

MELIA VOLKENSII (MUKAU) SEED ORCHARD (GERMPLASM COLLECTION SITE)



# KEFRI *Newsletter*

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**KEFRI launches a new facility  
at Tiva demonstration site,  
Kitui County**





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## Tiva launch

Research facilities for the Project on Development of Drought Tolerant Trees for Adaptation to Climate Change in the Drylands of Kenya were launched at Tiva demonstration site in Kitui, on 18<sup>th</sup> February, 2014.

The launch was presided over by the Cabinet Secretary for Environment, Water and Natural Resources Prof. Judi Wakhungu, accompanied by His Excellency Tatsushi Terada, Ambassador of Japan. In a speech read on her behalf by the Environment Secretary Mr. Gideon Gathaara, Prof. Wakhungu said the government has focused on promoting dryland forestry to increase forest cover to 10% as indicated in the Vision 2030 blueprint.

Prof. Wakhungu said initiative to achieve 10% forest cover in Kenya is hindered by illegal harvesting of charcoal and other related forest products, competition for land between forestry and crop production, and excision of forest for social development. However, in pursuance to increasing the forest cover, the ministry has initiated functional programmes such as development of technologies for drought tolerant trees to align itself with the government policies on dryland forestry. Consequently, an increment in forest cover, which now stands at seven per cent, has succeeded through development of supportive technologies and community participation in environmental conservation activities.

**Contributors:** S. Gitonga, S. Mwangi, S. Mogire, R. Shanda, E. Kitheka, S. Kamonde and M. Njenga  
**Editors:** J. Mulatya, S. Mwangi, N. Gachathi, S. Gitonga and M. Njenga  
**Layout and Design:** C. Nyogot  
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She appreciated the efforts by KEFRI and International Cooperation Agency (JICA) for not only undertaking this project since 2012 but also lots of other forestry projects since 1986. She further lauded the government of Japan for supporting the government of Kenya's initiatives in achieving sustainable woodland management.

Ambassador Terada who is also former Vice-Minister for Global Environment Affairs, Ministry of Environment of Japan said the government of Japan will support the Kenyan government to initiate development of drought tolerant trees for adaptation to climate change. This is in line with the basic policy of Japanese Overseas Development Agency where water, environment and forestry sector are key areas of assistance.

Climate change could be a serious threat to sustainable forest management. These effects of climate change characterized by severe drought, desertification and food shortage have been experienced in Kenya and other parts of the world. "In order to curb this phenomenon, global promotion of sustainable management of natural resources and biodiversity conservation is a key emphasis towards mitigating the effects of climate change," said Ambassador Terada.

Also speaking during the launch, KEFRI Director Dr. Ben Chikamai said the 5-year project is a collaborative research between KEFRI and JICA. KEFRI is partnering with Forest Tree Breeding Centre of Japan in screening and producing drought tolerant trees adaptable to climate change, particularly the severe conditions in Arid and Semi-Arid lands in Kenya. Currently, the project focuses on *Melia volkensii* and *Acacia tortilis* amongst other native tree species whose genetic base is dwindling.

Since its inception in 2012, the project has established two *Melia volkensii* seed orchards in Kitui and Kibwezi using clones of candidate plus trees selectively collected in ASALs areas. The orchard will serve as a source of quality seeds. Findings from the pilot project will be up-scaled to other parts of the country so as to provide germplasm for expanding natural resource management in Kenya.

Dr. Chikamai also thanked the government of Japan for extending grants since 1985 which developed KEFRI's headquarters at Muguga and Kitui Regional Research Centre and now the Tiva facilities that include administration block, propagation chamber, and demonstration plot with observation tower.



The Japanese Ambassador His Excellency Tatsushi Terada planting a tree to commemorate Tiva demonstration site. Looking on are Environment Principal Secretary Mr. Gideon Gathaara (Right), Director KEFRI Dr. Ben Chikamai (Centre in green) and Kitui Centre Director Dr. James Ndufa (Far left)



## Board of Directors Familiarization Tour



Board of Directors, KEFRI staff and community members during the visit at a rehabilitation trial site at Maragoli Hills, Kakamega

**K**EFRI's newly appointed Board of Directors made an extensive trip to Rift Valley, Western and Nyanza regions, in February 2014, to familiarize themselves with KEFRI activities and achievements since inception, 25 years ago.

Dr. Ben Chikamai, KEFRI Director led the group which included the Chairman, Dr Daniel Mugendi, who is also the Vice-Chancellor of Embu University in Eastern Province, Prof Agnes W. Mwang'ombe, Principal, College of Agriculture and Economics, University of Nairobi; Prof Kingiri Senelwa of Eldoret University; Caroline Oduor, a legal advisor; Robinson Ng'ethe, a Forestry Consultant and Robert Masibho, a stakeholder from Eldoret, accompanied by KEFRI senior staff.

At the Rift Valley Eco-Region Forestry Research Programme–Londiani, the Regional Director, Dr Joshua Cheboiwo presented ongoing research and development activities for the centre. The delegate later visited Turbo sub-centre and compartment 2K, comprising *Grevillea robusta* seed orchard, Pine and *Eucalyptus grandis* improvement trials.

While visiting trial plot at Esicheno in Kakamega, the group was enlightened on bamboo establishment, management and utilisation activities. Bamboo growing is gaining popularity as a source of alternative livelihood. This was followed by a visit to KEFRI's rehabilitation trials in both Kobujoi and Maragoli Hills under Lake Victoria Basin Eco-region Programme - Maseno.

Adoption of KEFRI technologies by stakeholders was portrayed on Mr. Akaki's farm, a KEFRI collaborator of many years. The farmer has integrated different tree species on one acre piece of land, proving that tree growing can be a profitable occupation.

The Board of Directors had an opportunity of interacting with the staff at the various centres where they discussed various staff welfare issues. Similarly, they were impressed by the institute's achievements in the region and the dedication of staff in achieving KEFRI's mandate. "Quoting from appreciation address by the Board Chairman."



Board members and staff of KEFRI, Turbo Station during the tour.



## KEFRI Participates in Marking International Day of Forests

The International Day of Forests, whose theme "Celebrating Forests for Sustainable Development", was marked on March 21<sup>st</sup> at Kereita forest, Kiambu County. The Environment, Water and Natural Resources Cabinet Secretary Prof Judi Wakhungu, who was the Chief Guest led players in the forestry sector from both public and private sectors in planting trees in the forest. KEFRI Director Dr. Ben Chikamai led KEFRI staff in the event.

This was the second time the Forest Day was celebrated worldwide following the United Nations General Assembly resolution of 21<sup>st</sup> December 2012 which urged Party States to honour 21<sup>st</sup> March of each year, as the International Day of Forests.

Speaking during the occasion, Prof Wakhungu observed that the resolution has created an important platform to educate the global community about the great value of forests and the huge social, economic and environmental costs of losing them. She noted that the day is a symbolic recognition of the contribution of forests to human development, particularly improvement of livelihoods.

"This day affirms our conviction that sustainable forest management of both natural and planted forests is essential in achieving sustainable development of our country. It is indeed a means to reduce poverty and deforestation, halt the loss of the valuable forest biodiversity and contribute to climate change mitigation," she stated.

She further noted that her ministry in collaboration with other state and non-state actors had mounted similar programmes and campaigns on tree growing. Key among this is the Green Schools and Commercial Tree and Bamboo Growing Programme which was launched by His Excellency the President on 7<sup>th</sup> December, 2013 in Nyandarua County. When fully rolled out, the programme will cover all public primary schools countrywide where activities will include awareness creation, capacity building on tree nursery establishment, tree growing, efficient wood and timber recovery, non-wood products development and many other related aspects of environmental conservation.

"We are convinced that instilling these important conservation values in our youth at the earliest opportunity is imperative in realising sustainable environment in the years to come," said the Cabinet Secretary.

She also noted that the process of formulating the National Forest Programme (NFP) has picked up by constituting a team of experts to guide and steer the process. The NFP intends to provide a clear strategy for the implementation of forest policy over the coming 15 years, and a framework for the government and development partners to align their support, leading to the establishment of a sector-wide approach. Both the policy reform and NFP processes will improve the capacity to effectively and efficiently address forest sector conservation challenges and promote knowledge-sharing amongst forest partners.



Environment Cabinet Secretary Prof. Judi Wakhungu plants a tree at Kereita forest to mark the International day of Forests. On the extreme left is the Environment Principal Secretary Dr Richard Lesiyampe.



## Call for action against Climate Change

Climate change in sub-Saharan Africa continues to pose grave danger to the environment thus, concerted efforts are needed to mitigate and curb its impact. The Cabinet Secretary for Environment, Water and Natural Resources, Prof Judi Wakhungu said during the opening of the Regional Policy Level Seminar on Mitigating Climate Change in Africa through Social Forestry held at KEFRI headquarters, Muguga, on 17<sup>th</sup> February, 2014.

The day seminar aimed at producing training curriculum on adaptation measures to climate change within the region to enhance capacities of participating countries to practically mitigate climate change through implementation of participatory social forestry extension methodologies.

The course brought together policy makers, who are Chief Executive Officers from 20 countries where regional training course participants are drawn. It was the second Policy Level forum under the Japan International Cooperation Agency (JICA) Third Country Training Programme, with the first being held in 2010. JICA has so far sponsored 19 Regional Training Courses with over 400 officers trained from 20 different countries within the region.

"More than ever before, the world today is faced with many environmental challenges, most of which can be attributed to climate change," noted Prof Wakhungu. Global warming presents a significant threat to achievement of many developmental goals, especially those related to eliminating extreme poverty and hunger, and promotion of environmental sustainability.

She observed that a major challenge for much of sub-Saharan Africa is how to formulate



Prof. Judi Wakhungu (Centre) hands over a UN award to the Director KEFRI, Dr Ben Chikamai (left), in recognition of KEFRI special contribution to South-South and Triangular Cooperation. Looking on is Mr. Hideo Eguchi, the JICA Country representative.

agricultural technologies that can resolve conflict between sustainable and improved livelihood, and environment conservation. Wakhungu said that the seminar took place at an opportune time when the world is developing strategies to combat the effects of climate change which, if left unchecked, will be a great threat to not just the environment but also to mankind's existence.

Speaking during the occasion, KEFRI Director Dr Ben Chikamai, said that the effects of climate change already being experienced in sub-Saharan Africa include floods, increased frequency and severity of droughts, increased incidences of human and livestock diseases, food and water insecurity.

"The impact of climate change can only be minimised if we develop and promote technologies

that can adapt to a changing environment, a process that will need sound decision support mechanisms from researchers and policymakers for effective implementation," he said.

Dr Chikamai explained that social forestry which encompasses integrating trees into agricultural landscapes is one option that could offer multiple benefits as well as ensure sustainable food production and creation of an effective carbon sink and sure way of increasing forest cover in our nations.

At the same time, Dr. Ben Chikamai received from the Cabinet Secretary an award from the United Nation for KEFRI support in South South and Triangular Cooperation in collaboration with JICA.

### Correction

In page 4 and 6 of KEFRI Newsletter issue No. 7 we published *Pordocarpus flaxinifolius* while the correct position is that the tree species is *Podocarpus latifolius*. The error is highly regretted.



## Towards effective Service Delivery



Customer Service Charter awareness seminar at Coast Eco-region Research Centre - Gede.

**S**ensitisation of KEFRI Customer Service Charter is an exercise implemented annually with the objective of making members of staff aware of their duties and responsibilities so as to deliver services effectively.

This year, the exercise was held in March 2014 covering the headquarters and all regional centres. This was a follow-up to previous sensitisations carried out in the last two financial years. These sensitisations were based on the revised corporate charter and the devolved service charters for each region, as well as the customized charters for various departments namely; Finance, Supply Chain, Tree Seed Centre, Tree Nurseries, KEFRI House and Conference halls.

These sessions are ideal forums for discussion, in-between staff, on the various challenges they face in their work and recommendations that can effectively tackle those problems. Students on attachment from various universities and tertiary colleges are also encouraged to participate.

Under the Performance Contracts (PCs) of the government, all public institutions are required to

improve service delivery, conduct customer satisfaction surveys annually and progressively work towards increasing customer satisfaction. The goal is to create accountability to the public for targeted results, increase productivity, improve on service delivery to the public, change attitude to work and adhere to work ethics.

KEFRI's service charter comprises the following:

- What the institution does
- vision and mission
- Products and services
- The standard and requirements of the service to be provided
- Time frame within which the service is to be provided
- Cost where applicable
- Contacts through which clients may seek redress if they are dissatisfied with any service or commitment as promised in the charter.

KEFRI has installed both corporate and devolved service charters at all regional centres and members of staff are obliged to adhere to each item of the Service Charter.



### Commitment to Service Delivery

The Kenya Forestry Research Institute was established in 1986 under the science and Technology Act (Chapter 250) to carry out research in forestry and allied natural resources.

**Vision**  
A centre of excellence in forestry research for development.

**Mission**  
To conduct research and provide information and technologies for sustainable development of forestry and allied natural resources for socio-economic development.

NO	SERVICES/GOODS	REQUIREMENTS TO OBTAIN SERVICES/GOODS	COST	TIMELINE
1	Develop forest technologies	Research based on stakeholder needs	Depends on the technology	Depends on reporting period
2	Disseminate forest technologies	Communication to stakeholders	Depends on format or channel of communication	Continuous on daily basis
3	Supply of high quality tree seeds	By order	As per tree seed catalogue	<ul style="list-style-type: none"> <li>• On order</li> <li>• Depends on seasonal availability</li> </ul>
4	Supply of high quality tree seedlings	By order	As per tree seedlings catalogue	Depends on seasonal availability
5	Training in forestry	On request	Nature of training	Quarterly
6	Wood, plant and soil analysis	On request	As per analytical catalogue	After contractual agreement
7	Provision of timber and non-timber products	By order	As per catalogue	Immediate (Depends on number of items)
8	Advice on landscaping, tree establishment and management	On request	Depends on service required	Immediate
9	Provision of training and conference facilities	On request	Depends on nature and duration of course	Within 4 days
10	Attachment of students	Application from learning institutions	Refundable KShs 5000 deposit and personal insurance cover	Within 4 days
11	Picnic sites for recreation and video/photo shooting	On request	As per catalogue	Immediate (After booking)
12	Consultancy in forestry	Call for consultancy	Nature of consultancy	Immediate (After contractual commitment)
13	Resolution of public complaints	Launch of specific complaints	After verification	One week

We value and welcome feedback and comments to enable us serve you better.

Complaints, compliments and suggestions should be sent to:

The Director  
Kenya Forestry Research Institute  
P.O. Box 20412-00200, Nairobi  
Tel: 0722157414, 0724259781/2  
Email: director@kefri.org

The Commission Secretary/Chief Executive Officer  
Commission on Administrative Justice  
Deputy President's Office, Harambee Avenue  
P.O. Box 20414-00200, Nairobi  
Tel: 020 2270000  
Email: certification@ombudsman.go.ke  
Website: www.ombudsman.go.ke

KEFRI is ISO 14001:2004 Certified  
**HUDUMA BORA NI HAKI YAKO**



## Secretaries workshop



KEFRI secretarial staff with Centre Director Kitui. (Below) Secretaries on a team building exercise during the workshop.

An interactive workshop for KEFRI secretarial staff was held at the Kitui Centre on 11<sup>th</sup> to 13<sup>th</sup> February, 2014. The objective was to enhance work performance, efficient service delivery and cohesion between the secretaries. The Regional Director Dr. James Kamiri Ndufa opened the course. The resource persons were Mr. Duncan Ikua, Kenya School of Government, Mrs Evelyn Oroni and Mr. Christopher Momanyi both from KEFRI.

The workshop covered overview of KEFRI, workplace etiquettes, Public relations and customer care, effective communication and public speaking, conflict management, team building, performance management, stress management, budget preparation and resource management.



## Beekeeping Course for CFA

Beekeeping is a beneficial activity that can be carried out by communities adjacent the forest in bid to improve livelihood, enhance forest conservation and food security. It is an old age activity inclined mainly to men but modernity has enabled women to be also actively involved.

Eleven members of Muguga Ecosystem Research Community Forest Association (MERCFA), a Community Forest Association (CFA) adjacent Muguga forest, benefited from a 3-day bee keeping course conducted at KEFRI headquarters from 5<sup>th</sup> to 8<sup>th</sup> February, 2014.

Trainers from National Bee Keeping Station (NBKS) conducted the course which was funded by Green Zones Developing Support Project (GZDSP) in collaboration with Kenya Forest Service-Kiambu Ecosystem Conservator.



Hands on training at KEFRI and modern Beehives that were placed at a farmer's land near Gachuthi forest.

The course covered; types of bees and their behaviors, types of beehives, (traditional, Kenya top bar, Langstroth and box hives), their advantages and disadvantages, hive placement and routine management, honey harvesting and processing.

The group made a study tour to Kereita Integrated Community Forest Association (KICOFA) where beekeeping activity is well established. The GZDSP also donated 15 beehives to kick start the beekeeping activity in Muguga forest.

Muguga CFA, registered in 2008, is an active stakeholder in the management of Muguga natural forests, partnering with KEFRI and KFS Kiambu County Office. Muguga natural forest comprises two blocks, Gachuthi and Gatwikira which are remnant of archaic forests in Kiambu.

### Choir

KEFRI Choirmaster Mr. Charles Mwangi, represented the Institute and contested in the Parastatals and Company Choirs' Consultative Committee election at State House, Nairobi on 13<sup>th</sup> March, 2014.

A committee to facilitate the Permanent Presidential Music Commission (PPMC) in its future activities was elected. Mr. Mwangi contested for the post of organizing secretary emerging second out of five contestants. Prior to the main elections, he was appointed in various oversee Committees.

KEFRI choir has been raising the image of the Institute since Mwangi joined the choir. The choir performance in the national events has been noticeable, even by the PPMC Committee which is aspiring to visit the Institute soon.



## Bamboo workshop

A workshop to impact skills on bamboo utilization was held in Ngege market, Migori County, from 4<sup>th</sup> to 10<sup>th</sup> February, 2014. Five farmers cum artisans namely; Lawrence Otieno, Zephania Onyango, Nicholus Onditi, Jane Odhiambo and Florence Ocholla from Migori Bamboo Farmers' Cooperative Society were trained. They were selected from over 60 farmers who have each planted approximately 100 clumps of bamboo species; *Dendrocalamus giganteus* and *Bambusa vulgaris* on their farms. Jointly, the farmers operate a bamboo nursery and a workshop. They also have a Bamboo Cooperative Society where they save money from sales of bamboo assorted products.

During the same period, KEFRI conducted an advanced Bamboo Training Workshop from 30<sup>th</sup> March to 11<sup>th</sup> April, 2014 at Karura. The artisans namely; Victor Kigen (Nakuru), Grace W. Maina, Stephen Odhiambo (Nairobi), John Gaitho (Kiambu), Peter Mwamburi, Josphine K. Mboje and Wilfred M. Mrongo (Taita Taveta), Makau Mwanzia (KEFRI-Kitui), Denis Obutu (Nyamira), Malachi Odhiambo (Homa bay), were selected based on their efforts in utilizing Bamboo skills impacted in a previous course.

The workshop and the training objectives covered the followings;

- Bamboo harvesting techniques, seasoning, treatment and preservation
- Bamboo furniture making and weaving techniques
- Making Bamboo fancy items and ornamental (e.g. earrings, necklaces, belts, cooking sticks, pen holders, table marts, pens) and many other household items
- Awareness of bamboo utilization and understanding basic theories and principals of bamboo technologies
- Group dynamics and leadership
- Preparation of bamboo edible shoots

The workshop applied presentations, discussions and practicals on bamboo scrapping, splitting, joinery, sanding, advanced finishing, and cooking edible shoots. The outcome was self-made handcrafts, ornamental, bamboo crisps, assorted furniture and fancy items.

Apart from the above mentioned uses, research in KEFRI has uplifted Bamboo into other uses such as charcoal, climate change mitigation, soil and water conservation, enhancement of soil nutrients, bamboo timber and house construction.



(Top) Participants of Bamboo workshop at Migori County.  
(Below) A participant demonstrating procedure for preparing Bamboo crisps during the workshop.

## Waruhiu ATC Field day

KEFRI participated at Waruhiu Agricultural Training Centre, Kiambu County, on 14<sup>th</sup> and 15<sup>th</sup> March, 2014.

Technologies exhibited were timber sawing on-farm, Bamboo processing and value addition and assorted value added bamboo products.

More information was disseminated through interactions, posters and publications. Five hundred people visited the stand.



Bamboo products attracted many people who also indicated interest to grow the plant on their farms.



## Efficient Charcoal Production Training



Mr. Ezekiel Kyalo (centre) consulting with Ms Emily Kitheka and the participants prior to constructing charcoal kilns.

Traditional charcoaling method employed largely by many communities in Kenya is contributing immensely to global warming. This practice is endangering forests cover and bush lands. KEFRI is addressing this challenge through refining methods for charcoal production and training communities on improved charcoaling technologies while taking the opportunity to scout strategies to minimise carbon dioxide emission.

On the week commencing 24<sup>th</sup> March, 2014, KEFRI staff from Forest Products Development Centre-Karura, Central Highlands, and Dryland Eco-Region Programmes trained Ndalakanjire Community group in Maungu - Taita Taveta County, on efficient charcoaling methods.

The exercise involved imparting skills on efficient charcoal technologies to the members of group ranches so as to improve charcoal production. A comparative study was conducted using three earth kilns; the usual earth kiln and two improved with chimneys, according to Mr. James Kimweme.

In addition, group discussion and semi-structured interviews were used to measure the level of community understanding on issues regarding best practices in charcoal production, and changes in the environment, according to Emily Kitheka. "KEFRI in collaboration with KFS is spearheading capacity building as well as awareness creation

to improve operational efficiency and enrichment to quantity and quality of forest products and services," she said.

Mr. Ezekiel Kyalo (Kitui Centre) taught seed collection and preservation, *Melia volkensii* as an alternative woodlot tree species, its establishment and propagation and management on-farm.

Mr. Eliud Macharia, a taxonomist, was involved in identification of tree species used for woodfuel production. *Acacia horrida*, *Acacia elatior*, *Cordia sinensis*, *Balanites aegyptiaca* were ranked as the best quality while *Commiphora africana* was ranked poor species for charcoal production.

Miti Mingi Maisha Bora Programme (MMMB) is a collaborative project between the Governments of Kenya and Finland with an objective to facilitate an increased contribution of forests and improved forest management to economic recovery and poverty alleviation in Kenya rural populations.



Members of the community group who participated in the training.



## Field Days

### Muranga

KEFRIs' Central Highlands Forestry Research Programme in collaboration with Ndakaini Dam Environmental Conservation Association (Ndeka) and the area administration organised a field day in Muranga County on 25<sup>th</sup> February, 2014. Ndeka was established in 2004 to conserve the 42 Kilometres Ndakaini dam line, which lies on the slopes of the Aberdares Ranges.



KEFRI staff Mr. Kungu (holding bamboo cane) interacting with farmers at Kanderendu in Ndakaini.

The field day was held at Mr. Zacharia Nguru Mubia's farm, a small-scale farmer who has integrated food crops and planted over 120 multipurpose tree species, both indigenous and exotic on his farm at Kanderendu in Makomboki sub-County, Muranga. The event was attended by 170 people. KEFRI emphasised on environmental conservation and protection of Ndakaini dam water catchment area. The demand-driven farmers seminar saw KEFRI impart skills on propagation and utilisation of Bamboo as alternative planting material, tree seed production, tree nursery establishment and management practices.



A view of Ndakaini dam water catchment area showing tea and forest on-farm.

Ndeka has currently managed to mobilize community and other well-wishers to plant 0.5 million indigenous trees along the dam line. To date, the population holds over 60,000 seedlings on individual and group nurseries and its aim is to plant 120,000 seedlings within the year.



Ndakaini water dam, the reservoir for Nairobi waters.

### Embu

The same Research Programme organised a field day in Embu County on 20<sup>th</sup> March, 2014. The event held at Karurumo Youth Polytechnic, Runyenjes sub-County, was attended by 70 people amongst them small scale farmers and students.

KEFRI staff trained them on propagation and utilization of Bamboo as alternative planting material, tree seed production, tree nursery establishment and management practices. Emphasis was more on the importance of bamboo in environmental conservation, water catchment, soil erosion control, air regulation and mitigation against climate change. These interactions of KEFRI, small-scale farmers and other partners is an important step towards imparting skills needed in raising seedlings for afforestation and reforestation as well as conserving the environment.



Mr. Kungu explaining Bamboo propagation method to farmers at Embu.



## Eldoret ASK show 2014



KEFRI staff Ms Joyce Okumu (2nd right) in engagement with show attendants during Eldoret ASK show.

The Rift Valley Eco-Region Research Programme participated in the Uasin Gishu branch annual ASK show in Eldoret from 5<sup>th</sup> to 8<sup>th</sup> March, 2014. The theme of the show was "Enhancing Technology in Agriculture and Industry for Food Security and National Growth".

KEFRI staff interacted with diverse people who included farmers, students, entrepreneurs and officers from the public and private sector. KEFRI Mission, Vision and Service Charter and theme Interpretation posters were displayed and explained in line with Vision 2030. Other displays included tree seed samples of both indigenous and exotic trees. Visitors were provided with information on best practices to apply in seed collection, processing, seed sowing, nursery management, different propagation and management methods for tree improvement, soil fertility improvement

practices, and information dissemination channels KEFRI uses to reach its audience. Many visitors sought guidance on the best commercial tree to grow in different agro-climatic zones in Uasin Gishu and neighbouring areas.

Rift Valley is a high potential area for *Prosopis*, an invasive tree species which has been a source of controversy in area residence. KEFRI exhibited *Prosopis* value added wood and non-wood products namely; *Prosopis* seedling management, animal feed made from grinded pods, assorted baked products, timber, wood carvings and floorboards (parquets).

Results from ASK judgment, KEFRI emerged second best stand in Research and Development and third best stand displaying Environmental System Applications.



## Aloe may Cure Breast Cancer



An Aloe specie commonly planted as ornamental in Kenya.

**K**enyan researchers have isolated compounds from Aloe plant with potential to cure breast cancer. According to the journal *Molecules*, the researchers from the University of Nairobi in conjunction with the University of Gothenburg, Sweden, analyzed 16 chemical compounds from sun-dried roots of *Aloe dawei* for their efficacy against breast cancer cells. Of those chemical compounds, two resulted in strong activity against specific breast cancer cells.

Developments in this study are very encouraging and the next step is to test how the plant extracts may be affecting normal cells before venturing into drug development, states the lead researcher Abiy Yenesew, as cited in the Standard Newspaper, 26<sup>th</sup> March, 2014.

This study may confirm Aloe's traditional medicinal use of cytotoxicity and serve as a foundation for future medical innovations and research in breast cancer treatment.

*Aloe dawei* grows widely in arid to semi-arid areas of Kenya, Tanzania, and is native to mountainous regions in Uganda, Congo and Rwanda. It is used in traditional medicine and particularly recognized for malaria treatment in Rwanda. However, even with its wide use in traditional medicines, no chemical analysis has been carried out before. According to Yenesew, this is the first record attempt.

*Aloe dawei* is named after Mr. Dawe, who was the curator of the Botanical Gardens at Entebbe, Uganda in the early 1900s.

Aloe, is a genus containing about four hundred species of flowering succulent plants. The most common and well known of these is *Aloe vera*,

or "true Aloe". The genus is native to Africa, neighbouring areas such as Madagascar and the Arabian peninsula.

KEFRI has been involved in research and development of Aloes in Kenya where its scientists have identified five main Aloe gum producing species and others with potential for commercial exploitation. KEFRI has also been involved intensively in development of value added beauty and health products, particularly from *Aloe vera*.

### Facts about Aloe

- **Aloe species are cultivated as ornamental plants or for commercial uses**
- **Most Aloes have thick and heavy leaves which are dotted with small white points**
- **Majority of Aloes plants are used in alternative medicine**
- **Some Aloes are laxative while others are poisonous**
- **Depending on variety, the leaves contain either sap or gel**
- **The sap contains aloin, which turns colour rapidly**
- **The sap is heated and cooled to form aloe gum**
- **The jell contains diminutive aloins thus it is used as health juice**
- **Aloe jell soothes skin burns, wounds, stings, bruises, etc**
- **The jell is added to other ingredients to make assorted products e.g. soap, shampoos, facial toners, creams and astringents**



Assorted Aloe products processed at KEFRI laboratory.



## Piece of thought

After fourteen months of waiting I received the letter. A single increment deprived of backdated payments came as no surprise. It has happened before and deliberations that followed didn't augur well. Thus, I dallied with the idea of responding to complain or compliment. Coincidentally, while scanning collection in my home library comprising literature and languages, *The American Readers, The Dolphins and the Norton*, I came across this letter to God written by Gregorio Lopez Fuentes and published by McDougal Littell.

The house—the only one in the whole valley—stood at the top of the low hill that looked like one of those primitive, truncated pyramids some wandering tribes abandoned when they move on. From there one could see the meadows, the river, the stubble pasture, and next to the corral the field of ripening corn with beans blossoming purple among the stalks – the unmistakable sign of a good crop. The only thing the earth needed was a good rain, or at least one of those heavy showers that form puddles between the rows. To doubt it would rain would have been the same as mistrusting the experiences of veteran farmer who believed in planting on a certain day of the year.

Lencho, who knew the country well, had spent the morning scanning the sky to the northeast. Now at last the rain is really coming, old girl.

And his wife, who was cooking dinner, replied: May God grant it.

The older children worked in the field while the younger one played near the house until their mother called them for dinner.

It was during the meal that great drops of rain began to fall, as Lencho had predicted. Mountainous masses of clouds could be seen coming from northeast and the air was fresh and cool. Lencho went out to fetch some implements that had been left on a stone fence, just to feel the pleasurable sensation of the rain on his body.

When he came in he exclaimed:

These are not drops of water falling from the sky, they are bright coins: the big drops are ten centavo coins, and the little drops are the fives...."

And he gazed with contented eyes at the field of corns and beans in blossom, all veiled in the filmy curtain of rain. But suddenly a strong wind began to blow, and hailstones as big as corn started to come down with the raindrops. The children dashed out to pick up the largest of the icy pearls. They indeed looked like new silver coins.

This is really very bad, Lets hope it stops soon, Lencho exclaimed with chagrin. But it did not stop that soon. For an hour the hail came down upon the house, the garden, the mountain, the corn, and



the whole valley. After the storm had passed, the field was white, as if covered with salt. The trees were left leafless, the corn destroyed, the beans left without blossom. And Lencho's heart was filled with grief.

Lencho told his children as he stood in the middle of the field: This year we shall be hungry, the hailstorm has left nothing. We have lost all the corns and beans...." A cloud of locusts would have left more than this!

The night was one of weeping. All our works and expectations has come to nothing.

And no one to help us!

Don't be so upset, even though its hard blow, said his wife. Remember being hungry never kills anybody.

That's what they say – being hungry never kills anybody!, but he who feels the pangs of hunger knows how much it hurts, retorted Lencho.

But in the hearts of Lencho there was one hope - the help of God.

And during the night Lencho thought a great deal about what he had seen in the village church on Sundays: a triangle, and inside the triangle an eye, an eye that seemed very big. An eye – which sees everything, even what is in the depths of one's conscience.

Lencho was uncouth peasant who worked hard in the fields, but he knew how to write.

At day break the following Sunday, having strengthened himself in the conviction that there is someone who watches over us, he began to write a letter. It was nothing less than a letter to God!

*Story continues in the next edition No. 9*



## New Appointments

The Board of Management congratulate and welcomes to KEFRI fraternity the following staff who were engaged through internal recruitment.



Roxventa Anyango

ARO (Social Science), Central Highlands Eco-region, Muguga

Holds a BA in social science. Currently pursuing MBA in Sociology at Kenyatta University. She worked with Kenya Bureau of Statistics (KNBS) and IFRI projects before confirmation.



Gregory W. Namasaka

Supply Chain Assistant II, Kakamega

Holds a Dip. in Purchasing from Masinde Muliro University. He worked with West Kenya Sugar Company and Malava District Hospital before joining KEFRI.



Leila Akinyi

ARO (Social Science), Gede.

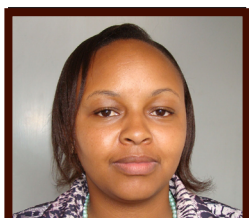
Holds BSc in Environmental Studies and Community Dev. (KU). Currently studying MSc at the same University. She worked in SIFOR project at KEFRI Gede before confirmation.



Rebecca K. Bateta

Supply Chain Assistant II, Baringo

Holds Dip. in Supplies Chain Management from Kabete Technical Institute. She has 5 years work experience in private sector. Lately worked with World Vision and Moi Referral Hospital.



Mary Ivy W. Kimama

ARO (Environment and Quality Assurance), Headquarters.

Holds BA in Enviromental Management from Makerere University. Currently persuing Postgraduate studies at Kenyatta University. She was attached to Environmental Management Systems office before confirmation.



Robert G. Nderitu

Supply Chain Assistant II, Turkana

Holds Dip. in Procurement and Supplies Management from Mount Kenya Univ. He worked with Private Sector before joining KEFRI for two years contract in procurement section.



Charles O. Magare

Laboratory Technologist III, Central Highlands Eco-region, Muguga

Holds a Diploma in Applied Biology from Kenya Polytechnic. Prior to his appointment, Charles was attached in Soil Fertility and Tree Improvement section-Biotechnology at the Headquarters.



Robert Abdalla Mwachai

Assistant Enterprise Manager

Holds a Bachelor Degree in Economics form Kenyatta University. He worked with Kenya Commercial Bank for 5 years before joining KEFRI.



Caroline Many

Laboratory Technologist III, Gede.

Holder of Dip. in Applied Biology from Kenya Polytechnic. She was attached in Biotechnology and Agroforestry projects at KEFRI headqartes before confirmation.



Peter Matinyi Mwanje

Accounts Assistant I, Turkana

Holder of CPA-III from KCA University. He worked with Agakhan Hospital, Ministry of Youth Affairs, Rapid Waste Services and KCA University before joining KEFRI.

## Demise

Mr. Michael Kinyanjui Ndungu passed away on 5<sup>th</sup> March, 2014.



The late Michael Kinyanjui

Until his death Michael was working at the Central Highlands Eco-region Research Programme, Muguga. Previously he served in Kibwezi and Gede Centres.

His body was laid to rest on 13<sup>th</sup> March, 2014 at his home Kiserian, Kajiado County.

*May God rest his soul in eternal peace.*





*Melia volkensii* seed orchard at  
Tiva demonsration site, Kitui



**Kenya Forestry Research Institute (KEFRI)**

P.O. Box 20412-00200, Nairobi - Kenya Tel: +254 724 259781/2, +254 722 157414

Email: [director@kefri.org](mailto:director@kefri.org) Website: [www.kefri.org](http://www.kefri.org)