





Updating Reference level in Kenya

Improving Measurement for Payments to Reduce Emissions and Strengthen Sinks (IMPRESS) project

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1.Introduction

2.20km & 2km Grid

3.CEO Data

Plenary

Global Forest

Observations Initiative 9-11 May 2023

4.QAQC activities



Kenya's Forest Reference Level – 2019

National Forest Monitoring System

- Capacity Development Project for Sustainable Forest Management in the Republic of Kenya (CADEP-SFM)
- Reference Period 2002 2018
- National Scale | CO₂ only
- REDD+ Activities
 - Reducing emissions from deforestation
 - Reducing emissions from degradation
 - Sustainable management of forests
 - Enhancement of forest carbon stocks
- Emissions Factors
 - Pilot NFI (121 plots)
- Activity Data
 - Map subtraction approach (2002 2006 2010 2014 2018)
- UNFCCC Technical Assessment in 2020

Republic of Kenya



Ministry of Environment and Forestry

The National Forest Reference Level for REDD+

Implementation

August 2020

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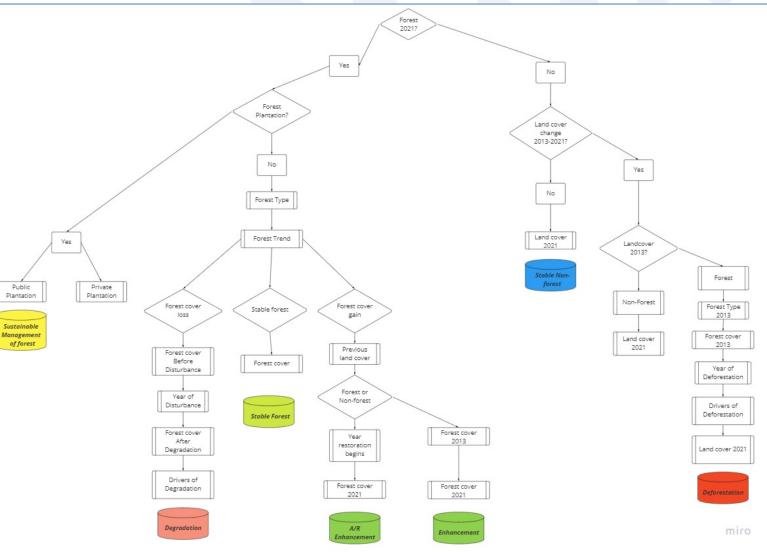
IMPRESS Activity Data Collection

- MRV Gap assessment
 - Crediting level 2013 2017 (Reference Period)
 - Crediting period 2018 2022
 - Sample Based Area Estimation (Activity Data)
- Response Design

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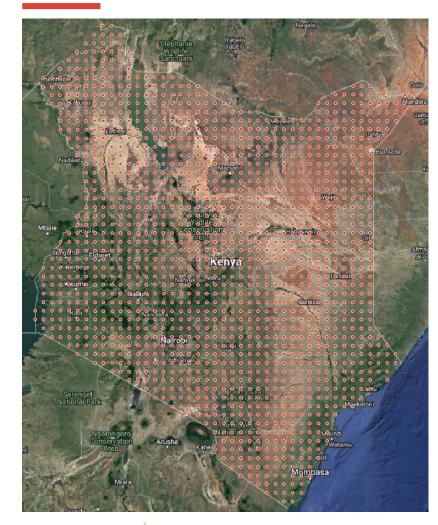
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- Land cover classes same as FREL to define REDD+ activities
 - Coastal and Mangrove Forests split
 - Montane and Western Rain Forests split



Decision tree used for point interpretation

IMPRESS Activity Data Collection – 20km Grid

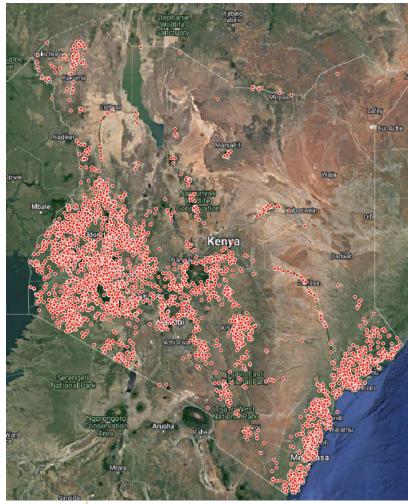


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- Initial data collection undertaken on 20km Grid
- 1494 sample points
- Collect Earth Online
- 13 image interpreters
 - DRSRS
 - KFS
 - RCMRD
- ~100 sample points per interpreter
- Land cover and land use change data collected



IMPRESS Activity Data Collection – 2km Grid



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- Change validation undertaken on 2km grid
- TS analysis 5559 potential change location
- Updated Collect Earth Online survey used for the 2km grid
- Same interpreters used as the 20km grid
- 500 points per interpreter
- Land cover and land use change data collected



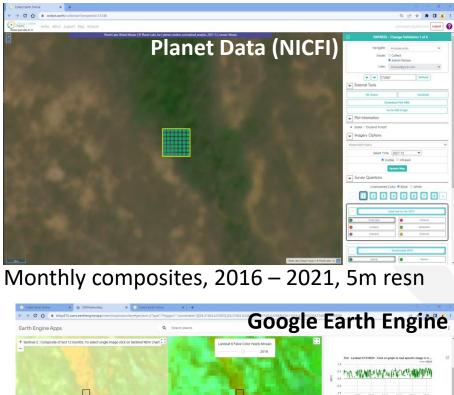
Collect Earth Online Data – Sample Unit

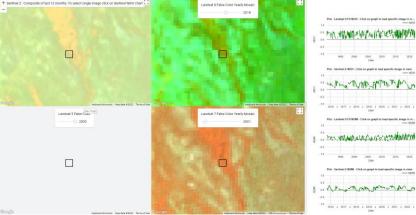
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Mapbox (OSM and Mapbox links)	IMPRESS - Change Validation 1 of 6
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	Land use in Jan 2013 Forest land Oropland Grassland Otherland
	- Forest land 2013 Natural Planted
	Natural forest 2013
Common Commo Common Common Commo	Montane Mangrove

- Sample unit 70m x 70m (~0.5ha)
- 49 internal grid points (2%)
- Sample unit = interpretation + spatial support unit



Collect Earth Online Data

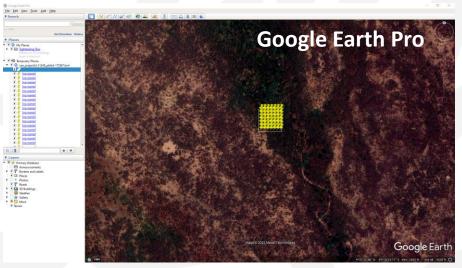




Global Forest Plenary Landsat and Sentinel composites, Time

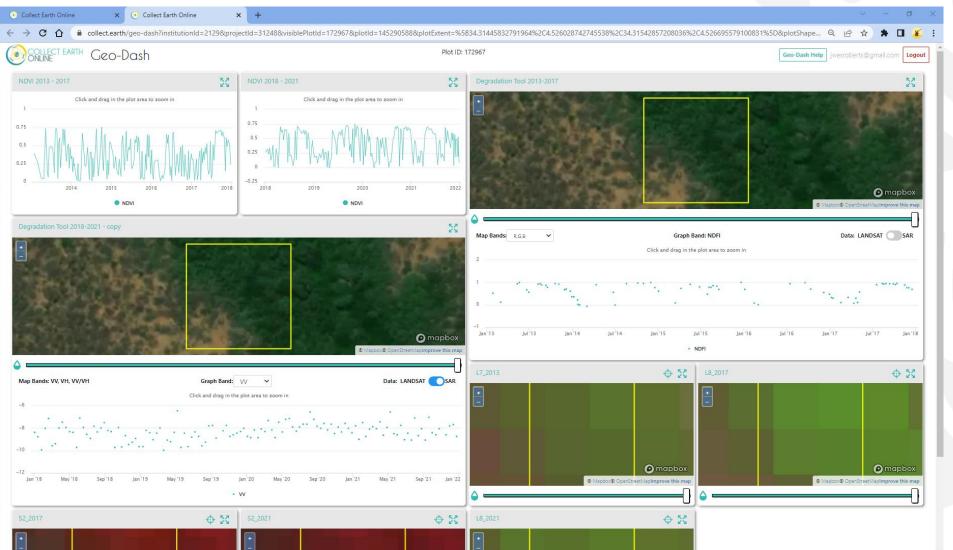


Monthly composites, 2015 - 2022, 10m resn



Very high resolution data

Collect Earth Online Data – Geo-Dash



- NDVI TS graphs
- Normalized Difference Fraction Index
- Landsat
 Composites



Quality Assurance and Quality Control

- QAQC procedures implemented in survey
 - Flagged plots
 - Interpretation confidence (0 100%)
 - Numeric range rules (Forest Cover % and Dates)
 - Unlikely transitions

- Post data collection QAQC by a team of experienced Interpretors
 - Low confidence points (<90%)
 - Flagged points
 - Omitted potential change
 - Dryland forest assessment
 - Forest type assessment
 - Unlikely transitions
 - Deforestation
 - Degradation
 - Restoration





Thank you.

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