



KEFRI *Newsletter*

Issue No. 40

January to March 2022

A Publication of Kenya Forestry Research Institute



CS for Environment and Forestry Keriako Tobiko with KEFRI staff marking International Day of Forests 2022 at Ngong Hills in Kajiado County, Kenya



KEFRI deputy director Dr. Njuguna (Right) with experts from Drones Space Kenya, African Tree Researchers, Kenya Flying Labs, Seedballs Kenya demonstrating use of drone in dispersal of tree seeds, held at Sigona farm, Kiambu County

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KEFRI Newsletter is a Quarterly Magazine produced by Corporate Affairs and Quality Assurance

Drone for aerial tree seed dispersal

As KEFRI continues to develop technologies for sustainable forest management, use of drones in aerial seeding is being viewed as one of the viable options to restore the 5.1 million hectares of degraded landscapes in Kenya.

KEFRI is collaborating with Drones Space Kenya, African Tree Researchers, Kenya Flying Labs, Seedballs Kenya in piloting the use of drone as an option for tree seed dispersal.

According to KEFRI senior deputy director for Research and Development Dr. Jane Njuguna, application of aerial seeding technology in restoration of degraded forestlands is significantly cheaper compared to manual planting of seedlings.

Drones complement helicopters and light-fixed wing aeroplanes that can also be used for aerial seeding. The drones are specialised to dispense the seeds in mapped areas with ease, faster and more cost-effective compared to other methods.

The desired seed density is mainly determined by calibration of the seed-release gate of the aircraft's hopper and the species of choice.

Similarly, calibration on the seeding rate is done before the drone take off, while seeding rate depends on species and expected results. A drone with a capacity to carry 7kg seeds and fly for 15 minutes covers 0.8 ha which works to seeding about 3.2 ha in an hour. In a working day, the drone can cover 16 ha within 5 hours compared to 25 man days required to cover the same area using the conventional planting.

The calculation shows that using drone for aerial seeding, to green and restore degraded areas would be achievable within a short time.

The use of aerial technology is cost efficient and, safe, to restore degraded forests in difficult terrain and other challenging ecosystems including mangrove. However it is worth noting that not all seeds can be directly dispersed using aerial model. Seed such as those of *Markhamia lutea* and *Hagenia abyssinica* are light and prone to being blown beyond the target area. It is recommended therefore to make them heavier through balling for them to fall within the earmarked area of dispersal.

Seedballs Kenya Ltd is a company that is working closely with KEFRI and other partners in forestry and agriculture sector to process seedballs for use in afforestation, for reforestation and in rehabilitation of degraded forests and landscapes.

Seed-balling is a technology where seed is enclosed in small balls of media such as soil and charcoal dust. The coating protects the seeds from predators and harsh weather conditions.

The seedballs can be dispersed anywhere and, with time, when the conditions are right the seeds begin to germinate.

Seed-balling presents an additional cost and challenges associated with increased bulkiness and weight.pursued, each with distinct financial implication

International Day of Forests 2022

KEFRI jointly with Kenya Flying Labs, Astral Aviation Ltd and Seedballs Kenya promoted the use of drones to restore degraded forests and landscapes during the 2022 International Day of Forests (IDF) celebration, held at Ngong Hills Forest Recreational Park, in Kajiado County, on 21st March 2022.



Application of drones is as one of the modern innovations to broadcast seedballs in and out of season as they will remain on the ground till the rains fall for seed to gain enough moisture to germinate.

The Chief guest, the Cabinet Secretary Ministry of Environment and Forestry, Keriako Tobiko in his remarks urged group of communities to join hands during this rainy season and grow trees to protect natural forests for current and future generations.

The CS also called upon state agencies and other stakeholders to sensitize communities on benefits of tree growing which he termed critical in balancing between production and utilisation.

“Tree growing is a critical agenda for the government to increase and forests cover to 10 percent by 2022. As such, I commend the various stakeholders for their contribution which has made the country increase forest cover to 8.83% from 5.7% and tree cover to 12.13% ” said the CS.

The IDF is an annual event observed globally with this year's theme focusing on 'Forests and Sustainable Production and Consumption'.

The CS urged the different players in the forestry sector to integrate communities in decision making and benefits sharing.

He commended the Green Blue Foundation Africa (GBFA), Family Bank and other partners for adopting and spearheading the restoration of Ngong forest.

“Conserving our forests and environment in general is a critical move to save humanity and our planet from conflicts arising from meagre resources including water, clean air and nutrition currently aggravated by climate change,” said Tobiko.

During the event, the CS witnessed the signing of MoU between GBFA and Family Bank as well as KFS to rehabilitate one hundred (100) hectares of degraded Ngong forest reserve. The Family Bank committed Sh 5million for two years as part of the restoration programme for forests and arid and semi-arid lands. The money will support tree growing, soil and water conservation, development and sustainable use of natural resources for the benefit Ngong Hills Forest adjacent communities.

The President of GBFA Mr. Bedan Mbugua signed on behalf of the organization the Framework of Collaboration, while CEO Family Bank Ms. Rebecca Mbithi on behalf of the Bank. The CCF Mr. Julius Kamau signed on behalf of KFS.

Kajiado County Deputy Governor Martin Moshisho also witnessed the signing ceremony together with FAO Country Representative Mrs. Carla Mucavi, Nation Media Group Chairman Mr. Wilfred Kiboro. Kajiado West DCC Morang'a Morekwa, CEOs of the Ministry's State Agencies; KEFRI Director and his Deputy Dr. Joshua Cheboiwo and Dr. Jane Njuguna respectively, Mamo B Mamo (NEMA) Samson Toniok (NETFUND) Dr. John Chumo (NECC) and Belinda Akello (NET)-UoN representatives among others also attended.

International Women's Day

International Women’s Day (IWD), is a global holiday observed on 8th March to commemorate the cultural, political, and socio-economic achievements of women.

The day is also a focal point in the women's rights movement, bringing attention to issues such as gender equality, reproductive rights, and violence and abuse against women.

The IWD 2022 was celebrated under the theme “Gender Equality Today for a Sustainable Tomorrow.”

KEFRI fraternity, congratulates women for their unwavering commitment and contribution in various sectors including environment, health and climate change.



The UN Women Kenya County Programme Analyst Ms. Jangmi Yun planting tree at Kitui to mark the Women Day

“ Let us encourage and support women by ensuring their safety and dignity, as well as providing conducive environment to each of them to pursue their dreams and passion,”said Jangmi.

On this 11th year of International Women’s Day 2022, we celebrate recognize some of the critical women roles women play as with their first duty as nurturers of humanity. Indeed the earth is called “Mother Nature”, or Mother Earth.

At the household level women are the Chief Resource Managers as planners, producers, gatherers of household food, nutrition, energy, water, medicines and shelter which are critical to human survival and therefore naturally interact more intensively with the natural environment.

United Nations Environment Assembly

KEFRI participated in the resumed session of the fifth United Nations Environment Assembly (UNEA-5.2) at UN headquarters Gigiri, Nairobi from 28th February to 4th March, 2022.



The UNEA-5 whose theme was ‘Strengthening Actions for Nature to Achieve the Sustainable Development Goals’, attracted thousands of delegates globally.

The session was an opportunity for member states and stakeholders to share best practices for environmental sustainability and create momentum for governments to re-build through green and sustainable recovery plans.

During the UNEA side event, KEFRI exhibited bamboo and value added products in a bid to promote the cash crop for diverse uses including carbon sequestration - through reduction of carbon emissions into the atmosphere.

The display was set in line with fulfilment of SDG goals 13 and 15, that focus on taking urgent action to combat climate change and its impacts, protecting, restoring and promoting sustainable use of terrestrial ecosystems, sustainably managed forests, combat desertification, and halt and reverse land degradation as well as biodiversity loss.

The President of Kenya, H.E Uhuru Kenyatta in a speech read on his behalf by CS Keriako Tobiko, the President said, ‘Humanity has crossed the planetary boundaries and are the main driver for pollution and biodiversity loss’.

The President also lamented the increased greenhouse gas concentration in the atmosphere, excessive pollution of nitrogen and phosphorus, and land degradation that is threatening global stability of ecosystems which humanity depends on.

“ The Government of Kenya has set aside a global award for persons and institutions which champion for peace and environmental sustainability,” added Mr. Tobiko.

The CS unveiled the REDD+ Strategy to accelerate forestry and land restoration climate action in Kenya.

He also attended UNEP@50 celebrations, and the launch of the National Litter Management Action Plan (2021-2030) alongside National Sustainable Waste Management policy, that will facilitate Kenya transit from linear to circular economy in waste management.

The occasion was also attended by, UN Deputy Secretary General Amina Mohammed, UNEA President Esperin Bartha Eide, UNEP executive director Inger Anderson, heads of states and government officials, Ambassadors & heads of foreign mission.

The CS was also accompanied by the PS for same Ministry Dr. Chris Kiptoo, KEFRI and NEMA directors Dr. Joshua Cheboiwo and Mamo B Mamo respectively, CCF Julius Kamau among other heads present.

The Assembly agreed and adopted several landmark resolutions that include:

- To end plastic pollution by enacting international binding agreements which seeks to address the full cycle of plastics which has an increased production of 400 million tons over the years
- Nature based solutions to support sustainable development
- Sustainable management biodiversity for healthy environment
- Management of chemicals and waste

World Wetlands Day 2022

KEFRI joined the world in marking World Wetlands Day at Ondiri wetland in Kiambu County, on 2nd February 2022.

The event was hosted by NEMA and celebrated under the theme "Wetlands Action for People and Nature." Key stakeholders joined hands to mark the day through a tree planting exercise.

Speaking during the event, Chief Administrative Secretary (CAS) for Environment and Forestry Hon. Mohammed Elmi emphasized on the importance of conserving Ondiri wetland as it forms the headwaters of Nairobi River. The CAS called upon communities living adjacent to the swamp to protect it noting it supports both aquatic and semi-aquatic life as the river flows down to Sabaki estuary at the coast.

Ondiri swamp which covers 34.5 ha is a source of water to 40 springs that serves Kiambu County and beyond. It is the second deepest wetland or quaking bog in Africa. The swamp is the headwater for Nyongara River, at tributary of Nairobi River. It is also the underwater for Kikuyu Springs, the city's oldest water source and still key exytraction point for Nairobi City water and Sewerage Company today, supplying the City; Karen suburb. Over 74 resident and migratory birds utilize the swamp as their habitat.

Initially, NECC, NEMA, KEFRI and other key stakeholders joined hands in a tree planting exercise at as a build-up activity in preparation for the celebrations.



KEFRI staff Mary Gathaara (Centre) with other stakeholders planting tree seedlings at Ondiri wetland

Eldoret ASK Show

KEFRI participated at the Eldoret Agricultural Society of Kenya (ASK) show from 2nd to 5th March, 2022, where it was ranked as the best stand demonstrating application of environment quality standards, as well as best ministry stand.

The stand was also ranked the 2nd best in research and development; and in seed producing and marketing.



KEFRI staff and collaborators celebrate after winning trophies at the Eldoret ASK show

The visitors had a chance to interact with our technical experts and learn how to grow different tree species suitable for various uses; control of pests and diseases; and to purchase quality tree seed and seedlings at subsidized prices. Various bamboo value added products and medicinal herbs derived from different tree species. Various bamboo value added products and medicinal herbs derived from different tree species were on display.

The dignitaries interacted with KEFRI staff and apprised of seed production and distribution process that involves harvesting, extraction, drying, cleaning, testing and packaging for sale.

The Uasin Gishu County CEC for Agriculture Mr. Samuel Yego and the Eldoret Water and Sanitation Company Ltd (ELDOWAS) Director, Mr. Peter Biwott were some of the dignitaries who visited the KEFRI stand.

KEFRI team also demonstrated the use of KEFRIApp which is used to guide tree species site matching and track the number of trees being planted countrywide.



PS for Environment and Forestry Dr. Chris Kiptoo (3rd left) launching tree seed distribution for schools in Nyeri County

Launch of tree seed distribution for schools in Nyeri County

KEFRI dispatched 2.1 tonnes of tree seeds to schools in Nyeri County on 21st February 2022, to initiate tree nurseries and commission Wangari Maathai 10million tree growing challenge for the County.

This activity is supported by Ministry of Environment and Forestry and its SAGAs, County Government of Nyeri, and the Catholic Church, Nyeri Diocese led by Archbishop Anthony Muheria.

The Permanent Secretary, Ministry of Environment and Forestry Dr. Chris Kiptoo launched the tree seed distribution exercise at a ceremony held at the Nyeri Governors parlour.

The County Governor, Mutahi Kahiga and Archbishop Muheria, who are championing the exercise, together with the County Implementation Committee will oversee distribution of the seeds to schools.

“Each school will establish a tree nursery and raise seedlings in support of 10% tree cover,” said the PS.

“The Government has dispatched 2.1 tonnes of seed worth Kshs 2.6million to benefit 230 schools in Nyeri County,” said Dr. Jane Njuguna.

KEFRI and KFS, will offer technical backstopping, monitoring and evaluation to ensure maximum survival of the seedlings.

“The Church in collaboration with other partners will uplift the welfare of its people through enhancing good environmental practices,” stated Archbishop Muheria.

The Nyeri County CEC for Water, Irrigation, Environment and Natural Resources Mr. Fredrick Kinyua said Nyeri targets to grow 10million seedlings to mark the decade anniversary for late Prof. Wangari Maathai.

Other officials in the ceremony were Chairman of Environmental Complaint Committee Dr. John Chumo, CCF - Mr. Julius Kamau, NETFUND Director Mr. Samson Toniok, KEFRI’s Senior Deputy Director for Research and Development, Dr. Jane Njuguna, Senior Deputy County Commissioner for Nyeri central Mr. James Mwangi, KWTA, MoE officials and school principals.

“The County Government of Nyeri has set aside Kshs 5 million to support the exercise and we appeal to donors to support the initiative that aims to increase the County's forest cover to 45 percent,” further added the Governor.

The PS noted that the world is currently struggling with pollution, biodiversity loss, and climate change which is currently a reality affecting weather patterns and each county in Kenya must stop forest degradation and forest loss.

To this end the national Government is partnering with County governments and institutions in a tree planting strategy to increase forest cover from current 7.4 percent to 10 percent.

At the same time the Government is keen to rehabilitate degraded forest, water towers, mangrove, green spaces, and public institutions including schools.

“Nyeri will be a model county and champion in tree growing once the 95 of 230 schools establish tree nurseries,” said Dr. Kiptoo.

KEFRI donated the seeds through the support of the Kenya Government. The delegation also planted indigenous trees at the County's head office to commemorate the event.

We commend the Archbishop for the initiative and also commitment to ensure that the seeds translate into seedlings and also trees in order to achieve the objective of achieving 42% tree cover in the county which is currently leading with over 38%.

The Governor committed to continue supporting tree growing in the county. The event was supported by Kenya Forest Service, Kenya Forestry research Institute, National Environment Trust Fund (NETFUND), Kenya Water Towers Agency (KWTA), National Environment Tribunal, Ministry of Education, Ministry of Energy among other stakeholders.

Farmer's field day for Nyeri County

The annual Farmers Field day for Nyeri county resumed at Wambugu Agricultural Training Centre on Friday 25th and Saturday 26th February 2022 after a two-year break following the Covid-19 pandemic.

KEFRI CHERP Deputy Regional Director Dr. Stephen Omondi led a team of comprising staff from Muguga, Nyeri sub-region, National Forest Products Research Programme (NFPRP - Karura), corporate affairs and collaborators in exhibiting forestry technologies with an aim to boost tree cover and improve livelihoods in the County and its surroundings.

The County Executive Committee member, department of agriculture, Mr. James Wachihi visited the stand and commended KEFRI's efforts towards seed production and agroforestry.

“The event provided a creative space where agricultural tech entrepreneurs, scientists and technology experts collaborate to innovate cutting edge ideas across the whole agriculture value chain for smallholder farmers to improve productivity,” said Wachihi.



KEFRI scientist Mr. Gordon Sigu training farmers in Nyamira on Bamboo management

Farmers field day held on 18th January 2022 in Nyamira, Lake Victoria basin, to equip farmers with the requisite knowledge and skills on the propagation, management and utilization of bamboo as cash crop.

KEFRI KEFRI Webometrics Ranking 2022

The Cybermetrics Lab Research Group, a research group of the Spanish National Research Council (CSIC) located in Madrid, in their most recent ranking (January 2022) has ranked KEFRI in position 11 out of 125 organizations in Kenya, 147 out of 2,047 organizations in Africa and 5,872 out of 11,999 organizations globally.

KEFRI Director, Dr. Joshua Cheboiwo in a circular released 10th February 2022, relayed the results indicating the Institute has improved tremendously compared to July 2021 ranking that placed the institute at position 36 nationally, 292 in Africa and 5,862 globally.

... The Ranking aims to improve the Presence of the Academic and Research Institutions on the Web and to Promote the Open Access Publication of Scientific results

The Webometrics Ranking of world universities and research institutions, also known as Ranking Web of Universities, is conducted based on a composite indicator that consider the volume of the Web content (number of web pages and files), the visibility and impact of these web publications according to the number of external in links (citations) they received.

The ranking aims to improve the presence of the academic and research institutions on the Web and to promote the open access publication of scientific results.

“This is to congratulate all of you, and appreciate your hard work and contribution to this major improvement in KEFRI’s national, continental and global ranking. We acknowledge the support from the Board of Directors, Management and Staff who made this achievement possible,” the director said in the circular.

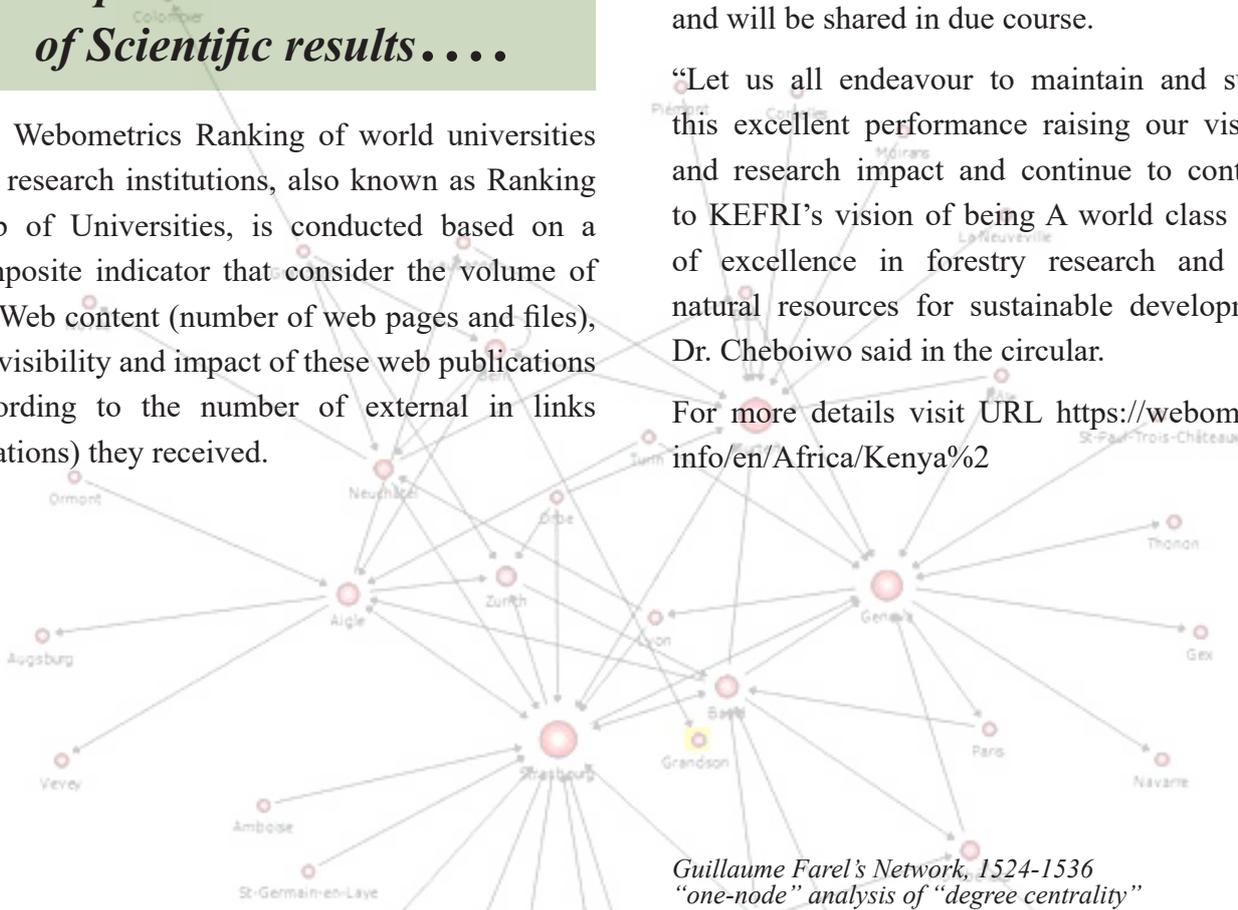
The circular also revealed that the Institute aspiration for ranking in ‘The SCImago Institutions Rankings (SIR)’.

This is a classification of academic and research-related institutions ranked by a composite indicator based on research performance, innovation outputs and societal impact measured by their web visibility, including publishing over 100 journal articles annually in SCOPUS citation database among others.

KEFRI Knowledge Management Team is developing a road map to achieve this objective and will be shared in due course.

“Let us all endeavour to maintain and surpass this excellent performance raising our visibility and research impact and continue to contribute to KEFRI’s vision of being A world class centre of excellence in forestry research and allied natural resources for sustainable development,” Dr. Cheboiwo said in the circular.

For more details visit URL <https://webometrics.info/en/Africa/Kenya%2>



Guillaume Farel's Network, 1524-1536
“one-node” analysis of “degree centrality”

JICA Chief Representative visits Kitui

The Chairman of KEFRI Board of Directors, Dr. Sammy Letema has praised the 35 years of collaboration between KEFRI and Japan International Cooperation Agency (JICA), noting that the partnership has uplifted KEFRI profile to a universal status.

The Chairman made the remark during a meeting with JICA Chief representative in Kenya, Mr. Iwama Hajime and the Project Formulation advisor (climate change/irrigation) Mr. Shimizu Tadashi, at KEFRI - Kitui centre, on 12th January 2022.



Mr. Iwama acquaints himself with the mechanism of nut cracker used in extracting Melia seed

The Chief Representative visit covered dryland forestry research activities in Tiva trial site and farmers groups initiatives in Matinyani, Kitui County.

The chairman of the board noted that JICA support has enabled KEFRI undertake forestry research and requisite capacity building, especially in developing technologies to mitigate climate change and improve community livelihoods.

Dr. Letema, sought JICA's support to transform Tiva site into a centre of excellence in dryland forestry research, that will entail establishing centres for seed production and breeding of improved species which currently focuses on breeding of *Melia volkensii* and *Acacia tortilis*.



“Melia is one of the best promising commercial species screened for growth in the drylands. Others include *Acacia* spps, *Terminalia brownii*, *Gmelina aborea*,” the Chairman said.

In rejoinder, the Chief Representative stated that JICA is set to extend long term collaboration in the forestry sector including forestry research. He noted tree breeding takes long to improve a single tree variety compared to other social sectors like agriculture and education.

KEFRI Director Dr. Joshua Cheboiwo also appreciated JICA's 35 years of collaboration which has strengthened forestry research and development in Kenya through KEFRI more so in the drylands.

“The support has enabled KEFRI cascaded its technologies to impact the community and environment,” said Dr. Cheboiwo.

JICA has funded over 6 research and development projects mainly in ASALs of Kenya since 1986 and looks forward to strengthen forestry sector development and community resilience to climate change through sustainable forest management and landscapes restoration.

KEFRI Deputy Director in charge of Forest Biodiversity Environment and Management Dr. James Ndufa together with Deputy Director in charge of Forest Research Support Services Dr. M.T.E. Mbuvi briefed the JICA delegate on status of forestry research in the drylands.

The delegation visited community groups namely; County Voluntarily Development Network Association-Kenya, and Wikwatyo Self help group in Matinyani, Kitui West.

The two groups have benefited from KEFRI training that have enabled them collect tree seed and established tree nurseries to improve their socio-economic welfare, the environment as well as enhance attainment of 10% tree cover.

State departments partner to accelerate 10% tree cover

KEFRI has disbursed 1.2 metric tons of tree seeds and will continue to offer technical support for establishment of tree nurseries in prisons and public schools countrywide under the National Tree Planting Campaigns.

KEFRI Director Dr. Joshua Cheboiwo assured all stakeholders present during the signing of implementation agreement by the PS Ministry of Environment and Forestry Dr. Chris Kiptoo and his counterpart Hon. Safina Kwekwe from State department of Correctional Services

The two signed the MoU on 11th March, 2022 at Ruiru GoK Prisons in Kiambu County, to collaborate and partner in the campaigns for accelerated achievement and maintenance of over 10% tree cover by 2022. The areas of collaboration include:

- a) Seedlings production in the country
- b) Promoting tree growing and rehabilitation of degraded public community and private lands
- c) Public awareness, education and training in forest protection and conservation
- d) Strengthening partnership and collaboration between the two parties

“Kenya's forest cover is currently at 8.83% up from 7.2% and need to close the gap of 1.7% to achieve 10% by end of 2022,” said Dr. Kiptoo

Dr. Kiptoo further stated his Ministry has identified various groups to work with including prisons, schools and youth groups to facilitate in production of tree seedlings countrywide.

Hon. Safina assured the parties of her ministry's support and requested for more seeds, technical support and training for the inmates to equip them with skills in nursery management.

“ Such training and skills will also be useful to the inmates even upon their release,” she emphasized.

KEFRI/JICA to implement a 5-yr project

JICA in collaboration with KEFRI will implementing a 5-year project entitled: ‘Project for Strengthening Forestry Sector Development and Community Resilience to Climate Change through Sustainable Forest Management and Landscape Restoration’ from 2022 to 2027.

The project Chief Advisor Mr. Katsuro Saito, revealed in a meeting with Director KEFRI on 17th March, 2022 at KEFRI headquarters, that the project is a collaboration between the governments of Kenya and Japan.



Mr. Saito, an expert in forestry sector development and commercial forestry will also lead commercial forestry component to be implemented by KFS and Policy Planning Component led by Ministry of Environment and Forestry.

He further reported that two other JICA experts in charge of Tree Breeding and Regional Cooperation components will be joining the project soon.

During the courtesy call, Mr Saito reported that he was happy to be back in Kenya and eager to work with KEFRI and the other stakeholders.

The Director KEFRI on his part welcomed the Chief Advisor and assured him of support towards implementation of the new project.

Forest Tree Breeding Center (FTBC) Japan extends partnership in tree Breeding in Kenya

The Director KEFRI Dr. Joshua Cheboiwo on 9th February 2022, held a discussion with representatives from Forest Tree Breeding Center (FTBC) Japan on a five year project which will focus on undertaking tree breeding trials in arid and semi-arid lands.

The breeding component is with the project titled “Strengthening Forestry Sector Development and Community Resilience to Climate Change through Sustainable Forest Management and Landscape restoration,” financed by JICA and the government of Kenya through the Ministry of Environment and Forestry (MoEF), Kenya.

The project has four components namely: Policy formulation; Commercial forestry; Tree breeding; and Regional co-operation, all to be spear-headed by various state agencies under MoEF.

Mr. Tatsuo Inamoto stated that FTBC is excited to embark on the project which will cover establish *Melia* breeding trials and seed orchards in Kwale, Taita Taveta, Marsabit and Kitui.

KEFRI will implement the Tree breeding component in partnership with FTBC to propagate drought resistant trees for adaptation to climate change.

“KEFRI will focus on breeding *Melia volkensii* and *Acaci tortillis* 2nd generation seed orchards with an objective of demonstrating the species physical attributes in order to attract investors. This partnership with FTBC will assist KEFRI with site indexing to determine yield percentages resulting in increased production of quality seed/seedlings,” said Dr. Cheboiwo.

As part of its mandate, FTBC sets out to develop new tree varieties, collection and conservation/preservation of forest tree genetic resources and international technical cooperation.

KEFRI signs MoU with Catholic Diocese of Mombasa and Scotts Christian University

The Director KEFRI Dr. Joshua Cheboiwo signed an MoU between the Institute and the Catholic Diocese of Mombasa in Marungu, Taita Taveta county, on 24th January 2022.

In his remarks the Most Rev. Martin Kivuva of the Archdiocese of Mombasa thanked KEFRI for setting up a tree nurseries and demonstration plots in the area to positively influence tree growing.

Rev. Kivuva further revealed that the Catholic Church has sunk boreholes to help communities access clean water for domestic and other uses such as raising tree seedlings commercially to improve livelihood.

Dr. Cheboiwo thanked the Church for donating 50 acres of land on which KEFRI will establish a tree nursery of eight diverse species suitable for the region.

“Species site matching is crucial if we are to increase tree cover in the region as well as attain 10% forest cover by 2022,” said the director.

As part of the MoU KEFRI has also undertaken to provide technical expertise and develop skills on environmental conservation for the youth and other community members.

At the same time KEFRI signed an MoU with Scotts Christian University Vice Chancellor Dr. Morompi Ole-Ronkei, on 27th January 2022, to increase tree cover within its campus at Konza City, Machakos County.

In the meeting it was agreed that KEFRI will offer technical support in environmental planning that will integrate forestry and green corridors within the campus. In addition KEFRI will support the University establish tree nursery and *Melia* demo plot to serve the campus and adjacent communities.



Sheila Mbiru, a KEFRI scientist and head of Knowledge management with participants during a workshop for women advocating for climate change action in Kenya

In these times of uncertain in terms of climate change, women are greatly affected in the way and practice of farming and taking care of livestock. As such, it's a great opportunity to add their voices to not only inform the priorities of climate change adaptation and planning but also empower our communities to better prepare for resilience in an ever-changing climate, according to Immaculate PISOI, from Ilkujuka Loita, Kenya. Immaculate is one of the advocates for climate change actions in Kenya under NAP Global Network.

Lensational and NAP Global Network, are supporting extraordinary women to share their experiences of climate change adaptation and resilience through visual tools. Special thank to Lydia Wanjiku Kibandi for amplifying womens' voices in climate action, Sheila Mbiru - KEFRI for being one among women who are in the frontlines advocating for policy on locally climate change actions, which is essential for gender-responsive.

UK Centre for Ecology and Hydrology (UK-CEH)

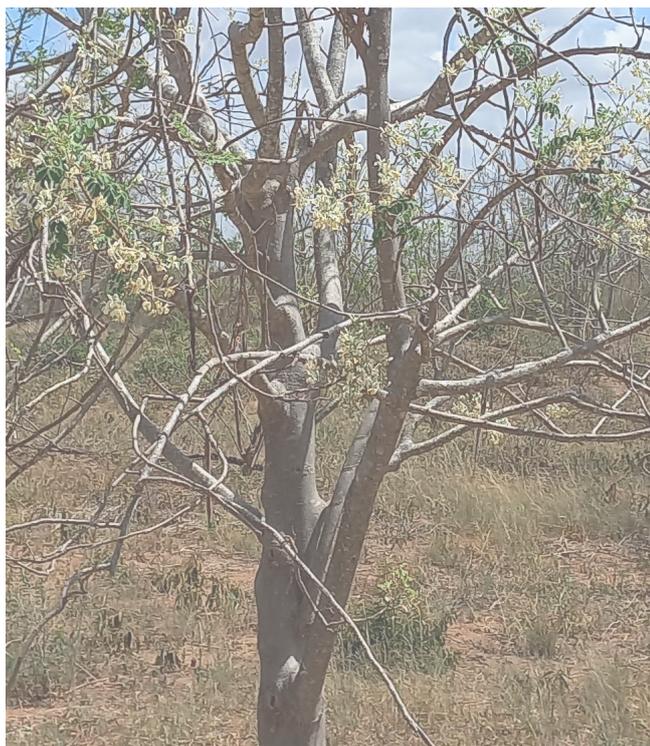
The executive director for the United Kingdom Centre for Ecology and Hydrology (UK-CEH) Prof. Mark Baley and his deputy director who is also in charge of science Prof. Alan Jenkins visited KEFRI as follow-up on an MoU between the two institutions, entered into 4 years ago.

KEFRI director Dr. Joshua Cheboiwo thanked UK CEH for their continued support of funding forestry research and pledged his support in further collaborations.

“The UK CEH support to KEFRI started in the year 2000 and is expected to continue under possible collaboration in forestry hydrology research,” said Prof. Baley.

Under the current collaboration, KEFRI has received support under Sunrise Project from 2018 to date undertaken activities that include:

- a) Establishment of 3 Moringa progeny trials
- b) Undertaken phenology assessment
- c) Genotyping of *Moringa oleifera* and *Melia volkensii* to enable breeding program among other research studies



Moringa oleifera under trial in Kibwezi-Kenya

CIFOR and KEFRI to strengthen partnership

The Director General, Centre for International Forestry Research (CIFOR), Dr. Robert Nasi, on 7th March 2022, held a consultative meeting with KEFRI Director Dr. Joshua Cheboiwo on areas of possible collaboration to strengthen relationships between the two institutions.



CIFOR Director Dr. Robert Nasi and his deputy Dr. Peter Minang addressing the meeting at KEFRI headquarters

The CIFOR DG outlined the global spread of CIFOR highlighting areas of common interests with KEFRI which include; tree breeding, biodiversity conservation, soil health and governance.

“CIFOR is present in 20 African countries including Kenya where it has engaged stakeholders from Makueni, Garissa and Baringo counties in developing County Integrated Development Plans,” said Dr. Nasi.

On his part KEFRI director Dr. Cheboiwo highlighted that KEFRI has adequate research capacity in terms of infrastructure and human resources to undertake any collaboration project with partner institutions.

The institute has around hundred scientists spread across the country conducting research in tree breeding, forest health, product development and improvement, forest and biodiversity management. Also present at the meeting was CIFOR Director for Africa region Dr. Peter Minang and KEFRI Senior Deputy Director Research and Development Dr. Jane Njuguna among other officials.

Gums and Resins Factory, Wajir

KEFRI joined Ewaso Ng'iro North Development Authority ENNDA in Wajir County during the commissioning of a factory at Lanbib for processing gums and resins.

Cabinet Secretary for East African Community and Regional Development, Hon. Adan Mohamed officiated the event held on 21st January 2022.

The 400 million facility is one of its kind in the country and East Africa region to process high value gums and resins products. The factory will greatly add value to Kenyan gums and resins to enable farmers and entrepreneurs to fetch high prices in the market.

The CS commended the Kenya Government for funding the investment, the leadership of through Wajir County, ENNDA and the many stakeholders that supported the project to provide opportunity for value addition of the gums and resins, generate employment and economically empower local communities in 7 counties of Isiolo, Marasbit, Garissa, Wajir, Samburu, Mandera, and parts of Meru.

KEFRI will bring on board over 35 years of experience in research and development in gums and resins, specifically in species site matching, establishment and management of plantations, tree nursery establishment, forest health management, propagation of difficult to propagate species and capacity building in sustainable harvesting technologies.

KEFRI plans to build a centre of research in gums and resins in Wajir in addition to a tree seed centre with a focus on conserving, collecting, processing and distribution of tree seeds to meet the demand of tree seedlings. KEFRI initiative will assist in the attainment of ten percent tree cover target and sustainable production of gums and resins in the region.

Muguga CFA receives JICA Volunteer

Muguga Ecosystem Research Community Forest Association (MERCFA) in Kiambu County, Kenya is set to benefit from technical advices from Mr. Genji Shin, a Japanese volunteer and an environmental student.

Japan International Cooperation Agency (JICA) through the Japan Overseas Cooperation Volunteers (JOCV) Program, has sponsored Mr. Genji, to work with Community Forest Associations (CFAs) of Muguga, Thogoto, Uplands, Kireita, Kinale, Kamae, Kieni and Ragia for two years commencing October 2021 to October 2023.

‘... Genji will interact with forest adjacent communities and share knowledge and experiences on forestry matters ... ,



Mr. Genji working with forest community dwellers adjacent in transplanting seedlings at Muguga tree nursery

one month pre-post training in Nairobi and learnt elementary English and Kiswahili, the national dialects, to effectively communicate with the locals. Genji will provide technical assistance while gaining valuable experience in terms of international goodwill as well as working with local communities in environmental conservation and empowerment.

The volunteer-ship will not only expand his international perspective but strengthen friendship and mutual understanding between Muguga community in Kenya and the Japanese government.



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