Regional Agricultural Society of Kenya Show at the Mamboleo A.S.K Show Ground, Kisumu from 24th to 28th July 2019.

The Regional Director Dr. Jared Amwatta led staff from the region, National Forest Products Center and Corporate affairs office in exhibiting in the show themed "Promoting Innovation and Technology in Agriculture & Trade."

Forestry rehabilitation model, seedlings of medicinal trees, timber and pole trees as well as ornamentals, seed harvesting gear were displayed.



Assorted bamboo products displayed at KEFRI stand during the A.S.K show, Kisumu

The team also showcased soil analysis processes and activities that are geared towards informing farmers about soil fertility recapitalization and management in the Lake Victoria Region and Publications with various scientific breakthroughs.

Some of the products included; aloe, improved domesticated indigenous fruits juices, New Bamboo products (Marts, bookshelf chair, shelf, flower vase, table, penholders, wooden tray and bowl).

There was a general demand for grafted mangoes and avocado seedlings as well as the technology (grafting techniques) from some of the show goers who visited the KEFRI stand.

Most participants sought to know what KEFRI is doing on the controversial Eucalyptus trees being planted all over regardless of site marching

Some farmers suggested KEFRI to be issuing free seedlings during the show.

Central Kenya Region 2019 Show

The Central Kenya National Agriculture Society of Kenya show held at Kabiru-ini showground in Nyeri County, from 14th to 11th September, 2019, KEFRI scored two trophies for excellent exhibition.



CS Agriculture Hon. Kiunjuri presenting trophy to Dr. Mutitu, accompanied by Jonah Kiprop and Miriam Gathogo, for demonstrating seed production and marketing

The Institute showcased seed collection and seedling production technologies, tree improvement and rehabilitation of degraded land, multipurpose trees for agroforestry purposes and value addition to wood and non-wood forest products.

Among the new products on display were *Melia volkensii* tree intended for introduction to the dryland areas of central region, cosmetic products from oil obtained from the seed kernel of *Ximenia Americana* as well as Cape Chestnut (*Calodendrum capense*).



Dr. Eston Mutitu and Dr. Joram Kagombe with officers judging the stand during Cenral Kenya region, Nyeri show

The Chief Guest, Cabinet Secretary for Agriculture, Livestock, Fisheries and Irrigation Hon. Mwangi Kiunjuri presented KEFRI with trophies for the best stand demonstrating Application of Environmental Quality Standards, and for Seed Production and Marketing.

KEFRI exhibits at Mombasa ASK show 2019

KEFRI participated at the Mombasa International Trade Fair 2019 held at Jomo Kenyatta showground in Mkomani, Mombasa County from 4th to 8th September 2019.



Dr. Letema (centre) and Dr. Cheboiwo being briefed by Coast Regional Director Dr. Linus Wekesa at KEFRI Mombasa stand

KEFRI Board Chairman commended KEFRI staff from Coast Ecoregion Research Programme and National Forest Product Development Centre for the impressive display on forestry technologies and innovations, ranging from quality tree seedling production, tree propagation, energy conservation and the financial impact to the community if it adopts the technologies displayed.

The Chairman also toured relevant exhibition stalls and attended the official opening ceremony and awarding of outstanding exhibitors by His Excellency President Uhuru Kenyatta, the Patron of the Agricultural Society of Kenya (ASK).

The 2019 Mombasa ASK Show attracted over 190 exhibitors from within and countries such as Uganda, Tanzania, Zanzibar, Egypt, Ukraine and China. KEFRI stand was ranked third in seed production and marketing category.

KEFRI Director Dr. Cheboiwo congratulated KEFRI staff at Coast region for the effort in developing relevant technologies and disseminating information to diverse stakeholders that include community groups conserving Kaya forests and mangroves.

Dr. Cheboiwo further urged scientists in the region to tap the opportunities with development partners visiting the region and craft proposals to enable develop research geared towards conserving the forest resources.

Japanese students visit KEFRI

Twenty two Japanese pupils, grade 1-9 from The Nairobi Japanese School – Junior High in Kenya paid a courtesy call to KEFRI on 20th September, 2019 to learn more about Japanese growing Flowering Cherry (Sakura) tree in Kenya.

KEFRI Director Dr. Joshua Cheboiwo hosted the pupil who were accompanied by their class teachers and embassy representatives.

According to the Head Teacher Mr. Atsushi Takikama, the study tour was also to mark the School's 50th anniversary since it's established in Kenya.

Dr. Michael Mukolwe, a scientist and training manager at KEFRI informed the schoolchildren that three Sakura trees (*Prunus pumila*) planted in KEFRI compound have shown different growth rates and propagation of more trees is ongoing.



Dr. Mukolwe demonstrating propagation of Sakura tree

“Growing of Sakura tree is a significant resemblance of the long relationship between Kenya and Japan,” said Dr. Mukolwe.

KEFRI and Japan have a long collaboration spanning over 30 years with support through JICA projects in research and trainings activities.

Dr. Mukolwe together with Ms. Josephine Wanjiku demonstrated vegetative propagation of Japanese Cherry tree being undertaken at KEFRI.

“The trial is experiencing challenges as well as opportunities each day” said Dr. Mukolwe

KEFRI host PFM validation meeting



Participatory Forest Management (PFM) experts in a validation discussion held at KEFRI - Kitui

Participatory Forest Management (PFM) experts in Kenya held a validation meeting at KEFRI - Kitui Centre on 16th August 2019 to deliberate on PFM implementation and measures of streamlining guiding policies to the benefit of ecosystem conservation and community development.

The experts drawn mainly from KEFRI, Kenya Forest Service, Nature Kenya, and National Community Forest Association (NACOFA) among others stakeholders representative such as Muguga Ecosystem Research Community Forest Association (MERCFA).

In his opening remarks Dr. Paul Ongugo, a Principal Research Scientist at KEFRI stated that PFM process was initiated in 2007 and involves management of forests by various stakeholders including the adjacent communities, within a framework that contributes to community's livelihoods.

Referring to the 'Manual on preparation of a Participatory Forest Management Plan (PFMP)' and PFM guidelines of 2015 as tools to PFMP formulation and implementation, the meeting explored successes and challenges facing the implementation of the process.

MERCFA among other CFA present shared their experiences in PFM implementation.

During the meeting the technical team constituted to evaluate and give recommendations into reviewing policies to appropriately implement the PFM process presented their progress.

The experts explored PFM guiding policies, successes, challenges and way forward for the process implementation in Kenya and even globally. Dr. Elizabeth Wambugu, Secretary to the technical team for PFM process validation, cited lack of incentives, cost and benefit sharing mechanism of resources as factors impeding successful implementation of PFM.

"Application of Forest Conservation and Management Act (FCMA) 2016 article 71 (a) guidelines on incentives and benefit sharing; (d) prescribing measures that enhance community participation in the conservation and management of forests; (f) prescribing measures and mechanisms for PFM agreements with other stakeholders and lead agencies is a pre-requisite to sustainable implementation and fulfillment of community's expectation in the PFM process," said Wambugu

Speaking during the closing ceremony, the Empowerment Manager at Nature Kenya, Joel Siele, stated that Nature Kenya is committed to supporting the validation process, such intention will consequently improve community's livelihood.

New Employees – 2019

KEFRI Board of Directors and the Management introduce the following new members of staff.

Fredrick Odhiambo Odieng:



Senior Administrative Officer. Fredrick holds a BA in Public Administration and Sociology-University of Nairobi, and is a member of IHRM. He formerly worked with Kenya Revenue Authority.

Hannah Wanjiku Kinyanjui:



Senior Human Resources Officer. Hannah holds an MBA in Human Resource (Masters) from Egerton University. She formerly worked with Ministry of Environment and Forestry.

Jared Onsoti Rangeria:



Senior Supply Chain Manager. Jared holds an MSc degree in Procurement and Logistics from JKUAT University. Previously worked with Kenya Railways and is member of KISM

Amos Kipkemboi Koskei:



Senior Internal Auditor. Holds a Bcom/Finance, CPA III, and a member of ICPAC. Amos had previously worked with Chemelil Sugar Millers and Nyayo Tea Zone.

John Bernard Odhiambo:



Internal Auditor. John holds a degree in BBM from Moi University. Formerly worked with the University of Nairobi. He is a member of ICPAK and a Certified Public Accountant.

Benjamin M. Mutinda:



Laboratory Technologist. Stationed at KEFRI Karura. Holds a Bachelor's degree in Technical and Applied Physics from Technical University of Kenya. Previously worked with Brainium Technologies.

Patrick Kauro Kwiriga:



Librarian. Patrick holds a BSc Degree in Information Science (IT) Moi University. Previously worked at Kenya Methodist University as Senior Library Assistant. He is a member of Kenya Library Association

Bonface Kituu Mwangangi:



Building Inspector. Holds a Diploma in Building Construction, from Ramogi Institute of Advanced Technology. Has 9 years experience and is a member of National Construction Authority. Previously worked with South Eastern University Kenya (SEKU).

Demise

Aloyce Oyoo Oywer

KEFRI Management console the family of the Late Aloyce Oyoo Oywer which occurred on 12th July, 2019 at Migori District Hospital. Untill his death the Late Aloyce served at KEFRI Migori Sub Region Research Centre. The body was interred on 22nd July 2019 at Oyani, Sigira village in Migori County.

May God rest his soul in eternal peace

Geoffrey Kiarie Nganga

KEFRI Management console the family of the late Geoffrey Kiarie Nganga following his sudden death on 2nd August, 2019.



The late Kiarie served at Central Highland Eco-region Research Programme Muguga. His body was buried on 10th August, 2019 at Lusigeti, Karai Sub-Location Kikuyu in Kiambu County.

May God rest his soul in eternal peace



Ezra Kibe proprietor of polybale (4th left) donating drinking water to volunteers who participated in the cleanup exercise

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