



KEFRI *Newsletter*

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**30TH ANNIVERSARY AND ISO 9001:2008 QMS
CERTIFICATION CELEBRATION**



CS, Ministry of Environment and Natural Resources Prof. Judi Wakhungu greeting Dr. John Chumo from Council of County Governors on arrival at KEFRI headquarters during the 30th Anniversary and ISO QMS certification celebrations

Cover Photo: CS Prof. Judi Wakhungu cutting a cake to celebrate KEFRI's 30th anniversary. Looking on is Dr. Margaret Mwakima (PS-MENR), Mary Miringi - Enterprise Manager and Susan Musandu, a former KEFRI employee

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KEFRI CELEBRATE 30TH ANNIVERSARY

By S. Gitonga, R. Mokaya and J. Otwoma

It was a jubilation for KEFRI fraternity as they celebrated 30 years anniversary and ISO 9001:2008 QMS certification at the headquarters Muguga, on 22nd June, 2017.

The chief guest Prof. Judi Wakhungu, Cabinet Secretary Ministry of Environment and Natural Resources who was accompanied by the Principal Secretary for Natural Resources Dr. Margaret Mwakima commended KEFRI for the crucial role it plays in developing technologies that have significantly contributed towards sustainable forest management in the country.

“Forestry technologies have enabled sound management and promotion of forestry programmes across the 47 counties, thus increasing tree cover to 7.2% by 2015, and safeguarding forest resources for our present and future generations,” she said.

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Prof. Wakhungu also congratulated KEFRI for attaining ISO 9001:2008 Quality Management Systems (QMS) certification and implementing ISO 14001:2004 EMS, which focuses on environmental management.

The CS noted that implementation of the two ISO standards opens up opportunities for continuous improvement of environment, products and services, efficient service delivery and performance to customers and stakeholders.

During the event Prof. Wakhungu launched the 30th Achievement booklet and ISO 9001:2008 QMS standard certificate. A number of staff were awarded for recognition in various work disciplines.

In his remarks Mr. Chinjiro Amameishi, Senior JICA representative in Kenya (pictured below) stated that the 30 years of technical cooperation between Kenya and Japan governments has enabled Kenya achieve 7 percent forest cover from 2 percent.

“Around 90 KEFRI staff have benefited with specialized counterpart training in Japan”.



“Kenya has benefited with various capacity development projects notably the Social Forestry Training Project (SFTP), Social Forestry Extension Model (SOFEM) and The Project for Development of Drought Tolerant Tree Species in Drylands of Kenya making KEFRI a prominent forestry research institute in Africa,” he said.

“Around 90 KEFRI staff have benefited with specialized counterpart training in Japan,” said Chinjiro.

To date, KEFRI has trained over 469 participants from 18 countries in eastern and southern Africa under JICAs Third Country Training Programme, 60 participants from Somalia on climate adaptation policy and practices under UNDP support, and many more tailor-made course, seminars and annual hosting of students and professors from Japan Universities. Likewise, forestry sector in Kenya has benefited with numerous Japanese experts dispatched to various projects to share knowledge and forest skills.

JICA will continue to support KEFRI strengthen its capacity through the Capacity Development Project

for Sustainable Forest Management (CADEP-SFM) that will serve to consolidate the gains made in forestry research over the years.

“Comparatively Japan’s forest cover is about 70 percent, ten times more than Kenya’s, however in the face of climate change, the dedication of both countries to properly conserve and manage forest resources is the same,” noted Chinjiro.

Speaking at the same event, Dr. John Chumo (below pictured) urged the cabinet secretary for environment to stand firm and ban plastic bags in Kenya. Dr. Chumo termed the plastics a menace threatening the livelihoods of pastoralists and fishing communities countrywide.

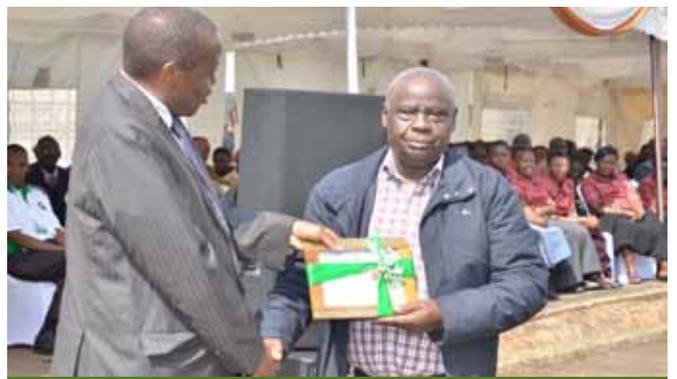


Dr. John Chumo (left) addressing guest and staff

“The County Governments will partner with KEFRI and other key stakeholders in the 47 counties on tree planting and conservation of water catchment areas among other initiatives for conserving the environment in line with Vision 2030 blueprint and sustainable development goals,” said Chumo.

Chumo stated that forestry technologies and research based decisions are needed by the counties to support forestry development and improve livelihoods according to article 22 of the Forest Act 2016.

“The Council is committed to share research information and best practices with KEFRI and other stakeholders through the Councils’ Knowledge Management (Maarifa Centre),” he stated.



Mr. Robinson Ng’ethe awarding a certificate of recognition to Mr. Francis Gachathi, a former employee



KEFRI Awarded QMS ISO Certificate

By S. Gitonga

The Société Generale de Surveillance (SGS) Kenya Limited, awarded KEFRI a certificate of conformity to ISO 9001:2008 Quality Management System (QMS) standard during the 30th anniversary event.



CS Prof. Wakhungu receiving ISO 9001:2008 certificate from Mr. Kioko Ndolo from SGS company

According to Dr. Jackson Mulatya, Quality Management Representative in KEFRI, adopting Quality Management System (QMS) is a state obligation that calls all ministries, departments and agencies (MDAs) to expedite operations which are core to transforming Kenya into an industrialized middle income country by year 2030.

“KEFRI has successfully implemented ISO 14001:2004 Environmental Management Systems (EMS) standard since June 2011 and embracing ISO 9001:2008 QMS will ensure delivery of quality service within all levels of processes and procedures”.

“ISO 9001:2008 QMS places strong emphasis on process, control and continuous improvement of products and service delivery. It is a proof of commitment to continuous strive to adopt good management practices with the aim of ensuring delivery of quality service within all levels of processes and procedures,” said Dr. Mulatya.

The journey towards embracing both EMS and QMS standards followed four fundamental phases of implementation namely; diagnostic and awareness creation, design, planning of operation procedures, and certification.

“KEFRI has successfully implemented ISO 14001:2004 Environmental Management Systems (EMS) since June 2011, thus embracing ISO 9001:2008 QMS which places strong emphasis on process control and continuous improvement of products and service delivery is a proof of commitment to continuous strive to adopt good management practices with the aim of ensuring delivery of quality service within all levels of processes and procedures,” said Dr. Mulatya.

So far, KEFRI has developed QMS quality manual, quality policy with 64 documented procedures covering all departmental processes in; research and development, human resources, administration, finance, corporate affairs, enterprise, procurement and ICT.

“By integrating QMS standard, KEFRI fraternity commits to bind itself to an international consensus towards provision of quality service, utilize the scarce resources better, customer satisfaction, use of innovations and new ideas, transparency and accountability in all operations, and to continuously improve its operations to service delivery mechanisms in order to meet the needs of the citizens or customer requirements at all times,” said Dr. Mulatya.

Implementing both ISO and QMS standards provide KEFRI the necessary support needed to meet research and development goals as well as the aspirations of stakeholders.

Members of staff and our stakeholders are to adhere to the operational procedures; internal quality audit to check compliance with set procedures and other requirements of the system.

Finally the system requires each staff to delivery quality products and services across the regions as well as ensure legal obligations are met through compliance to applicable statutory and internationally set requirements.



Remarks by Board Chairmen

The 30 years anniversary and ISO certification celebration was graced by KEFRI's former Directors, Board Chairmen and a number of distinguished retirees. Several speakers used the opportunity to compliment KEFRI achievements and Dr. Jeff Adhaya Odera for his contribution in establishing an institute that has excelled in spearheading forestry research in Kenya.

Dr. James Onsando, who chaired the 7th board, advised scientists to transform research into adaptable technologies that can impact positively on the livelihoods and the economy.

"Publishing research papers is the beginning of a journey to proliferate concepts," said Onsando.

Prof. Daniel Mugendi, the 8th board Chairman commended KEFRI for its achievements noting that his current prestige at the University of Embu is founded in KEFRI

Dr. Sammy Letema, formerly the 9th Board Chair stated that during his term of 5 months before joining politics, he guided the management in expanding funding resources thus increasing

Dr. Paul Konuche former director urged researchers to cascade research findings to the grassroots specifically forestry rehabilitation and conservation.

Remarks by Former Employees

Mr. Simon Orondo, a former forester and officer in-charge of KEFRI Gede between 1976 and 1982, advised staff to evaluate self each year, save for life in retirement of which is dependent upon fundamentals enacted while one is still in service.

Orondo challenged researchers to launch mangrove trials in Homa bay to evaluate its survival in fresh water beaches of Lake Victoria.

Mrs Mercy Maina, a retired personal secretary who served at the directors office noted that KEFRI has remained a noble employer and encouraged staff to adhere to virtuous work practices by being dedicated, honest and accountable which are the benchmark of a reliable public servant.

LAMU SUB-CENTRE LAUNCH

By S. Gitonga and R. Mokaya

KEFRI launched the Lamu sub-regional centre on 16th June, 2017 in an event graced by the CS for environment and natural resources Prof. Judi Wakhungu, Lamu County Governor, H.E. Issa Timamy, PS for Public Works Mariam El Maawy (representing PS, state department of natural resources, Dr. Margaret Mwakima).



CS. Prof Wakhungu (Red Cap) cutting a ribbon to signify official opening of KEFRI Lamu sub-region facility

The facility located at Mokowe in Lamu County, houses a farmer's resource centre with 14 self-contained rooms, administrative block, conference hall, laboratory, library and tree nursery. The facility has been funded by the National Government and the World Bank through Kenya Coastal Development Project (KCDP).

Speaking during the launch Prof. Wakhungu said the sub-center will be focal in identifying existing opportunities and researching on better ways of enhancing forestry development and land use systems in Lamu and Tana River counties for improved land productivity, environment management and sustainable utilization of resources by the local communities.

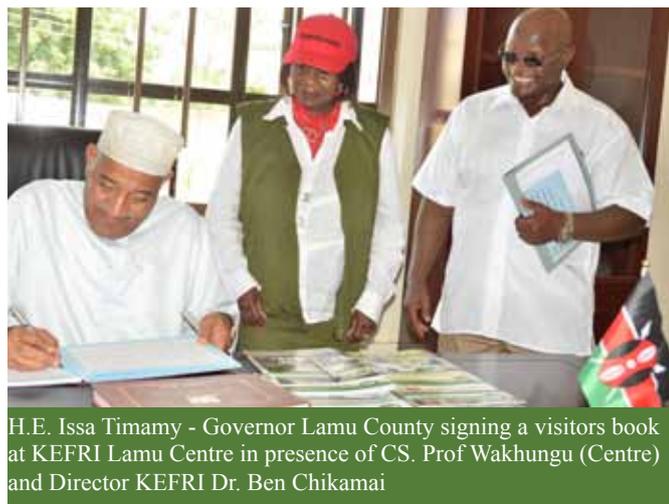
"The sub-centre is expected to provide appropriate technologies and outreach services in addition to environmental leadership targeting mega projects including the LAPSSSET, coal power production and other major development projects in the region," Prof. Wakhungu said.

The state department of natural resources has supported KEFRI in building the capacity of scientists as well as construction of modern research facilities in Kilifi, Lamu and Taita Taveta Counties to expand service delivery in the coast region," said PS El Maawy.

"KEFRI Lamu centre is one of the magnificent facilities in Lamu County which the community takes pride in the divolved government," noted El Maawy

Lamu County Assembly Mr. Mohammed Rashid speaking on behalf of the Governor Issa Timamy congratulated KEFRI for constructing the resource center, which is an indication that devolution will bring development and services closer to the people.

KEFRI staff from Gede organized a display exhibiting key research achievements in the coast region supported by the National Forest Product Research Programme Programme (Karura) and Ufanisi Conservation group in Kilifi county.



H.E. Issa Timamy - Governor Lamu County signing a visitors book at KEFRI Lamu Centre in presence of CS. Prof Wakhungu (Centre) and Director KEFRI Dr. Ben Chikamai

Research Priorities at Lamu

By M. T. E. Mbuvi

According to Mr. Tito Mbuvi Musingo, the KEFRI Coast Regional Region Director, Lam sub-centre research priorities will focus mainly on generating and promoting technologies for diversification and improvement of trees on farms, biodiversity conservation, sustainable management of mangrove ecosystem, rehabilitating of Kaya forests and under-explored forests ecosystem such as BoniLunghi and Dundori.

Other research priorities will be restoration of *Euphorbia tanaensis* - an endangered species in Lamu County, establishment of mangrove demonstration in Manda island, and formulation of mangroves management plans in partnership with Kenya Forest Service and Lamu County government.

The sub-centre specific objectives will be to transfer best forestry practices and upscaling commercial species such as *Casuarina equisetifolia*, *Gmelina arborea* and *Tectona grandis*, and indigenous species such as *Milicia exelsa*, *Azelia quanzensis*, *Terminalia spinosa*, *Dalbergia melanoxylon*, *Brachystegia spiciformis* and *Brachylaena huillensis*.



KEFRI Lamu facility housing the administration offices, modern laboratory and information centre

The sub-centre will contribute to the national goal of achieving 10% forest cover through annual provision of 1 tonne of high quality tree seeds producing about 180 million seedlings that can establish approximately 220,000 ha translating to annual increase in forest cover estimated at 2.7% in coast and 0.38% nationally.

Recently, the sub-centre trained 421 women and 373 youth groups in Tana River and Lamu County on efficient management of forestry resources and value addition of tree based products as source of livelihoods.

The Resource Centre targets to reach farmers and other stakeholders in public and private organizations to benefit with structured trainings on tree farming and other forestry related enterprises.

Launch of Booklets

Prof. Wakhungu also launched three booklets namely; The coast forestry research programme, Capability map for growing high value tree species in the coast region of Kenya, and a field guide to vulnerable trees and shrubs of Kaya MudziMuvya forests in Kilifi county.

These booklets will impact knowledge on development of forest and related natural resources in the coast region.



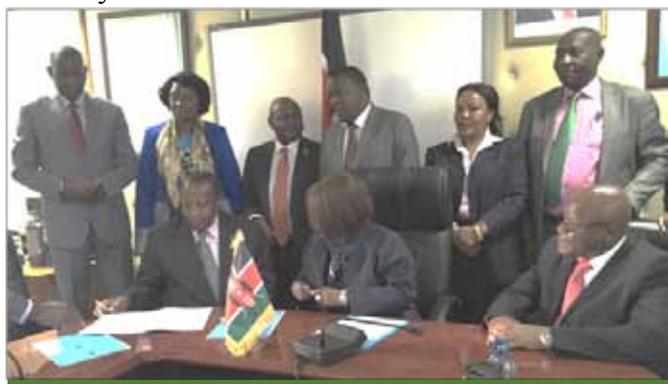
From left: Dr. Chikamai and Mr. Robinson Ng'ethe assisting CS Prof. Wakhungu and PS El Maawy during the launch of KEFRI booklets for the coast region

KEFRI SIGNS PC WITH MINISTRY

By S. Mogaka

Mr. Robinson Ng'ethe, on behalf of KEFRI Board of Directors signed a 'Performance Contract 2017/2018' between KEFRI and host Ministry of Environment and Natural Resources in a ceremony officiated by the Cabinet Secretary Prof. Judi Wakhungu.

The event was also attended by the Principal Secretary, State Department of Natural Resources, Dr. Margaret Mwakima, Director KEFRI Dr. Ben Chikamai, KFS Director Mr. Emillio Mugo and other senior directors and managers from the ministry and KEFRI.



Seated from left: Mr. Robinson Ngethe signing the Performance Contract with CS Prof. Wakhungu and Dr. Ben Chikamai in the presence of PS Dr. Mwakima and senior directors in the MENR

Prof. Judi Wakhungu stated that performance contracts are important planning tools that reminds us about the highlights of our annual work plans.

Prof. Wakhungu made the remarks during the event of signing Performance Contracts for State Corporations under her Ministry.

“Performance contracting is a management tool for measuring performance against freely negotiated targets specifying mutual performance obligations, intentions and responsibilities,” she said.

“While each institution has its unique performance contract, the respective targets complement each other in ensuring operation and delivery of services in a clean and healthy environment as envisaged in the constitution,” said Wakhungu

The CS called upon the executives of SAGAs under her Ministry to cascade the contract to the rest of the stakeholders, take the targets a notch higher and work together for the benefit of the citizens.

KEFRI SIGNS MoU with MMU

By S. Gitonga and S. Mogaka



VC. Prof. Mary Walingo and Dr. Ben Chikamai exchanging the MoU soon after signing at KEFRI headquarters in the presence of Prof. Simon Ole Seno and Alfred Nyambochwa- legal officer

The Vice Chancellor for Masaai Mara University Prof. Mary Walingo and KEFRI Director Dr. Ben Chikamai on 13th April, 2017 signed a Memorandum of Understanding (MoU) to undertake a joint research on medicinal tree plants.

“Masaai Mara University has spared 20 acres of land in the main campus in Narok County for domestication of wild medicinal plants, establishment of botanical garden and modern laboratory to be processing and packaging herbal medicines,” said Prof. Walingo

“KEFRI is keen to partner with Masaai Mara University in joint research and trainings on forestry and environmental conservation, attachment of students, and in any other relevant initiatives that will build resilience to climate change and improve the livelihood of our communities,” said Dr. Chikamai.

“KEFRIs’ long experience in herbal plants since 80’s will be key in capacity building and impacting skills in seed and seedling production, value addition, conservation of biodiversity and management of herbal germplasm founded in the adjacent eroded forests and woodlands.” said Dr. Bernard Kigomo, Senior Deputy Director for Research and Development.

At present the university is collaborating with Government of China in educational exchange programme, water refinement using green technology and establishment of botanical garden,” said Prof. Wanzala.

On the other hand, KEFRI is working with communities and women groups in arid and semi-arid areas of Turkana, Baringo, Kilifi and Kwale Counties in promoting conservation of endangered wood and non-wood forest resources valuable in development and refinement of herbal and cosmetic products.



Mr. Perminus Kioi, Lamu County Police Commissioner briefing KEFRI delegates on the LAPPSET project setup at Lamu port



Prof. Wakhungu, PS Miriam El Maawy, Lamu Governor Issa Timamy and Robinson Ng'ethe touring KEFRI Lamu facilities



From left: Prof. Wakhungu, PS El Maawy, Governor Issa Timamy, Robinson Ng'ethe in a briefing by Dr. Chikamai



The plaque the CS, Prof. Wakhungu unveiled to commemorate official opening of Lamu sub-region centre



Some of KEFRI staff from all regions countrywide who attended the launch of Lamu sub-centre at Mokowe



Herbal products displayed by Ufanisi conservation group from Gede during the launch of Lamu sub-region Centre



Director KEFRI Dr. Chikamai (left) welcoming Mr. Githinji, Deputy Governor, Kiambu County to WED cleanup exercise



Community neighbouring Muguga forest in a cleanup exercise held to mark World Environmental Day 2017

PICTORIAS

PICTORIAS



THANJA



Mr. J. Kagombe and Ms. Nelly Oduor deputy regional directors (CHERP & NFPRP) planting bamboo at Ndaka-ini dam



KEFRI and Masaii Mara University teams pose for a photograph after signing an MoU on joint research on herbals



Prof. Keya planting a tree on behalf of former chairman of KEFRI board of management during 30th anniversary event



Mr. Francis Njenga (left) with other technical staff displaying pests and diseases and management technologies



Above: PS Dr. Mwakima consulting with CS Prof. Wakhungu
Below: Dr. Chikamai displaying the ISO QMS certificate

Above: Some of KEFRI staff attending the event
Below: Kayamba Africa dance leading entertainments

THANJA



ANNUAL OPEN DAY

(By O. Oketch, J. Okumu, D. Munyao, and S. Nyambane)

KEFRI staff across the regions organized open day and showcased diverse technologies including tree seed collection and processing for high quality; best practices on tree nursery management; tree development on-farm; bamboo propagation and management, value addition to wood and non-wood forest products; rehabilitation of degraded forests and woodlands; charcoal production and energy saving practices amongst many others.

KEFRI pioneer director Dr. Jeff Adhaya Odera graced the Lake Victoria Basin Eco-Region Research Programme open day themed 'Developing Technologies for Sustainable National Development and Improved Livelihoods', held on 26th May, 2017 at Maseno Center.

The staff mobilised students and community in planting seedlings at Ngere boys high school to increase forest cover and mitigate the negative effects of climate change.

The Dryland Eco-region research programme held the event on 25th May, 2017 at the head office Kitui.

The Rift Valley Eco-region Programme held the open day on 26th May, 2017. Sacred Girls High school in Londiani presented a captivating environmental play in a competition tussled by eight high schools within the region.



Chief guest Mr. Alfred Ambugo, the Deputy Head of Mau Conservancy awarding trophy to Loisa Chebet, a student from Sacred Hill High School

Coast Eco-region Research Programme Open day was held on 16th June, 2017 at Lamu during the launch of the sub-ecoregion. The Programme staff exhibited suitable tree seeds, soil analysis and mangroves rehabilitation practices in the coast whereas NFPRP and Ufanisi community group displayed bamboo and herbal products respectively.

Central Highlands Eco-region Research Programme and the National Forest Products Research Programme (NFPRP) jointly held the open day on 22nd June, 2017 at the headquarters concurrently with the 30 years anniversary celebrations. Yoghurt, tooth paste and shoe polish were some of the new products KEFRI displayed at the event.



MELIA VOLKENSII WORKSHOP

(By Luvanda A., Mwalewa S.U., Musyoki J. and Takeda Y.)

The project on Drought Tolerant Trees for Adaptation to Climate Change in Drylands of Kenya held a workshop on 18th May, 2017 at Kitui to brief resource managers on the development of improved Melia and extension strategy.

It emerged that KEFRI will avail 150 Kg of high quality improved Melia seeds per year and ensure fair distribution of such seeds to farmers within the project areas. The Institute will also regularly monitor pests and diseases in the established plantations, as well as offer technical support and share information on seed and seedling production.

Kenya Forest Service (KFS) will produce 6,000 Melia seedlings annually for distribution to farmers and provide technical support in pest and diseases management, as well as train more groups on nursery establishment, networking and marketing.



Kitui County government will procure and distribute seeds to farmer groups, promote and facilitate distribution of at least 100,000 Melia seedlings to farmers per year and register producer groups. Additionally, the county will allocate land for establishment of Melia plantations, engage technical personnel to administer the initiative and share information.

The NGOs will facilitate seed distribution, labour for seedling production and land for plantation.

The workshop participants were drawn from Kenya Forest Service, County Government in seven project areas of Isiolo, Tharaka-Nithi, Embu, Machakos, Kitui, Makueni and TaitaTaveta. They deliberated on Melia market survey report, and guideline on production, distribution and use of improved melia seed/seedlings in the drylands of Kenya.



The workshop participants visiting Melia seed orchard established by KEFRI at Tiva, in Kitui County

The Project Manager Dr. Gabriel Muturi, officially opened the workshop in the presence of DERP Regional Director Dr. James Ndufa, and the Project Chief Advisor Mr. Yusuke Takeda among other project technical team.

Dr. Muturi commended the collaboration between KEFRI and JICA which has enabled implementation of the projects' agendas since 2012.

Melia volkensii known locally as (Mukau) is one of the key dryland tree species the project has earmarked for improvement due to its drought tolerant and fast growth characteristics. Melia matures within 10-15 years, thus it is potential in providing alternative source of livelihood to the communities in the drylands. Some of the Melia's notable products include high quality termite resistant timber, fodder, bee foliage and biomass.

WORLD ENVIRONMENTAL DAY

(By S. Kamonde)

Muguga Ecosystem Research Community Forest Association (MERCFA) jointly with over 1000 stakeholders planted trees and collected solid waste in Muguga forest and its surrounding to mark the World Environment day on 5th June, 2017.

The chief guest, the deputy Governor, Kiambu County Hon. E. G. Githinji, commended the area residents for their contribution towards the county's forest cover which stands at 21.5 percent.

Mr. Githinji urged the youth to tap opportunities in plastic recycling avenues.

Director KEFRI Dr. Ben Chikamai thanked Muguga residents for their unwavering efforts in environmental conservation, specifically pointing the management of Gachuthi forest.

Partnership in Water Stewardship

The Water Stewardship Partnership (KIWaSP) in Kiambu county held a meeting on 29th June, 2017 that deliberated on implementation of water agenda in the county.

Kiambu County Government is the lead agency supported by the GIZ International Water Stewardship Programme (IWaSP) whereas Water Resource Users Associations (WRUAs), Water Service Providers (WSP), Kiambu County Alliance of Community Forest Associations (KCACFA), KEFRI, KFS are among other institutions implementing water agendas in the county.

Ms. Esther Njuguna, the County executive in water department urged residents to conserve water and also explore means to avail adequate water to all.

The Coordinator GIZ International Water Stewardship Partnership Ms. Anne Marie Ran appealed for a holistic approach towards addressing water challenges. She urged the lead agencies to pro-actively engage partners in implementing the initiative that include rehabilitation of degraded water catchments or sources such as forests riverines and riparian lands,

Delegates planted trees of Muu (*Markamia lutea*) and fruit tree species of Avocado (*Persea americana*) and Mango (*Mangifera indica*) at Kwihota Secondary School in Ruiru sub county.



CONSERVING NDAKA-INI WATER DAM

By S. Wakori and S. Kamonde



Mr. Vimal Shah, CEO - Bidco Africa (left) exchanging views with Nelly Oduor and Prof. Judi Wakhungu (Centre) at a bamboo display staged by KEFRI staff at Ndakaini dam

KEFRI donated 150 bamboo seedlings of *Dendrocalamus membranaceus*, *D. asper*, *D. giganteus* and *Bambusa barbatus* to protect the banks of Ndakaini Dam in Murang'a County.

The joint planting exercise held on Saturday 27th May, 2017 was supported by Bidco Africa, Nairobi Water Company, Kenya Forest Service (KFS), Africa Plantations Company (APC) and Kitil farm.

The Cabinet Secretary for Environment and Natural Resources Prof. Judi Wakhungu led the exercise where over 300 enthusiastic volunteers planted 1000 assorted bamboo species to protect the dam from siltation.

KEFRI staff also displayed assorted bamboo species that included; *Bambusa vulgaris*, *Dendrocalamus asper*, *D. giganteus*, *D. membranaceus*, *Oxytenanthera abyssinica*, *Phyllostachys nigra*, and *Yushania alpina*.

Bamboo propagation techniques using single and double node, incubation, offset and bamboo utilization were demonstrated as well as technics for planting and spacing were explained and demonstrated.

Value addition to bamboo was indicated by a display of assorted products that are derived from bamboo. These included furniture, kitchen wares, fancy items, and edible bamboo shoots. Around 660 assorted KEFRI publications were distributed.

Bamboo is one of the fastest growing grass in the world that has fibrous roots desirable for soil erosion protection.

RESEARCH ON WOODLOTS

(By Wekesa L., et al)

A study to understand economic viability of establishing woodlot tree species integrated in smallholder production systems in the Coast region of Kenya found production of *C. equisetifolia* was economically viable and had better financial returns compared to *Tectona grandis*, *Melia volkensii*, and *Gmelina arborea*.

Profitability of woodlots on smallholdings depended on level of integration into existing farming systems, market outlets and level of value addition.

The highest costs in all the woodlots were found to be incurred at cutting and processing stage due to high labour and capital inputs.

Woodlots of *Tectona grandis* was found to have the highest cost in terms of establishment, rotation age, harvesting and processing.

The cross-sectional survey covered 219 woodlots randomly selected from 706 smallholder commercial onfarm woodlots established between year 2012 and 2014 with technical support by KEFRI under Kenya Coastal Development Project (KCDP).

The KCDP funded through World Bank is initiating several developmental initiatives in the coast region to safeguard sound management of natural resources and improve community livelihoods.

The survival rates were highest for trees in the counties of Kilifi and Kwale counties where the seedlings were also raised. However, lower survival rates was noted in Lamu County which was associated with stress the seedlings may have endured due to long distances of transportation from Kilifi County.

It was observed that apart from environmental and climatic conditions, and tree types, survival of trees planted on farms in the region was dependent on type of farm enterprise, and availability of water and the farmer.

Profitability of woodlots was better for the production systems that intercropped trees with crops at initial stages, and the sale of the value added tree products.

The margins were higher in an intercrop possibly as a result of extra benefits derived and complementarity that existed between the tree and other farm enterprises.

It was evident that higher profit levels were realized when efforts were made towards processing of the products.

VISIT TO WaTER SITES

(By R. Mokaya)

A technical committee derived from the agencies implementing the Water Towers Protection and Climate Change Mitigation and Adaptation Programme (WaTER), visited Cherangany and Mt. Elgon ecosystems between 23rd April and 6th May, 2017 to assess implementation of component 4 by KEFRI staff.

The 4-year project, funded by European Union, is implemented in 4 components under the responsibility of the Ministry of Environment and Natural Resources. The Ministry and the Regional Development and coordinator for Programme is implementing component 1; Kenya Forest service, (KFS), Kenya Water Towers Agency (KWTA), The National Climate Change Directorate (CCD) and Kenya Wildlife Agency (KWS) are implementing component 2; Component 3 is implemented by the 11 County Governments of Busia, Bungoma, Elgeyo Marakwet, Kakamega, Kisumu, Nandi, Siaya, TransZioia, UasinGishu, Vihiga and West Pokot, while KEFRI implements component 4.

Ms. Wanjiku Manyatta, the Programme Coordinator led the technical team in Londiani and Maseno regions for briefings and field visits.

It was apparent that in line with the programme's objective of alleviating poverty and promoting sustainable livelihoods, KEFRI has actualized scientific interventions to support community in decision making and policy applications on conservation and management of Mt. Elgon and Cherangany hills ecosystems.

Diversification of Trees On-Farm

To reduce pressure on the natural forests, the project has promoted tree on farms. Community members across the Cherangany ecosystem preferred planting commercial tree species of *Eucalyptus grandis*, *Cupressus lusitanica* and *Grevillea robusta*.

Bamboo demo plots with *Dendrocalamus asper*, *Bambusa striata* and *B. vulgaris* demo plots were establishment to validate their performance and source of germplasm, for conservation of riparian areas and for cottage industries.

Over 50 farmers in Mt. Elgon, and 84 farms in Trans-Nzoia, Uasin Gishu West Pokot, and Elgeyo Marakwet counties adopted bamboo on their farms

Communities were also supported to establish tree nurseries. A visit at Kajulu, Wath Oregoo tree nursery affirmed production of indigenous, exotics as well as fruit tree seedlings despite water challenges.

In an effort to reduce fuelwood consumption and forest degradation, the project has promoted 'Kuni Mbili Jiko' in West Pokot County and 10 households trained and embraced the technology.



Dr. John Otuoma (left) OIC Migori sub-centre, briefing the technical team at a bamboo demonstration plot in Butula sub-county

Residents of Mt. Elgon, Cherangany hills landscapes and their surrounding environment are characterized by low income levels that have led to malnutrition among infants.

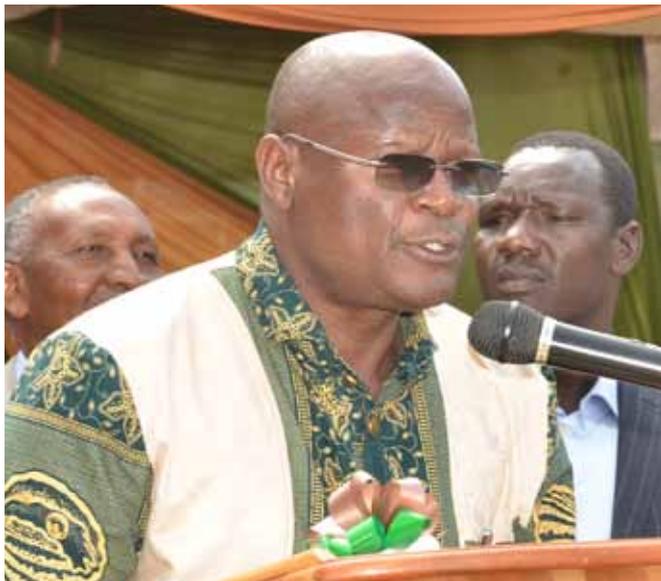
The WaTER project in collaboration with an NGO -Action against Hunger in West Pokot County is promoting fruit trees, and supporting establishment of kitchen gardens to diversify nutrition and improve health and income generation.

The team discussions dwelt on building synergy among partners. The team found a high level of the programme's acceptance by the communities and gathered information that will help to improve the implementation strategies.

The technical team at the end of the expedition lauded KEFRI for its accomplishment despite the challenges encountered during the course of implementation.



30 YEARS OF FORESTRY RESEARCH AND DEVELOPMENT



KEFRI Director Dr. Ben Chikamai delivering remarks on research and development for the past 30 years

For the past 30 years, KEFRI has registered tremendous growth in research, human capacity and infrastructure in the six research centres distributed country wide.

Key Research Achievements:

Research on forest productivity and improvement has increased *E. grandis* mean annual wood volume production to 60 m³ from 35, *Cupressus lusitanica* to 30 m³ from 20, and *Pinus patula* to 35 m³ from 20 per hectare per year.

Over 25 demonstration plots countrywide are now established to showcase additional on-farm tree species such as *Eucalyptus*, *Casuarina equisetifolia*, *Gmelina arborea*, *Grevillea robusta*, *Mangifera indica*, *Adansonia digitata*, *Tamarindus indica*, *Vitex paysonii* specific to suitable ecoregions.

The institute has established 320 high quality tree seed sources comprising 88 popular species covering around 1,170 ha which has increased annual tree seed production capacity to 10 tonnes from 1.2 tonnes and seed distribution to 8 tonnes from 0.9 tonnes in 1986 respectively. These orchards have potential to produce 320 million seedlings to cover 320,000ha which translates to 0.6% forest cover per annum.

Protocols to enhance productivity of bamboo, management of *Prosopis juliflora* (Mathenge) and domestication of *Osyris lanceolata* (Sandalwood) and other tree species were developed. Management and monitoring of tree pests and diseases were improved leading to reduction in tree ill health and mortality.

Guidelines for conserving and rehabilitating degraded forests and water towers such as Aberdares, Mau Complex, Mt. Kenya, Mt. Elgon and Cherangany hills enabling sustainable management of forests, biodiversity and other natural resources.

Modification of mobile framed chainsaw improved on-farm timber recovery from 27% to 56% and the developed timber strength codes (KS 02-771) for *Cupressus lusitanica* and *Pinus patula* was rolled to industry.

Developed technologies on utilization and establishment of small-scale community based enterprises dealing with forest based products e.g cosmetics, beverages, herbals, furniture and charcoal for local and export markets.

So far, over 2,500 charcoal producers were trained on efficient charcoal production, energy conservation.

Research alternative wood carving species identified and promoted 52 tree species to reduce exploitation of *Dalbergia melanoxylon* (Mpingo) and *Brachylaena huillensis*.

KEFRI scientists developed efficient charcoal production technologies using improved earth and metal kilns for small scale charcoal producers which has enhanced recovery of 28-30% .

Formation of 45 gums and resin producer associations in ASAL counties of northern Kenya increased gum arabic export to about 100 MT in 2016 from 58.8 MT (2005-2013) earning on average KES 159 million per year.

Research on value addition prioritized on indigenous fruits and Aloe, and linked some of the products to the Small and Medium sized Enterprises (SMEs).

Researchers continued to contribute to the circle of knowledge through dissemination/sharing of information and transferring technologies using various methods as well as publishing research articles in the international journals.

Within the period KEFRI embraced ISO 14001:2004 EMS and ISO 9001:2008 QMS standards in order to improve efficiency and effectiveness in operations as well as to meet the international management obligations.

The Board of Directors and KEFRI Management therefore encourage our stakeholders to support implementation of the ISO standards for improvement of service delivery, environment, social and economic welfare of our citizens.



KEFRI Defined Contributions Retirement Benefits Scheme Proposal for Enrolment as Members of Association of Retirement Benefits Schemes (ARBS)

The Association of Retirement Benefits Schemes in Kenya is a voluntary organisation that brings together trustees, sponsors, custodians, administrators, fund managers and any other professional in the retirement benefits industry to rally for the common good of the pension industry. Indeed the overarching theme for the Association is captured as “the first point of reference for all retirement benefits matters in Kenya”. The association is governed by a Council made up of industry practitioners, namely Trustees and Service Providers, supported by three Committees where each is charged with the responsibility of mobilizing efforts towards achievement its strategic goals Membership in this association is thus quite strategic as it allows the Board of Trustees and the Sponsor to address the following key pillars in the delivery of their mandate:-

- a) Governance and Financial dealings
- b) Focus on needs and aspirations of the members
- c) Relationship with other stakeholders of the fund

How does pension fund specifically stands to gain by joining the Association?

- a) Much of the Association’s efforts so far have been directed to addressing issues which affect the entire retirement benefits industry, through representations to the Retirement Benefits Authority and the Kenya Revenue Authority. Key success has been noted in the in the development of the RBA Regulations
- b) Other Legislation intervention – the association plays an important role in collating industry views and coming up with memoranda on expected legislation changes usually expected to come through, during National Budget Reading Typical success has been registered in the following proposals which converted to substantive legislations:-

- (i) Protecting Trustees as they discharge their responsibilities within the provisions of the law
- (ii) Tax provisions, set to be enhanced under the PAYE rates to apply to members
- (iii) Revamping scheme governance structure by setting out term limitations for members of the Board of Trustees

c)The Association organizes quarterly seminars and luncheon meetings where key speakers elaborate on current and topical retirement benefits issues. Through these forums the trustees and sponsors are equipped to execute their responsibilities as trustees. These forums also provide opportunities for members to exchange views and experiences with fellow members.

d)The association has maintained the annual membership fee at a cost of Ksh.12,500; retirement benefits schemes deal with members’ pensions and that maintaining the membership fee that low passes the low administrative costs to the schemes. The association takes cognisance that membership of any society is only as valuable as the benefits and services provided by the society. The focus of the association is the delivery of the benefits and services envisaged in the Vision Statement and Strategic Goals focusing mainly on;

Industry Governance - A retirement benefits industry governed with the highest principles of delivering best value to all stakeholders

Member Representation - An Association of Retirement Benefits Schemes which is truly representative of the majority of the retirement benefits industry and has the strength of voice and resources to meet its members’ needs

Cohesion with the Regulator - A strong relationship with the regulators in which ARBS’ opinion is sought and valued in all considerations of regulatory development

Knowledge Resource - An opportunity for trustees and other stakeholders to gain for themselves the knowledge and understanding necessary to equip them to address to varied and complex issues which face them.

Fair Play - An environment in which the State schemes are as well managed and well-funded as occupational and individual schemes and where there is a level playing ground among all types of schemes.

Understanding Members’ Needs – running a Council which is constantly informed of the sentiments among retirement benefits schemes trustees and other stakeholders enabling it to direct its energies appropriately.

The Board of Trustees having weighed the cost against benefits of joining such an association, have found it prudent and a positive stance to its strategic plan, to be associated with like-minded Pension Funds which have the interest of the industry at heart and indeed play invaluable role in the overall direction of the industry.

The Board of Trustees, in the spirit of transparency invites members to share their views on this move through the office of the Secretariat, KEFRI headquarters.



Salome Nasoro (in Green T-Shirt) from Ufanisi Conservation Project in Gede, marketing some of their herbal products during the launch of KEFRI Lamu, sub-eco region. *(Read story page 6)*



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