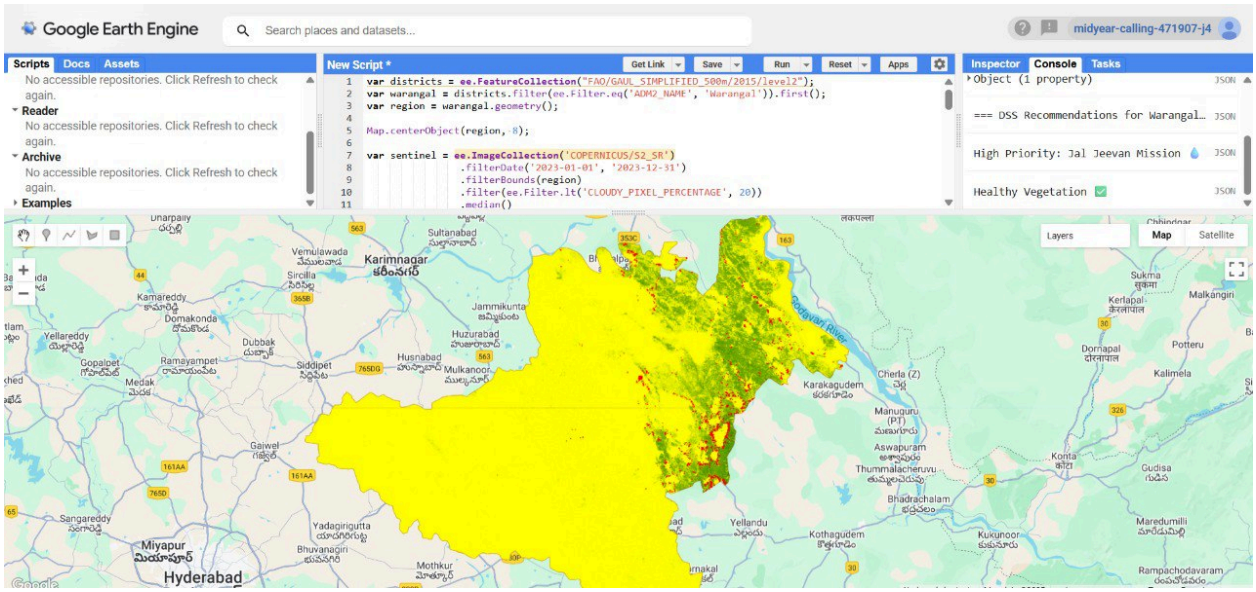


```
// ================================
// FRA Atlas Prototype for Warangal
// ================================

// 1. Define Warangal district boundary (from FAO GAUL dataset)
var districts = ee.FeatureCollection("FAO/GAUL_SIMPLIFIED_500m/2015/level2");
var warangal = districts.filter(ee.Filter.eq('ADM2_NAME', 'Warangal')).first();
var region = warangal.geometry();

Map.centerObject(region, 8);

// 2. Sentinel-2 median composite (2023, low cloud)
var sentinel = ee.ImageCollection('COPERNICUS/S2_SR')
                 .filterDate('2023-01-01', '2023-12-31')
                 .filterBounds(region)
                 .filter(ee.Filter.lt('CLOUDY_PIXEL_PERCENTAGE', 20))
                 .median()
                 .clip(region);

// 3. NDVI (Vegetation)
```

```
var ndvi = sentinel.normalizedDifference(['B8', 'B4']).rename('NDVI');
var ndviVis = {min: -0.5, max: 0.8, palette: ['white','yellow','green']};

// 4. NDWI (Water)
var ndwi = sentinel.normalizedDifference(['B3', 'B8']).rename('NDWI');
var ndwiVis = {min: -0.5, max: 0.8, palette: ['brown','blue']};

// 5. Hansen Global Forest Change dataset
var hansen = ee.Image('UMD/hansen/global_forest_change_2022_v1_10');
var treecover2000 = hansen.select('treecover2000').clip(region);
var loss = hansen.select('loss').clip(region);
var gain = hansen.select('gain').clip(region);
var treeVis = {min: 0, max: 100, palette: ['white', 'darkgreen']};

// 6. Add map layers
Map.addLayer(sentinel, {bands:['B4','B3','B2'], min:0, max:3000}, 'True Color');
Map.addLayer(ndvi, ndviVis, 'NDVI (Vegetation)');
Map.addLayer(ndwi, ndwiVis, 'NDWI (Water)');
Map.addLayer(treecover2000, treeVis, 'Tree Cover 2000');
Map.addLayer(loss.updateMask(loss), {palette:'red'}, 'Forest Loss');
Map.addLayer(gain.updateMask(gain), {palette:'lime'}, 'Forest Gain');

// 7. NDVI & NDWI summary statistics
var ndviMean = ndvi.reduceRegion({
  reducer: ee.Reducer.mean(),
  geometry: region,
  scale: 30,
  maxPixels: 1e13
}).get('NDVI');

var ndwiMean = ndwi.reduceRegion({
  reducer: ee.Reducer.mean(),
  geometry: region,
  scale: 30,
  maxPixels: 1e13
}).get('NDWI');

print("NDVI Mean (Warangal):", ndviMean);
print("NDWI Mean (Warangal):", ndwiMean);

// 8. DSS Prototype Logic
var water_status = ee.Algorithms.If(ee.Number(ndwiMean).lt(0.15),
  "High Priority: Jal Jeevan Mission ",
  "Water Adequate ");
```

```
var land_status = ee.Algorithms.If(ee.Number(ndviMean).lt(0.25),
  "Low Productivity: Recommend MGNREGA/PM-KISAN ",
  "Healthy Vegetation ");

print("=== DSS Recommendations for Warangal ===");
print(water_status);
print(land_status);
```