



# GIS IN FORESTRY 2020

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Forest Resources Assessment and Conservation Division  
Ministry of Forestry

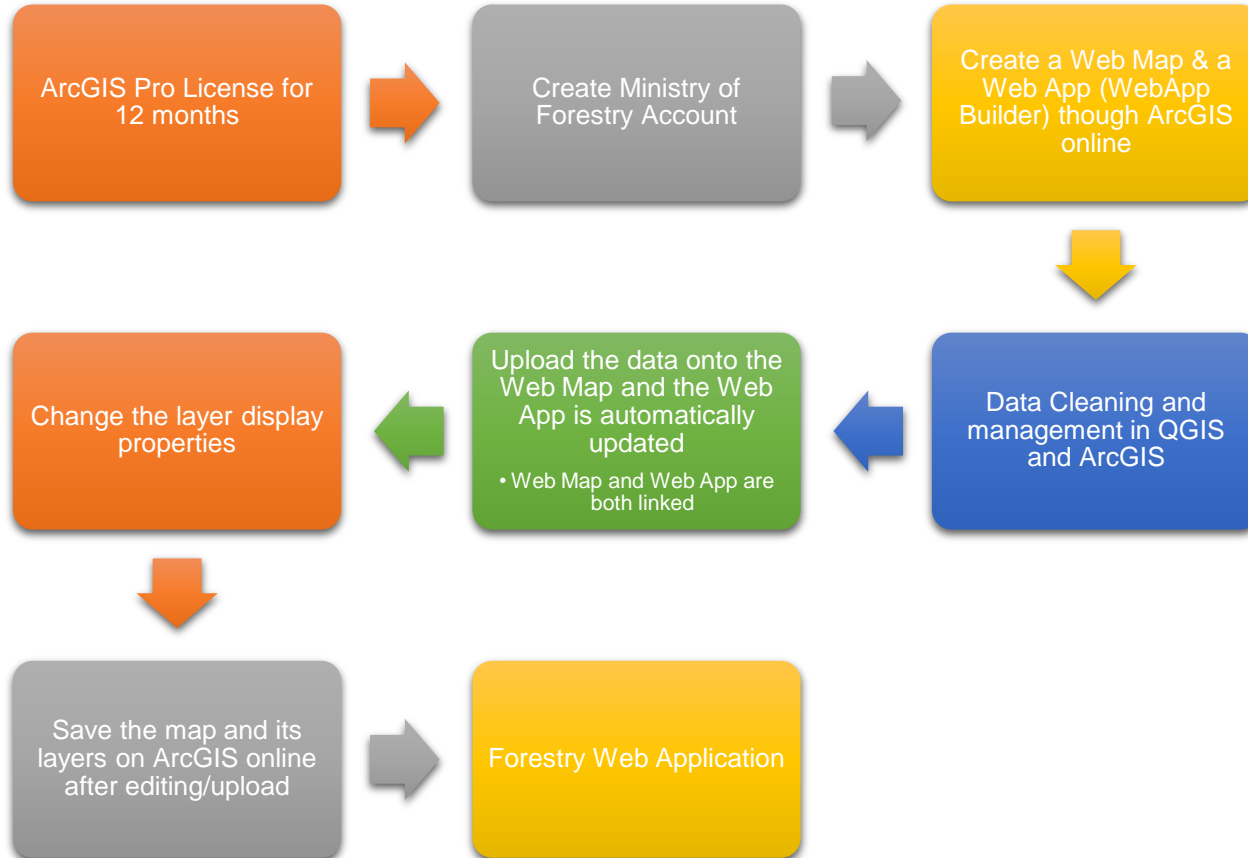
# Introduction

- **ESRI Web Map Application - ArcGIS online**
  - an interactive display of geographic information that you can use to tell stories & answer questions.
- **Reason for the Ministry of Forestry:**
  - Our Web Map was directed by our Permanent Secretary about 1½ years ago
  - Ability for the Ministry to access and view all forestry GIS data with one click
- **Management of map application under FRAC Division**
  - Development of web map application
  - Launch internally



ArcGIS

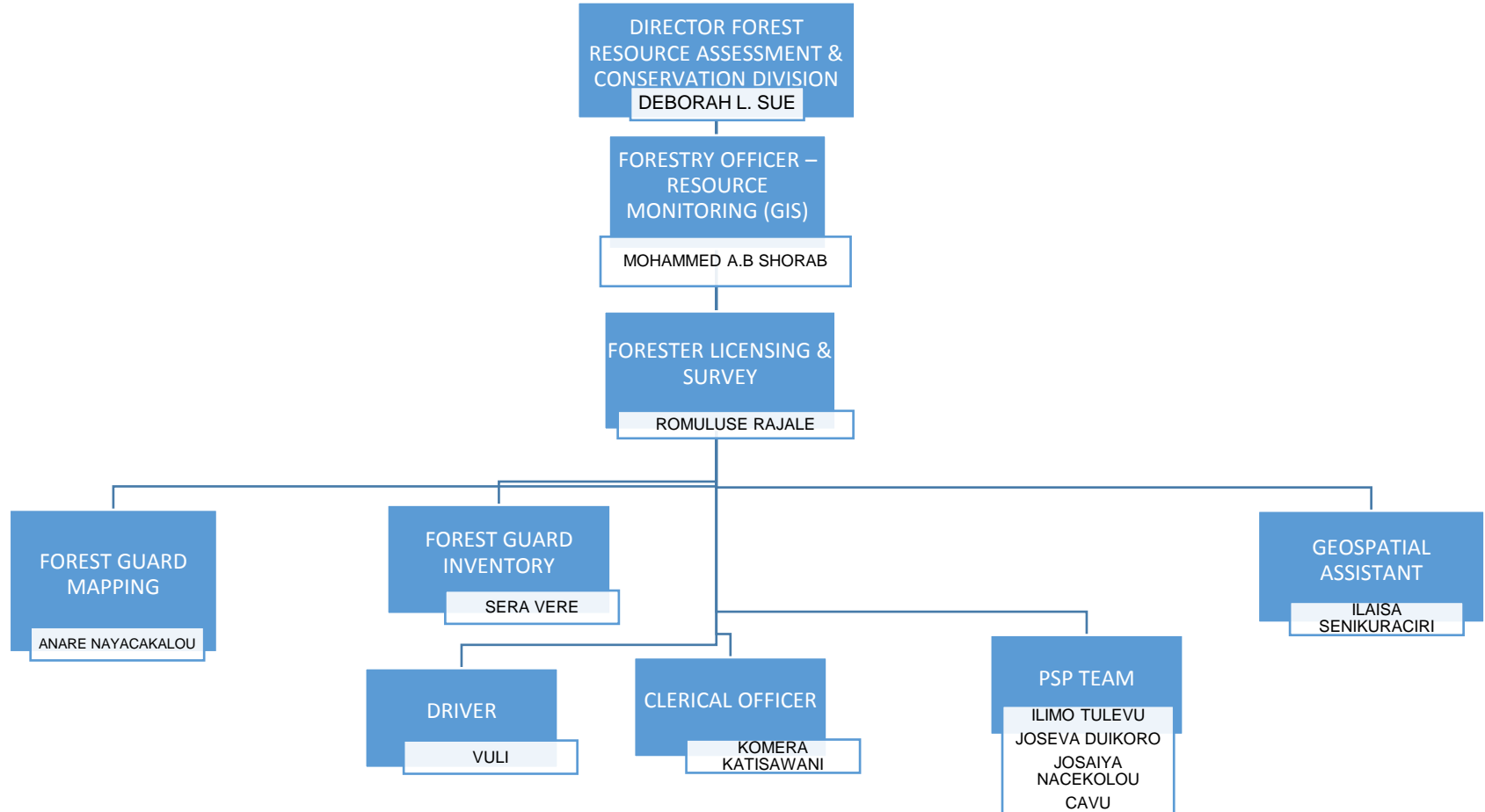
# Procedures



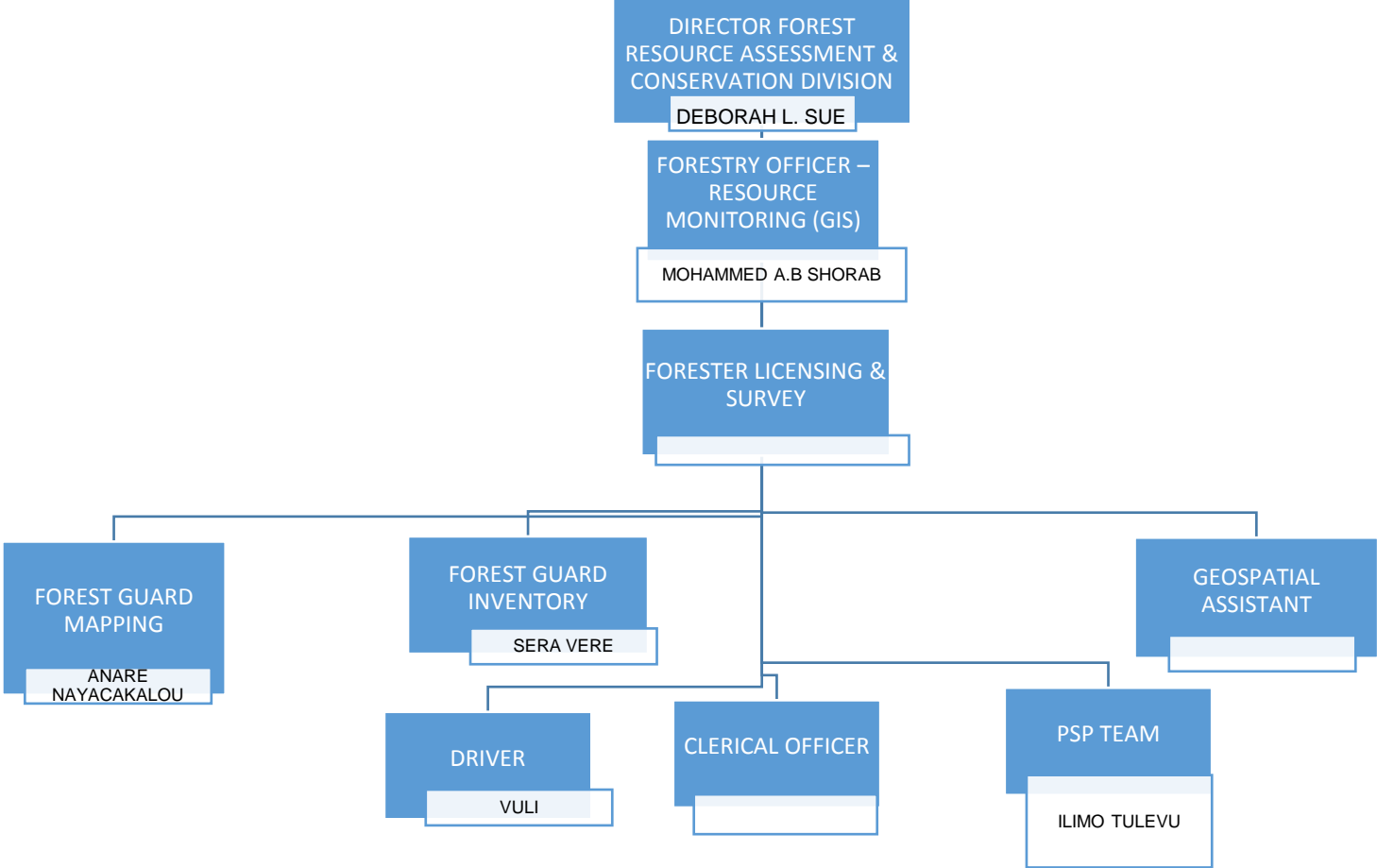
# Data Cleaning & Management

- **Brain drain in the FRAC Division**
- **Most of the data were:**
  - inconsistent,
  - missing additional information,
  - Outdated
- **Using ArcGIS and QGIS - structure, edit and update the forestry data**
- **Place data in Standard master copy folder**
  - For all cleaned data

# FRAC DIVISION - BEFORE



# FRAC DIVISION-AFTER



# Forestry Data

- Planted trees more than 0.5 planted areas
- Planted trees less than 0.5 planted areas
- Forest Only : 2014 - 2017
- Forest Beat Boundary
- Forest Reserves
- Forest Stations
- Harvested Area Report (HAR): 2006 - 2019
- Potential Mangrove Planting Areas (central, western & northern divisions)
- Fiji Hardwood Corporation Limited (FHCL)
- Forestry Protected Areas
- Drone Images
  - Projects done in February

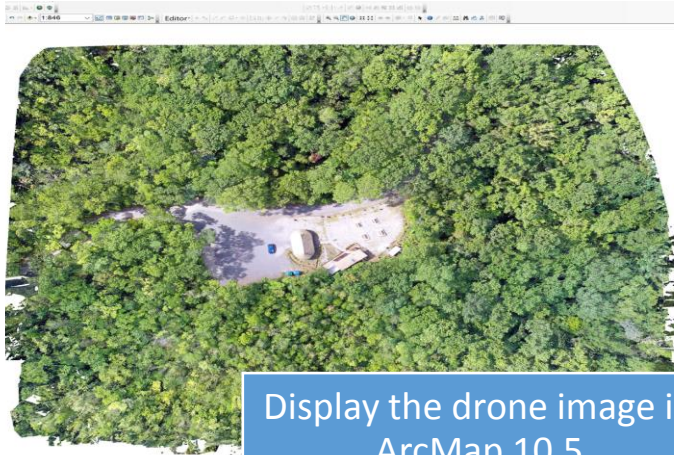
Home ▾ MapforWebAppForestry ✎

Details + Add ▾ | Basemap | Analysis

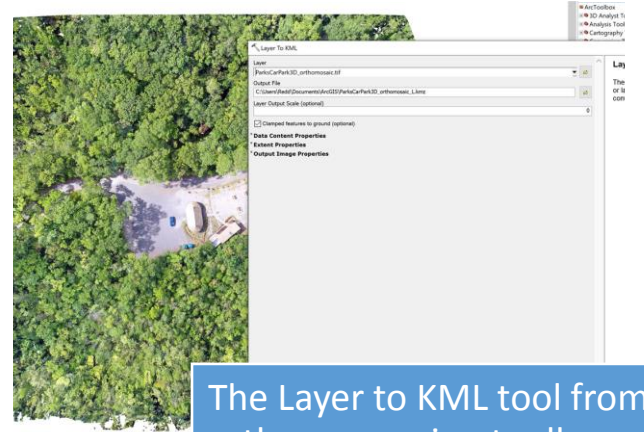
About Content Legend

Contents

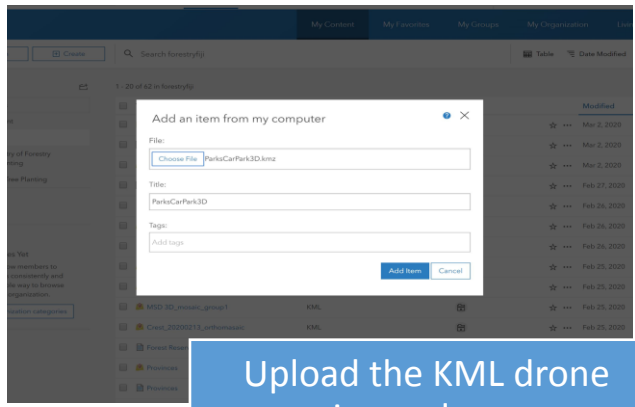
- 4 Million Trees less than 0.5
- 4 Million Trees Planted Areas
- FHCL Boundary
- Fiji Pine
- Forest 2014
- Forest 2015
- Forest 2016
- Forest 2017
- Forest Beat Boundary



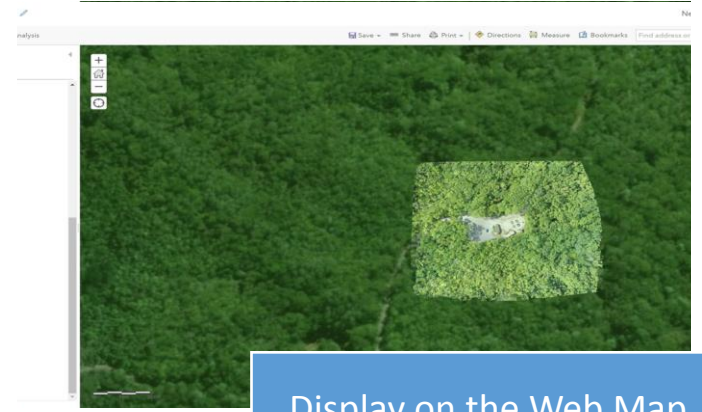
Display the drone image in ArcMap 10.5



The Layer to KML tool from the conversion toolbox



Upload the KML drone image layer

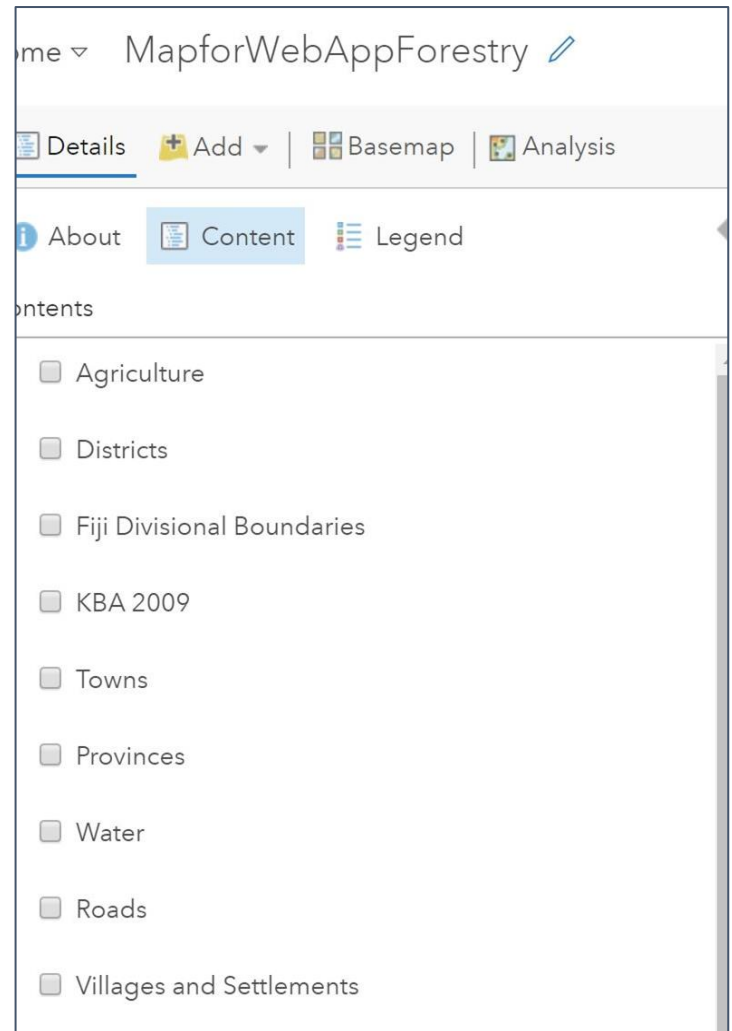


Display on the Web Map





# Other Data




- Agriculture
- Districts / Tikina
- Divisional Boundary
- Key Biodiversity Areas
- Provinces
- Towns
- Waterways
- Roads
- Villages
- Settlements










# ArcGIS Online Web Map


Home ▾ MapforWebAppForestry 

New Map ▾ Create Presentation  Fiji ▾

[Details](#)  Add ▾ |  Basemap |  Analysis


 Save ▾ |  Share |  Print ▾ |  Directions |  Measure |  Bookmarks

Find address or place 



[About](#) [Content](#)  Legend

Contents

- 4 Million Trees less than 0.5
- 4 Million Trees Planted Areas
- Agriculture
- Districts
- FHCL Boundary
- Fiji Divisional Boundaries
- Fiji Pine
- Forest 2014
- Forest 2015
- Forest 2016
- Forest 2017
- Forest Beat Boundary
- Forest Reserves
- Forestry Stations
- HAR
- Kadavu Pine
- KBA 2009
- Lakeba Pine

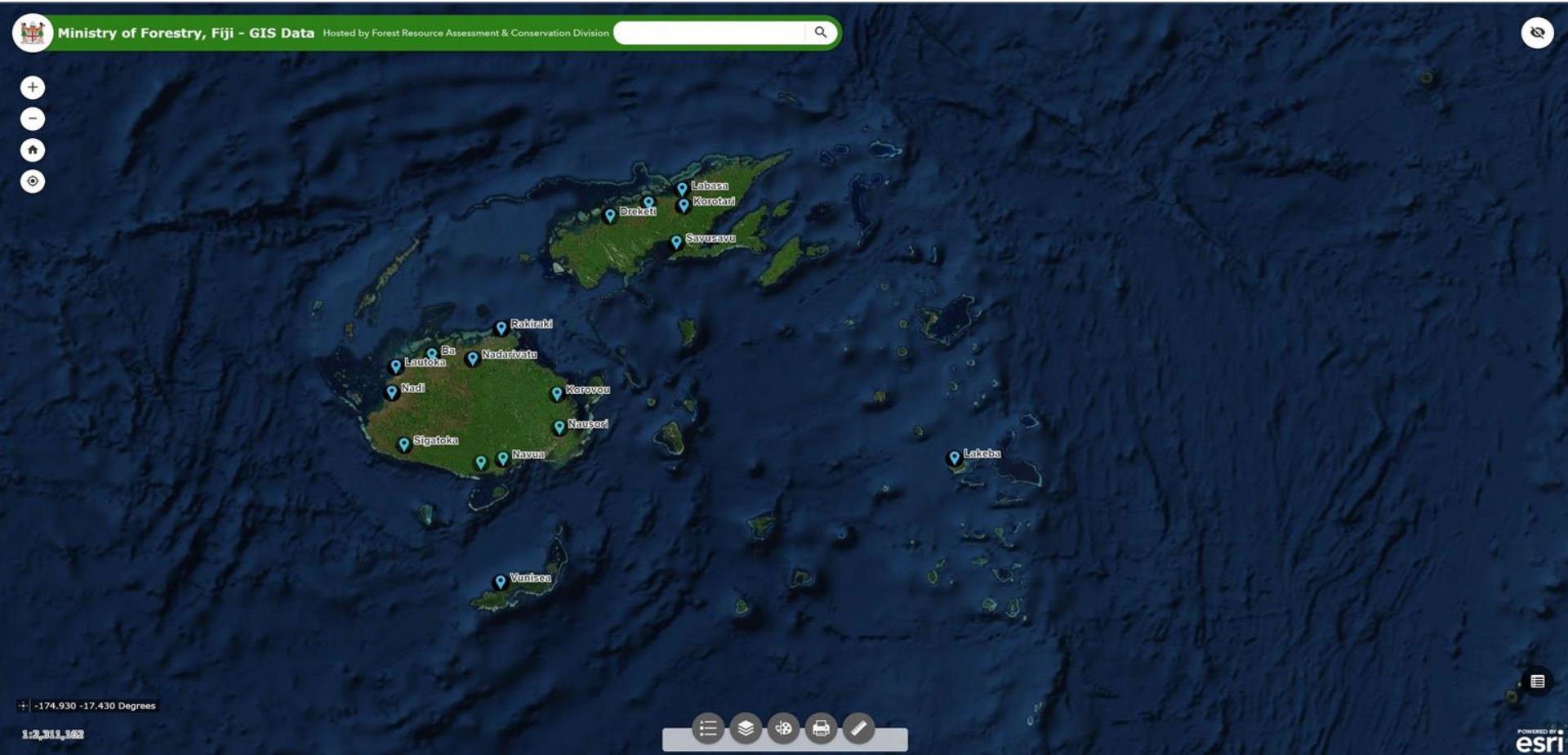


0 20 40mi

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# Forestry Web Application - ArcGIS





177.992 -15.906 Degrees

1:2,311,162



**Legend**

- Fiji\_Divisional\_Boundaries
- Forestry Stations
- Protected Areas
- Potential Mangrove Planting Areas

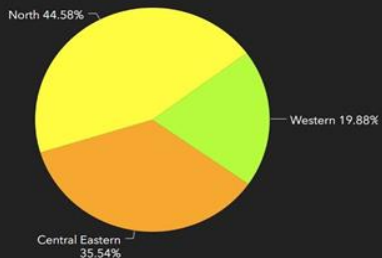
**Layer List**

- 4 Million Trees less than 0.5
- 4 Million Trees Planted Areas
- Agriculture
- Districts
- FHCL Boundary
- Fiji\_Divisional\_Boundaries
- Fiji Pine
- Forest\_2014
- Forest\_2015
- Forest\_2016

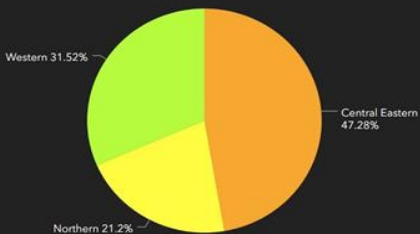


# Dashboard

>0.5ha Planted Areas by Division



Planted Areas <0.5ha by Division



Last update: a few seconds ago



Planted Areas <0.5ha  
**8,907**

Last update: a few seconds ago

Planted Areas >0.5ha  
**203,691**

Last update: a few seconds ago

# Problems Faced

1. Unstructured data
2. Conversion using other GIS software such as QGIS and MapInfo
3. Understanding the Forestry terms and concepts
4. Missing additional data - e.g. Fiji Sawmills data
5. Data Storage

# Conclusion

- ❖ Forestry Web Application is a new development for the ministry to visualize information spatially
- ❖ Easily accessed from portable devices
- ❖ It provides new insights and opportunities - to assist in the growth of Forestry in visualization and data management
- ❖ Supports collaboration with other government and related agencies
- ❖ Important in application of sustainable development targets and achievements of National Development Strategies and SDGs

# FORESTRY'S PLANS FOR 2020

- ✓ Structured Database
- ✓ A Server for the FRAC Division
- ✓ Use Survey123/Collector for field data collection
- ✓ Drone Plans – Survey all Forest Reserves and HAR areas
- ✓ Forest Cover 2019: Change Detection of Forest 2019  
(80% Done)



THANK YOU FOR LISTENING!  
ANY COMMENTS/QUESTIONS??