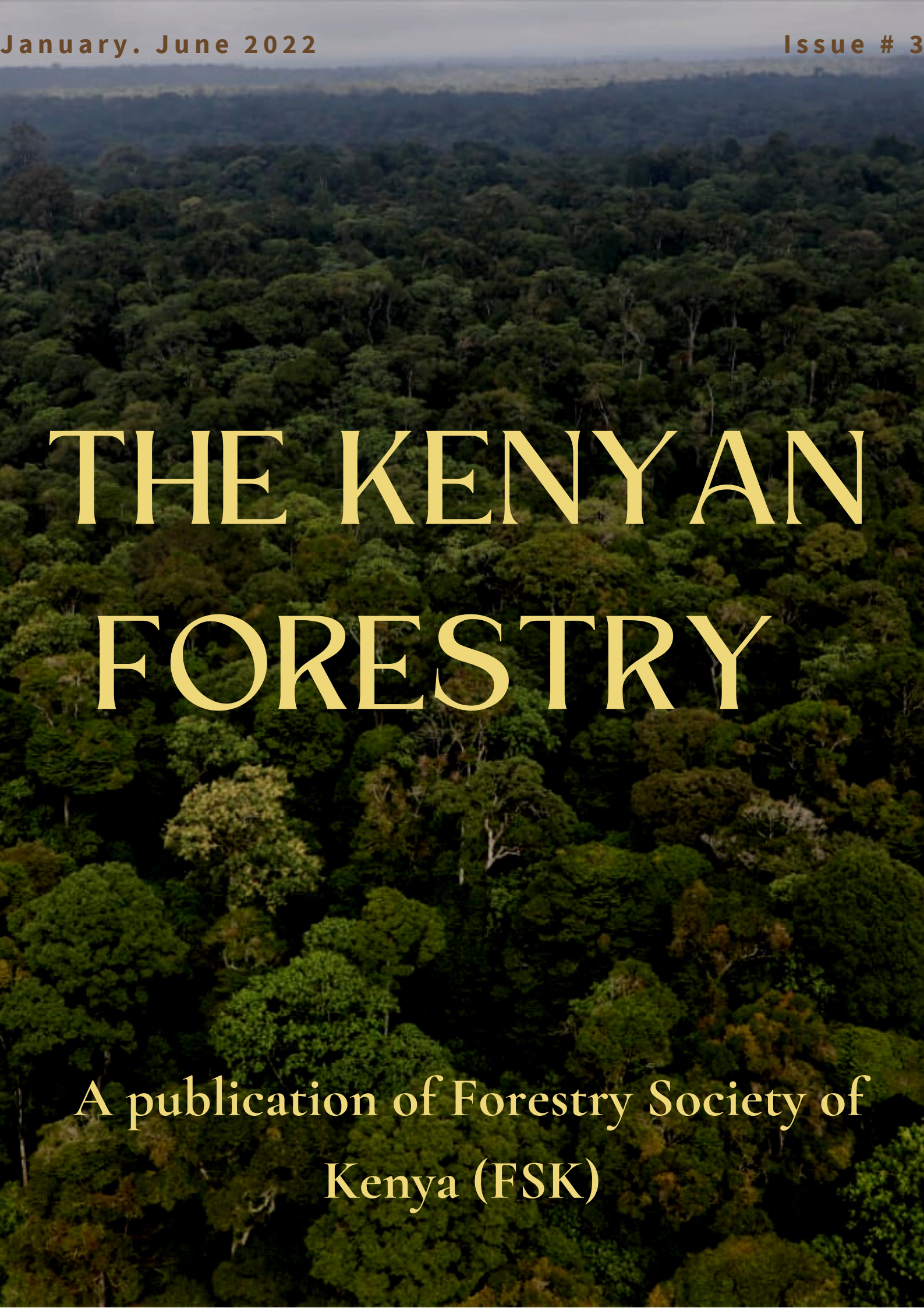
January. June 2022 Issue # 3



THE KENYAN FORESTRY

A publication of Forestry Society of Kenya (FSK)

INTRODUCTION TO FSK

Background

Forestry Society of Kenya (FSK) is the sole professional association of foresters in Kenya with the mandate of advising and assisting its members, the government, and the larger public on professional forestry practice and sustainable management of forest resources.

Vision, Mission, and Core Values

Our Vision is to be an internationally recognized Society that promotes quality and robust forestry professional practice and scientific principles in the management of forest resources.

Our Mission is to empower the forestry profession with quality member services to advance sustainable management of forest resources for the benefit of the current and future generations.

In its endeavor to enhance a strong professional culture and reinforce its vision and mission, FSK has adopted the following **core values**:

- Professionalism and scientific principles
- Integrity and ethics
- Teamwork
- Learning and growth

Objectives

- Create public awareness of sound forest management practices.
- Build capacity of the general public and private practitioners on best forestry practices
- Strengthen professionalism in forestry
- Strengthen forestry practices and community development

FSK Membership

- **Full Membership:** Any person possessing a degree or its equivalent in forestry, or allied sciences (Registration Kshs. 5,000 and an annual subscription of Kshs. 5,000)
- **Associate Membership:** Any person possessing at least a diploma or certificate in forestry or in allied fields (Registration Kshs. 3,000 and annual subscription of Kshs. 3,000)
- **Corporate Membership**: Open to supporting organizations, which subscribe to the policies and aspirations of the Society (Registration Kshs. 50,000, 25,000, or 10,000 and annual subscription of similar amount)
- **Student Membership:** forestry students who are enrolled in a forestry program at a recognized university or college awarding a degree or a diploma (Registration Kshs. 1,000 and annual subscription of Kshs. 1,000)
- **Life Membership:** distinguished career foresters approved by the council (registration fee Kshs. 50,000)

Capacity Building Activities

- FSK develops programs for strengthening the professional capacity in enabling Kenyan foresters and researchers to fully participate in defining and implementing priority forestry programmes. Activities include conferences and policy dialogues, webinars, trainings and workshops.

CONTENT

EDITORIAL

Dr. MTE Mbuvi,
Journal Editor, FSK

I take this opportunity to welcome all of you to Issue 3 of the Kenyan Forestry, a newsletter of the Forestry Society of Kenya. The newsletter provides a platform for foresters, forestry practitioners, entrepreneurs, and the public to share information on forestry and allied natural resources. The newsletter provides information on diverse aspects of the forestry sector at both local, national and global levels.

I would like to appreciate and extend my appreciation to the co-editors, editorial team members, reviewers, and contributing authors for ensuring that this issue is realized. Members are encouraged to share their contributions. The editorial Team extends a special invitation to the youth to share their stories on forestry.

The next issue will focus on indigenous forests that are being managed by traditional religious organizations, exclusively or in partnership with the government and other stakeholders.
Organizations and learning institutions are encouraged to advertise in the newsletter

Please share your manuscripts with the editorial team, through the FSK Secretariat by **30th November 2022** through the FSK email addresses **fsk@fsk.or.ke** or **keforsoc@gmail.com**.

FORWARD

Benjamin Wamugunda,
FSK, National Chairman

It is with great honor and appreciation that I welcome you all to Issue 3 of the Kenyan Forestry Newsletter, the voice of the forestry professionals in Kenya. It is through your support and encouragement that we have continued to be a vibrant society and the momentum to revitalize our society has gained momentum.

Members, partners, and stakeholders let us ensure that the newsletter creates an avenue to share information on forestry and enhances partnerships and investment in forestry. I call upon members to contribute articles to enhance society's vibrancy, visibility, and branding. We are sending a special request for articles from the youth especially those in our institutions of higher learning and TVETs.

Members, the growth of our society depends strongly on expanding beyond the forest and forester boundary. In order to achieve this, let us join hands to grow plurality in our approach, engagements, and partnerships that we nurture.

The newsletter provides members and the society with topical issues on the economy, devolution, and technologies that will ensure sustainable forest development not only in Kenya but on a global scale. This is indeed a moment for transformation and requires our concerted efforts to ensure that we attain 30% tree cover by 2050. Let us start the planning now. The expanding seed production that is well regulated will play a very important foundation role in forestry development towards achieving the target.

I am grateful to all the authors for their continued support of our newsletter. I request members, partners, and other stakeholders to submit manuscripts for our next issue which will focus on the traditional and religious organizations involved in forestry management. This does not article on topical emerging issues that society will yearn to know.

I implore the forestry fraternity to support our newsletter to be able to produce four [quarterly] issues per year. It remains our responsibility to ensure forestry is a major foreign income earner and contributes to better livelihoods, industrial development, and wealth creation in our country.

Beyond Gross Domestic Product as a Measure of Economic Growth

By Samuel K. Muriithi

Five decades ago (June 1972), 114 nations congregated in Stockholm Sweden for the United Nations Conference on the Human Environment (UNCHE). The conference addressed issues concerning the environment and sustainable development. UNCHE also known as the Stockholm Conference linked environmental protection with sustainable development.

The conference influenced international environmental laws while the final documents highlighted 26 principles concerning the environment. The conference also produced the "Framework for Environmental Action," an action plan containing 109 specific recommendations related to human settlements, natural resource management, pollution, educational and social aspects of the environment, development, and international organizations. The conference also gave birth to United Nations Environment Programme (UNEP).

The Fourth Global Session of the United Nations Science-Policy-Business Forum on Environment with the theme "The next 50 years: Trailblazing Pathways for a Nature-Positive World" took place in Stockholm from 31st May to 4th June 2022. One of the topics for discussion was "Beyond Gross National Product (GDP)". This topic is dear to me coming just after few weeks after the release of the Economic Survey, 2021, and also noting that a section of citizens expressed displeasure with the stated economic growth of 7.5%.

Gross Domestic Product measures the output produced by the factors of production (labor, capital, technology, land) located in a domestic economy, regardless of who owns the factors of production. The GDP is calculated as in the following equation: GDP = private consumption + gross investment + government investment + government spending + (exports – imports) while per capita income is GDP divided by the total population of a country at a specific point in time.

Here is a synopsis of the shortcomings of GDP as a measure of standard of living and why we should go beyond GDP as a measure of economic growth:

- **GDP does not incorporate any measures of welfare**

Although GDP presents Government expenditure on health and education, it fails to present how quality of human health and education has improved. Huge expenditure may have gone to construction of health facilities but lack of medicine or cost of treatment may not affordable to most of the population.

- **GDP only includes market transactions**

The value of manufactured goods and agricultural production is derived from market prices of the traded goods.

These excluded goods consumed in the subsistence economy. This may affect the value of forest goods reported in the national statistics since firewood, timber and charcoal are processed and consumed at household level.

- **GDP does not describe income distribution**

Although GDP reports aggregated national wealth it fails to provide the distribution of that wealth across population segments of a society.

Calculation of per capita has not assisted much because this is just an average which is affected by size of population as a denominator. It also fails to show position of typical person in society which ought to be presented by a median. This is where the economic status of Wanjiku, Chebet, Akiyi is not reported.

- **GDP ignores externalities**

Although GDP reports the production of various goods and services in an economy, externalities such as pollution are not reported. Such pollution may impose health costs on citizens in direct health costs and morbidity. Another input to the calculation of GDP which excludes externality is the production of timber and charcoal contained in the Economic Survey. It is not stated if the timber is harvested in sustainably managed forests or whether trees used for charcoal production are renewable.

- **Does not include household labour**

This is a serious omission since much of the forest activities are implemented by unpaid household labour. This includes raising seedlings and plantation establishment through Plantation Establishment and Livelihoods Improvement Scheme (PELIS). Family labour provided by Community Forest Association is neither accounted for in Kenya Forest Service Accounts nor in the National Statistics

- **Beyond GDP**

It is important to note that GDP will continue to be used as pronounced in the System of National Accounts which describes a coherent, consistent, and integrated set of macroeconomic accounts in the context of a set of internationally agreed concepts, definitions, classifications, and accounting rules. The following initiatives have been taken by countries to include the environment in National accounts. These include:

i. **Adoption of System of Environment Economics Accounts (SEEA).**

The System of Environmental-Economic Accounting (SEEA) is a framework that integrates economic and environmental data to provide a more comprehensive and multipurpose view of the interrelationships between the economy and the environment and the stocks and changes in stocks of environmental assets, as they bring benefits to humanity.

It contains the internationally agreed standard concepts, definitions, classifications, accounting rules, and tables for producing internationally comparable statistics and accounts. This provides changes in stocks of physical capital (e.g., roads, houses, railways) and stocks of natural capital such as water, forests, etc.

ii. Use of Satellite accounts

A satellite account is a framework of presentation for the economic data of a particular sector in relation to the overall economic analysis of the central framework of the national accounts. Education, health, social protection, and the environment, forests, and minerals are some examples.

About Author

Samuel Muriithi is a member of the Forestry Society of Kenya and a retired senior Forestry Officer.

He holds a BSC in forestry (Moi University) and an MSC in Ecological Economics (University of Edinburgh). Ecological Economics is a discipline concerned with three analytical strands: the economic system, the ecological system, and the social system

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County Governments and Kenya Forest Service Partnership in Restoration

By Muruatetu Brian

The distribution of functions between the national government and the county governments is set out in the fourth schedule of the Constitution of Kenya 2010. Public land is identified under Article 62(2)(a) and (b) vests under the County Governments and administered by the National Land Commission (NLC).

For the purpose of actualization of programs, the policy framework requires unbundling so that specific intervention can be implemented by the county governments with the technical support of the Kenya Forest Service (KFS). Under the same schedule, the National Government is mandated to conduct capacity building and technical assistance for the County Governments to create capacity to implement their functions as obligated by the Constitution.

The Constitution 2010, Vision 2030, the 10% National Strategy for Attaining and Maintaining 10% tree cover and the National agreements including the African Forest Landscape Restoration Initiative (AFR100) are documents that set out for the country to achieve and maintain 10% tree cover. In addition, Kenya is committed to restore 5.1 million ha of deforested and degraded landscapes and also reduce 50% of GHGs emissions from the forest sector by 2030.

These targets are to be scaled down at the local level and by this, Kenya Forest Service has already carried out a multi-stakeholder process for developing a Forest and Landscape Restoration Implementation Action Plan 2021-2025 (FOLAREP). The document requires a multi-stakeholder Technical Working Group (TWG) to coordinate, monitor, and report all restoration activities. Among them is the Council of Governors (CoG) through the county governments which plays a key role in on-farm forestry, and county and community forests.

County Governments signed their Transition Implementation Plans (TIPs) which were developed jointly with KFS. During the 5-year transition period, the devolved forestry functions implementation has Muriatic progressed well. Significant milestones which were obligations of the KFS to support county governments are being implemented in a number of counties such as Nyeri.

Through the Green Zones Development support programme (GZDSP) capacity building of counties on relevant policies, capacity building of staff on development and implementation of forest management plans and availing of existing records and databases on county forests, nurseries, enterprise groups has been among the quick wins for the counties.

Forging better and closer working relationships between the counties and KFS is pertinent, County Governments have often been flagged for pushing aside environmental projects by appropriating small budgets as compared to other developments like roads.

In conclusion, County governments are fully bound by the national commitments on restoration, they are also the first to be affected and also the first responders during a crisis. There is a need to increase support both financially and capacity-wise to the counties as they behold more influence

on the people and land in need of restoration. With little or no institutional memory in forestry, the new crop of young forestry professionals being employed in the counties are beating new paths

This necessitates proper capacity building and guidance to fully implement the devolved forestry functions. Over-reliance on the gazetted forest for resources can be significantly reduced by rehabilitating and managing landscapes and trees outside state forests.

About Author

Brian Muruatetu is a member of the Forestry Society of Kenya, working with the County Government of Nyeri in the Department of Water, Irrigation, Environment, and Climate Change as a forester(Management and extension) for the past 4 years.

He holds a BSC in Forestry from the University of Eldoret and currently undertaking a postgraduate degree at the Dedan Kimathi University of Technology.

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Technological Development in the forestry sector in Kenya

By Mercy Njane

The forestry sector in Kenya has been evolving over the years, from management to training, research, and development. Efforts towards afforestation, reforestation, and restoration have also increased as various forest sector actors take lead in the activities. While these efforts are effective in ensuring sustainable forest management, the use of technology is quickly picking global attention.

Technological development in the recent past has created new opportunities for the sector. Through technologies, the entire forestry value chain is set to be transformed in terms of productivity and efficiency. Technology is also helping in effective communication between all the major players within the sector.

In this article, we share some of the innovations, tools, and technologies in the forestry sector aimed at increasing efficiency in operations and also providing guidance on tree growing in Kenya.

- **Solar Heat Storage for Drying Forest Tree Seeds (SoFTS)**

The Storage for Drying Forest Tree Seeds (SoFTS) technology housed at KEFRI Headquarters, Muguga aims at drying tree seeds in the shortest time. The technology is a collaboration between KEFRI, The Brunel University, and Enso Impact and is a first in Kenya and in Africa in the forestry sector. Unlike other tree seed drying methods that take approximately six weeks to dry seeds, SoFTS takes only three days.

This not only shortens the seed drying time but also saves costs in reduced energy consumption and man hours. The drying technology relies on solar energy which is also a step towards sustainable production hence reducing carbon emissions.

Due to the reduced seed drying time the technology takes, it will help in increasing KEFRI's capacity to increase annual seed production to help meet the growing demand for high-quality seeds.

Hon. Keriako Tobiko during the launch of SoFTS

Seedballs samples

- **Seedballs Technologies**

Pioneered by Seedballs Kenya, the Seedballs technique is a low-cost and effective forest regeneration technique. It involves coating seeds with charcoal dust which is mixed with a nutritious binder. The coated seeds are easy to disperse reducing seed wastage. The coat also protects the seed from predators and direct sunlight giving the seed a better survival opportunity.

Using this technology, seeds are planted directly on the degraded landscape which reduced transplanting costs and also ensures the development of a strong rooting system for the trees. The technology also allows for aerial seeding techniques to be used in large-scale projects as was used in the restoration of the Mau Complex.

- **Plantech Kenya**

Plantech Kenya Limited is a seedling nursery company that propagates seedlings for mass production. The company introduced mass production of forest tree species in their line of business with three tree species namely cypress, eucalyptus, and cider seedlings.

With the increasing demand for forest tree seedlings in the country, there is a need for a mass supply of seedlings. Plantech mass produces forest tree seedlings through seeds vegetative propagation where clonal materials are replicated for mass production which helps meet the demand for the same

Mass production of seedlings

- **Site Species Matching Tool**

A product of Gatsby Africa in partnership with KEFRI, Site Species Matching Tool (SSMT) helps tree growers select the most suitable tree species for their site. The tool uses soil, rainfall, altitude, soil types, soil depth, and species performance to assist tree growers and investors identify the appropriate tree species.

SSMT can be accessed using Georeferenced PDF or ArcGIS online. The tool provides information on how suitable a tree species is on the selected site showing a suitability range of very suitable to not suitable.

- **KEFRI App**

Trees have the ability to grow in any region, whether the highlands or the drylands such as the Arid and Semi-Arid Lands (ASAL) regions, the largest parcel of land in Kenya. However, it is crucial to grow the right tree species in the right ecological zone. The KEFRIApp is a site-species matching tool that assists tree growers to identify the correct tree species to grow in a certain ecological zone.

The mobile platform offers guidance to the users on the types of tree species to grow in the desired area. The application that was launched in 2021 aims to provide not only species-site matching services but also provide information on the location of tree nurseries on the platform and also document tree planting activities on a real-time basis. The application is available for download on Google Play Store

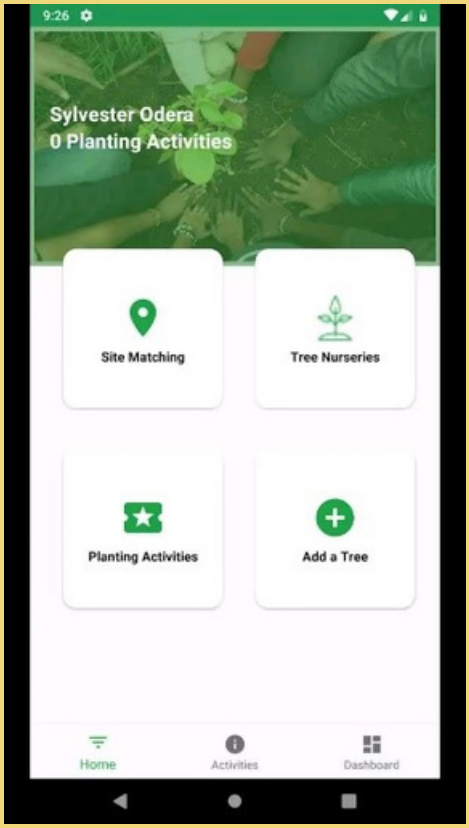

Image from KEFRI App

- **Earth Observation Platform Tools**

Kenya Forest Service (KFS) in collaboration with the National Centre for Earth Observation at the University of Leicester co-developed a rapid deforestation monitoring system. The system sends alerts every 5 days to help detect any changes in the forest resources such as changes in the forest cover. The system uses Copernicus Sentinel-2 images at 10m spatial resolution allowing detection of even small-scale logging in the forests.

The system developed under the Forest 2020 project sends near real-time alerts to the forest rangers and managers who can then patrol the region identified. The satellites send images to the server which can then be compared with the previous images to ascertain the changes.

The system is critical for monitoring forest changes effectively at both a regional and national scale. It also enables the rangers to react quickly to any threat that may arise. At the same time, the system helps KFS monitor the tree cover in Kenya. Such monitoring tools act as early warning systems to halt further destruction by humans, through illegal logging or settlement, or through wild fires

- **Tree Nursery Registration System**

The Voluntary Registration of Institutions and Private Tree Nurseries in Kenya aims to establish a comprehensive and credible database for Institutional and Private tree nurseries, map tree nurseries i fthe country, enhance networking and provide market linkages for tree seedlings and also improve tree seedlings production and nursery management standards.

The portal, spearheaded by Kenya Forest Service (KFS) and KEFRI, aims at promoting buying of certified, high-quality seedlings and provide market for the tree seedlings in private and institutions' tree nurseries. The database can act as a link between buyers and the tree nurseries.

- **Timbeter App**

Sustainable forest management is dependent on various factors among them ensuring efficiency in operations. The Timbeter App is already in use within Kenya Forest Service, it is expected to revolutionize public plantation management.

Timbeter App is a digital timber measurement solution using artificial intelligence and machine learning technology for accurate log detection. It aims at eradicating illegal logging and also improving the monitoring and supply of timber using the unique algorithm.

The application helps in reducing the cost of log inventory and is the easiest and quickest solution for the measurement of Roundwood. Timbeter is an easy-to-use mobile platform that provides services such as inventory and measurements.

- **Cross Laminated Timber**

BuildX Studio is a company in the construction industry spearheading the use of cross-laminated timber (CLT) in the industry. The company aims to reduce embodied carbon in buildings by using alternative, low-carbon building materials. Cross-laminated timber involves using small pieces of timber and gluing them together to create huge panels.

Cross-laminated timber has several benefits over concrete and steel including; it is stronger, and lighter which reduced the material needed for foundation development, and is up to 70% faster to construct. For effective mass production of timber for construction, there is a need for increased commercial forestry in the country for the supply of construction material. BuildX constructed a prototype building at Tatu City where interested individuals can visit to see the use of CLTs in construction

About Author

Mercy Njane is a member of FSK and works in the FSK Secretariat.

She holds a bachelor's degree in Environmental Studies (Resource Conservation) and is pursuing an MSC in Climate Change and Sustainability

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National Forest Resources Assessment Report 2021

By Mercy Njane

CCF, with the NFRA Report

The National Forest Resources Assessment Report (NFRA), 2021, was launched by H.E. President Uhuru Kenyatta on 27th May 2022. The NFRA report is important as it helps the county compare the country's percentages of tree and forest cover with the global forest resource assessments.

The assessments mapped out not only the tree and forest covers but also the land cover using high-resolution images which made it possible to capture scattered trees outside the forest areas, individual trees on farms, deciduous trees in ASALs, and trees under agroforestry.

According to the report, the country has surpassed the constitutional requirement of achieving and maintaining a tree cover of at least 10%. Kenya's tree cover now stands at 12.13% while the national forest cover stands at 8.83% up from 5.9% in 2018.

Debates on the difference between tree cover and forest cover have been ongoing for years. The report defines the latter as, the "amount of land area that is covered by a forest" and the tree canopy cover is defined as, "an area covered by tree patches of size less than 0.5 hectares outside the recorded forest area".

Further, in the report, a tree is defined as, "a woody perennial plant of at least 2m in height with one or several stems having a definite crown" and a forest as, "a land area of more than 0.5 hectares, at least canopy cover of at least 15%, trees of minimum 2m height in situ, which is not primarily under agricultural or other specific non-forest land use".

The assessment indicated that Kenya now has a tree cover of 7,180,000.66 hectares of tree cover with Central, Western and Coastal regions having the highest percentages.

Nyeri County has the highest percentage of tree cover standing at 45.17% followed by Lamu County, 44.06%, and Vihiga, 35.92%. Marsabit County recorded the lowest percentage of tree cover at 2.06%

Ten counties out of the forty-seven in the Republic of Kenya recorded a tree cover below the constitutional requirement of 10%. These counties are; Kisumu (8.85%), Busia (8.39%), Uasin Gichu (8.04%), Taita Taveta, Isiolo, Machakos (6.03%, Siaya (5.27%), Wajir (4.45%), Mandera (3.61%) and Marsabit (2.06%).

According to the report, the national forest cover stands at 5,226,191.79 hectares with Nyeri county recording 40.89%. Siaya county recorded the lowest percentage in forest cover standing at 0.23%.

It was noted that counties in the arid and semi-arid areas (ASALS) recorded the lowest percentages in terms of forest cover.

The country also recorded 65,565.94 hectares of new natural forests. Natural forests have the highest percentage at 84% followed by plantations at 11% the bamboo and mangroves at 4% and 1% respectively.

The increase in tree and forest cover has been associated with;

- National tree planting campaigns
- Social/physical fencing in public and community forests
- Reclamation of encroached forest land
- Rehabilitation and restoration of the forest of degraded forest areas
- Development of urban green spaces
- Collaborative partnerships between the public and private sector through campaigns such as 'Adopt a Forest Campaign'
- Gazettement of new forests

This tree cover assessment is the first in Kenya and it will set a baseline for future assessments. The forestry function is among the devolved functions in the counties. There is a need to support counties in the implementation of forestry programs.

Some of the recommendations provided by the report include;

- Identification of incentives to promote the establishment of commercial forest plantations by the private sectors and the county governments
- Strengthening the institutional capacity of KFS to effectively protect, conserve and sustainably manage forest resources
- Including tree growing in programs such as the 4K Clubs to create awareness and instilling a culture of environmental stewardship among the young generation
- Undertaking a total valuation of all forest resources
- Public entities with large and unutilized tracts of land to place at least 15% of total land under tree and forest development

National Validation Workshop of the Seeds and Plant Varieties (Forest Tree Seeds) Regulations, 2021

FSK Chairman during the National Validation Workshop

The demand for forest tree seeds in the country is increasing as people are more cognisant of the importance of tree growing and the vast benefits that are accrued from proper management of the trees. With the increasing demand, especially from commercial tree growers, there is a need to ensure that forest tree seeds available are of quality and that the seeds are readily available to the farmers.

The provision of adequate and high-quality forest tree seeds will also aid the government in meeting its commitments and contributions to the nation's, regional, and global initiatives such as the National Strategy for Achieving and Maintaining 10% tree cover by 2022.

In line with this, various agencies among them the Kenya Forestry Research Institute (KEFRI) and the Kenya Plant Health Inspectorate Service (KEPHIS), with support from various state and non-state actors, embarked on the process of developing The Seeds and Plant Varieties (Forest Tree Seeds) Regulations 2022 (Draft).

The proposed regulations aim to strengthen the legislation on forest tree seeds, enhance operationalization of the provisions of the Act relating to the forest tree seed value chain, and facilitate forest tree seed market access for local, and external seed markets.

Mr. Kibet from KEPHIS gave a brief history of the forest tree seed regulations, a process that began in 2010 with the initiation of the seed policy. Like all the seeds, forest tree seeds should be anchored in the seed policy. However, in Kenya, seed laws and regulations only cover food crops. The Seed Act was then reviewed through the partnership of KEPHIS and KEFRI to include the forest tree seed and the Act was enacted in 2013.

In 2014, several organizations including NGOs started the process of developing forest tree seed regulations. In the same year, Kenya applied to be a member of the Organisation for Economic Co-operation and Development (OECD) seed scheme through KEPHIS. Verification was conducted the same year and following a visit to plantations and KEFRI labs, Kenya became a member of OECD. After the regulations are passed in parliament, the same will be sent to OECD to provide Kenya with the certificate to allow the movement of forest tree seeds among various countries.

Speaking during the workshop, Mr. David Ombalo, a representative of the Ministry of Agriculture, Livestock, Fisheries and Co-operatives (MoALFC), noted that there is a nexus between agriculture and forestry as the law that governs seed in Kenya is housed by the MoALFC which is the Seed and Plant Varieties Act where the

Forest Tree Seeds Regulations will be imbedded.

Agroforestry, for example, is practiced within farmlands, a practice that is scaling up in Kenya. He also noted that amendments made in law now allow KEPHIS to authorize actors to regulate and manage seeds especially forest tree seeds. He concluded by noting that the development of the regulations is vital in ensuring that tree growers and producers have access to quality and affordable tree seeds as is vital to the success of forestry.

In his remarks, Dr. Joshua Cheboiwo, Director of KEFRI, noted that the forest tree seeds conversations in Kenya started way back in 1920 through the support of South Africa and Australia to start forest plantations. The then, Forest Department, now Kenya Forest Service (KFS), collected its own seeds. However, through collaborations with various countries, scientists imported forest tree seeds to Kenya.

Between the 1980s and 2000s, the forest sector changed as tea sector players and farmers joined the sector by setting up their own plantations and were keener on purchasing quality tree seeds. Kenya has grown and investments in the forestry sector have increased over the years. Various players among them Gatsby Africa, Komaza, and One Acre Fund are actively involved in the development and scale-up of the forestry sector through investments along the value chain.

Quality seed demand in Kenya is increasing with the county's goal of increasing tree cover to 10% by the end of 2022. The Director noted that to support this, KEFRI increased the production of forest tree seeds from 10 metric tons in 2018 to 60 metric tons in 2021. He noted that of this volume, 80% is indigenous while 20% is exotic species. He noted that regulating the forest tree seed is critical to KEFRI and that having the right seed is the foundation for good productivity.

He noted that even though KEFRI has increased its productivity, it is not able to meet the growing demand for forest tree seeds in the country. With this, he noted that the regulations will help open up markets and opportunities, to allow more players to provide quality tree seeds for the growing Kenyan market.

Dr. Cheboiwo informed the participants that there are approximately 12 species available for dry land forestry stating that the goal is to carry out research and allow for commercial tree growing in the ASALs. He concluded by noting that a regulated seed sector will help meet the various countries' goals among them the 10% tree cover and also increasing demand for forest products not only in Kenya but also regionally and globally. Regulations will improve access to forest seed information to users especially small growers, merchants, and stockists

In addition, a Regulatory Impact Statement (RIS) was developed as is required by law to indicate the costs and benefits of the proposed regulations on the public and stakeholders. Presented by Munyao from Muthama & Kashindi Advocates, some of the effects of the proposed regulations to the public sector include;

- Establishment of a coherent and regulated forest tree seed chain by the government
- Forest tree seed standards and certification will be applied across both formal and informal tree seed chains
- The country will develop and maintain a database of all forest tree seed chain actors
- The broader forest sector and national economy will benefit from the increased tree establishment
- Provide opportunities for public-private partnerships in the realization of national objectives in forest resources management.

The presenter also noted that the regulations are set to also have effects on the private sector players which included;

- Streamlined, competitive and well-regulated forest tree seed chain devoid of unfair trade practices and other malpractices.
- Uniform standards will be applied across the forest tree seed chain to assess seed quality and standards in both the formal and informal forest tree seed chains

- The process of importation and export of forest tree seed will be transparent and accessible to all eligible person
- Commercial forest tree farmers and eligible on-farm tree farmers can diversify their income streams by establishing and maintaining forest tree seed sources

A cost and benefits analysis was also conducted which highlighted the economic, environmental, and social impacts of the proposed regulations. More details on the RIS can be found in the link below.

- https://kilimo.go.ke/wp-content/uploads/2022/03/25.01.2022-Final-Regulatory-Impact-Statement-RIS-for-FTS-Regulations-2021.pdf

- https://kilimo.go.ke/wp-content/uploads/2022/03/Draft-Seeds-and-Plant-Varieties-Forest-Tree-Seeds-Regulations-2021-Final-27June2021.pdf

Wood Markets Industry Event

The supply and demand gap for timber and other wood products in Kenya is growing with various organizations, mostly private sector and development partners, working towards bridging this gap and meeting the wood deficit in the country. Gatsby Africa (GA), through their commercial forestry program, has worked to bridge this gap in the sawn timber value chain through innovative processing technologies of raw materials.

The Kenya Wood Market Industry Event organized by GA on 28th June 2022 brought together stakeholders along the forest value chain across the region among them FSK, represented by the National Chairman, Mr. Benjamin Wamugunda.

Commercial forestry is one approach that can be utilized to bridge the wood deficit gap in the country and the region at large. It helps increase forest cover while at the same time ensuring sustainable wood production which further relieves pressure off the natural forests. However, the scale-up of commercial forestry has been slow in Kenya.

During the event, participants listed a number of challenges hindering unlocking of the full potential of commercial forestry including; lack of sector coordination, policies, lack of market requirements, trading restrictions, information gap, lack of value addition, and lack of good partnership.

The event was officially opened by the Conservation Secretary, Ministry of Environment and Forestry, Mr. Alfred Gichu, representing the Principal Secretary, Dr. Chris Kiptoo. He noted that Kenya targets a tree cover of above 30% by 2050 and this will be achieved through a combination of both commercial forestry and conservation forestry.

He also noted that the demand for sawn timber is increasing and this is bound to exert pressure on the public forests hence the need for alternative solutions such as increased commercial forestry in Kenya.

In his remarks, he noted the need for the establishment of public and private plantations and increased sensitization and campaign on agroforestry to help reach the target and meet Kenya's commitments. He also emphasized the need for full engagement of all the stakeholders along the forestry value chain.

He noted that the draft National Forest Policy, 2020, promotes the commercialization of forestry activities through the involvement of the private sector to invest in forestry and also through the establishment and management of commercial forests on public, private, and community land to increase the productivity of forests.

Timber production in Kenya has been faced with various

challenges among them inefficient saw milling technologies leading to low production and efficiency. Mr. Gichu concluded by noting that the forest sector has the capacity to be a major employer and also has vast opportunities to be explored.

The proposed 250,000 housing units by the government, for example, creates an opportunity for structural timber use and also employment. He further challenged the need to increase public-private partnerships for better returns advocating for frequent engagements and collaborations.

Unlocking the full potential of commercial forestry involves looking beyond the public forest and lands and working with private land owners. Charles Kimiti from Komaza noted that Komaza has adopted a small-holder forestry model.

In this model, Komaza works with smallholder farmers, providing seedling and extension services for tree growing. The farmers provide the land needed for tree growing and also ensure the management of the trees. The company links the farmers to the market which acts as an incentive and makes forestry competitive land use.

Timber branding is essential in increasing the competitive nature of the products. Zuri Timber, for example, from Busonga Forestry Company has grown its market beyond Uganda to countries such as the United Arab Emirates.

This has been made possible due to timber branding. Unfortunately, branding of timber products is lacking in Kenya and the region in general reducing the competitive advantage of timber products from Kenya to the regional and international markets.

During the event, the need for a good understanding of the market was emphasized through various approaches among them the Human Centred Design (HCD). HCD is a marketing strategy that ensures continuous feedback from the users during the development and helps in identifying the customers' needs and wants.

Use of HCD ensures better sales revenue, better profit margins, no costly mistakes in innovations, and customer loyalty. In forestry, there is a link between quality germplasm and desired end products hence the need to use innovations and tools such as site-species matching tools and improved seeds to attain maximum productivity in commercial forestry.

The furniture and joinery sector is one of the crucial sectors in the value chain working to produce the final products. This sector has the potential to grow and is an area that can create employment for the youths in Kenya. To unlock the growth in the furniture and joinery sector, there is a need to address policy issues and increase the competitiveness of local furniture globally.

Increasing competitiveness can be achieved through value addition of local products, product branding, reduced importation, and increased sales and use of locally manufactured products by consumers.

The sector players in furniture and joinery also noted the need for standardization. They noted that raw materials in the country are standardized. However, finished products from other countries, that is the furniture are not standardized, leading to increased substandard products in the Kenyan markets sold at cheaper prices as compared to the locally produced products.

The sector players called on the government to ensure all timber products are standardized and enforce and formulate policies in line with the timber processing industries.

During the event, timber was spearheaded as an alternative construction material to reduce the cost of construction in Kenya. Arch. Florence Nyalo, the Vice President, of the Architectural Association of Kenya (AAK), noted that timber is a sustainable material and can be used for mass construction and green building.

In her presentation, he noted that the construction industry is evolving over the years with new technologies

and innovations being embraced. Such include construction management software, green building, and smart cities among others.

The right to housing is a constitutional right in Kenya. However, the rapid rate of urbanization has resulted in a majority of urban dwellers settling in informal areas. Some of the challenges of affordable housing in Kenya identified include; funding, shortage of land for development, high cost of production, bureaucracy, and poor physical and social infrastructure.

Arch. Florence noted that there are several opportunities that can be embraced in the construction industry including; mass housing development, use of alternative materials and technologies, more sources of finances, and implementation of policy frameworks.

She noted the need to establish a timber construction sector in ensuring easy, affordable, and sustainable housing in the region. This can be achieved through the development of prototypes to demonstrate timber's capability. She also highlighted the need for government to provide incentives and allow for concessions on public lands.

Issues raised across the forestry value chain

- Forestry- sustainable practices, land allocation, restoration, best practice silviculture, long-term investment, conflict with fuel wood, low-value addition
- Timber harvesting, transport & processing- poor infrastructure, availability and reliability, low yields, low efficiencies, lack of modern technology, globally uncompetitive, reliance on few species, high ex-mill prices
- Timber trade- established channel to markets, availability, and reliability, low yields, low efficiencies, lack of modern technology, globally uncompetitive, unseasoned timber
- Furniture industry- high input costs, availability, and reliability, low yields, low efficiencies, lack of modern technology, globally uncompetitive, not export-oriented, has highest potential for employment in the value chain, import substitution, standards, substandard imports, undervaluation of imports, infrastructure.

At the end of the event, several issues were emphasized including;

- The need for sustainable timber supply in the country to ensure sustainable production of the same along the value chain
- Utilization of the whole tree to attain its maximum value
- Need for knowledge transfer and experience sharing in the region to enhance commercial forestry
- Need to embrace new innovations and technologies such as species-site matching tools, and cross-laminated timber for mass production among others
- There is a need for an enabling environment through policies and frameworks that advocate for use of timber as a structural material in the construction sector.

FSK Chairman, Paul Opanga, and Mercy Njane during the Wood Market event

Grand Opening of Komaza Sawmill in Ol Kalou, Nyandarua County

Komaza Sawmill

The wood deficit in the country is increasing as the population increases and the demand for the commodity also increases. Heavy reliance on public forests for the provision of wood products has also led to an increase in deficit following the logging ban on public and community forests in 2018.

The private sector has a major role to play in bridging this gap. There is also a need to develop business models involving smallholder farmers and the use of ASAL areas to reduce reliance on public forests for the supply of wood.

Komaza has taken up the challenge and through the smallholder farmer forestry model, contracted farmers to grow trees on their farms. The establishment of a sawmill is one of the approaches Komaza has taken in ensuring that their farmers have a good market for wood products. In line with this, Komaza officially opened he Ol Kalou sawmill on 30th June 2022 which is a state-of-the-art facility.

Through the smallholder microforestry model, farmers provide land and skills while Komaza provides them with tree seedlings appropriate for their site, a platform to share experiences, coordinated commercial log harvesting, and a ready market for their wood upon maturity.

The innovative tech platform in Komaza provides real-time tree management and connects the value chain from seedling to sawmill which ultimately provides an integrated experience. To date, Komaza is working with approximately 22,000 farmers and has planted over 7 million trees.

The Ol Kalou Sawmill is a state-of-the-art facility in East Africa with advanced wood processing equipment. The sawmill aims to manufacture, export, and grade sustainable sawn timber products.

Chris du Toit, the commercial leader of Komaza informed the participants that Komaza is planting more trees than they harvest to ensure the sustainability of their operations. The goal of the sawmill is to increase wood product variety through value addition to increase returns from the timber which will trickle down to the small-scale farmers. Komaza model aims at impacting farmers and ensuring that the farmers benefit from tree growing business.

Sawmill provides a market for agroforestry and on-farm tree growers in the region and beyond and will encourage more people to take up tree growing as a business venture. It is a source of income for farmers in the area and also others through employment opportunities at the facility. Teris Howard, CEO, and Founder of Komaza noted that the company aims at looking at the entire value chain in the timber

industry and the sawmill completed this cycle.

While giving her remarks, Dr. Jane Njuguna emphasized the need to carry out species-site matching to ensure the right trees are planted in the right areas. She also challenged the private sector and the investors to venture into ASAL areas where land is readily available noting that KEFRI has done research on dryland species such as Melia volkensii (Mukau)to increase productivity in the regions.

Mr. Gichu noted that the government is seeking private sector engagement and investments in the forestry sector. He emphasized that policy aspirations in the sector cannot be achieved without the involvement of the private sector. He noted that forestry is for the people and that efforts by Komaza in the establishment of the sawmill will help improve the livelihoods of the farmers. He challenged the private sector to assist the government in providing an enabling policy environment for investments in the sector.

The CCF noted that smallholders are set to benefit from the facility as they will be the main suppliers of raw materials for the sawmill. The sawmill also provides employment opportunities for forestry graduates to enhance their skills.

The CCF challenged the industry players to not only focus on public forests for raw material but also engage smallholder farmers and private commercial tree farmers to provide the raw material required. He challenged the Komaza team to use the state-of-the-art sawmill as a learning platform for students

Komaza CEO, Teris Howard together with FSK Chairman, Mr. Wamugunda, CCF, Mr. Kamau and Dr. Jane Njuguna during the grand opening event

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