



KEFRI *Newsletter*

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KEFRI Board of Directors Chairman, Dr. Sammy Letema (second right) receives a seed extracting machine from Gatsby Africa Country Director Mr. Sam Kareithi (centre)



Gatsby Africa Donates Seed Extracting Machines to KEFRI

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Gatsby Africa Donates Seed Extracting Machines to KEFRI

Gatsby Africa handed over to KEFRI two seed extraction machines worth Kes 2.5M and signed an addendum with KEFRI on 15th February 2021 at Central Highlands Eco-Region Research Programme to boost commercial forestry projects in Kenya.

Gatsby Africa is an English charitable company limited by guarantee that has funded and implemented programmes in Africa since 1985. Its mission is to accelerate inclusive and resilient economic growth in East Africa by demonstrating how key sectors can be transformed

Gatsby Africa donated two machines namely; Seed Cleaner & Sizer machine and Seed Gravity Separator (Full seed, half empty and empty seed) to assist KEFRI supply a ‘cleaner version’ of Eucalyptus seeds and drive demand for pure seeds.

Following this donation, it is envisaged that the Kenyan forestry sector will easily grade and store viable and healthy seeds that are not susceptible to pests and diseases, pure and sized seeds packed in smaller quantities and ease transportation thus producing seedlings of uniform growth rates that have less than 2% chaff.

The equipment will assist KEFRI in the production of sized and high purity seeds which will be able to catalyse demand and build access to improved seeds for markets. The supply of viable seeds will bring an increment in germination percentage, which will in turn introduce and encourage seed grading into various categories of purification and sizes. These will enable KEFRI compete with international suppliers of high purity seeds.

Speaking during the handing over ceremony at Central Highlands Eco-Region Programme, Gatsby Country Director Mr. Sam Kareithi reiterated KEFRI's commitment to the memorandum. "Whenever I need to consult on any topical issue enshrined in the agreement, KEFRI scientists are always available and willing to help," he said.

In his remarks, KEFRI Board of Directors Chairman, Dr. Sammy Letema lauded KEFRI and Gatsby's partnership in commercial forestry in the country noting that this will go a long way in achieving 10 percent tree cover by the year 2022. He also observed that community forestry will be a thing of the past once the government fully commercializes forestry in partnership with private and non-governmental sectors.

KEFRI Director Dr. Joshua Cheboiwo reported that Eucalyptus was the first point of concern at the onset of the partnership with Gatsby Africa, adding that tree seed regulation was currently at policy level. He also reported KEFRI being unable to compete effectively with other players in the market when it is producing poor quality of seed laced with high percentage of chaff. "Partnering with Gatsby Africa and the donation of these seed equipment will ensure production of clean, well sized and high purity seeds," he said.

Bamboo Propagation Training

KEFRI-Migori-Sub Centre held a training on 3rd February 2021 in Homa Bay County with stakeholders in a bid to build capacity on Bamboo propagation.

The objective of the training was to create awareness on the products and uses of Bamboo as an alternative to wood/timber/poles as well as to enhance technology adoption and up-scaling on propagation, establishment and management of Bamboo.

Bamboo is an ancient woody grass widely distributed in tropical, sub-tropical and mild temperate zones. It is a fast-growing plant that tolerates poor soils making it useful for planting on degraded land.

The Propagation Process



Bamboo which is Kenya's 16th cash crop has become an increasingly important plant in poverty eradication, economic and environmental development. It is widely used for housing and agricultural activities. Other uses include; production of pulp, paper, board and charcoal and construction, either in its natural form or as a reconstituted material (laminated boards and panels).

The Assistant Regional Director, Dr. Beryn Otieno encouraged the community to embrace Bamboo as a cash crop in order to improve their livelihood through its numerous economic benefits.

Issues observed during the training included lack of exposure to bamboo value addition, training and ready markets. The community was to strengthen linkages with KEFRI-KFS and Ministry of Environment and also requested exchange visits to other successful farmers growing bamboo.

Migori Sub-center Field Day

Lake Victoria Basin Eco-Region Research Programme, Migori Sub-Centre held a farmers field day on 4th February 2021 in Homa Bay County, titled ‘*Calliandra* for Fodder and Soil Fertility Improvement’.

The field day at County level was to create awareness on the uses of *Calliandra calothyrsus* as a fodder and soil fertility replenishment tree, create collaboration and linkages with the farmers, County Government and other players in the area.

Calliandra is a small, thornless leguminous fodder shrub with pink flowers, whose origin is in Central America. It grows in a wide range of climatic and soil conditions. Acidic soils, waterlogging and frost are some of the conditions that affect its growth.

It can as well be grown in various sites on the farm since it does not compete with crops within the vicinity, as long as it is properly managed to reduce the shading effect.



Calliandra calothyrsus also helps to reduce soil erosion, protects watersheds and provides firewood and anchorage for bees.

During the field day, farmers were able to; access information on the establishment and management of *Calliandra calothyrsus* for maximum production, adopt planting of *Calliandra calothyrsus* for fodder and soil fertility as the region experiences severe dry spell.

The Agriculture and livestock officers in Homa Bay required support in implementing the adoption of soil fertility improvement, as well as strengthening the growth of *Calliandra calothyrsus* for fodder and soil improvement.

Garissa Open Day

Dryland Eco-Region Research Programme - DERP held an open day on 18th February 2021 in collaboration with Garissa station.

The event brought together farmers, County Government of Garissa, private sector representatives, development agencies and Government departments.

The displays included dryland seeds and nursery establishment, Melia and Bamboo propagation techniques, non-timber forest products, information dissemination and tree field establishment and management.

The open day which attracted 50 participants was officiated by CECM- Environment, Energy and Natural Resource Management, Mrs. Habon Maalim. Other stakeholders included; WFP, UNCHR, Kenya Red Cross Society, UNICEF, Pastoral Girls Initiative, NDMA, LMS, Garissa University, Garissa Million Trees, KALRO, KFS, Area Chief and community members.

The aim of the open day was to encourage the agro-pastoral community and other stakeholders to grow trees for livelihood improvement as well as achievement of 10% tree cover. The attendants shared experiences, skills, aids and knowledge with KEFRI technical staff on tree growing for diverse benefits.

In addition stakeholders learnt the characteristics of a good mother tree for seed collection and how to carry out simple seed germination test methods, nursery establishment, factors to consider when establishing tree nursery; accessibility to ease seedlings collection, central positioning, good soil and gentle slope for good drainage, Melia and Bamboo propagation, wood and non –timber wood products.



Stakeholders looking at the various dryland tree seedlings being raised in the nursery

The dryland areas of Kenya possess a high potential of growing indigenous fruits and vegetables that have sustained the communities for years.

Products displayed from indigenous fruits included jam and juice from *Adonsonia digitate*, Aloe, Bamboo, Melia, gums and resins and Cactus. Consequently the stakeholders also showcased the ways they use the gums for snake and insect bites and as a chewing gum.



Garissa Aloe farm group representative explaining the aloe soap making process and its economic benefits to CECM- Environment, Energy and Natural Resource Management, Mrs. Habon Maalim and other stakeholders

Coastal Drive to Achieve 10% Tree Cover by 2022

KEFRI Lamu Sub Centre is spearheading research and promotion of forestry technologies for rehabilitation at the North Coast of Kenya, as the world marks the UN decade of ecosystem restoration which aims to prevent, halt and reverse the degradation of ecosystems.

Lamu County is endowed with diverse ecosystems that include inland forests, mangrove forests, rangelands, inland wetlands, and marine ecosystems offering diverse ecosystem goods and services. However, Lamu County forests are undergoing deforestation and degradation as a result of land conversion for agricultural production, human settlement, infrastructural development; overexploitation of wood and non-wood forest products; climate change; weak governance among other challenges.

In line with the government's commitment of restoring 5.1million hectares by 2030 under the AFR100 initiative, KEFRI is committed to rehabilitating more than 5 Ha of degraded land in the vast Lamu terrestrial and mangrove ecosystems. The Institute is involved in the following activities: Enhanced high quality seed collection, processing and distribution; Production of high quality seedlings; Site species matching to ensure survival of trees and establishment of forests; Rehabilitation and conservation of mangroves; and currently greening of learning institutions which will leverage on pupils and students to enhance tree cover.

This undertaking involves broad institutional and multi-stakeholder participation in accelerating the achievement of 10% tree cover of the national land area as provided under Article 69 (1) (b) of the Kenyan constitution.

In collaboration with other organizations and support of Eden Reforestation Project, an NGO engaged in reforestation of mangrove and other coastal forest ecosystems, the KEFRI Lamu has planted 13,400 mangrove propagules.

The key species planted were *Avecinnia marina* and *Ceriops tagal* at Manda Island, Mkunumbi and Kwa - Sassi in Lamu County.

The local communities are at the fore front in providing: indigenous knowledge on planting seasons, labor for propagule collection, sorting and planting; and creating awareness on the benefits of reforestation.



KEFRI and Eden Reforestation staff collecting mangrove propagules for planting

KEFRI is offering technical support in nursery establishment to raise 2 billion seedlings towards National Strategy on 10% National Tree Cover. Locally, this has been reflected through collaborations with County Government of Lamu, Ministry of Education, KFS, Nature Kenya, community nursery groups and other organizations within Lamu County.

The centre is also raising 72,000 quality tree seedlings to support tree planting activities during the long



KEFRI staff engaged in tree nursery production activities

rains season. To fast track the exercise, teamwork was demonstrated when all KEFRI- Lamu staff came together to establish 23,000 tree seedlings in a single day. The species established include *Tamarindus indica*, *Acacia nilotica*, *Erythrophleum suaveolens*, *Gmelina arborea*, *Adansonia digitata*, *Azadirachta indica*, *Delbergia melanoxylon*, *Senna semea*, and *Azelia quanzensis*.

Mangrove Planting in Kilifi County

The Ministry of Environment and Forestry through Kenya Forestry Research Institute (KEFRI) planted more than 40,000 mangroves seedlings in Mida Creek and 60,000 propagules at Ngomeni, Magarini Sub-county as part of the government's initiative of achieving 10 per cent forest cover by 2022.

The exercise which began on 31st January, 2021 was officially launched by Environment and Forestry Cabinet Secretary, Keriako Tobiko on 2nd February, 2021 during this year's World Wetland Day at Sabaki Estuary themed 'Wetlands and Water'. 'The Integrated Coastal Zone Management Action Plan for Kenya 2018-2023' and 'The Sixth National Report to the Convention on Biological Diversity', were unveiled at the event.

The CS commended the community for turning up in large numbers to commemorate the day by planting mangroves. He also emphasized the importance of mangroves as the levels of degradation and segmentation in the area are high, thus compromising marine life and community livelihood.

"The Blue Economy agenda being driven by the government and its development partners cannot thrive without mangroves. We cannot separate water, wetlands and life. Both County and National governments must involve communities in the rehabilitation and conservation of our forests," he said.



CS Keriako Tobiko launching the Sixth National Report to the Convention on Biological Diversity during the World Wetlands Day celebrations at Sabaki estuary

During the mangrove planting at Mida Creek, KEFRI Director, Dr. Joshua Cheboiwo thanked the community for participating in the exercise and pledged the Institute's support especially in ensuring payment for all mangrove seedlings picked for planting from the community groups, ensuring species site matching and identification of diseases that attack mangroves.

"The Institute is ready to work round the clock to ensure rehabilitation and conservation of mangroves. The mangrove planting exercise will continue throughout the year as part of government's initiative to achieve 10 per cent tree cover in the country." Dr. Cheboiwo said.



Mangrove planting at Mida creek

"We have already attained 7.2 per cent forest cover and we will be planting 45 million seedlings in every county so as to attain the recommended 10 per cent cover after identifying suitable areas for planting such as schools, government land and private farms," he added.

Coast Eco-Region Research Programme Director Dr. Linus Wekesa said KEFRI has been doing research to establish drivers of degradation in the mangrove eco-systems. He further added that the Institute is also determining tipping points in the mangrove ecosystem where its functioning has been irreparably damaged.

"We are developing sound restoration practices in relation to the levels and drivers of degradation; quantifying the carbon stock in mangrove ecosystems exhibiting different levels of degradation and establishing offtake levels to guide in management planning and utilization of the mangrove resources." Dr. Wekesa said.

In Kenya, wetlands occupy approximately three to four percent of the country's landmass. About 60% of Mangrove forests occur in Lamu County (37,350 ha), followed by Kwale, Kilifi, Tana River and Mombasa counties respectively. In Mida creek, approximately 8.8ha have been degraded between 1969 and 2010.

Dr. Wekesa added that using the developed technologies, KEFRI has rehabilitated more than 50ha in degraded sites at Mida, Lamu, Miritini, Mwache & Vanga over the last 15 years. More than 15ha have been rehabilitated in Mida Creek since 2013.

The Institute in collaboration with Kenya Forest Service (KFS), Bidii Yetu na Kazi Women Group, Jitahidi Women Group, Mida Creek Conservation and Fishing and Awareness Group will continue with the exercise until 200,000 mangrove seedlings are planted by March 2021.

KEFRI to Research Mangrove Pests



Kenya Forestry Research Institute (KEFRI) scientists are investigating pests attacking mangrove trees along the Kenyan coastline. The pests have been identified as marine arthropods belonging to sub-phylum crustaceans commonly known as Barnacles which attacks mangroves.

The disease manifests with the leaves of the Mangrove trees turning from their natural bright green colour to light green and then brown after shrinking before finally drying up. The young trees on the other hand, dry up immediately after sprouting.

Speaking at Mida Creek on 3rd February 2021 during the World Wetlands Day celebrations, Environment and Forestry Chief Administrative Secretary Hon. Mohamed Elmi said that research will help in singling out causes of the infection and in turn lead to the cure. The pests have so far affected Mangrove trees in Kilifi, Mombasa, Lamu and Kwale counties.

Hon. Elmi pointed out that KEFRI scientists are expected to use their expertise and knowledge to ascertain the root cause of the disease and its management. “One Mangrove is the equivalent of 10 trees in terms of carbon sequestration and as such it is imperative that we protect our mangroves.” He said.



Community members planting mangroves at Sabaki Estuary

KEFRI Director, Dr. Joshua Cheboiwo echoed the CAS comments and reported that the Institute has recruited four Ecologists who will work in partnership with the Kenya Marine and Fisheries Research Institute (KEMFRI) on mangrove research.

He further stated that apart from researching the pests and diseases, they will also need to understand how climate change has affected marine life in the region.

“KEFRI will ensure that two billion trees are planted by 2022 to meet the recommended 10 per cent forest cover for the country. We have already attained 7.2 per cent cover and will be planting 45 million seedlings in every county so as to meet the recommended 10 per cent cover,” he said.

Ms. Arafa Salim Baya, a community conservationist and patron of local women’s groups including Bidii na Kazi based at Mida creek congratulated the Ministry of Environment through KEFRI adding that the community is hopeful that the scientists will find a lasting solution to eradicate the disease.

Dr. Cheboiwo was accompanied by KEFRI Board Chairman Dr. Sammy Latema, Board Member Ms. Maureen Mwangovya, Senior Deputy Director Research and Development Dr. Jane Njuguna, Deputy Director Corporate Affairs and Quality Assurance, Dr. Jackson Mulatya and staff from the Coast Eco-Region Research Programme - Gede, Taita Taveta and Lamu Sub-Centres.

The mangrove planting exercise which began in late January has so far seen approximately 40,000 seedlings planted and is set to continue with a target of 200,000 seedlings by March 2021.



CAS Hon. Mohamed Elmi and Dr. Jane Njuguna planting mangroves along the Sabaki estuary

Rehabilitation of Chania River

KEFRI and President Award Kenya were hosted by the management of Nyeri Main Prison, Nyeri Medium Prison and Nyeri Women Prison in rehabilitation of Chania river. The teams were led by Senior Deputy Director Research and Development, Dr. Jane Njuguna and CEO Nellie Munala.

A total of 500 Bamboo seedlings were planted as part of Greening Kenya Campaign which is aimed at achieving 10 per cent tree cover by 2022 and climate change mitigation.

This multistakeholder partnership is geared towards promoting bamboo propagation, management, sustainable harvesting, utilization, marketing, capacity building of stakeholders and training for youth aged between 16 and 24 years.



Senior Deputy Director Research & Development Dr. Jane Njuguna plants a ceremonial tree at Nyeri Main Prison

Adopt-A-Forest Initiative

KEFRI in collaboration with KFS have been called upon to offer technical advice on establishment of indigenous tree nurseries while ensuring community participation in forest restoration and conservation.

Environment and Forestry Cabinet Secretary Keriako Tobiko launched the Adopt-A-Forest initiative spearheaded by the Ministry of Energy at Mt. Blackett, Kericho County.

In his remarks, the CS lauded Kericho County firstly for signing Transition

Implementation Plan (TIPs), enacting the Climate Change Act and achieving 24% tree cover in the county.

Governor Paul Chepkwony recently issued an Executive Order on Eucalyptus trees encouraged the local community to try out Bamboo as they are more suited for riparian lands.

The Ministry of Energy has adopted 107.6 Ha in Kericho and 100 Ha in Nyeri for a period of four-years.



CS Keriako Tobiko planting a ceremonial tree during the launch of the Adopt-A-Forest Initiative

KEFRI signs Memoranda of Understanding (MoUs)

IBERAFRICA Power (EA) Ltd

KEFRI has gone into partnership with IBERAFRICA Power (EA) Ltd to carry out afforestation and re-afforestation activities in gazetted forests to achieve a carbon neutral status by employing current forest technologies as developed by KEFRI.



IBERAFRICA CEO Mr. Henry Muthangi, (right) and Director KEFRI Dr. Joshua Cheboiwo (left) during the MoU signing

As per the MOU signed on 21st January 2021, IBERAFRICA will fund the activities while KEFRI offers support in forestry and development of technologies for integrated conservation activities such as technical advice, access to seeds and seedlings and tree planting activities.

The Senior Deputy Research and Development, Dr. Jane Njuguna pointed out that the Institutes engagement with IBERAFRICA began in 2019 during the short rains planting season by planting 6300 seedlings in 11 schools in Kajiado East.

The CEO IBERAFRICA Mr. Henry Muthangi, thanked KEFRI for the partnership saying that it will go a long way in supporting the company's carbon sinking project to absorb its carbon footprint.

The project targets to seed 2,500 ha within the Aberdares and Maasai Mau.

One Acre Fund

KEFRI signed an MoU with One Acre Fund on 23rd February 2021 with the aim of establishing a framework for co-operation and linkage between the two institutions in sustainable agricultural practices for increased access to high quality seed and germplasm.



Director KEFRI Dr. Joshua Cheboiwo (left) and Mr. Koome McCourt Team Lead One Acre Fund (right) exchange copies of the signed MoU at KEFRI HQ

" This partnership will promote research and development in the establishment of commercial farm forestry through One Acre Fund's tree programme among smallholder farmers in Kenya", said KEFRI Director Dr. Cheboiwo.

The Team Lead, One Acre Fund Mr. Koome McCourt, stated that they are excited to partner with KEFRI as the company continues to stretch its reach nationally.

"One Acre Fund currently boasts of a database of over 500,000 farmers and we look forward to supporting our farmers growth through the technologies and expertise that will be shared by KEFRI", he said.

Kenya Climate Change Innovation Centre (KCIC)

The Institute signed a 5-year MoU with Kenya Climate Change Innovation Center (KCIC) on 24th February 2021 to collaborate in supporting innovative climate change solutions and sustainable development in Kenya.

KCIC offers incubation, capacity building and financing options to new, small and medium business ventures and Kenyan entrepreneurs that are developing innovations to address the challenges of climate change.

The partnership will among other objectives; promote research, development and smooth operations in the establishment of commercial farm forestry through innovations that bridge the wood-gap through responsible

forestry harvesting, afforestation and re-afforestation while reducing the felling of trees.

Speaking during the signing ceremony, KEFRI Director Dr. Cheboiwo thanked KCIC for eagerly taking up the partnership opportunity with the Institute, stating that this will go a long way in tapping into the innovative capacity of Kenyans to mitigate climate change from a commercial point of view.



KCIC CEO Mr. Edward Mungai (left) and KEFRI Director Dr. Joshua Cheboiwo (right) applaud the MoU signing between the two institutions

Dr. Cheboiwo further appreciated KCIC for taking up sponsorship of the upcoming Kenya Commercial Investment Conference (20th – 22nd April, 2021).

KCIC CEO Mr. Edward Mungai stated that the partnership is a welcome opportunity for them as the organization continues to expand in the country. The partnership will enable KCIC benefit from KEFRI’s technical expertise.

Bee hives distribution



Dr. David Langat Regional Director giving out KTB bee hive to beneficiary groups

The Regional Director Rift Valley Eco-region Research Programme Dr. David Langat donated 50 Kenya top bar bee hives to five community groups in Marioshoni and Kiptuga constituencies in fulfillment of a pledge made by the Institute during the World Wetlands Day 2020.

The pledge was made in line with a directive from the CS Environment and Forestry Keriako Tobiko who instructed all state agencies under his ministry to donate beehives to communities living around the wetland in a bid to supplement their income thus reducing the dependence on forests.

Staff Movement from 1st January 2021 to 25th March 2021

Name	P/No.	Date of Exit	Mode of Exit
Paul Wachira Ngatia	5604	1/1/2021	Retirement
Wilfred Okongo Sikuku	6264	1/1/2021	Retirement
Jacinta Wangari Karuma	6261	1/1/2021	Retirement
David Kipkorir Ng'eno	6346	1/1/2021	Retirement
David Nyabuti Meroka	5802	1/1/2021	Retirement
Chrisantus Owino Ominde	5833	1/1/2021	Retirement
Joseph Ranga Ogutu	5859	1/1/2021	Retirement
Samuel Wabai Kangari	6298	1/1/2021	Retirement
Richard Karisa Bakari	5975	1/1/2021	Retirement
Jackson Barisa Badhula	5058	1/1/2021	Retirement
Susan Wacuka Ngigi	5241	1/1/2021	Retirement
Richard Kipkirui Towett	5250	1/1/2021	Retirement
Eliud Macharia Waweru	5498	1/1/2021	Retirement
Joseph Juma Sumo	6357	1/1/2021	Retirement
Pricilla Mwanyonyo Gari	5050	1/1/2021	Retirement
Samuel Kipkemoi Molel	6356	1/1/2021	Retirement
John Kiruthu Mutahi	5648	1/1/2021	Retirement
Elijah Kiplangat Rono	5721	1/1/2021	Retirement
James Njuguna Gitau	6413	1/1/2021	Retirement
Margaret Nyokabi Miringu	6811	1/1/2021	Retirement
Shadrack Charo Kutisha	5051	1/1/2021	Retirement
Kiraki Njama Nganga	6020	1/1/2021	Retirement
Maina D.K. Kahuthia	5568	1/1/2021	Retirement
Josephat Mburu Macharia	6574	1/1/2021	Retirement
Johnstone Simiyu Maube	6533	1/1/2021	Retirement
Collin Khisa Wasike	6660	1/1/2021	Retirement
Victoria Rahadia Baranga	5936	26/1/2021	Retirement
Rebecca Omoro	6732	1/1/2021	Retirement
Javan Enzoli Kavuka	6803	1/1/2021	Retirement
Ruth Njambi Ngigi	5543	6/2/2021	Retirement
Paul Othim Ongugo	6086	21/2/2021	Retirement
Agnes Wangari Nganga	5138	23/3/2021	Demise

YOUR HEALTH MATTERS



1. Wash Hands



2. Wear Mask



3. Sanitize Hands



4. Social Distance

CALL 719 OR DIAL *719# IF YOU HAVE SYMPTOMS

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