

RAINFOREST ALLIANCE

GUIDANCE

GOOGLE EARTH

Version 1



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GOOGLE EARTH

There are web, mobile and desktop versions of Google Earth. To create your own maps, you will need to use the desktop version, also known as “Google Earth Pro” (further referred to as GEP). GEP can be downloaded for free at: <https://www.google.com/earth/versions/#download-pro>.

1. GOOGLE EARTH PREPARATION

The Google Earth screen is divided into 3 panels on the left-hand side of the screen and one larger panel in the center with the “**Map Viewing Area**” (Figure 26). For mapping farm polygons, you will utilize the “**Map Viewing Area**” and the “**Places panel**”, which is where the data can be referenced and organized.

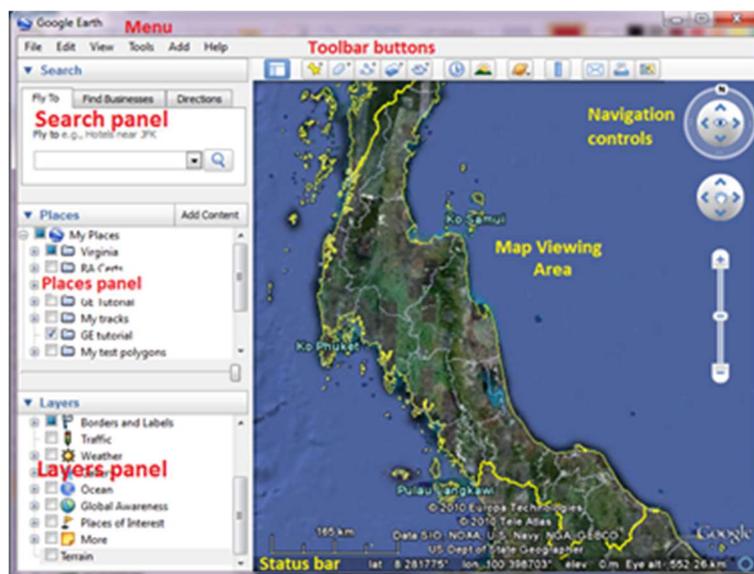


Figure 1. Google Earth with labels showing various parts of the screen

After installing and launching the program, the configuration must be customized. From the main menu select “**Tools**” → “**Options**” → “**#D View**” → “**ShowLat/Long**” → “**Select Decimal Degrees**” (Figure 2 & 3). This is an important step to enable GEP to read and display the collected coordinates correctly.

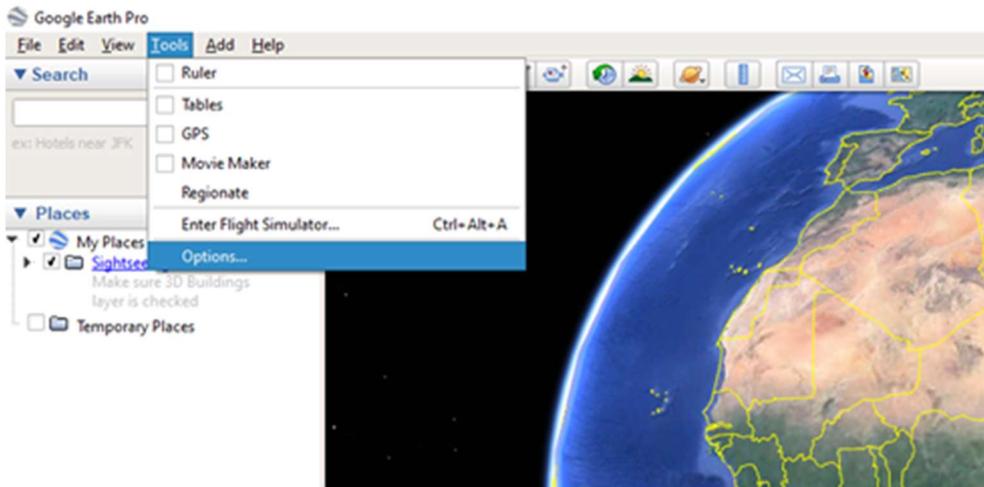


Figure 2. Open option in the tools button

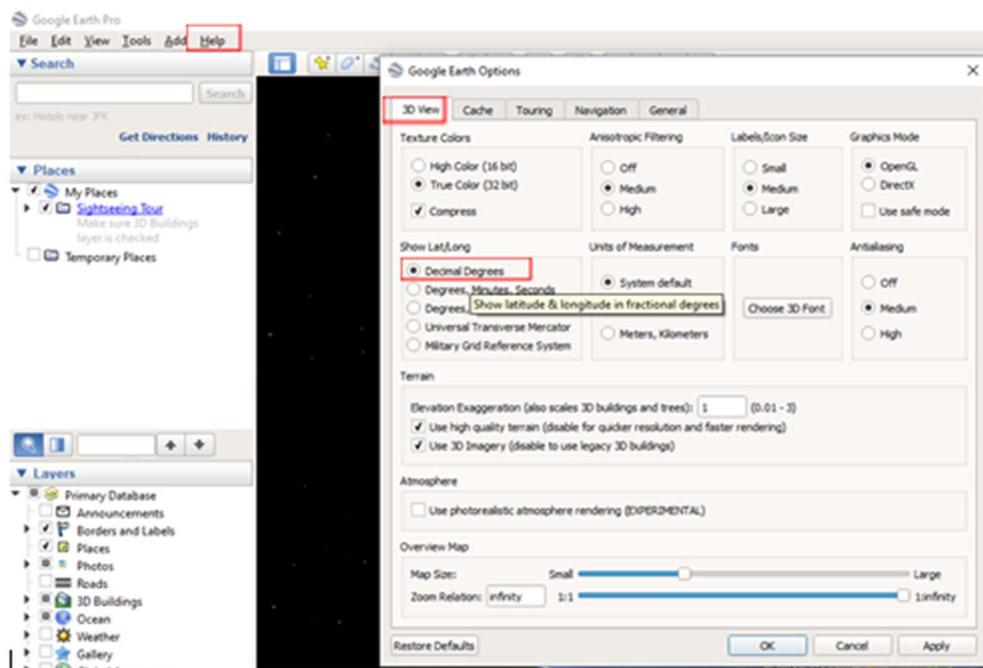


Figure 3. Change setting to Decimal degrees

2. UPLOADING DATA IN GOOGLE EARTH

Data can be uploaded to GEP in 2 ways. When uploading data, always ensure that the data package is unzipped.

- i. Drag the files from the computer folder directly onto the map.



ii) In GEP go to **"File"** → **"Import"** → **"File location"** and select **"ESRI Shapefiles"** in the file option.

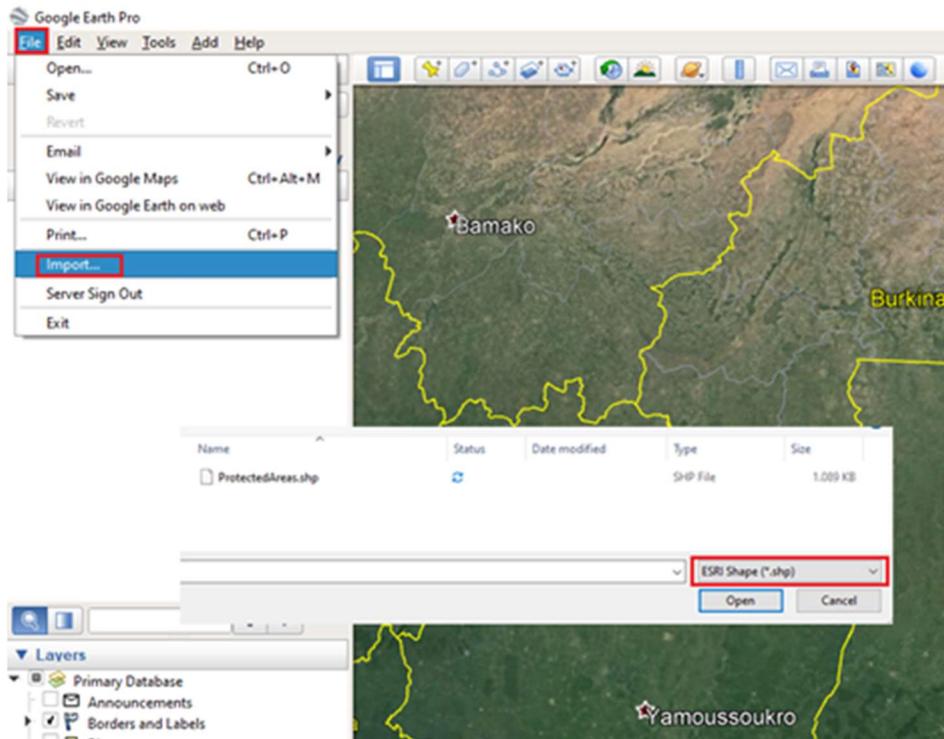


Figure 5. Method 2, Adding layers via the import function

3. DATA SETTING

After adding the layers GEP will ask if a style template should be ingested. Choose **"yes"** to create a template for the layer display. Next time this template will automatically be used to display the data. The color setting can be chosen and based on a specific attribute.

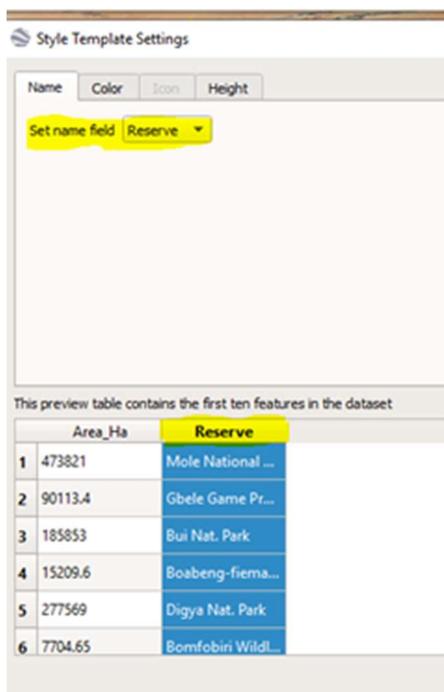


Figure 6. Style template set name field

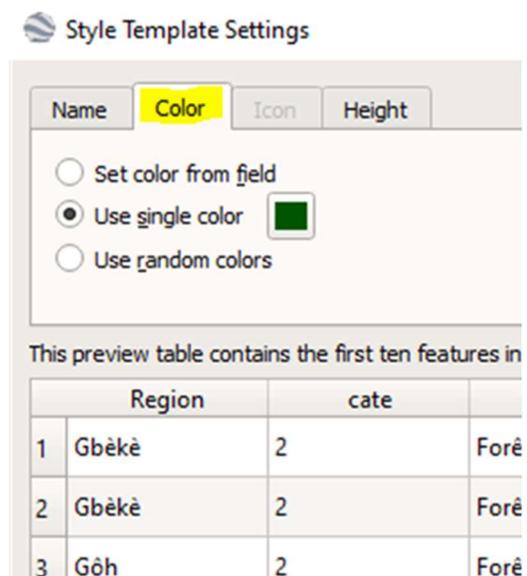


Figure 7. Style single color setting

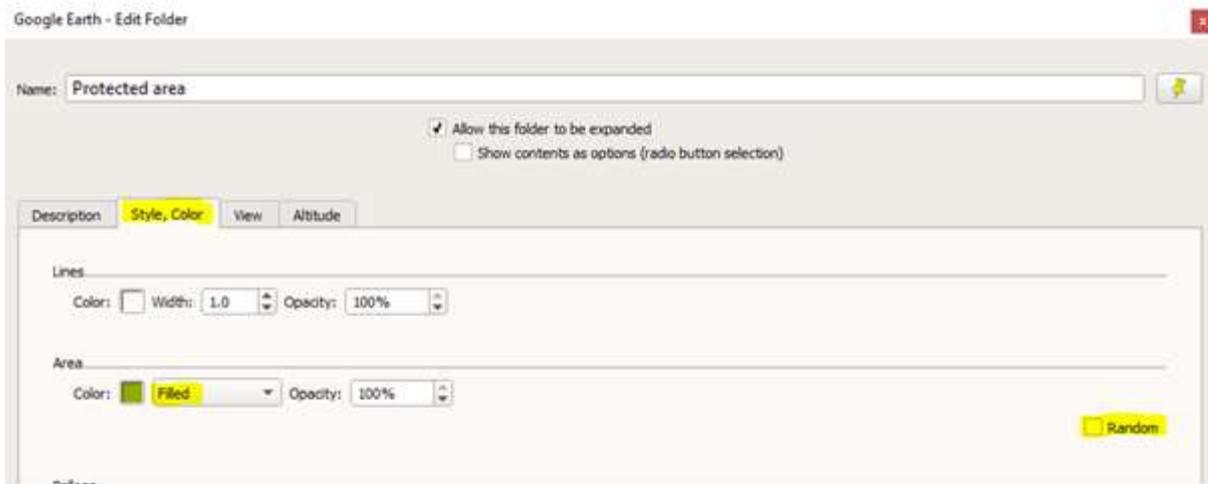


Figure 8. The property section of the layer, changing the random color to single color

If you choose “**No**” when responding to the GEP question of whether or not a style template should be ingested, then the template will not be automatically uploaded. However, the properties of the layer can still be changed in the “**properties**” section of that layer at a later stage.

When you are done, the layers will be added to the places frame on the left-hand side of the screen. To visualize the layer in the map viewing area, click on the checkbox of the layer (in the “**Places**” panel) as below.

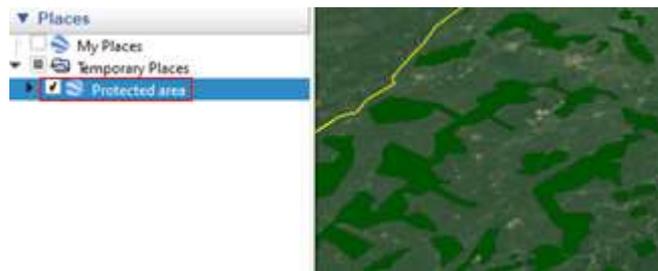


Figure 9. PA layer box being checked to display on screen

4. UPLOADING THE GPS COORDINATES RECEIVED

To upload the farm location into GEP, a CSV file must be uploaded with the correct Latitude and Longitude coordinates. The CSV cannot contain any merged cells. The file should at least (as a minimum) contain 3 columns:

- i. the unique Farm Unit ID,
- ii. the Latitude,
- iii. the Longitude.

It is important that the GPS (Global Positioning System) coordinates are documented correctly and in the number format specified in [Annex S17: Collecting Geolocation Data](#). GEP will only read and display the CSV file when all the GPS coordinates in the file are registered correctly.



4.1. UPLOADING THE COORDINATES IN GEP

Coordinates can be uploaded by dragging the CSV file from the computer into GEP (Figure 35).

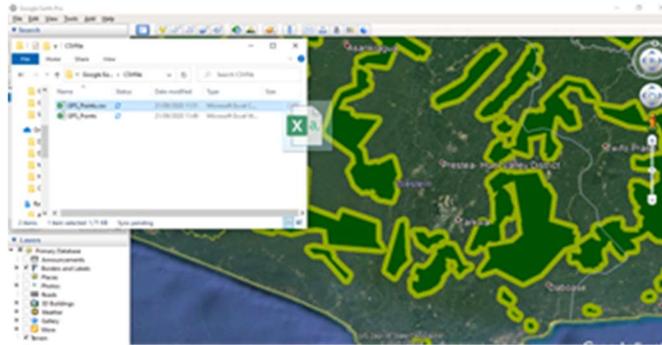


Figure 10. Dragging the CSV from the computer to GEP

The following 3 figures (Figure 11, 12 & 13) show the follow-up import wizard of GEP which needs to be followed to correctly display the coordinates as a point in the program.

Ensure the settings of GEP's data import wizard are correct, if they are, click "**Next**".

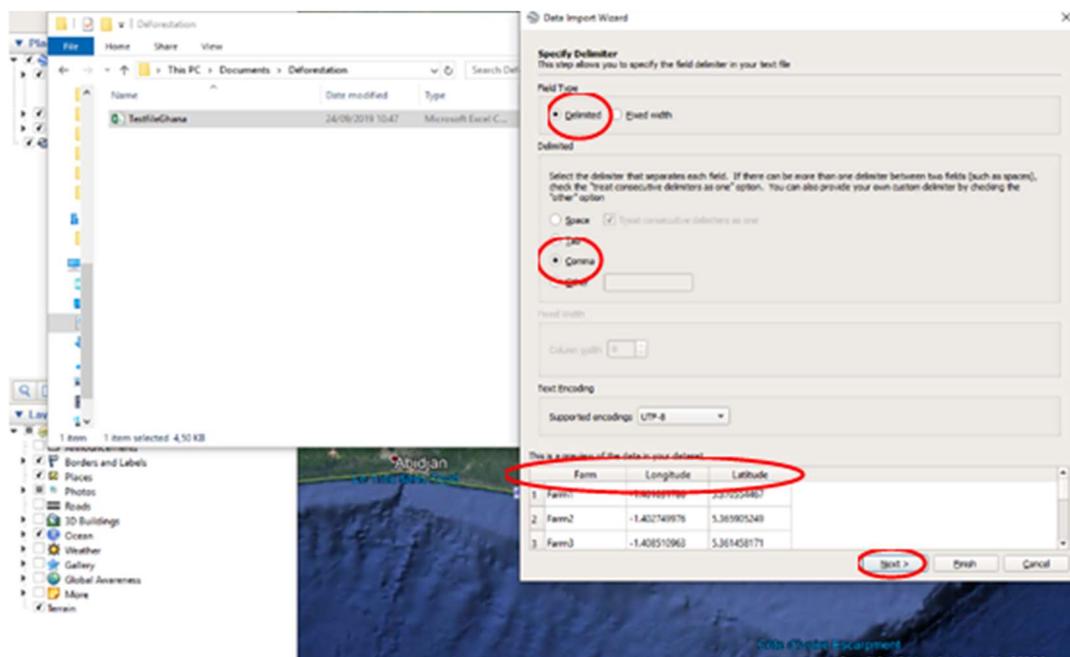


Figure 11. Settings for the coordinates

The next step is to set the latitude and longitude fields, which will be automatically selected if correctly documented in the CSV file. If the latitude and longitude field in the CSV file contain errors, the import wizard will not recognize them.

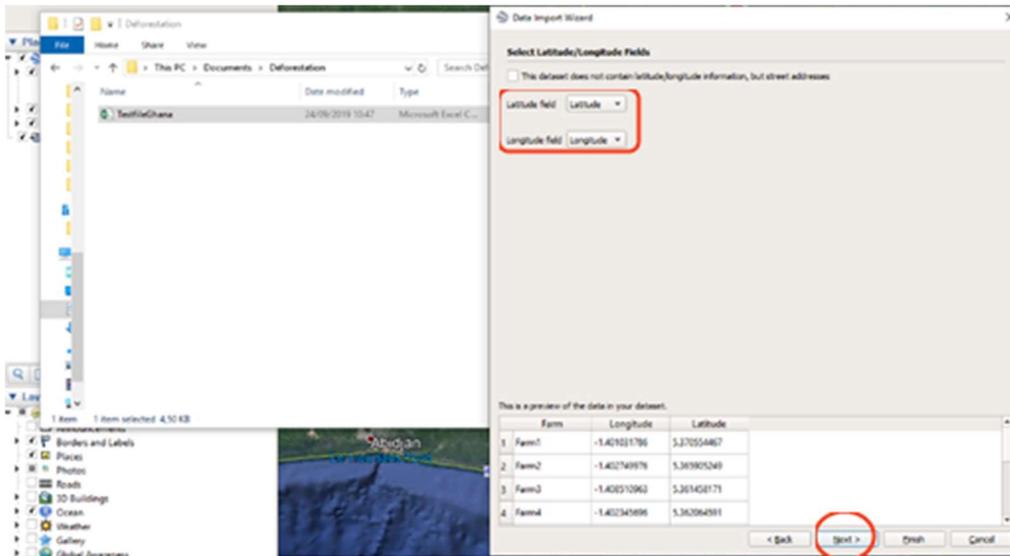


Figure 12. Check and set the latitude and longitude fields

The last step is to check the fields, and if correct “**Finish**” the import wizard.

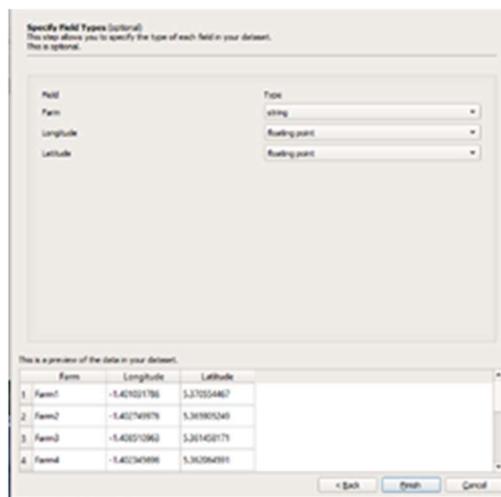


Figure 13. Check the fields needed to be imported and “finish” the import

For each layer you want to add, GEP will prompt if you want to ingest a style template or not (Chapter 3). After adding all the layers and creating properties for each of them as per the steps above, the map could look as follows:



Figure 14. GEP map with Protected areas, buffers and location points

Files can be opened on your mobile device with two options, for one option you need to save the files first in your google account. To do so; ii. Save the file as a **Kmz**.

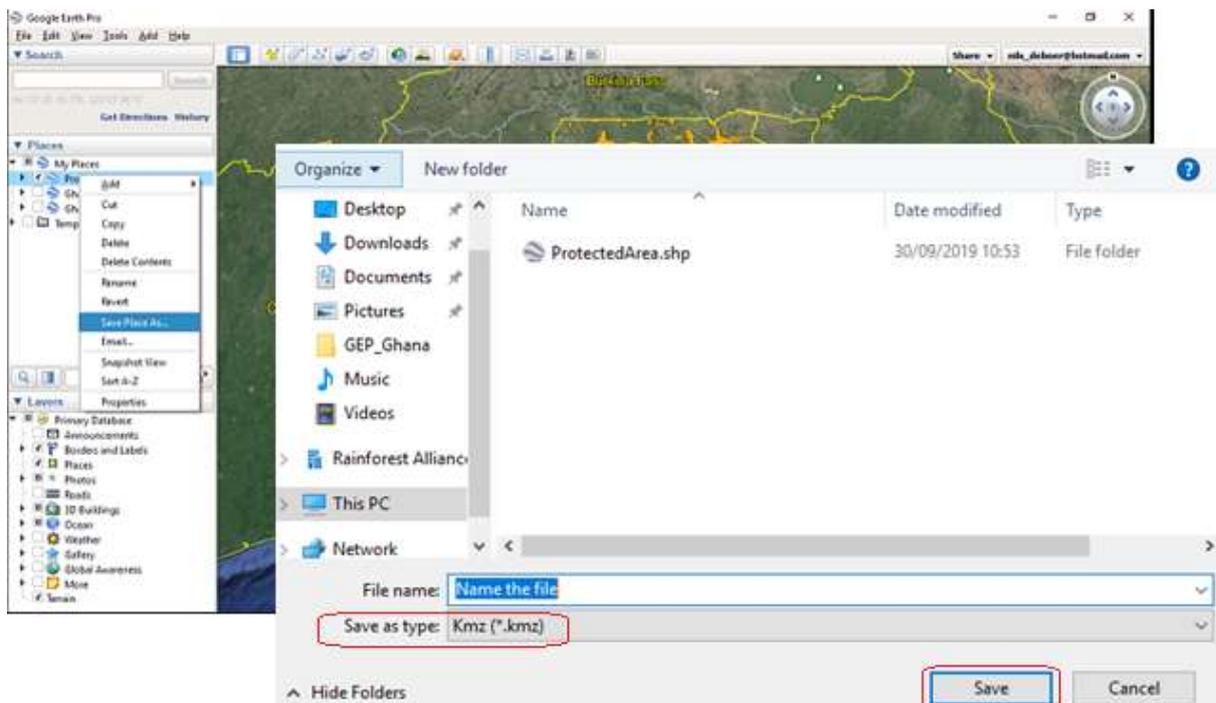


Figure 15. Save "My Place As" Kmlz (.Kmlz)



5. SMARTPHONE USE AND COLLECTING OWN LOCATION

GEP also works on a mobile device and can be downloaded from the application store.

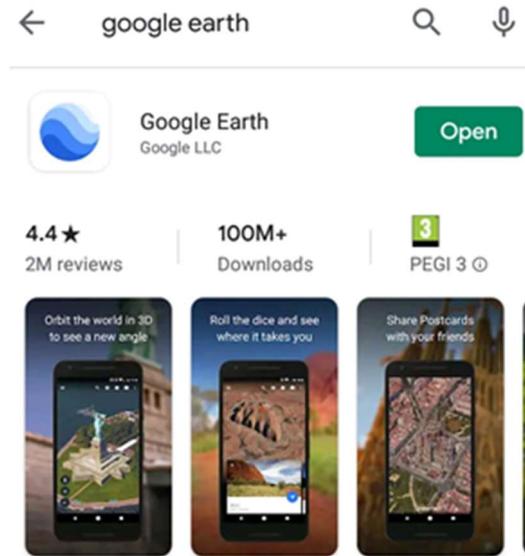


Figure 16. Google Earth in the android play store

On your mobile device the files/layers/data can be retrieved by in 2 ways:

Option 1: Opening files directly from the email application in the google app:

- Open the email received with the files and open each KMZ file
- This will open the Google Earth application on the mobile device automatically

Option 2: Storing the files directly on your mobile device:

- Save the files on the mobile device
- Then open the files manually from the earth application
- Once the app is open
 - Press the three lines in the top left of the screen
 - Go to **"My Places"** or **"Projects"** and import the KML files
 - Search for the files on your phone and select them one by one

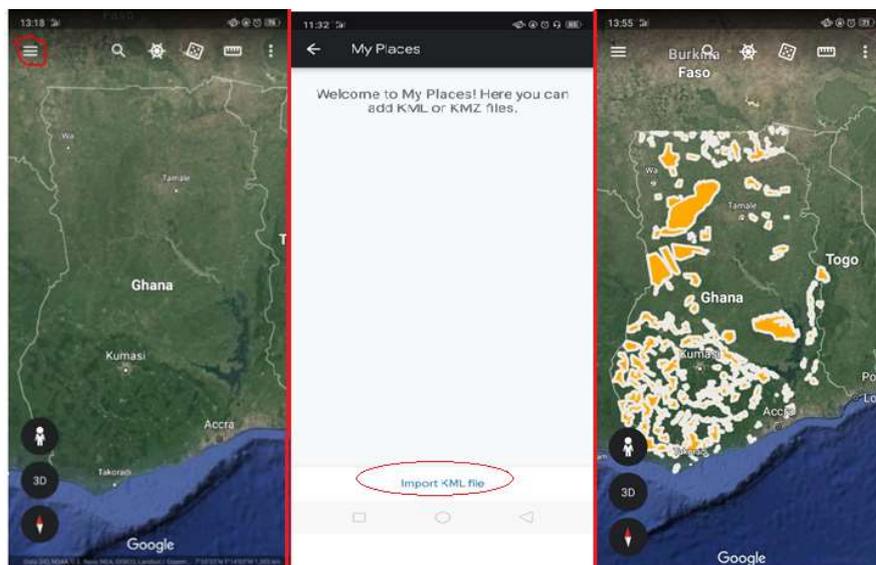


Figure 17. Option 2: on the left: step 1, in the middle: step 3 import KML file and on the right the result



GEP can also capture your current location. To do this, the user location service on the mobile device must be turned on:

- Go to the three dots in the right top of the screen and press "**My location**".
- After enabling the function, a blue dot will appear showing the location of the user

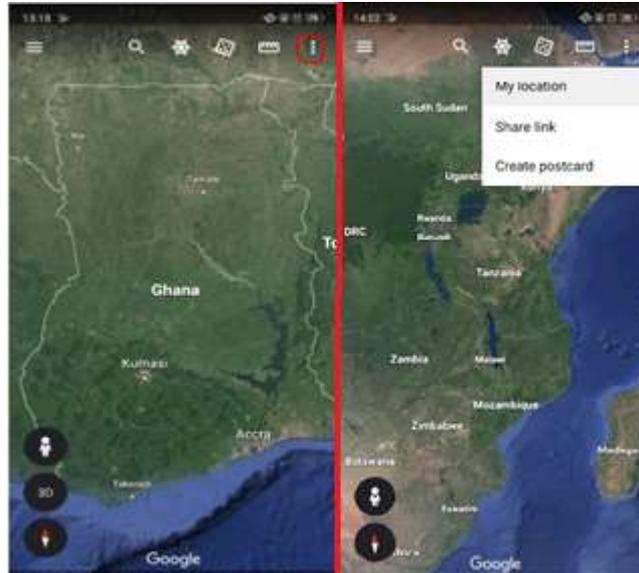


Figure 18. Enabling My Location function

The coordinates of the location can be found seen on the bottom of the screen. These coordinates are first shown in DMS (Decimal Minutes Seconds) and therefore need to be adjusted to DD (Decimal Degrees) coordinates. This can be done by using the following equations:

- DMS to Decimal degrees = degrees + minutes/60 + seconds/3600.
- Longitude Decimal degrees = ((52) + (39/60) + (26/3600)) = 52.6572
- Latitude Decimal degrees = ((5) + (6 / 60) + (21 / 21)) = 5.1058
- There are also online converters that can be used such as:
 - <http://www.latlong.net/degrees-minutes-seconds-to-decimal-degrees>
 - https://www.engineeringtoolbox.com/utm-latitude-longitude-d_1370.html



Figure 19. GEP displaying the users own location

6. CREATING POLYGONS WITH GOOGLE EARTH

6.1. LOADING REFERENCE GPS POINTS INTO GOOGLE EARTH

The reference points in KML format can be uploaded to Google Earth simply by double-clicking on the KML file. Alternatively, open the KML, KMZ, GPX or any other type of spatial data file by selecting them from the menu in the app and clicking on “**File**” → “**Open**”. Data imported into Google Earth is stored in the “**Temporary Places**” folder of the “**Places panel**”. Remember to move and save the files to one local folder so that the files are not lost when closing the program.

6.2. DIGITIZING POLYGONS

To draw a polygon, follow these steps:

- Select the “**Add polygon**” tool
- Click on the map at the location of the polygon corners (vertices), going around the entire edge of the polygon to define its shape.
- When done, give the polygon a name in the “**Name**” field and add any additional details in the “**Description field**”.
- Click on the “**Style, Color**” tab to define how the polygon is displayed.
- Click on “**OK**” to save the polygon.

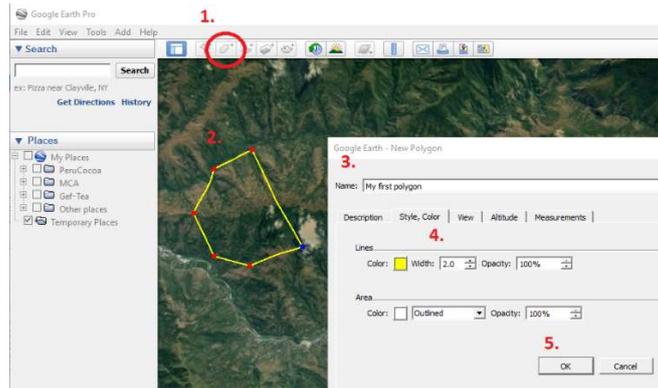


Figure 20. Polygon digitizing steps in Google Earth

Once a polygon is created it will appear in the **"Places panel"** on the left-hand side. Both the vertices and the properties of this polygon can be edited by right-clicking on the item in the **"Places panel"** and selecting **"properties"**. To save the polygon as a KML file, move all the polygons you want to save into one folder in the **"Places"** panel, right-click on the folder, select **"Save Place As"** and enter the name and location of the output file.

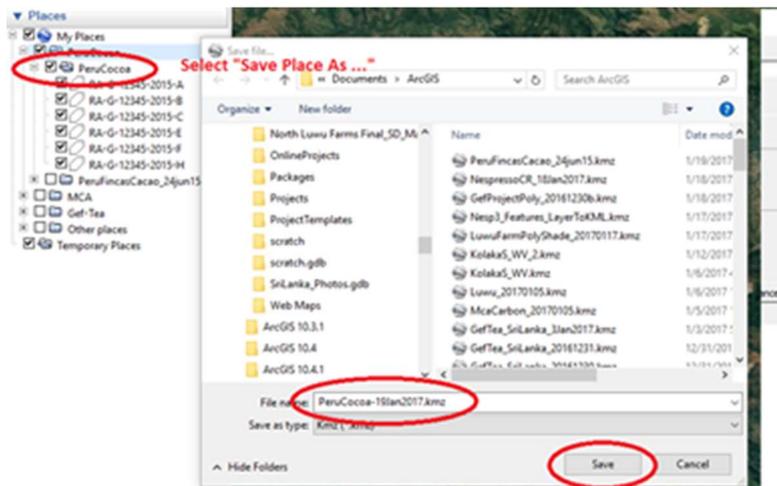


Figure 21. Example of how to save polygons as a KML file