

Title: KEFRIApp: Tree Species to Site Matching Tool for Commercial Forestry and Ten Percent Tree Cover

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The KEFRIApp

Professional Guide to Tree Growing in Your Hand



Our Vision, Mission and Mandate

Vision

A world class centre of excellence in forestry and allied natural resources research for sustainable development.

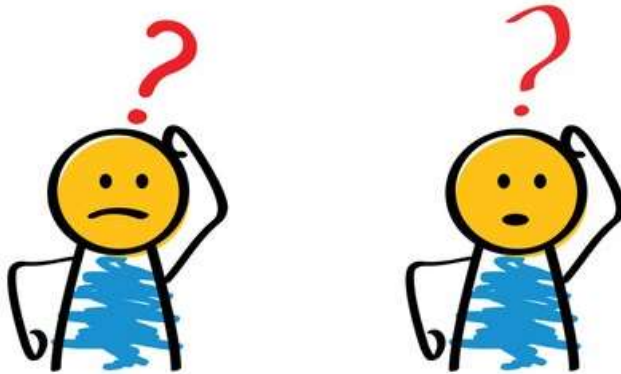
Mission

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

Mandate

1. Conduct research in forestry and allied natural resources.
2. Disseminate research findings to stakeholders.
3. Build capacity of stakeholders.
4. Establish partnerships and cooperate with other research organizations and institutions of higher learning in joint research and training.

What is Research?



- Research is "creative and systematic work undertaken to increase the stock of knowledge".
- It involves the collection, organization and analysis of information to increase understanding of a topic or issue.

Purpose of Research

- **To inform action, gather evidence for theories, and contribute to developing knowledge in a field of study.**
- **Forestry research seeks to develop new technologies that can be used to assist in economic development programs designed to improve human well-being, while protecting the natural resource base and the environment. ... There is an important distinction between the goal of science and the goal of technology.**

Innovations in Research and Development

KEFRI's has developed over 500 research products, technologies and innovations that are instrumental in assisting the country to achieve its national and global development agenda. These include;

- **High quality germplasm** for increased farm productivity and expansion of forestry programmes
- **Diversification** of trees and bamboo for soil erosion control and increased crop production
- **High quality forest products** for construction, furniture, bio chemicals, medicinal and herbal products and biomass energy,
- **Science to calculate carbon** sequestration rates for carbon credits.
- **Innovative digital products such as KEFRIApp** to track progress of ten percent (10%) tree cover by 2022 and;
- **Piloting aerial seeding to fast track the achievements** of restoring 5.1 million hectares of degraded lands by 2030.



The KEFRIApp

- KEFRIApp is a mobile platform that seeks to establish a to guide species site matching for sustainable tree growing.
- The main objective of KEFRIApp is to provide information to enhance science based smart greening activities by stakeholders in forest-based enterprises and initiatives in agroforestry, commercial forestry and landscape restoration to achieve 2030 goals and Big 4 Agenda.
- Purpose is to promote resilient tree growing in the country for enhanced livelihood and climate change mitigation.

Science of Species Site Matching

- Species perform best in their natural range
 - ✓ Failure of eucalyptus clones in the ASALs
- Tolerate local climatic changes
 - ✓ Success of Melia in the drylands
- Co-evolution with local pests and diseases
 - ✓ Ecosystem balance
- Builds climatic resilience



Why Develop the App?

- The National Strategy for achieving and maintaining 10% tree cover by 2022 identified the need for innovative products to track progress of the same since 2019
- Need to collect real time data on tree planting activities in the country to estimate number of trees planted on public and private land.
- **Collect data** on rate of tree felling in the country
- Monitor survival and mortality of trees planted in various sites
- **CUMULATIVELY TRACK PROGRESS TOWARDS ATTAINMENT OF 10% TREE COVER IN THE COUNTRY**
- **User friendly application** for use by tree growers countrywide to provide the required data like the MPESA platform



KEFRIAPP - Objectives

- Science based guide for tree growers on species site selection in a specific site/area
- Enable the Government Institutions, private companies and individuals to document trees planted and surviving over time.
- Provide big data on total number of trees in planted in the country, disaggregated by species, age, County /region
- Provide professional guide on tree management through the *m-Forester* module
- Link to other decision support systems; IPM, Certification, Gatsby SSMT, Tree valuation
- Track the progress towards the achievement of the 10% tree cover by 2022
- Guide investors on suitable places to establish investments near sources of raw materials and farmlands

Together with the use of drone technology in forest monitoring, KEFRI envisions that it is possible to calculate the number of trees growing in Kenya at any given moment

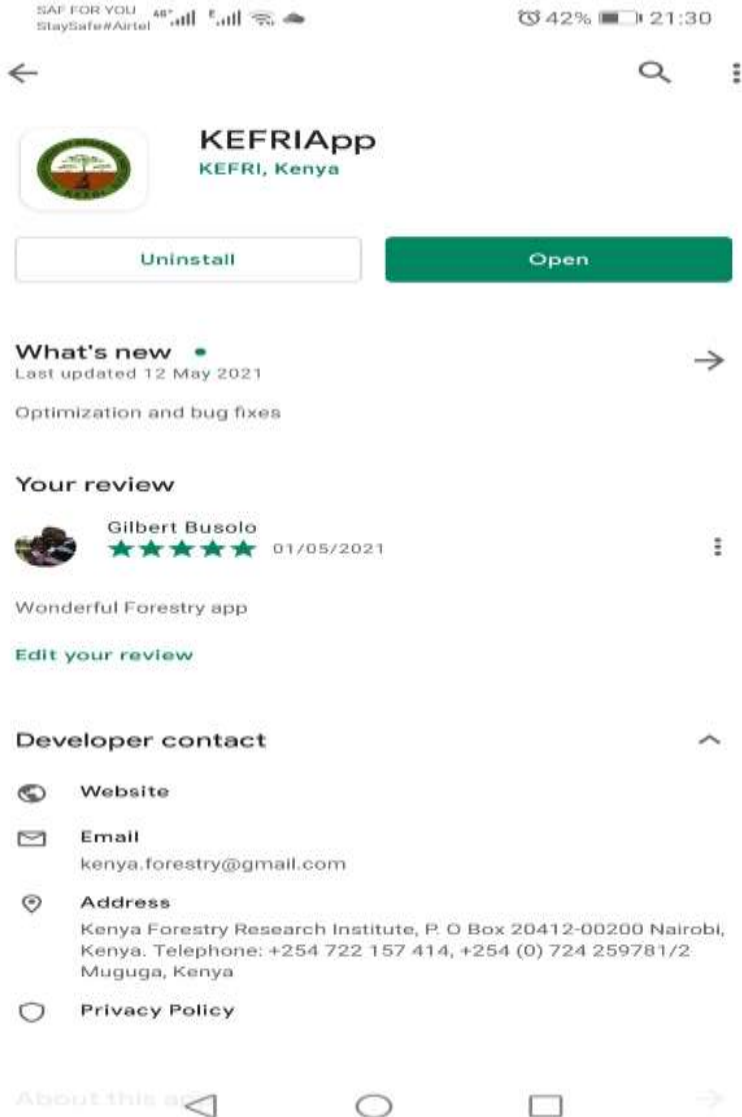
Current Features of the KEFRIApp

- A dashboard with menu of functions/tools:
- Species to site matching (up-to sub-location level)
- Link to registered and certified tree nurseries in various locations and tree species available (*E-commerce module*)
 - ✓ Connecting tree growers with local tree nurseries
- Documenting new planting activities and cumulative national tally of planted trees in real time
- Documenting a previous planting activity and also cut trees
- National Map of all documented tree planting activities
- Web-based version with capability for detailed analytics

Who Can Use –The App

- Public institutions (Ministries, State Agencies in both levels of Government);
- NGOs (Local and International)
- Development partners
- Private companies
- Community groups
- Tree nursery owners
- Individuals (Main group of tree growers who are not captured)

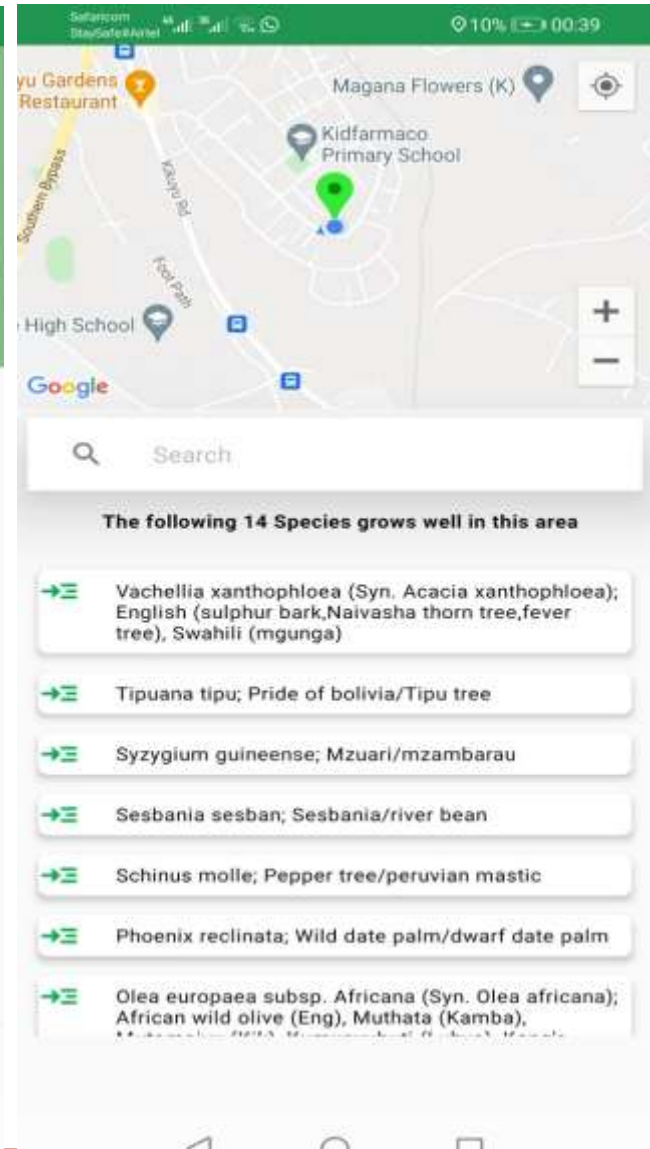
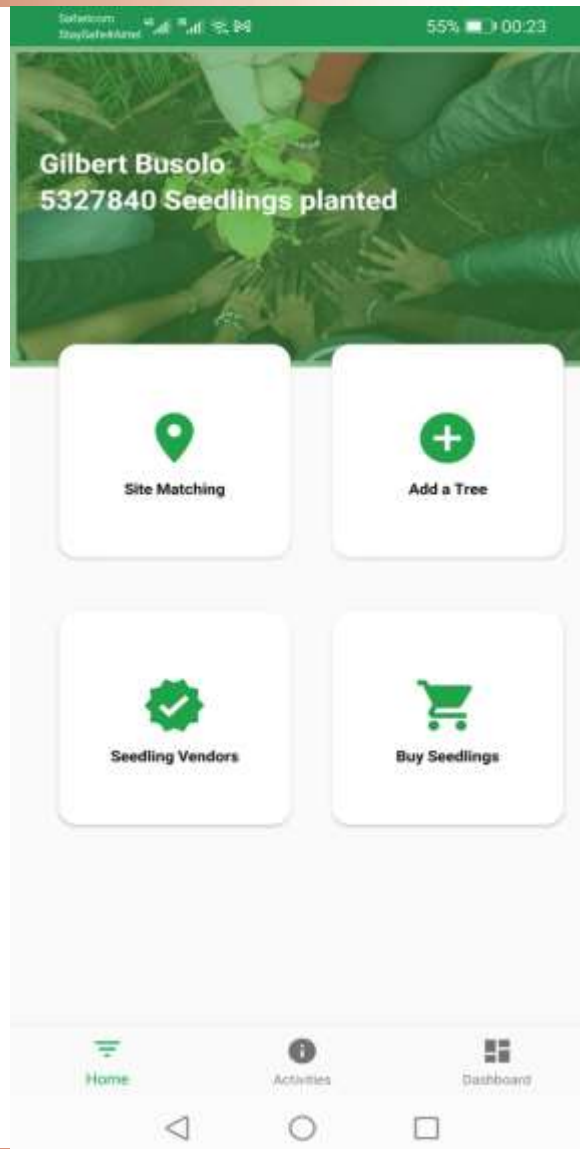
How to Access to KEFRIApp



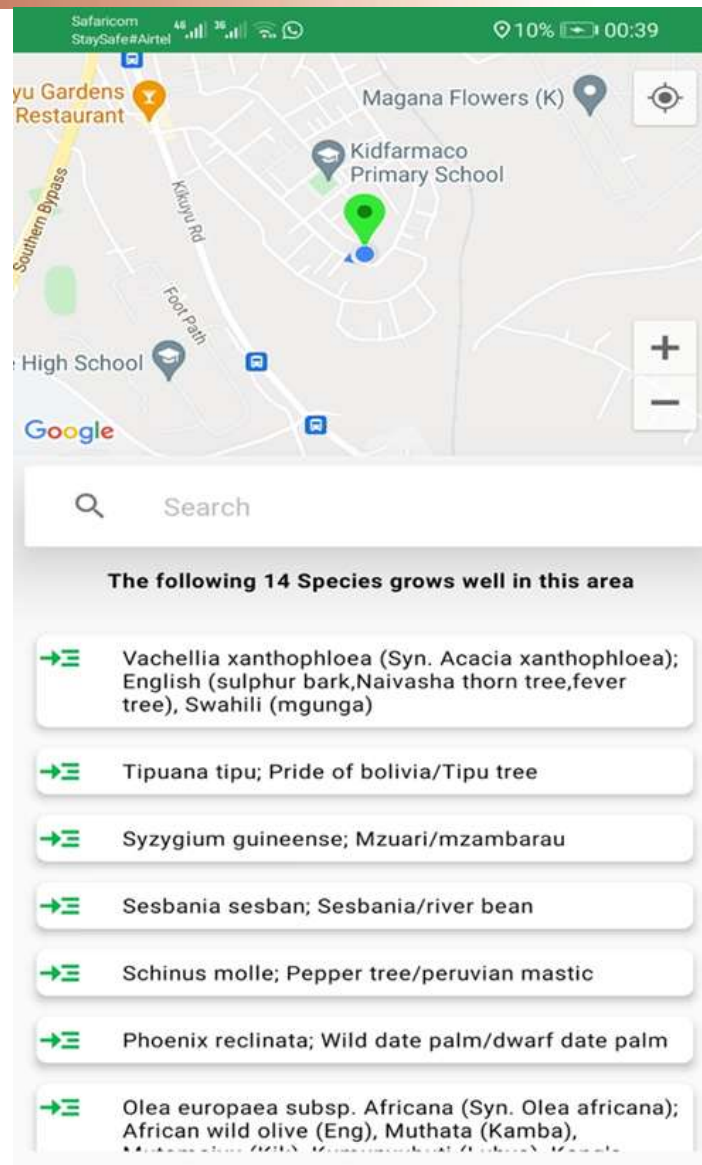
Steps:

- Using Android Phone-Go to Google play store.
- Download the KEFRI App
- Register
- Login
- Bravo!! Use the App
- Note. Ensure that your phone's location service is enabled for best results

KEFRIApp Features



KEFRIApp Features



KEFRIApp Data Status to Date

Safaricom
StaySafe#Airtel

54% 00:23

DOCUMENT AN ACTIVITY

☐ New ☐ Previous

Select County


Location

Organization name/your name

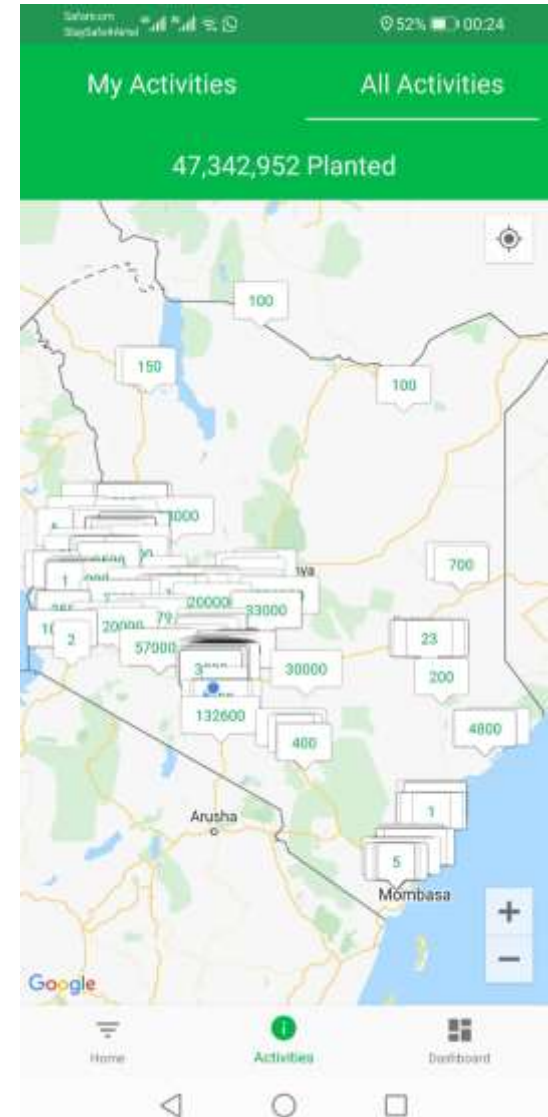
Number of Seedlings planted

Species planted

Coordinates will be picked automatically



DOCUMENT



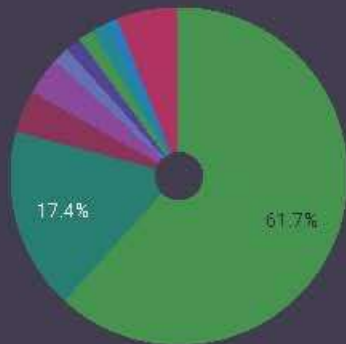
Tree Planting Activities

Select date range

County

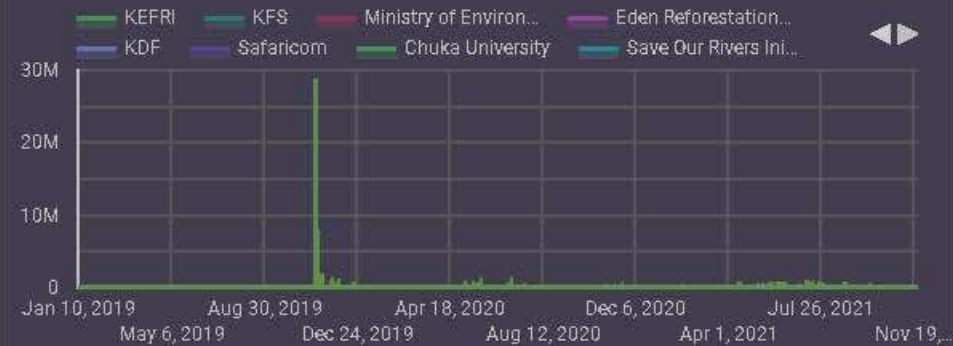
Organisation

Organizations



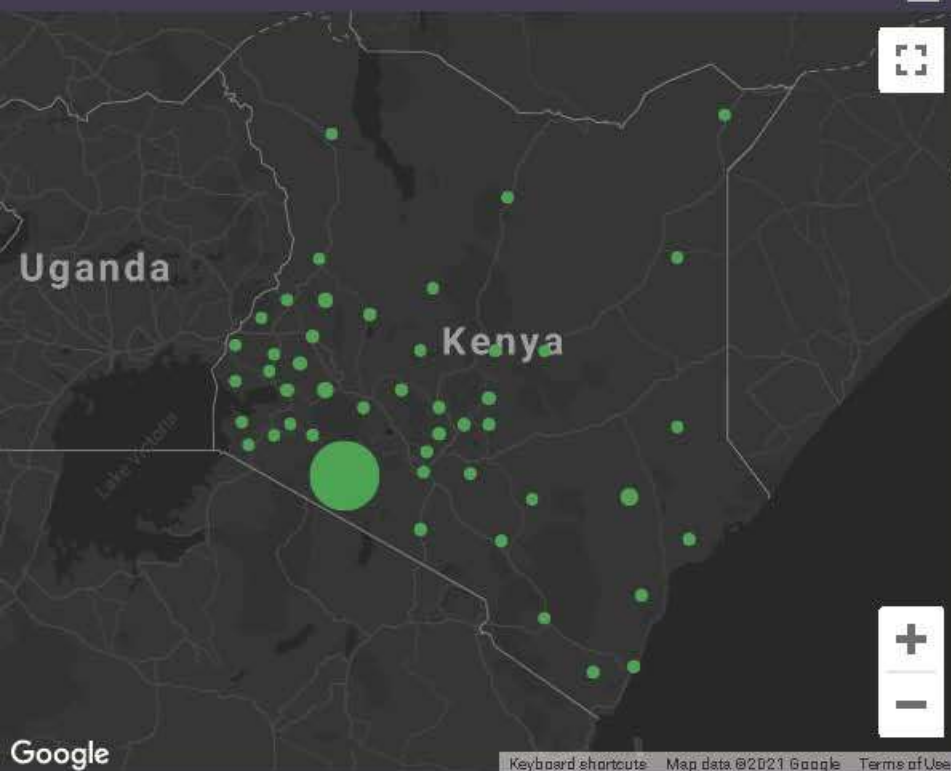
● KEFRI
● KFS
● Ministry of Environment
● Eden Reforestation Project
● KDF
● Safaricom
● Chuka University
● Save Our Rivers Initiative
● Green Belt Movement (GBM)
● others

Tree planting trend



Seedlings planted
47,342,952

Verified
No data



	County	Seedlings planted
1.	Narok	30,024,848
2.	Tana River	2,659,361
3.	Kericho	2,135,184
4.	Elgeyo Marakwet	1,627,940
5.	Nandi	966,274
6.	Tharaka Nithi	847,528
7.	Kisumu	806,755
8.	Murang'a	655,207
9.	Uasin Gishu	588,347
10.	Baringo	558,984
11.	Kirinyaga	546,196
12.	Nyandarua	506,592
13.	Kajiado	435,307
14.	Mombasa	401,010
15.	Nyeri	397,707

KEFRIApp Way Forward

- Create awareness to tree growers on how to use the KEFRIApp in conferences, workshops, webinars etc
- Provide **periodic data updates** towards attainment of 10% tree cover (**now**)
- Partner with County Governments and other Institutions for enhanced KEFRIApp awareness, uptake and utilization
- Strengthen Monitoring and Evaluation Component – Survival rate
- Will be reviewed from time to time
- Open to integrating with other Apps for wholistic data capture in the country

Acknowledgements

- Cabinet Secretary Hon. Keriako Tobiko and Principal Secretary, Dr. Chris Kiptoo, Ministry of Forestry and Forestry for excellent leadership and
- Continuously supporting the development of innovations in forestry and environment for socio-economic development
- State Agencies in the Ministry, KFS, KWTa, NEMA, NECC, Environment Tribunal and NETFUND, KMD and the Ministry Departments for supporting and adopting technologies
- KEFRI Board of Directors for continued support
- Kenya Government through The National Treasury for funding 10% Tree Cover activities
- You for installing KEFRIApp and helping us track tree planting activities in the country



As Easy as That!

Thank You

God Bless You.

Dr. Jane Njuguna

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