NDVI

// var aoi = ee.FeatureCollection("projects/ee-drashti202319019/assets/aoi");

// // FOR NDVI YEAR 2014 TO 2021

// var startYear = 2000;

// var endYear = 2022;

// var districts = ['Jamnagar', 'Junagadh', 'Rajkot', 'Amreli', 'Bhavnagar']

// var dataTable = [['District', 'Year', 'Mean NDVI']];

// for (var year = startYear; year <= endYear; year++) {

// var startDate = year + '-06-01';

// var endDate = year + '-10-15';

// for (var i = 0; i < districts.length; i++) {

// var district = districts[i];

// var modisNDVI = ee.ImageCollection('MODIS/006/MOD13Q1')

// .filterDate(startDate, endDate)

// .select('NDVI')

// .filterBounds(aoi.filter(ee.Filter.eq('district', district)));

// var meanNDVI\_district = modisNDVI.mean();

// var districtMeanNDVI = meanNDVI\_district.reduceRegion({

// reducer: ee.Reducer.mean(),

// geometry: aoi.filter(ee.Filter.eq('district', district)).geometry(),

// scale: 1200 // Adjusted to 1.2 km resolution

// });

// dataTable.push([district, year, ee.Number(districtMeanNDVI.get('NDVI')).multiply(0.0001)]);

// }

// }

// var featureCollection = ee.FeatureCollection(dataTable.slice(1).map(function(row) {

// return ee.Feature(null, {

// 'District': row[0],

// 'Year': row[1],

// 'Mean NDVI': row[2]

// });

// }));

// Export.table.toDrive({

// collection: featureCollection,

// description: 'GujaratDistrictsMeanNDVI',

// folder: 'IIRS\_M\_4\_DATA', // Set the folder name here

// fileFormat: 'CSV'

// });

EVI

// var aoi = ee.FeatureCollection("projects/ee-drashti/assets/aoi");

// // FOR EVI YEAR 2014 TO 2021

// var startYear = 2000;

// var endYear = 2022;

// var districts = ['Jamnagar', 'Junagadh', 'Rajkot', 'Amreli', 'Bhavnagar'];

// var dataTable = [['District', 'Year', 'Mean EVI']];

// for (var year = startYear; year <= endYear; year++) {

// var startDate = year + '-06-01';

// var endDate = year + '-10-15';

// for (var i = 0; i < districts.length; i++) {

// var district = districts[i];

// // Filter MODIS EVI by date, district, and region of interest

// var modisEVI = ee.ImageCollection('MODIS/006/MOD13Q1')

// .filterDate(startDate, endDate)

// .select('EVI')

// .filterBounds(aoi.filter(ee.Filter.eq('district', district)));

// // Calculate the mean EVI for the district

// var meanEVI\_district = modisEVI.mean();

// // Reduce region to get the mean EVI value

// var districtMeanEVI = meanEVI\_district.reduceRegion({

// reducer: ee.Reducer.mean(),

// geometry: aoi.filter(ee.Filter.eq('district', district)).geometry(),

// scale: 1200 // Adjusted to 1.2 km resolution

// });

// // Add data to the data table

// dataTable.push([district, year, ee.Number(districtMeanEVI.get('EVI')).multiply(0.0001)]);

// }

// }

// // Create a FeatureCollection from the data table

// var featureCollection = ee.FeatureCollection(dataTable.slice(1).map(function(row) {

// return ee.Feature(null, {

// 'District': row[0],

// 'Year': row[1],

// 'Mean EVI': row[2]

// });

// }));

// // Export the data table to Google Drive

// Export.table.toDrive({

// collection: featureCollection,

// description: 'GujaratDistrictsMeanEVI',

// folder: 'IIRS\_M\_4\_DATA', // Set the folder name here

// fileFormat: 'CSV'

// });

FAPAR

// var aoi = ee.FeatureCollection("projects/ee-drashti202319019/assets/aoi");

// // Define the date range

// var startDate = '2000-06-01';

// var endDate = '2022-10-15';

// // Define the districts of interest

// var districts = ['Jamnagar', 'Junagadh', 'Rajkot', 'Amreli', 'Bhavnagar'];

// // Initialize the data table with headers

// var dataTable = [['District', 'Year', 'Mean FAPAR']];

// // Loop over each year, district, and calculate mean FAPAR

// for (var year = 2000; year <= 2022; year++) {

// for (var i = 0; i < districts.length; i++) {

// var district = districts[i];

// // Filter MODIS FAPAR by date, district, and region of interest

// var modisFAPAR = ee.ImageCollection('MODIS/006/MCD15A3H')

// .filterDate(startDate, endDate)

// .select('Fpar')

// .filterBounds(aoi.filter(ee.Filter.eq('district', district)));

// // Calculate the mean FAPAR for the district

// var meanFAPAR\_district = modisFAPAR.mean();

// // Reduce region to get the mean FAPAR value

// var districtMeanFAPAR = meanFAPAR\_district.reduceRegion({

// reducer: ee.Reducer.mean(),

// geometry: aoi.filter(ee.Filter.eq('district', district)).geometry(),

// scale: 250 // Adjusted to 250 meters resolution for better results

// });

// // Add data to the data table

// dataTable.push([district, year, ee.Number(districtMeanFAPAR.get('Fpar')).multiply(0.1)]);

// }

// }

// // Create a FeatureCollection from the data table

// var featureCollection = ee.FeatureCollection(dataTable.slice(1).map(function(row) {

// return ee.Feature(null, {

// 'District': row[0],

// 'Year': row[1],

// 'Mean FAPAR': row[2]

// });

// }));

// // Export the data table to Google Drive

// Export.table.toDrive({

// collection: featureCollection,

// description: 'GujaratDistrictsMeanFAPAR',

// folder: 'IIRS\_M\_4\_DATA', // Set the folder name here

// fileFormat: 'CSV'

// });

GPP

// var aoi = ee.FeatureCollection("projects/ee-drashti/assets/aoi");

// // Define the date range

// var startDate = '2000-06-01';

// var endDate = '2022-10-15';

// // Define the districts of interest

// var districts = ['Jamnagar', 'Junagadh', 'Rajkot', 'Amreli', 'Bhavnagar'];

// // Initialize the data table with headers

// var dataTable = [['District', 'Year', 'Mean GPP']];

// // Loop over each year, district, and calculate mean GPP

// for (var year = 2000; year <= 2022; year++) {

// for (var i = 0; i < districts.length; i++) {

// var district = districts[i];

// // Filter MODIS GPP by date, district, and region of interest

// var modisGPP = ee.ImageCollection('MODIS/006/MOD17A2H')

// .filterDate(startDate, endDate)

// .select('Gpp')

// .filterBounds(aoi.filter(ee.Filter.eq('district', district)));

// // Calculate the mean GPP for the district

// var meanGPP\_district = modisGPP.mean();

// // Reduce region to get the mean GPP value

// var districtMeanGPP = meanGPP\_district.reduceRegion({

// reducer: ee.Reducer.mean(),

// geometry: aoi.filter(ee.Filter.eq('district', district)).geometry(),

// scale: 500 // Adjusted to 500 meters resolution

// });

// // Add data to the data table

// dataTable.push([district, year, ee.Number(districtMeanGPP.get('Gpp')).multiply(0.1)]);

// }

// }

// // Create a FeatureCollection from the data table

// var featureCollection = ee.FeatureCollection(dataTable.slice(1).map(function(row) {

// return ee.Feature(null, {

// 'District': row[0],

// 'Year': row[1],

// 'Mean GPP': row[2]

// });

// }));

// // Export the data table to Google Drive

// Export.table.toDrive({

// collection: featureCollection,

// description: 'GujaratDistrictsMeanGPP',

// folder: 'IIRS\_M\_4\_DATA', // Set the folder name here

// fileFormat: 'CSV'

// });

LAI

// var aoi = ee.FeatureCollection("projects/ee-drashti/assets/aoi");

// // Define the date range

// var startDate = '2000-06-01';

// var endDate = '2022-10-15';

// // Define the districts of interest

// var districts = ['Jamnagar', 'Junagadh', 'Rajkot', 'Amreli', 'Bhavnagar'];

// // Initialize the data table with headers

// var dataTable = [['District', 'Year', 'Mean LAI']];

// // Loop over each year, district, and calculate mean LAI

// for (var year = 2000; year <= 2022; year++) {

// for (var i = 0; i < districts.length; i++) {

// var district = districts[i];

// // Filter MODIS LAI by date, district, and region of interest

// var modisLAI = ee.ImageCollection('MODIS/006/MCD15A3H')

// .filterDate(startDate, endDate)

// .select('Lai')

// .filterBounds(aoi.filter(ee.Filter.eq('district', district)));

// // Calculate the mean LAI for the district

// var meanLAI\_district = modisLAI.mean();

// // Reduce region to get the mean LAI value

// var districtMeanLAI = meanLAI\_district.reduceRegion({

// reducer: ee.Reducer.mean(),

// geometry: aoi.filter(ee.Filter.eq('district', district)).geometry(),

// scale: 500 // Adjusted to 500 meters resolution

// });

// // Add data to the data table

// dataTable.push([district, year, ee.Number(districtMeanLAI.get('Lai')).multiply(0.1)]);

// }

// }

// // Create a FeatureCollection from the data table

// var featureCollection = ee.FeatureCollection(dataTable.slice(1).map(function(row) {

// return ee.Feature(null, {

// 'District': row[0],

// 'Year': row[1],

// 'Mean LAI': row[2]

// });

// }));

// // Export the data table to Google Drive

// Export.table.toDrive({

// collection: featureCollection,

// description: 'GujaratDistrictsMeanLAI',

// folder: 'IIRS\_M\_4\_DATA', // Set the folder name here

// fileFormat: 'CSV'

// });

// var aoi = ee.FeatureCollection("projects/ee-drashti/assets/aoi");

// // Define the date range

// var startDate = '2000-06-01';

// var endDate = '2022-10-15';

// // Define the districts of interest

// var districts = ['Jamnagar', 'Junagadh', 'Rajkot', 'Amreli', 'Bhavnagar'];

// // Initialize the data table with headers

// var dataTable = [['District', 'Year', 'Mean LAI']];

// // Loop over each year, district, and calculate mean LAI

// for (var year = 2000; year <= 2022; year++) {

// for (var i = 0; i < districts.length; i++) {

// var district = districts[i];

// // Filter MODIS LAI by date, district, and region of interest

// var modisLAI = ee.ImageCollection('MODIS/006/MCD15A3H')

// .filterDate(startDate, endDate)

// .select('Lai')

// .filterBounds(aoi.filter(ee.Filter.eq('district', district)));

// // Calculate the mean LAI for the district

// var meanLAI\_district = modisLAI.mean();

// // Reduce region to get the mean LAI value

// var districtMeanLAI = meanLAI\_district.reduceRegion({

// reducer: ee.Reducer.mean(),

// geometry: aoi.filter(ee.Filter.eq('district', district)).geometry(),

// scale: 500 // Adjusted to 500 meters resolution

// });

// // Add data to the data table

// dataTable.push([district, year, ee.Number(districtMeanLAI.get('Lai')).multiply(0.1)]);

// }

// }

// // Create a FeatureCollection from the data table

// var featureCollection = ee.FeatureCollection(dataTable.slice(1).map(function(row) {

// return ee.Feature(null, {

// 'District': row[0],

// 'Year': row[1],

// 'Mean LAI': row[2]

// });

// }));

// // Export the data table to Google Drive

// Export.table.toDrive({

// collection: featureCollection,

// description: 'GujaratDistrictsMeanLAI',

// folder: 'IIRS\_M\_4\_DATA', // Set the folder name here

// fileFormat: 'CSV'

// });

RAINFALL

// var aoi = ee.FeatureCollection("projects/ee-drashti202319019/assets/aoi");

// // Define the date range

// var startDate = '2000-06-01';

// var endDate = '2022-10-15';

// // Define the districts of interest

// var districts = ['Jamnagar', 'Junagadh', 'Rajkot', 'Amreli', 'Bhavnagar'];

// // Initialize the data table with headers

// var dataTable = [['District', 'Year', 'Mean Rainfall (mm)']];

// // Loop over each year, district, and calculate mean rainfall

// for (var year = 2000; year <= 2022; year++) {

// for (var i = 0; i < districts.length; i++) {

// var district = districts[i];

// // Filter IMERG precipitation by date, district, and region of interest

// var imergPrecipitation = ee.ImageCollection('NASA/GPM\_L3/IMERG\_V06')

// .filterDate(startDate, endDate)

// .select('precipitationCal')

// .filterBounds(aoi.filter(ee.Filter.eq('district', district)));

// // Calculate the mean rainfall for the district

// var meanRainfall\_district = imergPrecipitation.mean();

// // Reduce region to get the mean rainfall value

// var districtMeanRainfall = meanRainfall\_district.reduceRegion({

// reducer: ee.Reducer.mean(),

// geometry: aoi.filter(ee.Filter.eq('district', district)).geometry(),

// scale: 5000 // Adjusted to 5 km resolution (IMERG resolution)

// });

// // Add data to the data table

// dataTable.push([district, year, ee.Number(districtMeanRainfall.get('precipitationCal')).multiply(24\*30)]);

// // Multiply by 24\*30 to get the monthly total precipitation (assuming each image is a daily total)

// }

// }

// // Create a FeatureCollection from the data table

// var featureCollection = ee.FeatureCollection(dataTable.slice(1).map(function(row) {

// return ee.Feature(null, {

// 'District': row[0],

// 'Year': row[1],

// 'Mean Rainfall (mm)': row[2]

// });

// }));

// // Export the data table to Google Drive

// Export.table.toDrive({

// collection: featureCollection,

// description: 'GujaratDistrictsMeanRainfall',

// folder: 'IIRS\_M\_4\_DATA', // Set the folder name here

// fileFormat: 'CSV'

// });

TEMPERATURE

// var aoi = ee.FeatureCollection("projects/ee-drashti202319019/assets/aoi");

// // Define the date range

// var startDate = '2000-06-01';

// var endDate = '2022-10-15';

// // Define the districts of interest

// var districts = ['Jamnagar', 'Junagadh', 'Rajkot', 'Amreli', 'Bhavnagar'];

// // Initialize the data table with headers

// var dataTable = [['District', 'Year', 'Mean Temperature (K)']];

// // Loop over each year, district, and calculate mean temperature

// for (var year = 2000; year <= 2022; year++) {

// for (var i = 0; i < districts.length; i++) {

// var district = districts[i];

// // Filter MODIS LST by date, district, and region of interest

// var modisLST = ee.ImageCollection('MODIS/006/MOD11A2')

// .filterDate(startDate, endDate)

// .select('LST\_Day\_1km')

// .filterBounds(aoi.filter(ee.Filter.eq('district', district)));

// // Calculate the mean temperature for the district

// var meanTemperature\_district = modisLST.mean();

// // Reduce region to get the mean temperature value

// var districtMeanTemperature = meanTemperature\_district.reduceRegion({

// reducer: ee.Reducer.mean(),

// geometry: aoi.filter(ee.Filter.eq('district', district)).geometry(),

// scale: 1000 // Adjusted to 1 km resolution (MODIS resolution)

// });

// // Add data to the data table

// dataTable.push([district, year, ee.Number(districtMeanTemperature.get('LST\_Day\_1km')).multiply(0.02)]);

// // Multiply by 0.02 to convert temperature from Kelvin to Celsius

// }

// }

// // Create a FeatureCollection from the data table

// var featureCollection = ee.FeatureCollection(dataTable.slice(1).map(function(row) {

// return ee.Feature(null, {

// 'District': row[0],

// 'Year': row[1],

// 'Mean Temperature (C)': row[2]

// });

// }));

// // Export the data table to Google Drive

// Export.table.toDrive({

// collection: featureCollection,

// description: 'GujaratDistrictsMeanTemperature',

// folder: 'IIRS\_M\_4\_DATA', // Set the folder name here

// fileFormat: 'CSV'

// });