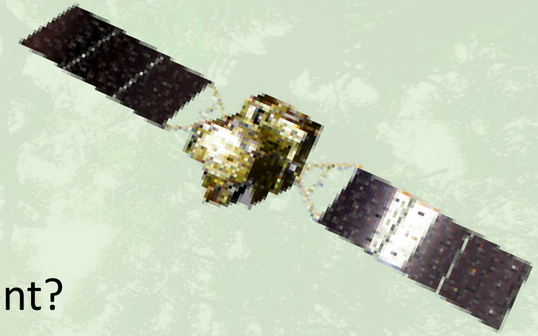
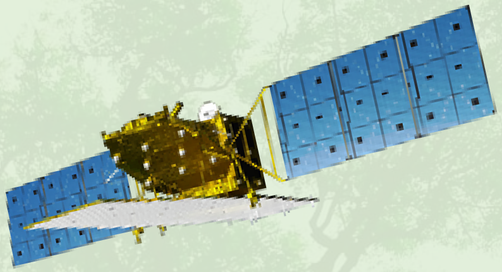


UNFCCC COP 27 Japan Pavilion Seminar
How can satellites improve Forest Monitoring and Management?

Panel Discussion

Mr. Peter Sirayo
Conservator of Forests, Kenya Forest Services (KFS),
Government of Kenya



REDD+ Readiness in Kenya: An Overview of Kenya's Forest Reference Level and National Forest Monitoring System

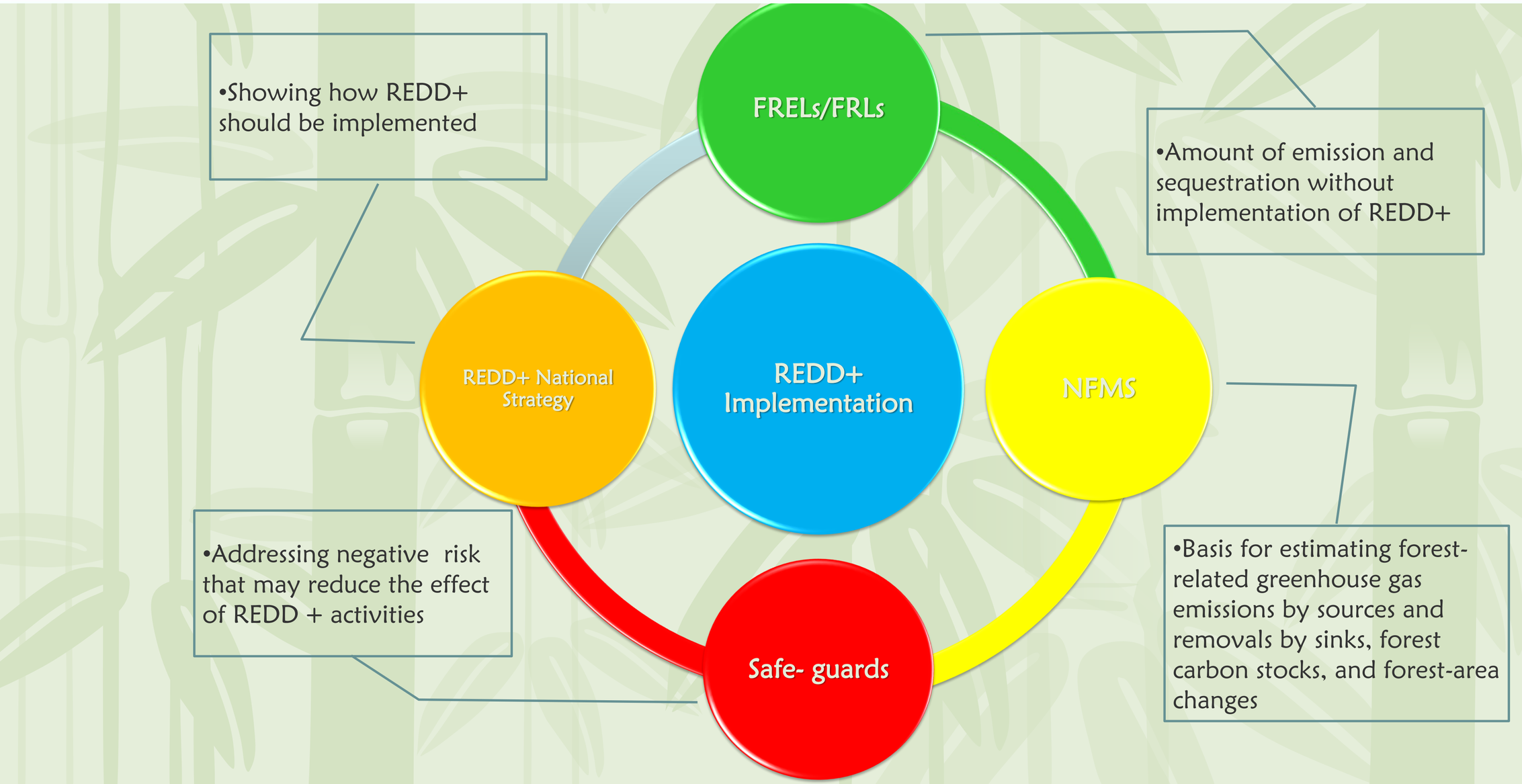
【Scope of REDD+】

REDD+ is covered by three categories of land use change according to the IPCC Good Practice Guidance for LULUCF:

1. Forests converted to other lands
   - Deforestation
2. Forests remaining as forests
   - Forest degradation
   - Conservation of forest carbon stocks
   - Sustainable management of forests
   - Enhancement of forest carbon stocks in existing forests
3. Other lands converted to forests
   - Enhancement of forest carbon stocks in bare lands

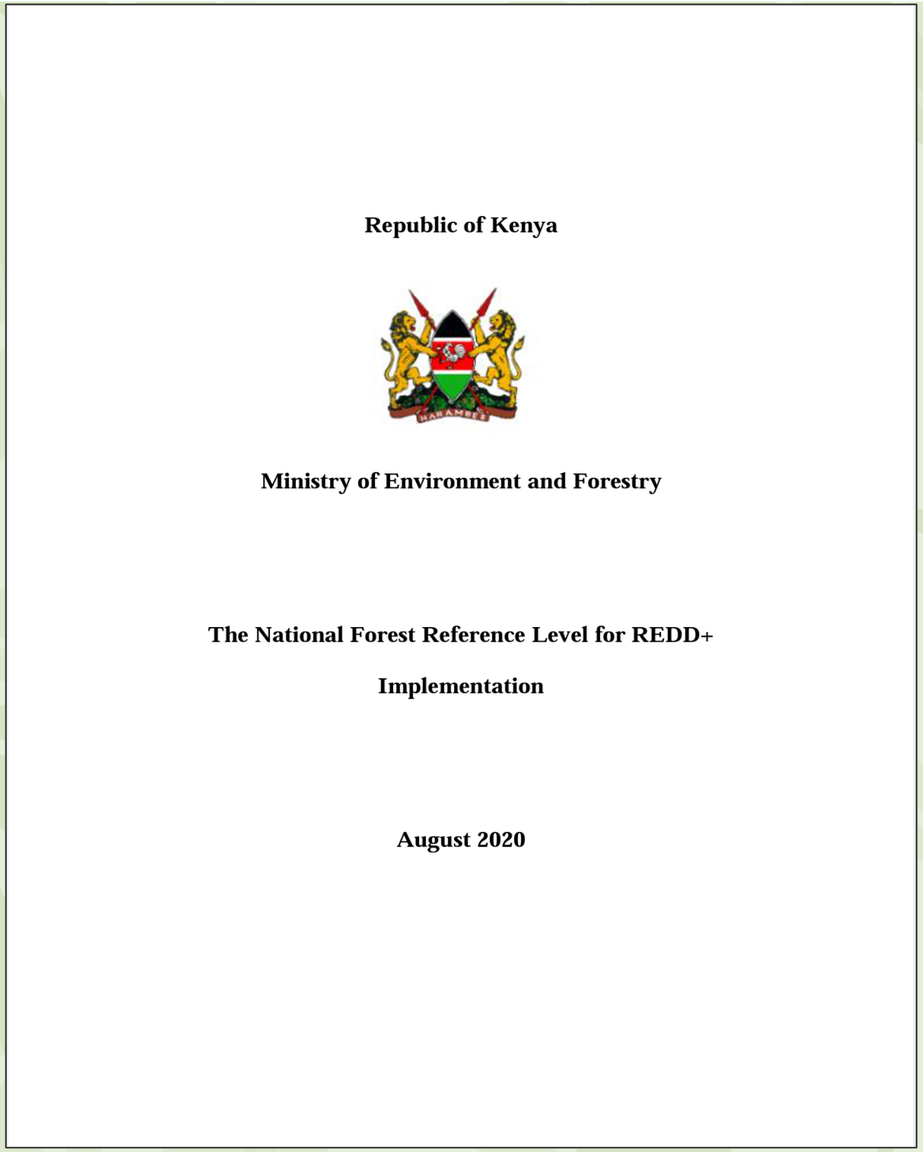



【Requirement for implementation of REDD+】



Kenya's Forest Reference Level

Condition	Decision
Forest definition	a minimum 15% canopy cover; minimum land area of 0.5 ha and minimum height of 2 meters
Scale/Approach	National
Scope of REDD+ Activities	Reducing emissions from deforestation Reducing emissions from forest degradation Sustainable management of forests Enhancement of forest carbon stocks
GHG Gases	CO_2
Carbon Pools	Above Ground Biomass (AGB) and Below Ground Biomass (BGB)
Reference period	2002-2018 Data points: 2002, 2006, 2010, 2014, 2018
Construction method	Historical Average of emissions and removals between 2002 and 2018, monitored at 4-year intervals



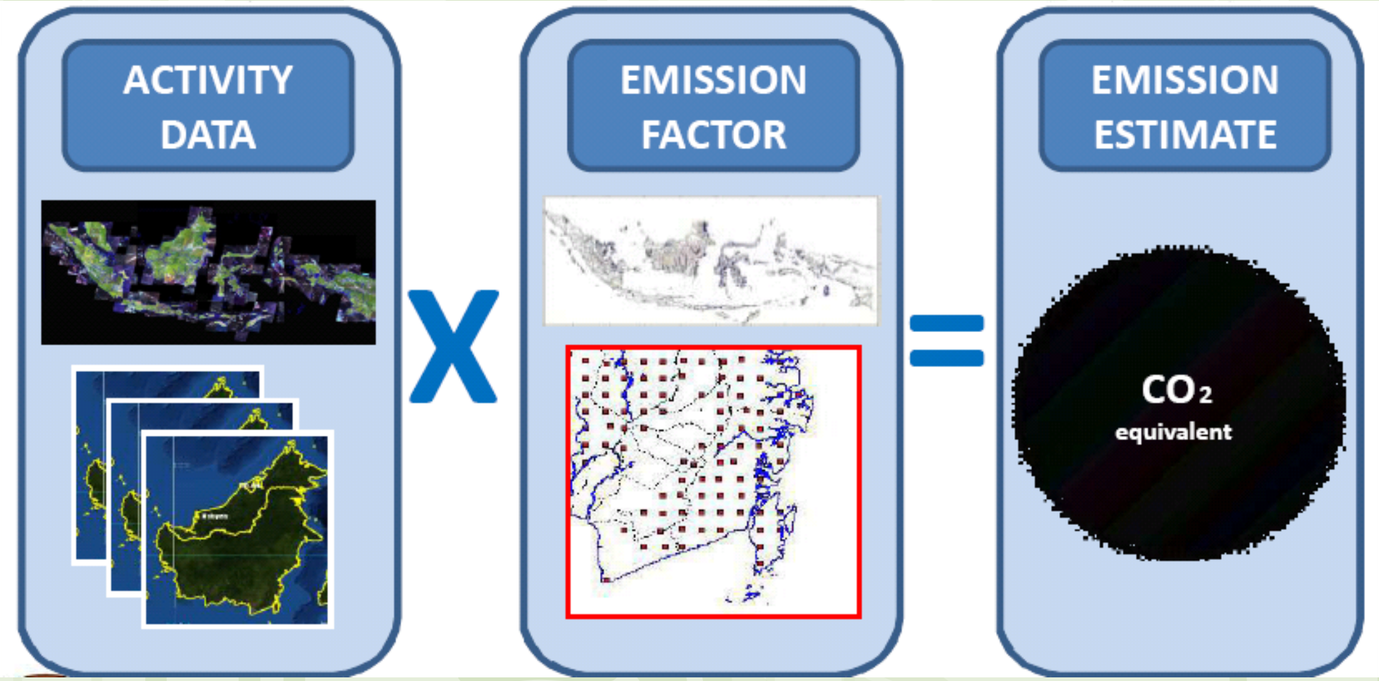
Republic of Kenya

Ministry of Environment and Forestry

The National Forest Reference Level for REDD+ Implementation

August 2020

Kenya's Forest Reference Level



Forest area change (unit: ha)

Forest cover map

Carbon stock change (unit: CO2 t/ha)

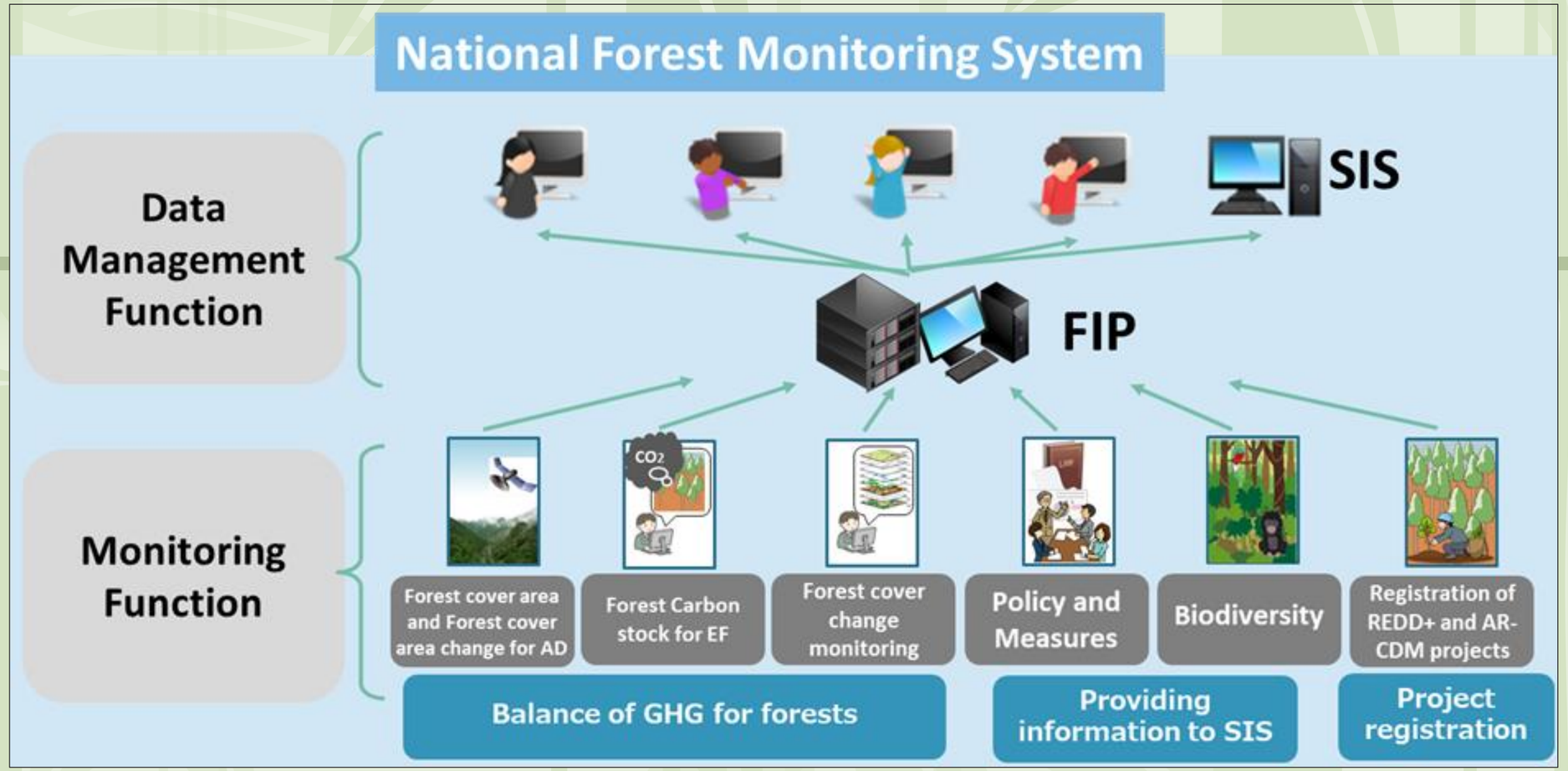
Forest inventory

52,204,059 t CO2 eq/year

Conceptual Design of Kenya's NFMS

Developing country Parties implementing REDD+ activities are requested to develop NFMS for the monitoring and reporting of the REDD+ activities

1. Monitoring Function
2. Data management function



Monitoring Function of NFMS

Item	Information resources	Methodology
Activity Data (AD) by Satellite analysis	Land use / Land cover map	Methodology is established based on SLEEK map manual
Emission Factor (EF) based on Forest carbon stock	National Forest inventory, Allometric equation	Methodology of NFI will be developed based on ICFRA proposal with modification. Equations have been already selected but it should be developed in Kenya as phased approach
Forest area change Monitoring	Optical and radar satellite imageries	Detect land cover changed area, JJ-FAST and Forest Alerts- Near Real Time Forest Alert System (NRTFAS), Mobile GIS/Survey 123 (RT)
Policy and Measures	NDC, National REDD+ strategy (NRS) and National Forest Program, etc.	Monitoring Methodology to be developed based on contents of NRS etc.
Biodiversity	Protected area, management plan, biodiversity assessment etc.	Methodology is established based on ICFRA and the monitoring through implementation of NFI
Project information	Project proponent of each REDD+ and A/R CDM project	Registration and monitoring system to be developed

Kenya's NFMS- Monitoring Function

develop AD

-Forest Definition:

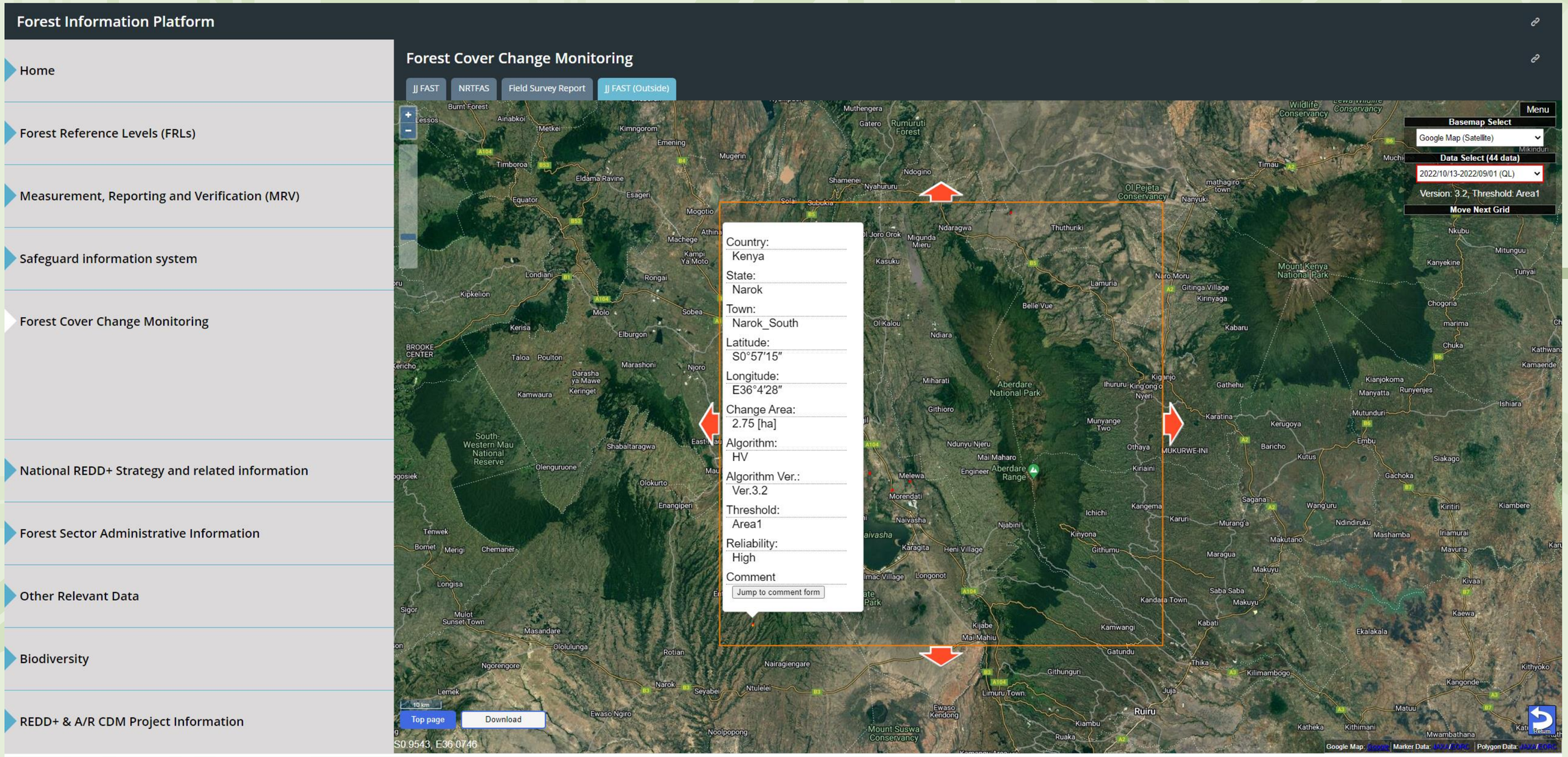
Minimum surface area	0.5ha
Minimum Height	2m
Minimum Cover	15%

-Map :

Map	SLEEK Map
Image	Land Sat image or any available and more accurate image
Methodology	Wall to Wall Supervised Classification (using algorithm named Random Forest)
Time	At the least every two years

Data Management function of NFMS

Components of FIP



Forest Alerts (Ground Truth by use of Survey 123)

Kwale Forest Monitoring System

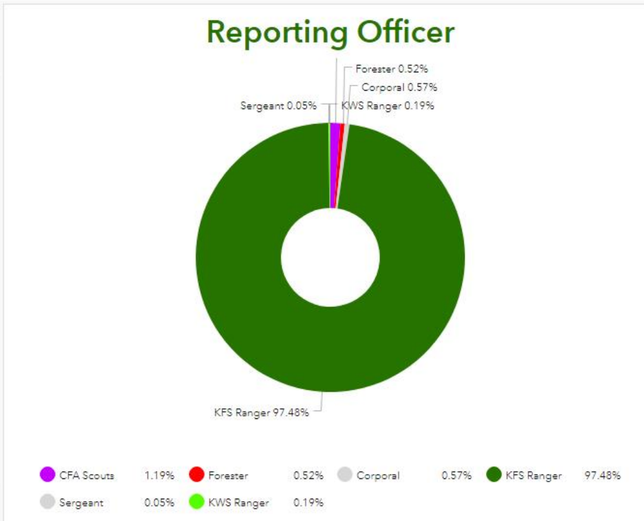
Select a date
No date selected

2125 of 2127

Latest Incidence

photo-20221028-073716.jpg

Reporting Officer



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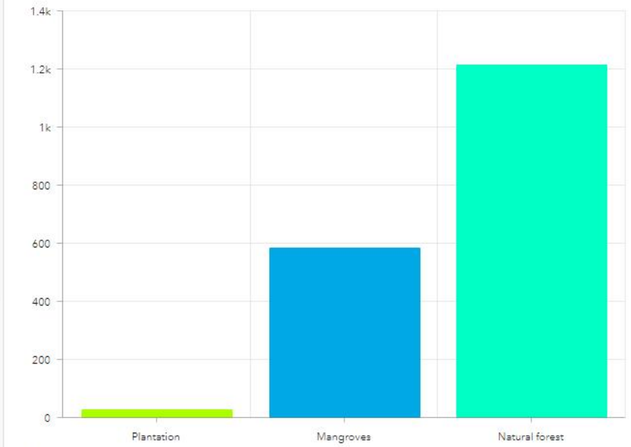
Reporting Officer | Forest Station

Forest Type



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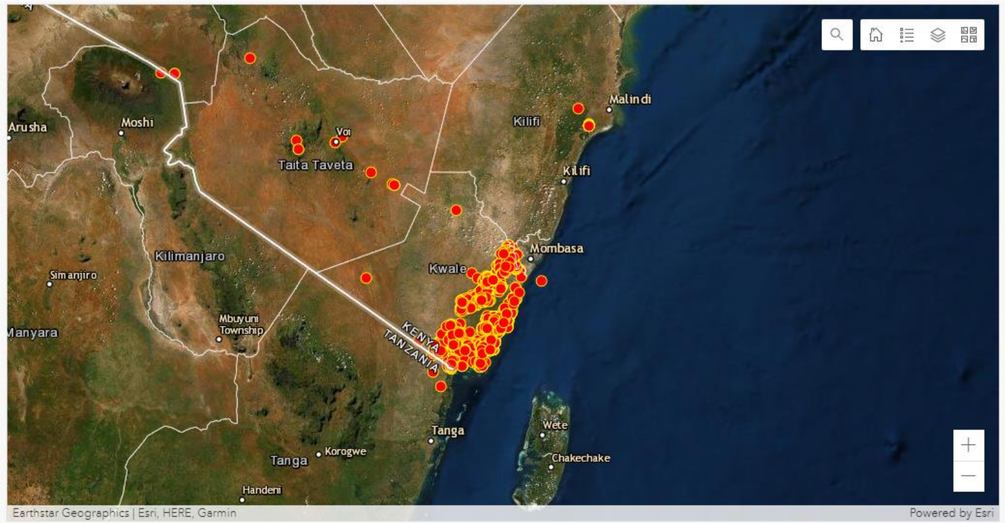
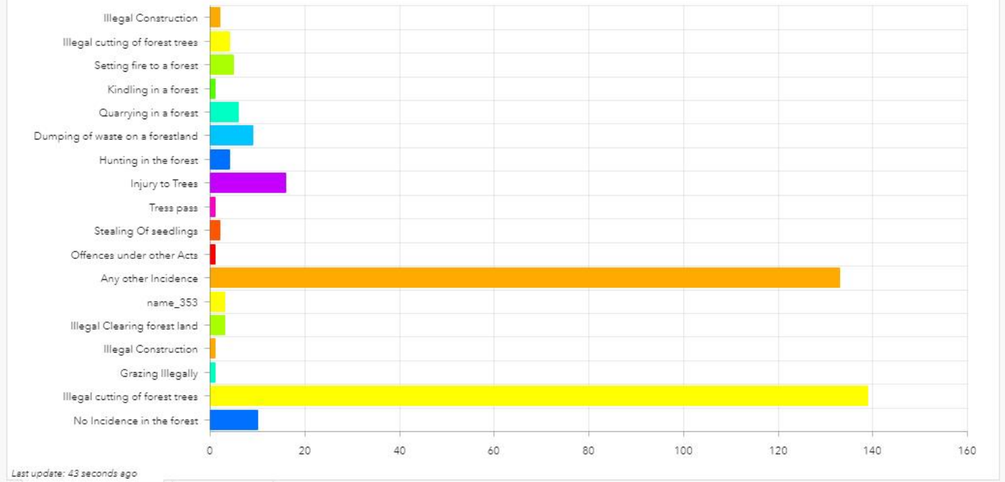


Type of Incidence



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Type of Incidence | Forest Beat

Total Incidences Reported

2,127

Last update: 41 seconds ago

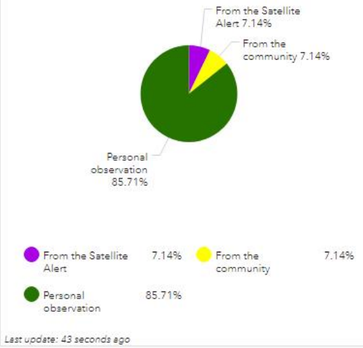
Number of Trees Cut

349

Last update: 43 seconds ago

Indicator | Progress

Source of the Alerts



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Forest Alerts (Ground Truth by use of Survey 123)

1 of 422

Latest Report

photo-20221030-030229.jpg

photo2-20221030-030239.jpg

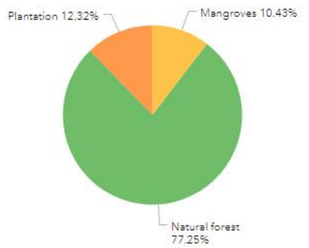
sign-20221030-030304.jpg

Last edited by eckilifi_kenyaforest on 10/30/2022, 11:22 AM.

Last update: 31 seconds ago

Latest Report | Detailed Report

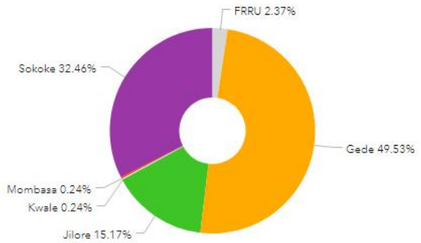
Forest Type



Mangroves 10.43% | Natural forest 77.25% | Plantation 12.32%

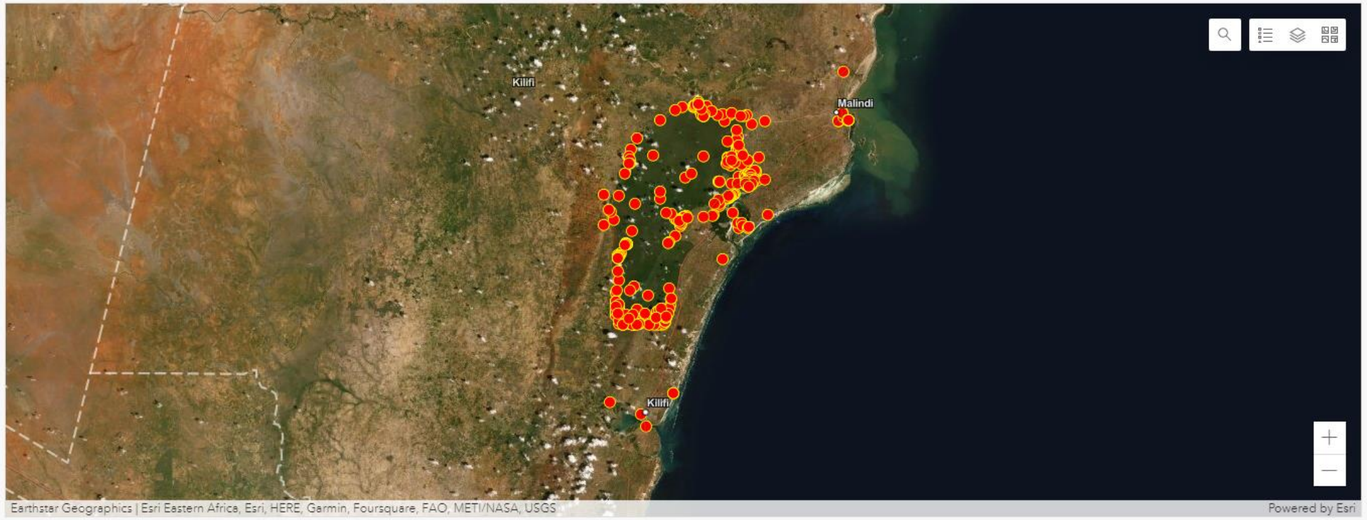
Forest Type | Designation

Forest Stations

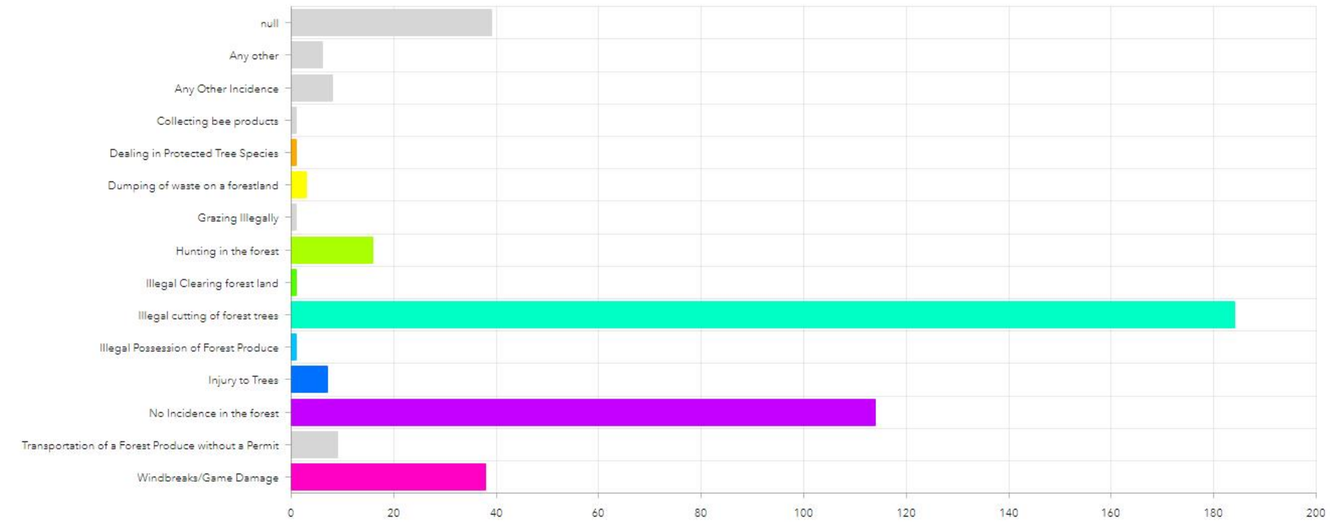


FRRU 2.37% | Gede 49.53% | Jilore 15.17% | Kwale 0.24% | Mombasa 0.24% | Sokoke 32.46%

Forest Station | Source of Information



Forest Incidences



Forest Incidences | Forest Beat | Block Name

Total Number of Reports

422

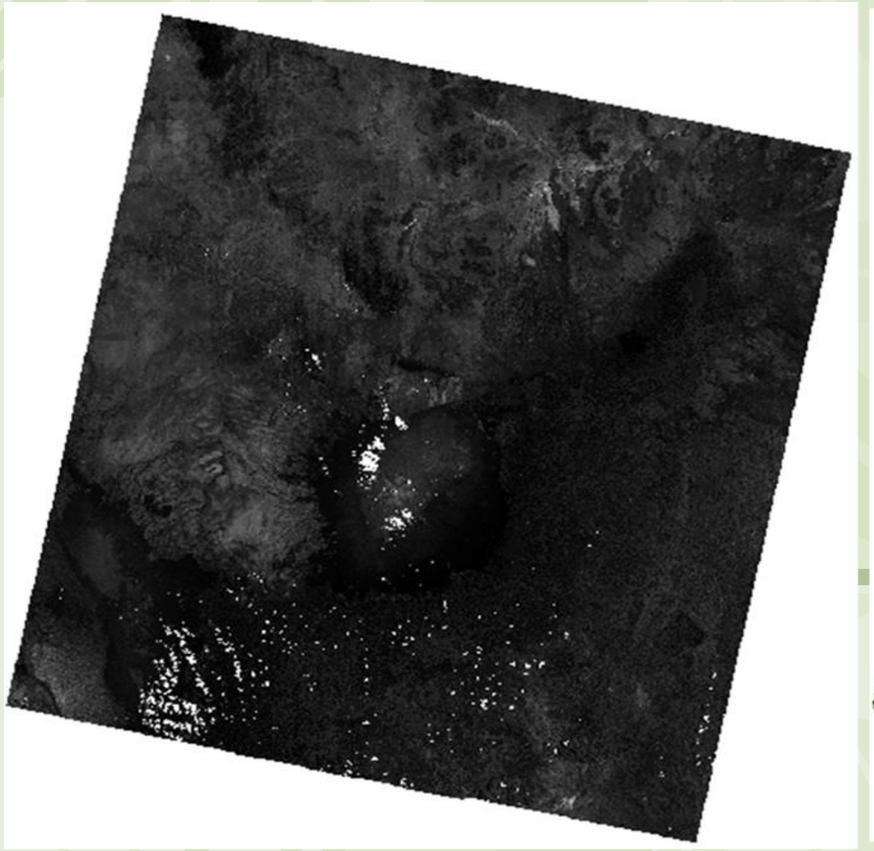
Forest Incidence Progress

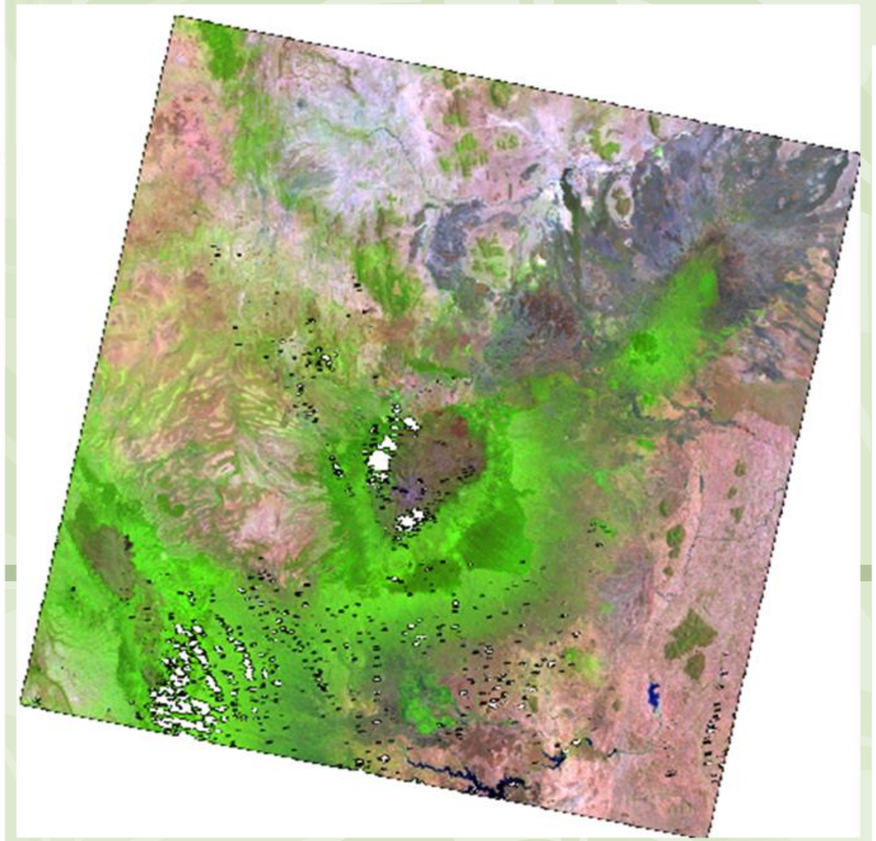
Last update: 31 seconds ago

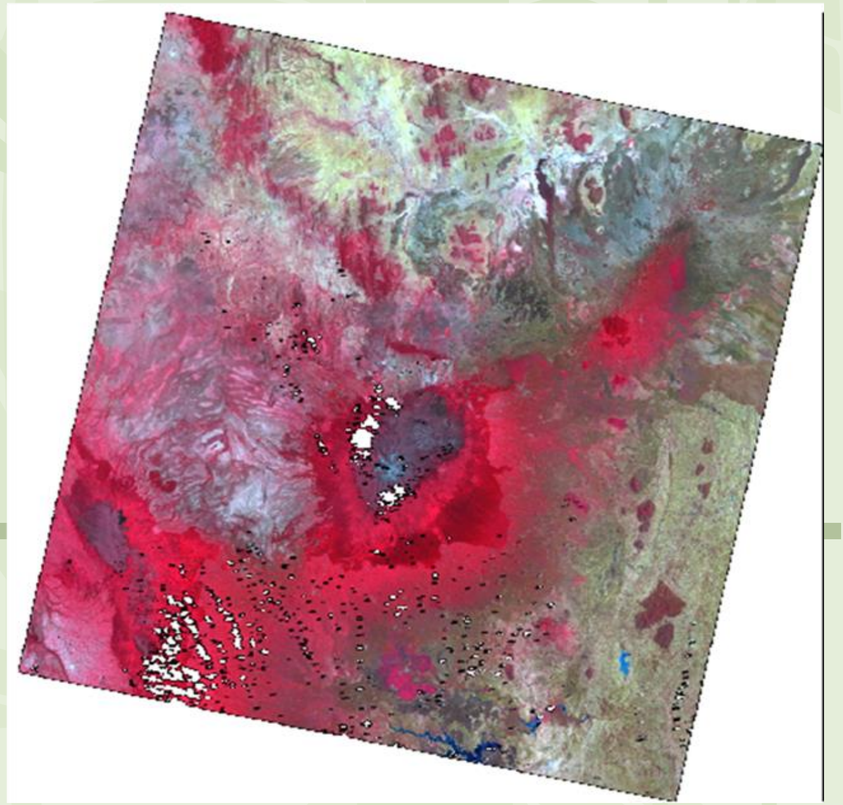
Institutional Arrangement for NFMS

Item	Activity/Data Type	Lead Institution	Mandated institutions	
			Institutions	Role
Land cover mapping based on SLEEK methodology	Development, validationand publication of the Land cover/Land use (LCLU) map	DRSRS	KFS	Periodic mapping of Creation of the LCLUC
			DRSRS	
			Survey of Kenya	
			KEFRI	
			Universities	QA/QC
			SLEEK	Technical guidance based on mapping manuals
Maps of forest areas	Provide information on forest area by type and region	KFS	KFS	Periodic mapping of forest cover in Kenya
			DRSRS	
			Survey of Kenya	
			KEFRI	
			Universities	QA/QC
Maps of Forest cover change (AD)	Development of forest cover change maps (Activity Data)	KFS	KFS DRSRS KEFRI SLEEK	provide periodic information on forest cover changes
			Universities	QA/QC
National forest inventory (NFI)	Implementation of the NFI	KFS	KFS	Carry out NFI
			KEFRI	Support NFI
			Universities	Carry out QA/QC
			County Government	Facilitate inventories in County forests
Carbon stocks and Emission Factors	Development of forest carbon stock values from analysis of NFI data and Generation of associated Emission factors	KFS	KFS	Data analysis
			KEFRI	Support analysis improvement of allometric equations and other related factors
			Universities	Carry out QA/QC

Item	Activity/Data Type	Lead Institution	Mandated institutions	
			Institutions	Role
JICA-JAXA Forest Early Warning System in the Tropics（JJ-FAST）	Monitoring of deforestation	KFS	KFS	Management of the monitoring system
The Near Real Time Forest Alert System (NRTFAS)	Receiving and analyzing of forest destruction alerts	KFS	KFS	Management of the monitoring system
Field validation for deforestation according to data from JJ -FAST and NRTFAS	Ground truth survey by use of Survey 123	KFS	KFS	Carry out ground truthing, and analysis
Policies and Measures (PaMs)	Monitor Policies and Measures based on indicators	MoE&F	MoE&F	Manage the monitoring system
			KFS	Support the monitoring of PaMs
			KWS	
			KEFRI	
Biodiversity	Biodiversity Monitoring	KFS	KFS and Universities	Analysis of NFI data to provide biodiversity indicators







Thank You!