



KEFRI *Newsletter*

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**KEFRI
gets
new
Director**





Newly appointed KEFRI 4th Director Dr. Joshua Cheboiwo (right) with PS Environment and Forestry Dr. Ibrahim Mohammed at KEFRI headquarters during the forestry open day for central highlands

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KEFRI gets new Director

KEFRI Board of Directors has appointed, Dr. Joshua K. Cheboiwo as the new KEFRI Director. Dr. Cheboiwo's appointment takes effect from 1st April, 2019 according to an internal circular dated 29th March, 2019 released by Mr. Robinson Ng'ethe representing the board of directors.

In the circular, Mr. Ng'ethe states; "...the appointment was done in consultation with the Cabinet Secretary in the Ministry of Environment and Forestry following competitive interviews held on 9th July, 2018."

Until his appointment, Dr. Cheboiwo was the acting Senior Deputy Director for Research and Development, a position he has held since April 2018.

Dr. Cheboiwo replaces Dr. Jane W. Njuguna who was acting director since February 2018.

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Forestry Open day for Central Highlands

KEFRI continued to fulfil its mandate of disseminating information and transferring forestry technologies to the public during the Central Highlands Eco-Region Research Programme (CHERP) Open Day at KEFRI headquarters.

The exhibition held on 28th March, 2019 attracted 36 agri-based firms, partners and learning institutions.

Over 2000 farmers attended the event that also promoted forestry technologies, related products and services.

KEFRI products and services displayed included; high quality tree seeds, soil sampling, tree improvement techniques, high value tree species, various bamboo species and their propagation, growing and utilization methods, non-wood and wood forest products, bamboo products, suitable tree species for agroforestry systems.

Other technologies were on molecular biology, sandal wood propagation and domestication, propagation of *Melia volkensii* using tissue culture, wood and plant nutrients analysis methods, conservation and rehabilitation of natural forests and water catchment areas, management of tree pests and diseases, tree taxonomy, strategies for green economy, charcoal briquette making, strategies for mitigating negative impacts of climate change, establishment and management of tree nurseries and medicinal plants.

KEFRI offers other services which were also explained: plant tissue elemental chemical analysis, soil physical analysis, sludge and fertilizer analysis, water analysis for irrigation, drinking and waste water quality. The farmers were encouraged to utilize the right soil, water and fertilizer for better crop yields.

Chief Administration Secretary, Ministry of Environment and Forestry Hon. Mohammed Elmi and the Principal Secretary Dr. Ibrahim Mohamed graced the event and visited various laboratories and seed processing unit.

“I commend scientists for the advancement of forestry technologies and urge them to foster collaborative approach towards advancing research and developing technologies to increase forest cover and mitigate climate change,” said PS Mohammed.

KEFRI acting director Dr. Jane Njuguna cited low funding to research and inadequate scientific staff as some of the limits that the institute is experiencing and may limit forestry research and development.

Bamboo Forum in Vihiga County

Stakeholders in forestry sector and the public submitted their views concerning the Draft Policy on Bamboo Management and Utilization during a forum held in Gisambai, Vihiga County on 22nd March, 2019.

In the same forum which the nation used to mark the World Water Day, stakeholders also gave their views on the National Forest Policy and Forest Conservation and Management Act, 2016.

Environment and Forestry Cabinet Secretary Mr. Keriako Tobiko, Chief Administrative Secretary Hon. Mohammed Elmi graced the occasion together with Vihiga Governor Wilbur Ottichilo.

Speaking during the forum, the CS decried the low levels of awareness among the stakeholders involved in the bamboo value chain and urged the working groups to initiate a massive awareness and public sensitization programme to promote bamboo country wide.



CS Keriako Tobiko, Governor Ottichilo and Mohammed Elmi holding bamboo seedling ready for planting at Sosa Cottages grounds in Gisambai-Vihiga County, in commemoration of the bamboo policy formulation

Tobiko further said, “It is only when we get rid of the ignorance towards bamboo that registration of bamboo policy and its implementation will be useful.”

The Minister commended KEFRI for introducing 22 new bamboo varieties and identifying their viable ecological zones across the country.

He however, cautioned private sector against fronting vested interests through the policy document, stating that any recommendation must be practical, factual and supported by statistics.

“My ministry oppose opening up indigenous bamboo forests for exploitation. Such an act will certainly harm the biodiversity as well as increase pressure on the already threatened forests,” said the CS.

Tobiko noted that the country has a total 134,000 ha of indigenous bamboo out of which 80,000 ha are vested in public land which is now the domain of the County’s authority. Therefore, it’s imperative that the

bamboo policy should consider contributions and responsibilities of the county governments, state departments and agencies as well as other critical players.

In addition, the CS advised the team to consider the utility of bamboo in the realization of the 10% tree cover and in mitigating climate change, its contribution to the Big 4 agendas, and Third Medium Term Plan of Vision 2030.

Governor Ottichilo stated: “My County is committed to be the pioneer in growing bamboo as a commercial crop and its value addition. We will partner with the ministry of Environment and Forestry to ensure bamboo policy is finalised and implemented to facilitate conservation of the environments.”

The governor said the policy will help communities in his County address challenges such as; poverty, population increase, encroachment to riparian and other wetlands areas.

Mr. Paul Ongugo, KEFRI research scientist, introduced the goals and objectives of the policy, and commended the taskforce for drafting an all-inclusive policy since 2016.

Other views from the stakeholders included adopting bamboo as an entrepreneurship and as a tool for managing and conserving the environment, establishing a national bamboo steering committee, including various acts of parliament and county regulations for the smooth implementation of the policy.



The delegates also visited Tiriki Tropical Gardens and Farm in Shamakhokho village in Vihiga County. The farm’s proprietor, Mr. Victor Mwanga, a devoted bamboo farmer and currently the Chairman Bamboo Association of Kenya, together with a community group demonstrated the use of bamboo in making products and restoring degraded landscapes.

6th Devolution Conference

KEFRI exhibited its technologies during the 6th Annual Devolution Conference held at Kirinyaga University from 4th to 8th March, 2019.

The institute demonstrated technologies on tree seed production, value addition to wood and non-wood forest products including aloe, indigenous fruits, bamboo and briquettes production in a side event themed ‘Deliver, Transform and Measure’.



Government representatives from 47 counties attended the conference that aimed to promote visionary leadership, offer a collective voice on policy issues, promote inter-county consultations, encourage and initiate information sharing on performance of county governments.

Approximately 200 delegates including Members of County Assemblies who visited the stand expressed interest in partnering with KEFRI in capacity building and value addition. Uasin Gishu Governor Hon. Jackson Mandago sought KEFRI support in establishing 80 hectares of bamboo plantation in his county. wood and non-wood products.

Eldoret ASK show

KEFRI was awarded the trophy for the best stand demonstrating application of environmental quality standards at the North Rift Agriculture Society of Kenya (ASK) show held at Eldoret from 6th to 9th March, 2019.

The stand was also ranked second position in Seed Production and Marketing, Energy Services and Conservation Sector, third best in Research and Development, and fourth best in theme interpretation.

Turbo and Londiani staff jointly showcased KEFRI’s technologies at the national agricultural show, under the theme ‘Promoting Innovation and Technology in Agriculture and Trade.’

The team showcased various products and services which included; seed production and marketing, seed collection and distribution, energy services and conservation, tree improvement techniques using seed testing and cross-breeding, integrated pest management (IPM), bamboo propagation and utilization.

Collaborators displayed non-wood forest products that included herbal medicines, honey and other nutritional produces.



The Cabinet Secretary for Agriculture, Livestock, Fisheries and Irrigation Hon. Mwangi Kiunjuri presenting trophy to Mr. Martin Welimo at Eldoret ASK show

Dr. David Langat, Regional Director Rift Valley Eco-Region Research Programme (RVERP) said the institute showcased the forest technologies to create awareness to the community in the North Rift region so as to increase forest cover to 10% by 2022.

“KEFRI has adopted both Quality and Environmental Management Systems (QMS and EMS) and uses its developed procedures and policy in all areas of operations to minimize negative impacts on the environment,” said Dr. Langat.

Mr. Joram Mbinga, a scientist also demonstrated cross pollination of *Pinus patula* and *Pinus tecunumanii*, being an advanced technology for improving the quality of trees and other plants.

“Cross breeding of the two pines results into hybrid-preferred for the expanded range of growth parameters as well as tolerance to diseases such as the pitch canker fungus and *Fusarium circinatum*,” said Mbinga.

In Kenya, pines are among the preferred commercial tree species valued for timber and wood pulp. Pines grow in various environments, ranging from arid and semi-arid to rainforests.

When grown for timber, pine plantations can be harvested after 30 years.

International Day of Forests Celebration in Siaya County

KEFRI joined other institutions in celebrating the 2019 International Day of Forests on 21st March, 2019.

Environment and Forestry CS Keriako Tobiko graced the event by planting a commemorative tree at Bondo Teachers College in Siaya County.

In respect to this year’s theme ‘Forests and Education,’ 5,000 trees were planted in the college as a build-up activity for the expected long rain season.



KEFRI acting Director Dr. Jane Njuguna, CS Keriako Tobiko, Governor Rasanga, area MP Gideon Ochanda, CAS Mohammed Elmi visiting KEFRI stand at Bondo Teachers College where display on forestry and education was set to mark the International Day of Forests

The CS was accompanied by the Chief Administrative Secretary Mr. Mohammed Elmi, Siaya Governor H.E. Cornel Rasanga, area MP Dr. Gideon Ochanda, Siaya County Commissioner Mr. Michael ole Tialal and CEOs from various organizations.

“Siaya is ranked among counties with lowest tree cover of 0.42% and was therefore chosen to host the event and sensitize the community on the importance of increasing trees and forest cover,” said Tobiko.

The CS also commended the County Government for signing the Transition Implementation Plans (TIP) for the devolved forestry functions. The Plan, regulated by Kenya Forest Service (KFS), aims at facilitating the transfer of functions related to management of community and private forests.

“My ministry will facilitate gazettelement of the 17 hills as forests and water towers subject to submission of the report by the County Government. Additionally, will support tree nurseries in the region,” said Tobiko.”

The CS emphasized that for the country to reach the threshold of 10% tree cover by 2022 each county is to plant and nurture 5 million trees each year with the coordination of County Commissioners.

Governor Rasanga urged the communities to halt the wanton destruction of indigenous trees for charcoal production stating that the county faces environmental challenges that include deforestation, encroachment to ungazetted degraded hilltops and exploitation of forest products.

The Governor called on partners to support his government's tree planting efforts so as to realize the national governments' initiative of attaining the Constitutional 10% tree cover.

"We are where we are by choice reference to the low forest cover. "Hosting the International Day of Forests therefore is an opportunity to change our attitude towards forests," said the area MP Dr. Ochanda.

The County Commissioner added that Siaya County targets to plant 30,000 tree seedlings in schools and other public institutions during the upcoming rainy season.

The Ministry of Environment and Forestry, its agencies and collaborators showcased various products and services, technologies and suitable tree for rehabilitating forests and hilltops in the region.

At the same time KEFRI Migori sub-regional centre jointly with stakeholders in the region celebrated the day by planting trees at Rongo University grounds.

The Centre exhibited bamboo products and services, propagation, and utilization techniques, as well as enlightened its essence in conservation of forests, degraded lands and riverine.

Attendants requested KEFRI to provide viable bamboo germplasm to replace Eucalyptus in the Kisii highlands, while Rongo University sought strengthening collaboration with KEFRI in research and establishment of tree nursery and bamboo arboretum at the university.

Forest day 2019 according to United Nations, is a day to raise awareness on the importance of forests. The 2019 theme underscores the importance of education in achieving sustainable forest management and biodiversity conservation.

KEFRI Participates at the United Nations Environment Assembly (UNEA 4)

The United Nations Environment Assembly (UNEA) Conference held at UN headquarters in Gigiri, Nairobi Kenya from 11th to 15th March, 2019 was attended by heads of states, ministers, scientists, financial experts, academia, civil society and the private sector.

KEFRI exhibited at the side event of the conference whose key discussion entailed environmental challenges related to poverty and natural resources management, conservation of energy and waste management and technological advancement under the theme 'Innovative Solutions for Environmental Challenges and Sustainable Consumption and Production'.

H.E President Uhuru Kenyatta addressing the opening of the 3rd annual One Planet Summit which preceded the opening of UNEA 4, pledged the country's commitment to achieving at least 10% tree cover by 2022.

"Forestry is one of the key sectors of investment to realize our goals and my government has set targets to achieve global sustainability development goals. Currently, Kenya has a forest cover of 7% which necessitated the existing ban on logging," said President Kenyatta.

The One Planet Summit is an annual gathering of government, corporate and civil society leaders to discuss methods of battling climate change with a commitment to embrace clean energy such as wind, geothermal and solar.

UN Environment Assembly President Siim Kissler, in his opening remarks lauded Kenya's decision to ban single-use plastic bags as a major step in eradicating environmental pollution.

"Pollution levels in the universe are steadily increasing hence the need to urgently find innovative and sustainable solutions to these environmental challenges," said Kissler.

"Its high time we took immediate action to reverse the trends pausing a threat to human and environmental health if we are to maintain the current and future integrity of global eco-systems. As a result, many of the Sustainable Development Goals will be met," he said during the first plenary session.

Environment and Forestry CS, Mr. Keriako Tobiko pointed out that adopting cutting-edge technologies and innovations are key in tackling the pressing environmental challenges that are currently witnessed globally.

"Innovations are urgently required to tackle pollution and adverse impacts of climate change on our planet," he said.

Africa regional group requested UNEP to establish partnerships to promote incubation programs and eco-labelling as well as adopt text, 'the empowerment of women and the role women play as managers of natural resources and agents of change in safeguarding the environment'.

Regional Forestry Course on Climate Change

The 5th Regional Training Course on Adaptation to Climate Change in Africa through Social Forestry, held at KEFRI Headquarters Muguga, ended on 28th February, 2019.

The course aims to enhance the capacities of participating countries in sub-Saharan countries to implement adaptation measures to climate change through participatory social forestry extension methodologies.



Mr. Henry Obino awarding certificate to Ms. Awo Abdirahman Osman from Somaliland during the closing ceremony at KEFRI headquarters. Looking on is Dr. Jane Njuguna, acting Director KEFRI (Centre), Dr. Michael Mukolwe (Training Manager), and Ms. Jane Ndeti from Kenya Forest Service

The CAS, Ministry of Environment and Forestry, Hon. Elmi officially opened the course noting the training provides a unique opportunity to natural resource managers from at least 20 countries in Eastern, Central and Southern Africa to discuss as well as share practical experience in environmental conservation, mitigation and adaptation to climate change in Africa.

Officials from the Embassy of Japan, JICA Kenya Office, High Commissioners from Tanzania, Malawi, Sudan, Kenya Forest Service and KEFRI Board of Directors attended.

“The complex nature of the recurrent and emerging environmental challenges imply that no single solution approach would suffice but a multi-dimensional strategy should be used. It is also recognised that the challenges continue to create additional demands for capacity development and the need to work through more comprehensive partnerships,” said PS Elmi.

“The course is the 24th and final in a series of regional social forestry courses concluded since 1995 under the Japan International Cooperation Agency (JICA) supported Third Country Training Programme (TCTP) within the phase 2014 - 2018.”

Ms. Keiko also emphasized the importance of the Third Country Training Programme model as being

unique in its content and approach that embrace application of farmer field schools (FFS) as participatory forestry extension methodology,” she said.

During the 5-week course, participants covered sessions on forestry farmer field school (FFS), conservation and management of natural resources, climate change, livelihood improvement and other social and economic activities dependent on tree-related products and services in Africa.

“The participants shared experiences and prepared case studies and practical action plans that can make a positive impact on the forestry sector in their countries. The action plan includes monitoring and evaluation based on their country and institutional policies, strategies and plans,” said Dr. Michael Mukolwe, Training Manager.

“To date, a total of 491 participants from 20 sub-Saharan countries have been trained since 1995. In addition, a Follow-up Visits to five selected participating countries in three east Africa regions was successfully undertaken in May 2016,” said Mr. Obino.



Participants undertaking practicals on designing a Farmers Field School enterprise plot during the regional training course session in Kitui Centre

Field excursion at Karemuni and TIVA pilot forest project in Kiambu and Kitui counties respectively, was accomplished to learn bamboo seedlings production, utilization and marketing, as well as drought tree for adaptation to climate change in drylands of Kenya.

“The participants have gained knowledge on Farmers Field School principles covering; agro-ecosystems, growing health crops, and regular monitoring of fields, enabling them with capacity to train farmers to become experts in their own fields,” said Ms Jane Nzilani Ndeti, on behalf of the Chief Conservator of Forests.

Farmers Field School sessions are forums organised by the farmers, facilitators and the field coordinator to pass on to the public the lessons learnt during the FFS; similarly to the farmers field days.

Scientific Colloquium:

The Invasive Polyphagous Beetle

KEFRI scientists have issued an alert to farmers and other stakeholders on the invasive Polyphagous Shot Hole Borer (PSHB).

The destructive beetle which has invaded most of southern Africa region is spreading northwards and likely to be in Kenya soon.



According to Dr. Eston Mutitu, an entomologist (*pictured*), the Polyphagous beetle (*Euwallacea fornicatus*) has been noted to attack a wide range of tree species in the areas of invasion.

Dr. Mutitu relayed the information at a scientific colloquium

held at KEFRI headquarters on 30th January, 2019.

Polyphagous borer is a tiny ambrosian beetle that tunnel into living host trees mainly; Eucalypts, Acacia, Pepper tree (*Schinus sp.*) Jacaranda, Guava, Peach, Avocado and Castor (*Ricinus communis*).

The beetle (*right*) is native to Southeast Asia. It is classified into two types of host; reproductive host that completes its life cycle on that host, and non-reproductive host which only attacks but no breeding taking place.



The beetle gains entrance into the tree through the bark, and creates branching galleries for breeding and feeding. The galleries are lined with a layer of spores of the fungal associate of the beetle that serve as food to the beetle and its larvae.

The female adult is about 2mm and darker compared to young females which are light brown. The adult male, usually lighter in color and smaller than the female, occupies one gallery.

“The beetles have symbiotic relationship with fungus *Fusarium* and *Graphium* which spread *Fusarium* die back disease that infects over 260 tree species.

“The fungal symbiont are tree pathogens and primary colonizers that degrade resinous compounds.

They are main source of food for adult and larvae, and serve as food supplement (sterols),” said Mutitu.

Globally, there is an increase in spread of highly invasive damaging pests due to movement of contaminated seedling and nursery stocks, wood, packaging materials such as non-compliant pallets.

In Israel, the female beetles can fly 2km per day and natural spread 10 to 20km per year. *Ricinus communis* (Castor oil), green waste and firewood like infested prunings and wood chips are the widespread reproductive hosts in the landscape.

Dr. Mutitu states that eradication of Polyphagous beetle is difficult, although chemical lures and trapping complemented by biological control has shown promises when entomopathogenic *Beauveria bassiana* fungi was used.

“The only pertinent ways to curb the spread is monitoring and surveillance, and translating the results into management strategies, increase phytosanitary measures, engage stakeholder in agricultural, urban and environment sectors to foster promotion of best silvicultural management practices as well as information sharing and exchange,” said Mutitu.

Farmers and merchants are therefore requested to report any symptom attack observed in their areas and seek service from experts.

Impacts of Extraction of Non-Timber Forest Products in South Nandi Forest and Livelihoods of Adjacent Households

South Nandi Forest play an important role in the world carbon cycle, biodiversity, habitat and provide many tangible and intangible benefits especially to communities adjacent the forest.

A study to assess the impacts of extraction of non-timber forest products (NTFPs) by households adjacent the South Nandi Forest in Kenya, indicates a significant reduction of stocking in the forests and its landscape compared to a decade ago.

The study considered the economic value of the key NTFPs, and socio-economic factors that influence household’s dependence on South Nandi Forest.

The findings were revealed during a scientific colloquium held at the Institute’s auditorium on 30th January, 2019.



Mr. James O. Maua, KEFRI scientist (*pictured*), states that data collected from recent studies attributes increased human population and unsustainable exploitation of NTFPs by the community adjacent the forest as probable causes of the reducing forest resources.

Studies point out that sustainable management of the NTFPs is only possible where the products harvested are abundant or regenerate easily.

Similarly, the economic benefits of NTFP extraction are viable over time only if collection of the species (or group of species) is ecologically sustainable hence the need for prescribed maximum sustainable harvest limits at which the parts are taken from a plant, or individuals culled from the population, will not exceed the natural rate of regeneration in a given time period.



A community member with a load of firewood collected from the forest

“Domestication of the most exploited tree species if sustainably managed would reduce chances of over-exploitation or extinction” said Maua.

Mr. Maua recommends NTFPs that affect food security, health and primary products need special consideration during forest conservation planning activities.

For example, species showing low importance value index (IVI) or with poor regeneration in South Nandi forest are to be prioritized for conservation and for enrichment planting.

Detailed studies on regeneration are encouraged to explore the causes and probable mechanisms that could promote natural regeneration.

More importantly specific socio-economic conditions of forest adjacent households (forest resource users) should be understood before or when implementing forest policy on sustainable participatory forest management at the local level.

South Nandi Forest is considered an eastern extension of Kakamega the only remnant of sub tropical rain forest that once stretched from Congo basin.

African Baobab, the Wonder Tree

As one treks the drylands of the coast and eastern Kenya, it is easy to notice the African baobab (*Adansonia digitata*), a huge tree looking like its growing upside down.

Baobabs are trees recognizable by their distinctive swollen stems.

There are nine species of baobab, six are native to Madagascar, two are native to mainland Africa and the Arabian Peninsula, and one is native to Australia.

The lifespan of the baobab is very long, some species estimated to be 3000 years old, according to investigation by accelerator mass spectrometry radiocarbon dating.

All baobab trees are deciduous, losing their leaves in the dry season. The tree has an extensive root system, high water holding capacity and tolerate high temperatures and drought.



Common names for the baobab include dead-rat tree (from the appearance of the fruit), monkey-bread tree (the soft, dry fruit is edible), cream of tartar tree, and upside-down tree.

Have you ever wondered why it looks like its growing upside down?. The myth has it that soon after creation, baobab grew very well in the environment that the Creator endowed it. It’s countenance made other tree species envious and occasionally confronted God with all manners of complaints ranging from overshadowing, depletion of water, nutrients and many more.

One day after such provocation, the Creator, in haste and anger, travelled to the earth, uprooted the baobab and stuck it upside down, half way its height.

The other trees were once happy that the baobab has come to an end. With time however, the baobab produced leaves from the sparse branches that resemble roots but never attained its former height.

The African baobab are typically found in the semi-arid and sub-humid zones of sub-Saharan Africa, where they dominate the dry woodlands. The tree is a multi-purpose food tree exploited for many uses.

Every part of the tree: the tender roots, tubers, twigs, fruit, seeds, leaves and flowers is useful and is considered a traditional food plant in Africa.

The tree has been suggested to have the potential to foster rural development, improve nutrition and boost food security, provide shelter and raw material for construction, clothing, medicinal and many useful items. Similarly, value addition to baobab harvestable can improve the sources of livelihoods for the marginalized rural communities.

Baobab leaves are rich in protein, vitamin A and minerals: zinc, calcium, iron, potassium, phosphorus, magnesium, and molybdenum. They are used as fresh vegetables, steamed with tubers or added to meat stews or dried and powdered to make soup ingredients.



Baobab fruits with its value added products manufactured by KEFRI Forest Products Development Centre at Karura

The fruit is rich in Vitamin C, 10 times that of an orange, and a strong antioxidant. The fruit main ingredients are baobab powder and large seeds embedded in the dry acidic pulp. The dry pulp is either eaten fresh, used to make refreshing drinks, candy (Mabuyu) or fermented flavor for seasoning food. Some communities use it to ferment sugar cane juice for beer making.

The seeds are used as a thickener in soups or flavouring agent or fermented sauce for roasted food dishes. They can also be roasted and used as alternate to coffee or other beverage.

In recent years, baobab seeds are pressed for oil as the demand by industries seeking natural alternatives as ingredients for food, cosmetics and biofuel has continued to increase.

The wood is a poor source of fuel but the roots and green bark are used to make dyes. The fiber found in the inner bark is processed into ropes, basket nets, snares and fishing lines.

The dry fruit shells are used as pots for serving food and beverages. The shells are also good source of ash for soap making and charcoal briquettes, once it is carbonized.

Baobab products have a growing market in Europe and the US, which offers income opportunities for baobab producers in Africa. *...continued pg 11.*

KEFRI and GATSBY renew Collaboration



Mr. Samuel Kareithi and Dr. Jane Njuguna exchanging the signed agreements to support commercial forestry in Africa

KEFRI and GATSBY Africa has renewed a collaborative relationship ratifying commitment to support some forestry development activities anchored in the KEFRI 6th Strategic Plan (2018 - 2022).

GATSBY Africa Country Director Mr. Sam Kareithi, and KEFRI acting Director Dr. Jane Njuguna, on behalf of the two institutions, signed the Memorandum of Understanding that will facilitate sustainable forest management in Kenya and eastern Africa region.

“The two institutions have a long history of collaboration stretching back to 1997 and renewing this agreement confirms our joint interest in making commercial forestry competitive in Kenya,” said Kareithi.

The MoU will strengthen KEFRI’s collaborative research and development agendas, including forest health, tree improvement and productivity, establishment of tree seed certification unit, model tree nurseries, and validation of the national tree breeding strategy.

Dr. Njuguna said, “KEFRI is committed to uphold environmental integrity by mobilizing science into action, conducting innovative research, upholding sustainable forest management and supporting forest and tree-based value chains.”

“The Institute actively engage with stakeholders in dialogue to inform policies and practices that affect forests and human well-being,” said Njuguna.

In Kenya, GATSBY is supporting stakeholders to close wood supply gap through commercial forestry, partnering with the private and public sector to catalyse increased productivity and quality, and secure a sustainable supply of commercial support services.

Forest Products Centre host Environment Delegates

Member of Parliament for Isiolo North, Hon. Hassan Oda Hulufu visited National Forestry Products Research Programme (NFPRP), Karura on 18th January, 2019.

The MP was accompanied by the County Administrator Ali Wako and Mr. Golompo Mohammed, from Pastoralist Work and Health Education section.

The MP who is also a member of the Environment and Natural Resources committee had a lengthy interaction with the Deputy Director Forest Products Development Dr. Joseph Githiomi and researchers on development of gums and resins, aloe products, Prosopis management and indigenous fruits.



Isiolo North MP Hon. Hassan Hulufu (third left) together with his entourage and KEFRI staff during a study visit at the Centre

Hon. Hassan emphasized that his vision is to transform youths into entrepreneurs, citing non-wood products like gums and resins, and indigenous fruits which grow naturally in Kina area of Isiolo.

“My County has youth with potential but for some reasons terminate education and get involved in illegal activities, impacting negatively on development,” the MP said.

The MP said that production of animal feeds from prosopis pods is a preferable to charcoal production which is limited by cultural behaviours and technicalities involved.

The MP thanked KEFRI for supporting gums and resins production in Isiolo and other counties, and requested for capacity building for the youth, assessment and resource mapping for gums and resins in his county.

At the same period, high ranking officials from the ministry of Environment and Natural Resources of Zimbabwe visited the centre on 24th January, 2019.

The visitors were benchmarking development of forest products in Kenya and its impact on the environment, as well as contribution to the projected increase of forest cover to 10 percent.

The Programme Deputy Director Mrs. Nellie Oduor gave an overview of research activities being undertaken at national level including value addition to wood and non-wood forest products.

“I commend KEFRI in developing forestry in Kenya and the region,” said Mr. Abedinigo Marufu, General Manager of Forestry in Zimbabwe.

Mr. Marufu who was accompanied by his country officials; Mr. Mduduzi Tembani - forest officer research division, Mr. Rodrick Nyahwai - provincial forest manager, Mr. Chris Mushava- environmental protection, and Manatsa Ruzengwe - Chief ecologist also proposed the line ministries of the two countries to sign pacts on collaborative research and exchange programme on forestry matters.



KEFRI staff James Kimwemwe (left), demonstrating materials used to make charcoal briquettes, to the Zimbabwe environment officials

...continued from pg 10.

The tree which is neither grown commercially nor properly domesticated, is threatened by the changing landuse systems and climate change.

Such gaps call for intervention from research institutions and private companies to investigate baobab contribution food security, income generation and sustainable land use system.

Additionally, domestication, which includes selection and propagation of superior trees on farms could be a viable strategy to conserve the species and reduce competition with other resources in the drylands.

KEFRI Board of Directors Tour CHERP

The KEFRI Board of Directors toured research facilities at the headquarters, Muguga, on 5th February, 2019 on its mission to monitor progress of research.

Central Highlands Eco-region Research Programme Regional Director Dr. Joram Kagombe, coordinated the tour to Entomology, Pathology and Biotechnology laboratories.

Entomology and Pathology laboratories research on tree pests and diseases respectively. Attacks occurs in tree seeds, seedlings or mature trees.



Dr. Kagombe (left) and Dr. Mutitu (Centre) with Board members at the Entomology - Insect Reference Collection laboratory

“Tree diseases such as wood rot, Fusarium infects tree seeds and seedlings in tree nurseries, sawn wood and plantation,” said Angela Muthama.

Pest and diseases cause stunted growth and reduced tree yields, staining of wood, rotting of timber and death of trees. The condition leads to low return on investment and may cause an economic damage to the country.

Dr. Eston Mutitu, an Entomologist, stated that in Kenya, tree pests mostly: Psyllids, beetles, ants and borers are prevalent due to climatic change, whereas diseases are transmitted by vectors, pathogens or microbes in the water or soil.

KEFRI intervention involves identification, monitoring and management of both pests and diseases using cultural and chemical controls. Pruning and plant rotation, removal of the affected material are other measures for arresting the spread.

The board also visited the Insectary where quarantine and breeding of control agents will commence once the accreditation is done.

“Both Pathology and Entomology divisions offer advisory services and awareness creation to prompt early detection and prevention of pests and diseases,” said Dr. Kagombe.

Dr. Stephen Omondi, explained the roles of biotechnology and microbiology in tree improvement programmes.

“KEFRI has undertaken DNA finger printing of economically important tree species to supplement their improvement activities such as; estimating genetic diversity in breeding populations, germplasm identification, verifying controlled crosses, and estimating seed orchard efficiencies,” said Dr. Omondi.

Isolation, quantification and characterization are some of the daily activities carried out at the biotechnology laboratory to improve the population genetics and conservation.

Kenya Celebrate World Wetlands Day

KEFRI joined the World in marking World Wetlands Day on 2nd February, 2019 in Rumuruti, Laikipia County under the theme ‘Wetlands and Climate Change.’

The event was organized by; National Environment Management Authority (NEMA), Ministry of Environment and Forestry, Laikipia County, KEFRI, KFS, Ol Pejeta Conservancy and Ewaso Water Partnership.



Dr. Jane Njuguna (left, in green polo T-shirt) with other environmental champions during the Wetlands' awareness campaign at Rumuruti town

Environment and Forestry Cabinet Secretary Mr. Keriako Tobiko while officiating the function, urged communities to protect the Ewaso Narok wetlands for a better environment.

He cited climate change as a global challenge that need to be addressed to save humanity, wetlands and forests.

Laikipia Governor, H.E. Nderitu Muriithi commended the community for protecting the wetlands from individuals purporting to reclaim them for commercial use.

He added that his government is formulating a plan for conserving wetlands in Ewaso Narok basin as they are sources of water for 2 million people and over 6 million wild animals.

“Concerted efforts by both national and county governments, individuals, civil society and the private sector is required to reverse degradation thereby saving our wetlands,” the county boss said.

At the same event the chairman of NEMA Board Mr. John Konchella, stated that sensitization is important if the country is to attain its conservational goal. He further added that NEMA has come up with measures to safeguard wetlands in the country.

“Encroachment of our wetlands will lead to adverse effects to the country, we should always remember that wetlands are not wastelands,” said Konchella.

MERCFA marks the Day at Ondiri Swamp

Muguga Ecosystem Research Community Forest Association (MERCFA) also marked the event by planting trees at Ondiri swamp in Kikuyu, Kiambu County.

Stakeholders in environmental conservation in Kikuyu sub county, in realization of the challenges facing the swamp joined efforts to restore the ecosystem.

Kikuyu MP Hon. Kimani Ichung’wa graced the event and planted bamboo spp (*Dendrocalamus giganteus*)



Hon. Kimani Ichung’wa planting a bamboo at Ondiri swamp

Hon. Ichung’wa decried the encroachment of Ondiri swamp stating that it is impacting negatively to the ecosystem.

“Ondiri swamp is an important source of water to the communities in Kikuyu sub-county and its environs,” he said.

The MP further promised to support youth groups to start tree nurseries as an income generating activity. The seedlings will be used in rehabilitating the swamp and other degraded areas.

He also requested relevant bodies to expedite gazette-ment of the swamp as a wetland and promised to fully support the initiative.

Ondiri swamp is the second deepest quaking peat bog in Africa after the greatest in Douala, Cameroon.

Better Globe Forestry for improved Livelihood

KEFRI in partnership with Better Globe Forestry and Kenya Forest Service is bringing a new lease of life to residents of Kiambere in Embu County.

The project is promoting integration of *Melia volkensii* and Acacia trees on-farms as an alternative to the traditional farming.

The project hope to increase tree cover and improving farmers livelihood through sale of tree products, promoting soil erosion control and fertility improvement.

CS Keriako Tobiko commended the project implementers; KEFRI, KFS and Better Globe Forestry for promoting the drought tolerant tree species suitable for the drylands.



CS Keriako Tobiko (second left), Jan Vandenabeele (second right), acting KEFRI director Dr. Jane Njuguna (right) with KFS representative (left) visiting the Better Globe Forestry project at Kiambere, Embu County

Tobiko urged institutions and communities in the region to develop a culture of planting trees and nurturing them to growth.

“Tree growing should not be dependent on rainfall, but should be a continuous activity if we are to achieve the 10% tree cover by 2022,” said Tobiko

Kenya Forest Service and KEFRI are implementing a five year JICA supported project named Climate Change Adaptation Against Dessertification in Africa (CADEP) which started in June 2016.

The CADEP Project also aims at implementing and documenting good practices on resilience to climate change in the dryland and sharing with other African Countries.

In Kenya, the project is supporting a pilot capacity building project on participatory management of planting tree and strengthening farmer field schools in Kitui, Embu, Mbeere, Tharaka Nithi, Makueni and Taita Taveta Counties.

African Nazarene University mark Green Week 2019



CS Keriako Tobiko watering Cupressus thuja tree he planted at the African Nazarene University to mark 'The Green Week 2019'

The Cabinet Secretary, Ministry of Environment and Forestry Mr. Keriako Tobiko honoured the African Nazarene University campaign titled 'The Green Week 2019', by planting a tree on 5th February, 2019.

The ministry in collaboration with its Semi-Autonomous Government Agencies; Kenya Forestry Research Institute (KEFRI), Kenya Forestry Service (KFS), National Environmental Management Authority (NEMA), Kenya Water Tower Agency (KWTA), National Environment Trust Fund (NetFUND) and Meteorological Department joined the African Nazarene University staff in awareness creation to conserve the environment under the theme 'Human and Environment Creation Care'.

KEFRI Launch Smart Card

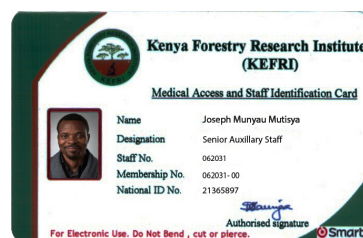
The Human Resource Department jointly with General Assurance Company (GA) and Smart Application Solutions (SAS) held a one-day awareness seminar on medical insurance and usage of biometric 'smart card' which will replace the existing staff identity card forthwith.



Deputy Director, Human Resource Ms. Everyne Oroni (*pictured*) stated that, "it's a milestone for the institute to attain the current medical status, which spans back to 1989 when an in-house voluntary medical scheme was launched and later contracted to external service providers."

Ms. Oroni who was addressing members of staff at the Institute's headquarters on 20th February, 2019 said that the issuance of the digital card is a managerial commitment to improve wellness and health of staff.

KEFRI Deputy Director Research and Development Dr. Joshua Cheboiwo, who inaugurated the card distribution termed the transition from analogue to digital platform a success that will enhance service delivery.



The smart card (*left*) will serve as both staff identification and for accessing medical services in destined medical facilities.

Dr. Cheboiwo noted that staff medical premium is relatively low due to financial priorities given to the expansion of the Institute's infrastructure, "however plans to increase the premiums are under consideration to enable staff meet the medical needs," he said.

Dr. Cheboiwo urged staff to use the service efficiently, as such move will enable the government fulfil its agenda of providing universal health to its citizens by 2022.

"General Assurance commends KEFRI for upgrading to digital card which will enable service providers offer quick service to staff seeking medical services as well as payment of funeral benefits," said Ms. Sheila Mwai, Health Division Manager.

The General Assurance is providing KEFRI staff with medical cover till 30th December, 2019. The service include medical insurance for in-patient or outpatient services, dental, optical, consultation with general practitioner and a specialist upon referral. The company service line: **0709 626 400**, can be reached 24/7.

Mr. Joshua Kaka from SAS, conveyed his gratitude to KEFRI for offering the opportunity to provide the electronic medical cards which is in line with the company's slogan '*Create a World of Health People*'.

The card durability is upto 10 years, and is legible to staff and dependants over 5 years.

Members of staff will activate the card by registering their fingerprint at any medical facility prior to accessing the required services.

"However the card should be handled with care to avoid damage to the micro-chip which holds the employees' biodata, entitlement and balance," said Kaka.

Pension Update

KEFRI fraternity recognize the dedication fronted by these veterans during their service and wish them a happy life in retirement, and for the deceased; life everlasting.

Name	P/No.	Date of Exit	Mode
Faith W. Kamau	5711	22 nd October, 2018	Retirement
Nancy Waithera Waweru	5990	26 th November, 2018	Retirement
Dorine Auko Ongudi	6561	6 th December, 2018	Retirement
William Chemutto	5341	18 th December, 2018	Retirement
Agnes Dama Shume	5054	1 st January, 2019	Retirement
Moses Khonde Gona	5048	1 st January, 2019	Retirement
Aden Mhamud Abdile	6652	1 st January, 2019	Retirement
Stephen Muok Ogola	6853	1 st January, 2019	Retirement
Clara Ngori Ndonge	5065	1 st January, 2019	Retirement
Silas Were Lutomia	6364	1 st January, 2019	Retirement
William K. Bii	5796	1 st January, 2019	Retirement
Margaret Njoki Kamau	5255	1 st January, 2019	Retirement
Eliud Sek Munde	5139	1 st January, 2019	Retirement
Edward Katheka Nzesi	5265	1 st January, 2019	Retirement
Caleb Mutemi Kirambi	5437	1 st January, 2019	Retirement
Yumbia Musili	5316	1 st January, 2019	Retirement
Esther Kombe Mwarandu	5043	1 st January, 2019	Retirement
Biashara Abdalla Maruka	5013	1 st January, 2019	Retirement
Lawrence Maina Mbugua	6233	1 st January, 2019	Retirement

Name	P/No.	Date of Exit	Mode
Peter Iraki Njoroge	5068	1 st January, 2019	Retirement
Clarice Akoth Odera	6196	1 st January, 2019	Retirement
Chrisantus Mose Mabeya	6497	1 st January, 2019	Retirement
Patricia Atho Ogugo	6318	1 st January, 2019	Retirement
Geoffrey Muthee Muturi	6290	1 st January, 2019	Retirement
Lydia Nabwire Okwaro	6385	1 st January, 2019	Retirement
Lukas Ondieki Ogutu	6323	1 st January, 2019	Retirement
Cyrus George Kairu	5803	1 st January, 2019	Retirement
Stephen Ndung'u Gitau	6629	1 st January, 2019	Retirement
Galagalo Sora Golicha	5643	1 st January, 2019	Retirement
Christopher S. Milimo	5763	1 st January, 2019	Retirement
Boru Jirmo Giro	5653	1 st January, 2019	Retirement
Charles Nyogot Ochola	5949	17 th February, 2019	Retirement
Edwin Gichini Njung'e	6336	1 st March, 2019	Retirement
Maithya Kimende	5924	1 st March, 2019	Retirement
Rodgers Kiprof Kipturgo	7111	4 th July, 2018	Resignation
Esther Ng'endo Mukiha	7013	12 th September, 2018	Resignation
James Gathung'i Gituri	7019	4 th March, 2019	Resignation
Patrick Shiamia	6348	19 th March, 2019	Resignation
Richard Simiyu Nalianya	5962	24 th January, 2019	Death

New Appointment

KEFRI Board of Directors announce the appointment of Mr. Phillip M. Kichana as the Corporation Secretary and Senior Legal Officer.

Mr. Kichana, a Certified Public Secretary (CPS) and an Advocate of the High Court of Kenya, holds a Master's Degree in Public International Law LL.M from London School of Economics (LSE).



His key role is ensuring KEFRI's compliance with operations within the Public Service, required legal standards, maintenance of good corporate governance through provision of secretarial services to the Board.

Mr. Kichana will also provide legal advice in all areas of the Institute's operations; contracts, compliance, procurement, agreement and other areas of potential risks.

Kichana brings a wealth of experience gained in private sector, being an executive director of International Commission of Jurists (Kenya Section) and lecturer at Kenyatta University School of Law. Contact Mr. Kichana through email: pkichana@kefri.org.

Demise



KEFRI fraternity console the family of the late Richard Simiyu Nalianya who passed on 24th January, 2019.

Richard served at KEFRI Turbo sub-regional Research Programme

The burial was held on 1st February, 2019 at Magemo Village, Ndivisi in Bungoma County.

May the Lord rest his soul in eternal peace.



Mr. Patrick Makatiani (inset), KEFRI staff at Turbo sub regional centre, inspecting performance of year 2011 hybrid Pine at Turbo progeny trial next to the Pine plantation (indicated at the background) established in 2007

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