**Google Earth Engine Console Code:**

**Gambia, 2018:**

* **Greenness (NDVI):**

// Step 1: Define Region of Interest (The Gambia)

var gambia = ee.FeatureCollection('FAO/GAUL/2015/level1')

.filter(ee.Filter.eq('ADM0\_NAME', 'Gambia'));

Map.centerObject(gambia, 8);

// Step 2: Load MODIS NDVI Data for 2018

var ndvi = ee.ImageCollection('MODIS/061/MOD13Q1')

.filterDate('2018-01-01', '2018-12-31')

.filterBounds(gambia)

.select('NDVI');

// Step 3: Calculate the Mean NDVI for 2018

var annualNDVI = ndvi.mean().multiply(0.0001).rename('NDVI');

// Step 4: Visualize the NDVI on the Map

Map.addLayer(annualNDVI.clip(gambia),

{min: 0, max: 1, palette: ['white', 'green']},

'2018 Average NDVI');

// Step 5: Export NDVI Raster as GeoTIFF to Google Drive

Export.image.toDrive({

image: annualNDVI.clip(gambia),

description: 'Gambia\_2018\_Average\_NDVI',

folder: 'GEE\_exports',

fileNamePrefix: 'Gambia\_2018\_Average\_NDVI',

region: gambia.geometry(),

scale: 250, // MODIS native resolution (~250m)

maxPixels: 1e13,

crs: 'EPSG:4326'

});

* **Precipitation:**

// Step 1: Define Region of Interest (The Gambia)

var gambia = ee.FeatureCollection('FAO/GAUL/2015/level1')

.filter(ee.Filter.eq('ADM0\_NAME', 'Gambia'));

Map.centerObject(gambia, 8);

// Step 2: Select CHIRPS Daily Precipitation Data for 2018

var chirps = ee.ImageCollection('UCSB-CHG/CHIRPS/DAILY')

.filterDate('2018-01-01', '2018-12-31')

.filterBounds(gambia);

// Step 3: Calculate the Mean Daily Precipitation for 2018

var annualPrecip = chirps.mean().select('precipitation');

// Step 4: Visualize the Result on the Map

Map.addLayer(annualPrecip.clip(gambia),

{min: 0, max: 20, palette: ['blue', 'cyan', 'yellow', 'orange', 'red']},

'2018 Average Daily Precipitation');

// Step 5: Export the Raster as a GeoTIFF to Google Drive

Export.image.toDrive({

image: annualPrecip.clip(gambia),

description: 'Gambia\_2018\_Daily\_Avg\_Precip',

folder: 'GEE\_exports',

fileNamePrefix: 'Gambia\_2018\_Daily\_Avg\_Precip',

region: gambia.geometry(),

scale: 5000, // 5 km resolution

maxPixels: 1e13,

crs: 'EPSG:4326'

});

* **Temperature:**

// Step 1: Define Region of Interest (The Gambia)

var gambia = ee.FeatureCollection('FAO/GAUL/2015/level1')

.filter(ee.Filter.eq('ADM0\_NAME', 'Gambia'));

Map.centerObject(gambia, 8);

// Step 2: Load ERA5-Land Daily Average Temperature Data

var temp = ee.ImageCollection('ECMWF/ERA5\_LAND/HOURLY')

.filterDate('2018-01-01', '2018-12-31')

.filterBounds(gambia)

.select('temperature\_2m');

// Step 3: Calculate Daily Average Temperature for 2018

var dailyTemp = temp.mean().subtract(273.15).rename('Avg\_Temp\_C');

// Step 4: Visualize the Temperature Layer

Map.addLayer(dailyTemp.clip(gambia),

{min: 20, max: 40, palette: ['blue', 'cyan', 'yellow', 'orange', 'red']},

'2018 Daily Avg Temperature (°C)');

// Step 5: Export the Temperature Raster as GeoTIFF

Export.image.toDrive({

image: dailyTemp.clip(gambia),

description: 'Gambia\_2018\_Daily\_Avg\_Temp',

folder: 'GEE\_exports',

fileNamePrefix: 'Gambia\_2018\_Daily\_Avg\_Temp',

region: gambia.geometry(),

scale: 1000, // 1 km resolution

maxPixels: 1e13,

crs: 'EPSG:4326'

});