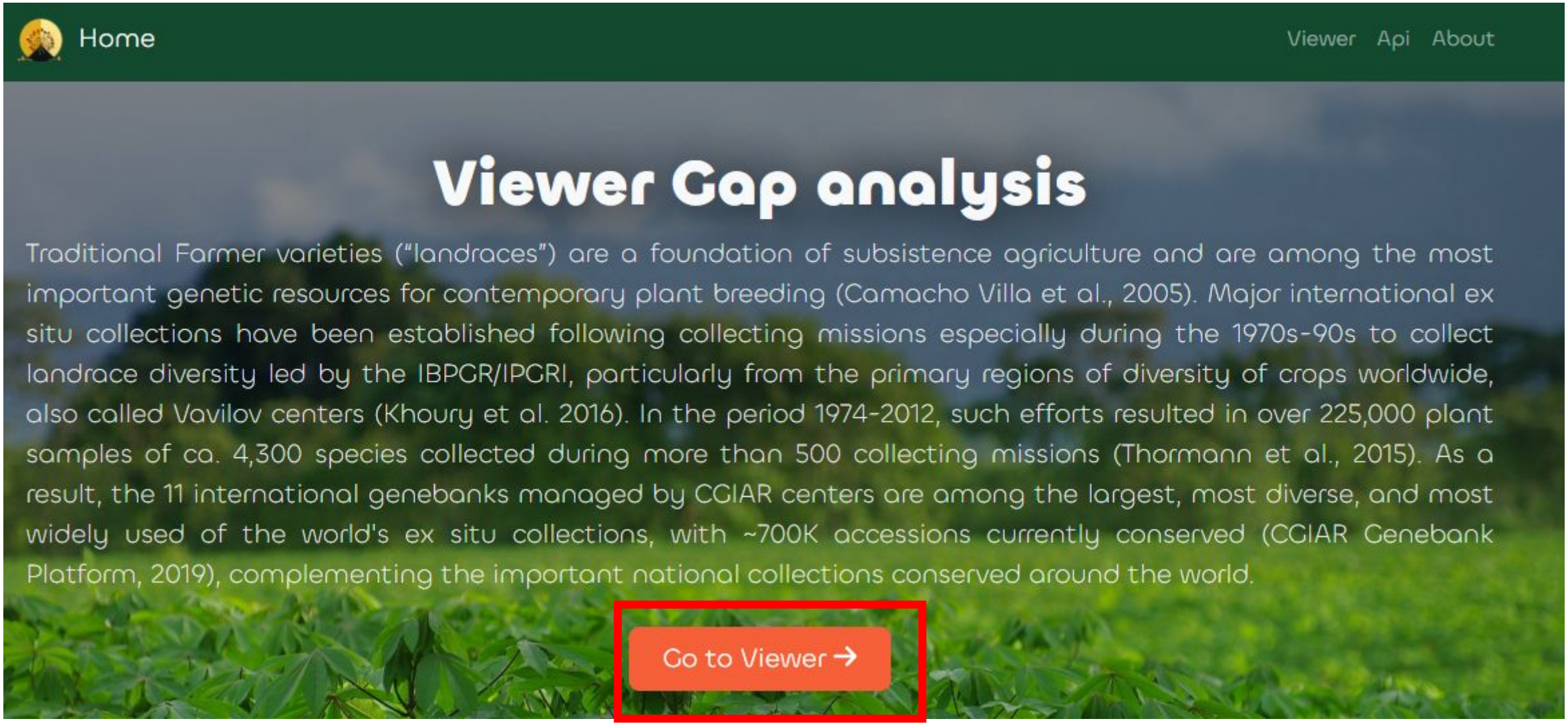
Tutorial to upload a gap map to Viewer Gap analysis

Please check your inputs

- ❑ Identify your gap map
- ❑ Format your raster file (only is accepted grids with gaps in numeric values, no gaps must be format as NA!)

Click on Go to Viewer

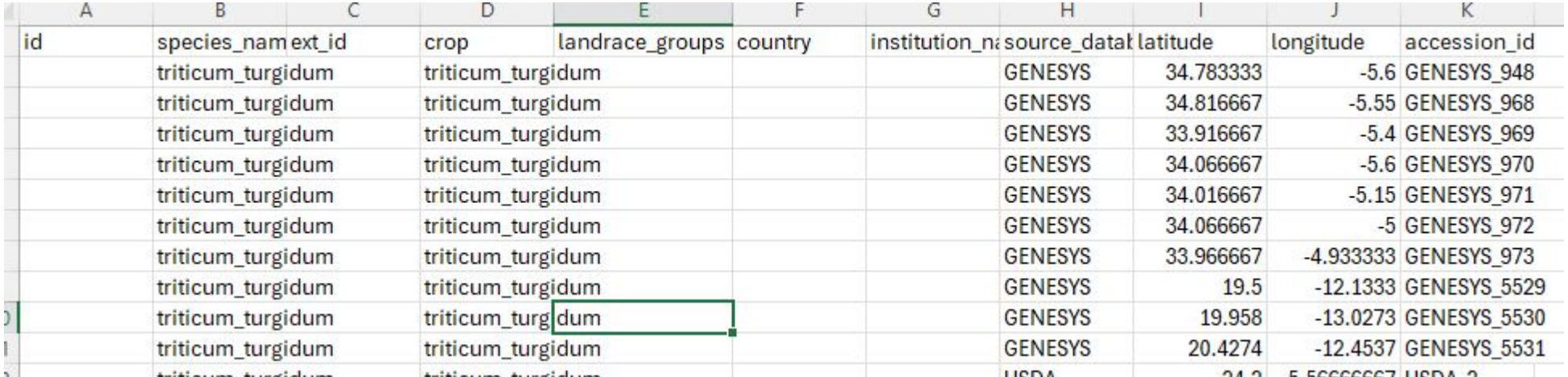


Landraces Gap Analysis

Format occurrence file for LGA and CWRGA

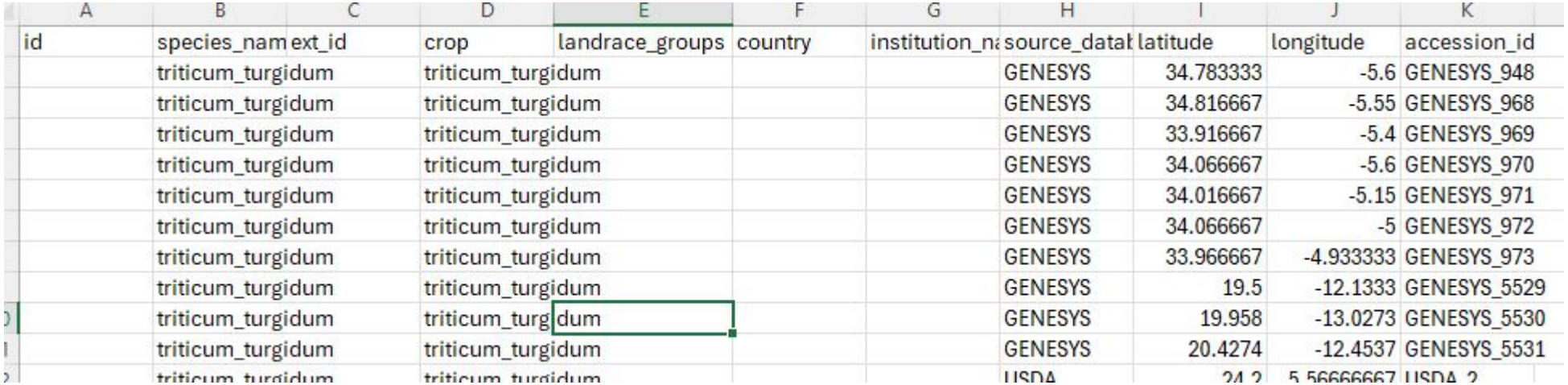
Please format only the germplasm occurrences to the following format:

- Species_name= species name with underline
- Country = Country ISO2 CODE
- Source_database = source
- Accesion_id = internal database id



	A	B	C	D	E	F	G	H	I	J	K
	id	species_nam	ext_id	crop	landrace_groups	country	institution_na	source_datal	latitude	longitude	accession_id
		triticum_turgidum		triticum_turgidum				GENESYS	34.783333	-5.6	GENESYS_948
		triticum_turgidum		triticum_turgidum				GENESYS	34.816667	-5.55	GENESYS_968
		triticum_turgidum		triticum_turgidum				GENESYS	33.916667	-5.4	GENESYS_969
		triticum_turgidum		triticum_turgidum				GENESYS	34.066667	-5.6	GENESYS_970
		triticum_turgidum		triticum_turgidum				GENESYS	34.016667	-5.15	GENESYS_971
		triticum_turgidum		triticum_turgidum				GENESYS	34.066667	-5	GENESYS_972
		triticum_turgidum		triticum_turgidum				GENESYS	33.966667	-4.933333	GENESYS_973
		triticum_turgidum		triticum_turgidum				GENESYS	19.5	-12.1333	GENESYS_5529
		triticum_turgidum		triticum_turgidum				GENESYS	19.958	-13.0273	GENESYS_5530
		triticum_turgidum		triticum_turgidum				GENESYS	20.4274	-12.4537	GENESYS_5531

Take the file triticum_turgidum_occurrences_ IDs and format to get a similar csv file.



	A	B	C	D	E	F	G	H	I	J	K
	id	species_nam	ext_id	crop	landrace_groups	country	institution_na	source_datal	latitude	longitude	accession_id
		triticum_turgidum		triticum_turgidum				GENESYS	34.783333	-5.6	GENESYS_948
		triticum_turgidum		triticum_turgidum				GENESYS	34.816667	-5.55	GENESYS_968
		triticum_turgidum		triticum_turgidum				GENESYS	33.916667	-5.4	GENESYS_969
		triticum_turgidum		triticum_turgidum				GENESYS	34.066667	-5.6	GENESYS_970
		triticum_turgidum		triticum_turgidum				GENESYS	34.016667	-5.15	GENESYS_971
		triticum_turgidum		triticum_turgidum				GENESYS	34.066667	-5	GENESYS_972
		triticum_turgidum		triticum_turgidum				GENESYS	33.966667	-4.933333	GENESYS_973
		triticum_turgidum		triticum_turgidum				GENESYS	19.5	-12.1333	GENESYS_5529
		triticum_turgidum		triticum_turg	dum			GENESYS	19.958	-13.0273	GENESYS_5530
		triticum_turgidum		triticum_turgidum				GENESYS	20.4274	-12.4537	GENESYS_5531
		triticum_turgidum		triticum_turgidum				USDA	24.2	5.56666667	USDA_2

Equivalences

- Y=species_name
- Latitude=latitude
- Longitude=longitude
- source_db=source_database
- database_id= accesion_id

Format gap analysis raster file

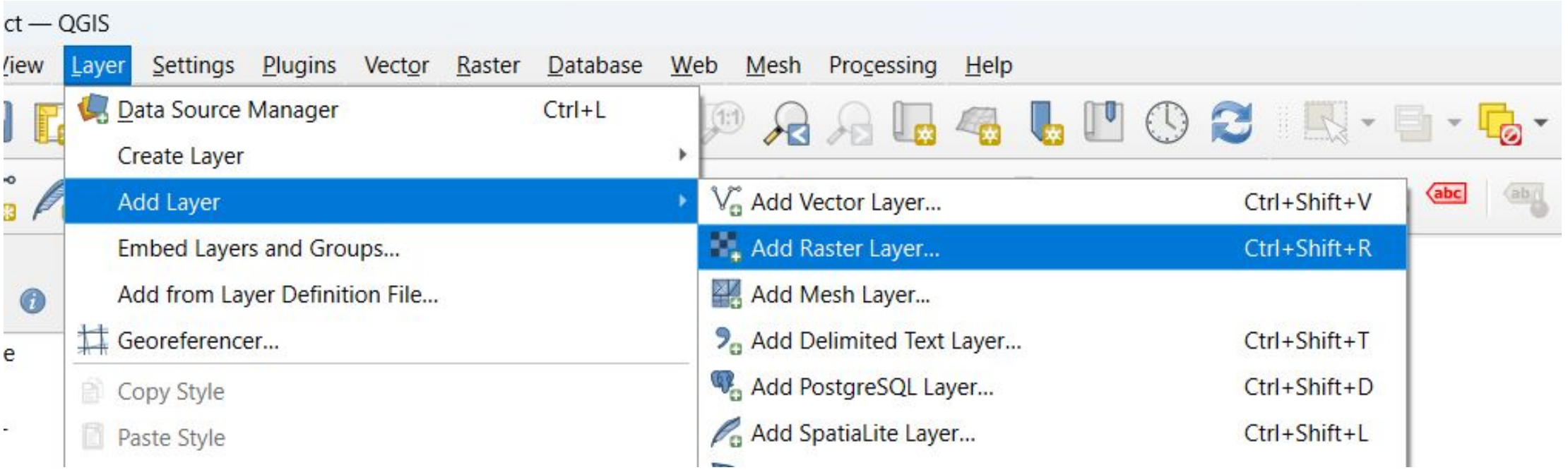
QGIS instructions

Go to your folder

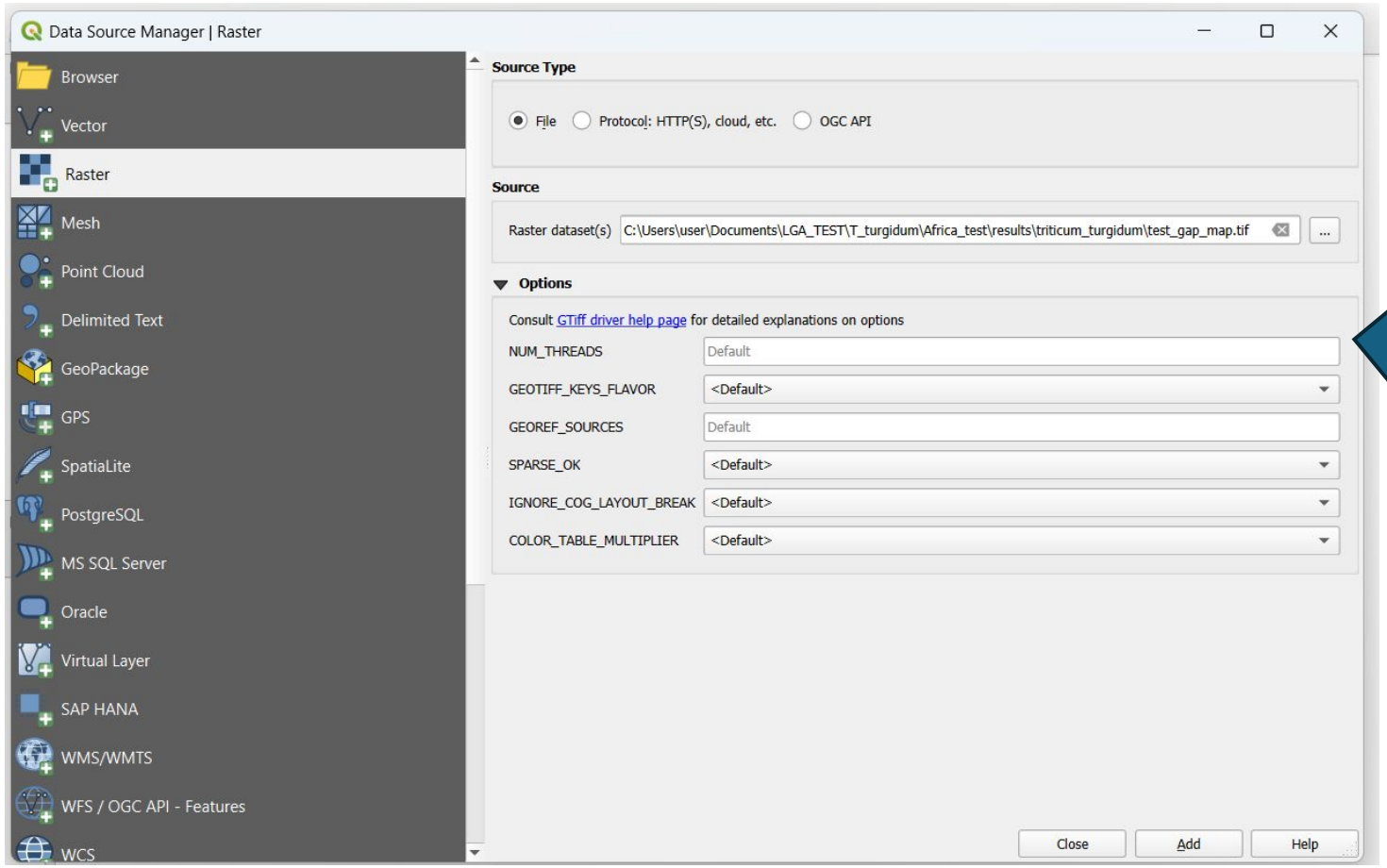
- T_turgidum\Africa_test\results\triticum_turgidum
- Your gap map is named: test_gap_map.tif
- Please remove the values in the raster as 1 to 2. They are low and medium probabilities gaps (You can use QGIS or R)

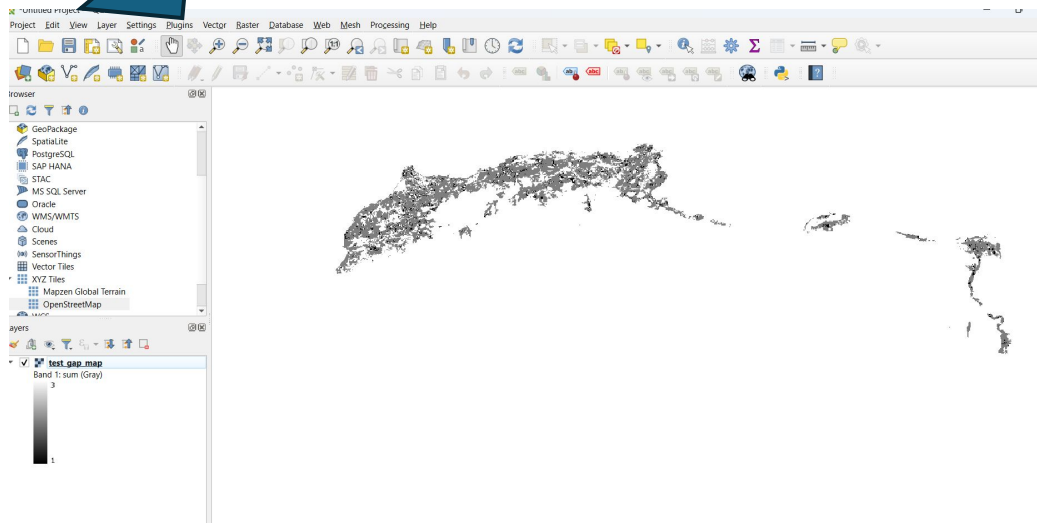
Instructions for qgis

- Step 1) Click in Add Layer > Add Raster Layer

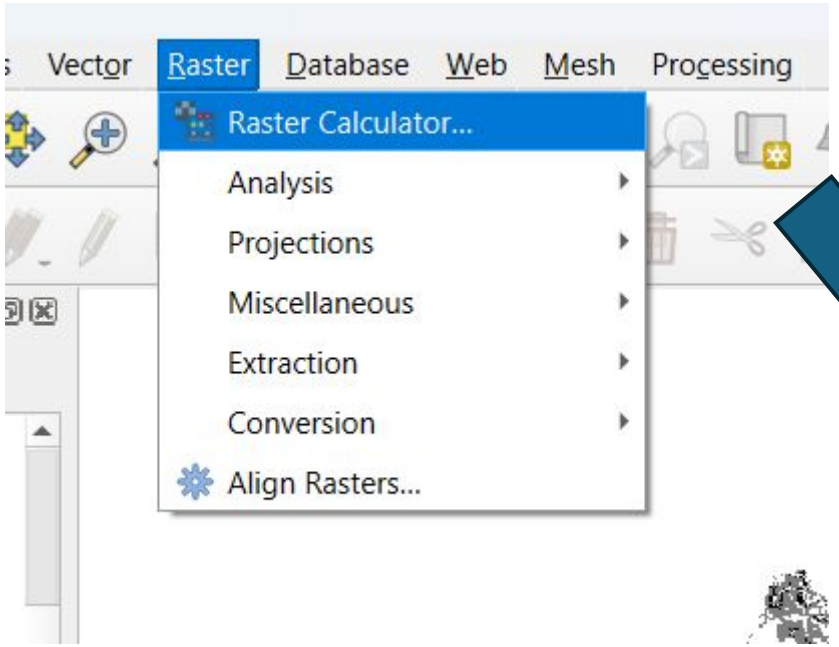


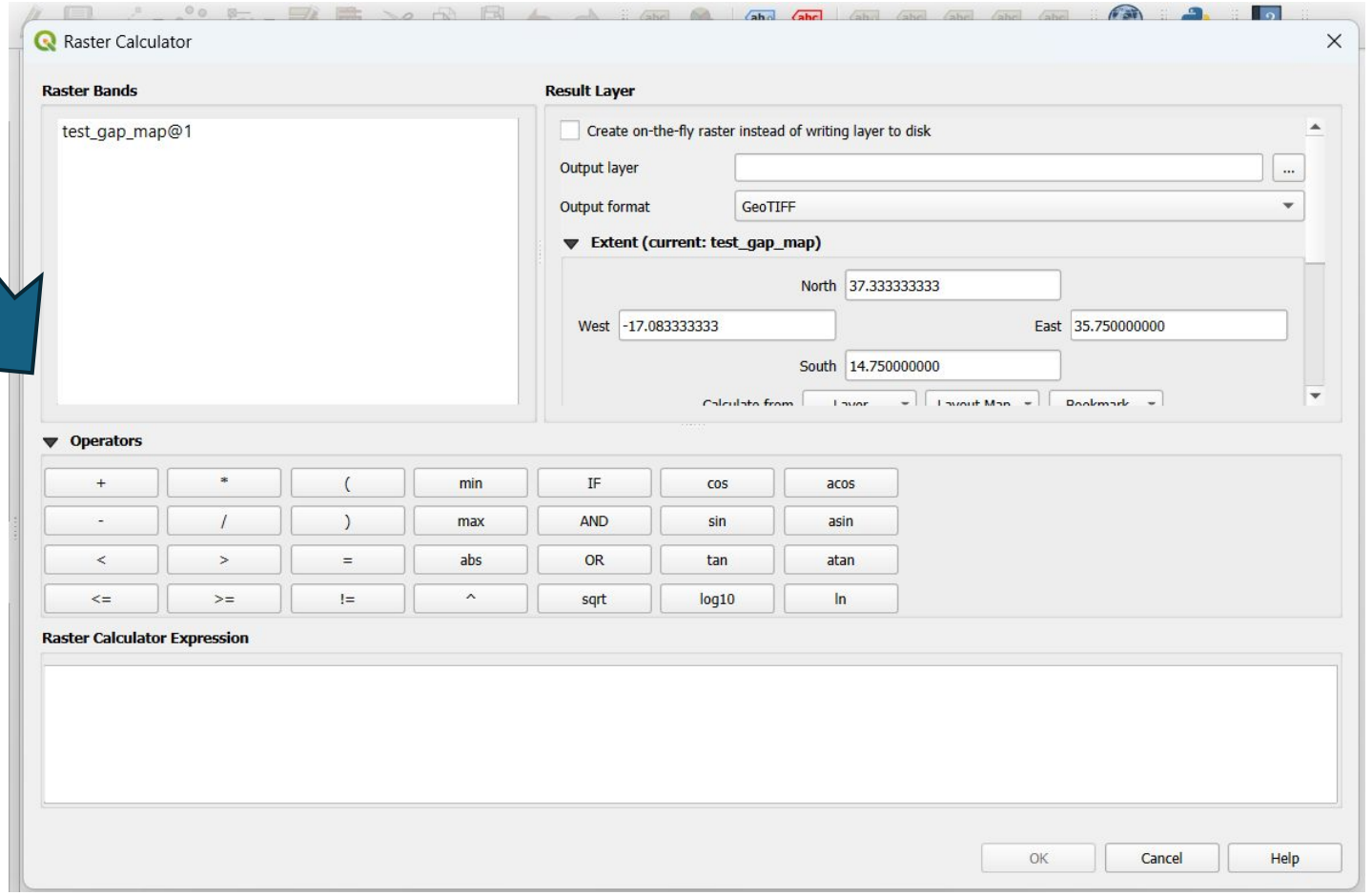
Step 2) Load your gap map file test_gap_map.tif and click on Add

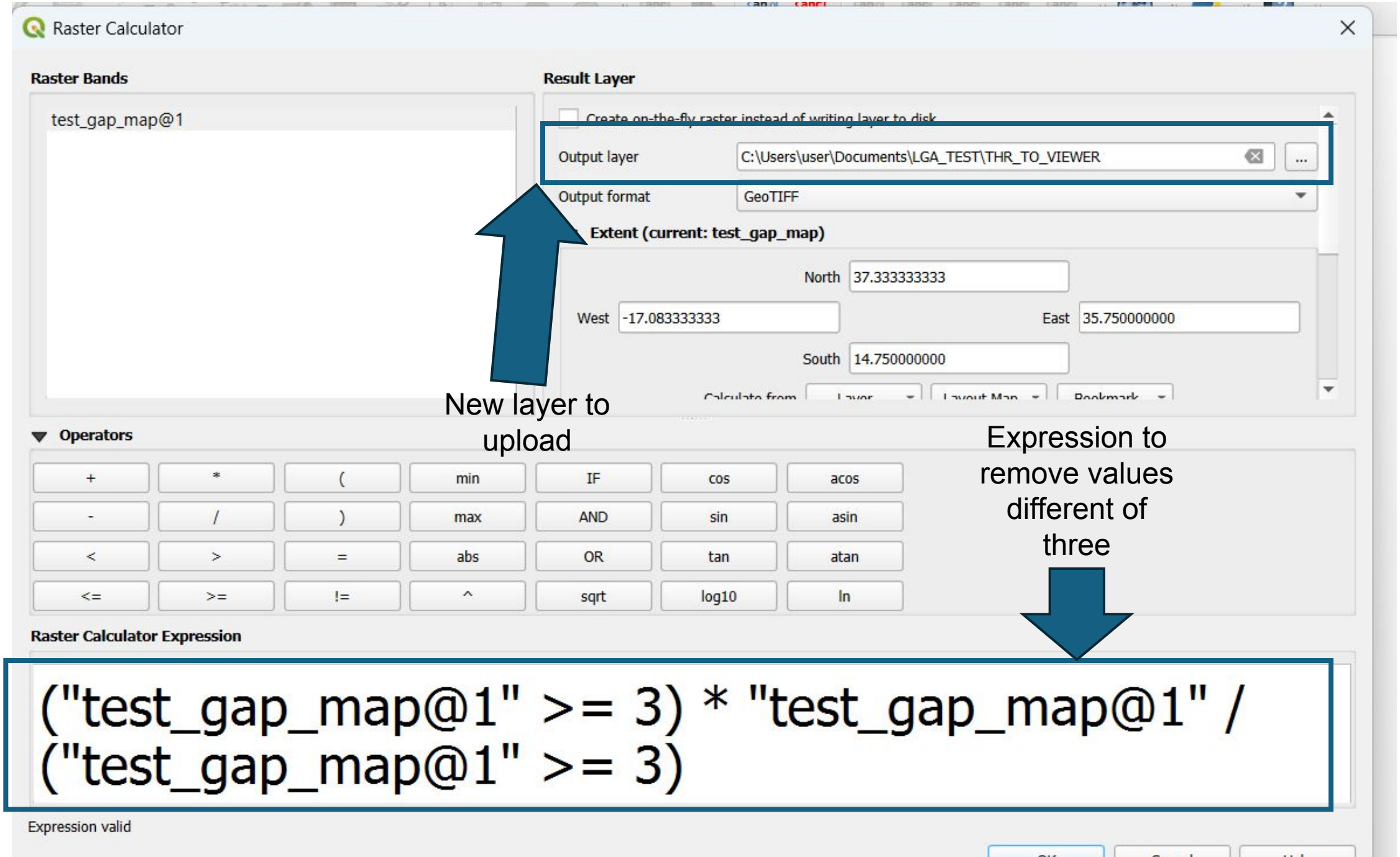




Step 3. Remove values different of three






Raster Calculator
Raster Bands
test_gap_map@1
Result Layer
Create on-the-fly raster instead of writing layer to disk
Output layer
C:\Users\user\Documents\LGA_TEST\THR_TO_VIEWER
Output format
GeoTIFF
Extent (current: test_gap_map)
North
37.333333333
West
-17.083333333
East
35.750000000
South
14.750000000
New layer to upload
Operators
+ * (min IF cos acos
- /) max AND sin asin
< > = abs OR tan atan
<= >= != ^ sqrt log10 ln
Expression to remove values different of three
Raster Calculator Expression
("test_gap_map@1" >= 3) * "test_gap_map@1" /
("test_gap_map@1" >= 3)
Expression valid

Expression to remove values different to three

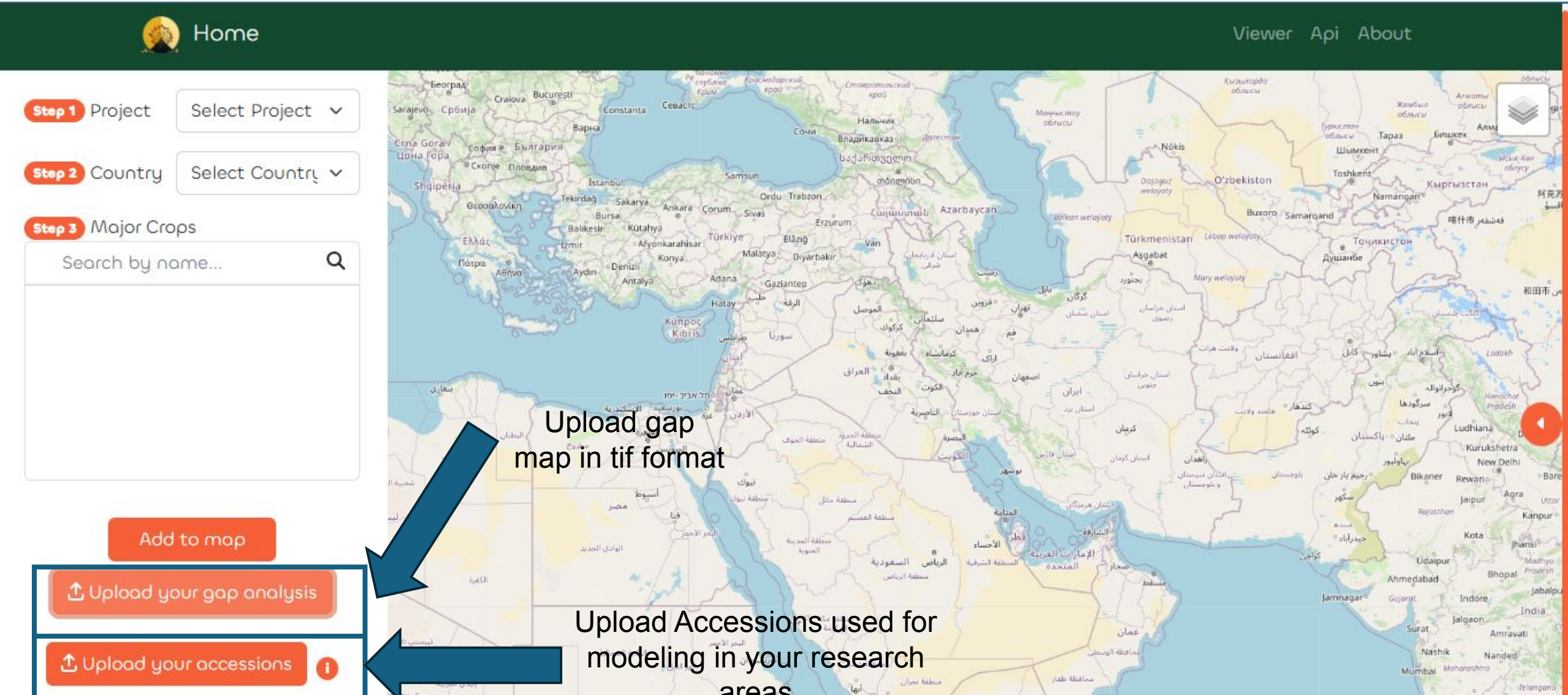
("test_gap_map@1" >= 3) * "test_gap_map@1" / ("test_gap_map@1" >= 3)

Format raster for CWRGA

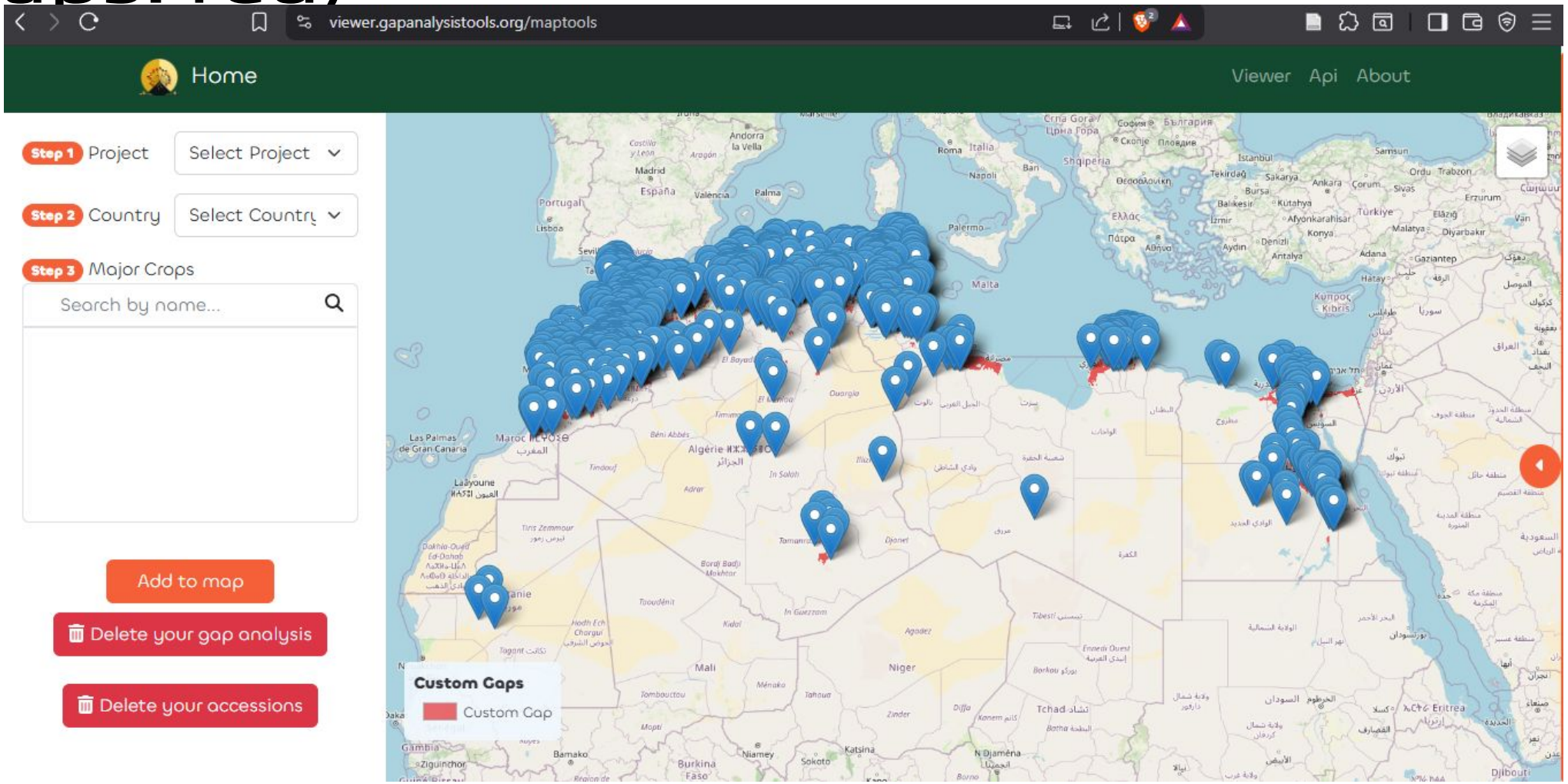
In your R write the following lines

```
#Call terra librarylibrary(terra)
#Change the value of the gap map from 1 to 3
grs_exsitu$gGaps[grs_exsitu$gGaps==1] <- 3
#save raster
filewriteRaster(grs_exsitu$gGaps,"C_cordata_gap.tif",overwrite=
T)
```

Instructions to use Gap Analysis Viewer

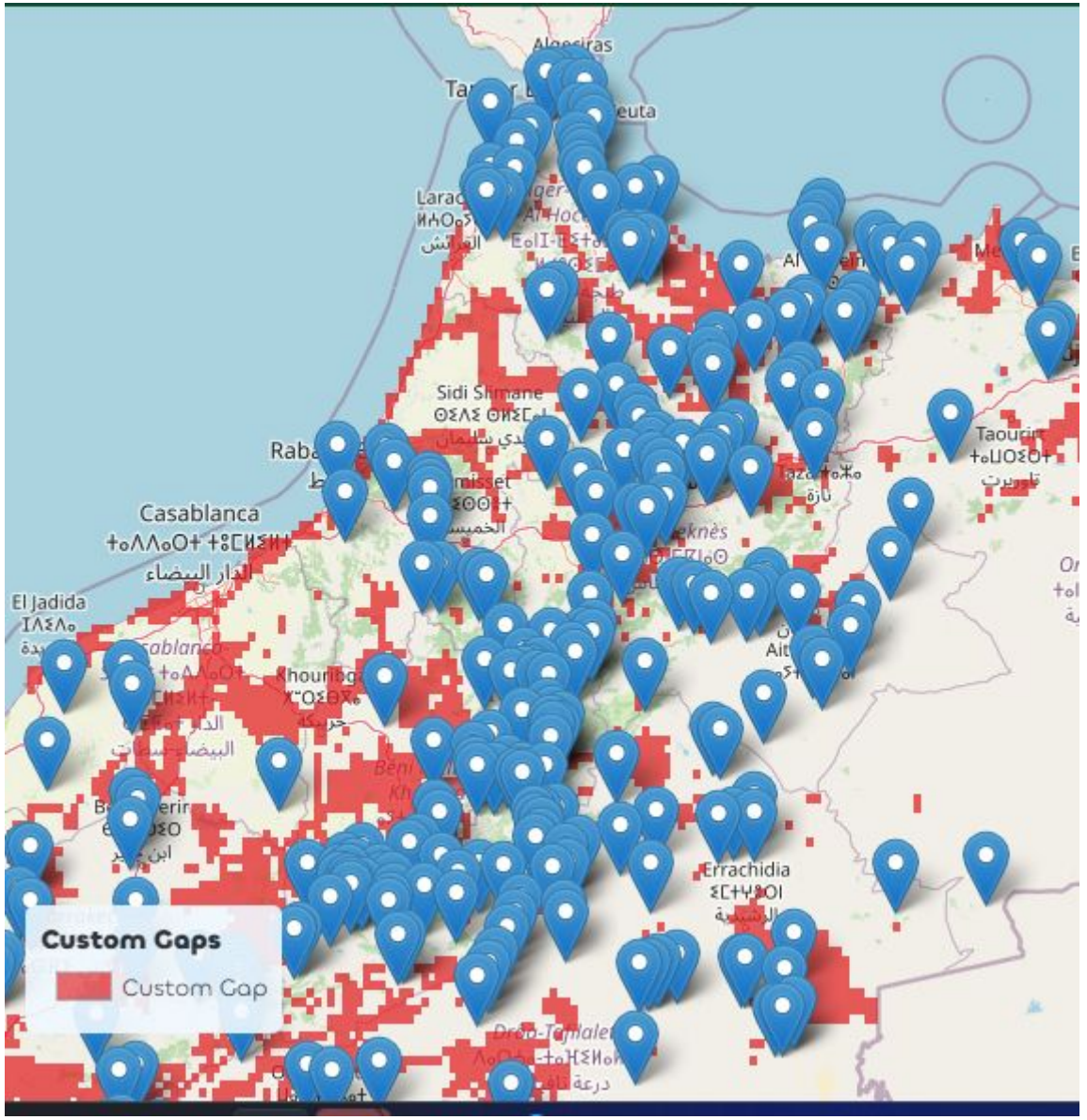

Home
Viewer
Api
About
Step 1 Project
Select Project
Step 2 Country
Select Country
Step 3 Major Crops
Search by name...
Add to map
Upload your gap analysis
Upload your accessions
Upload gap map in tif format
Upload Accessions used for modeling in your research areas

Your germplasm data and gap map are ready to be visualized! (Accessions: Blue, gaps: red)



Zoom in

- In this case the coastal areas are potential gaps in the germplasm collection!
- Let´s try a collecting plan!

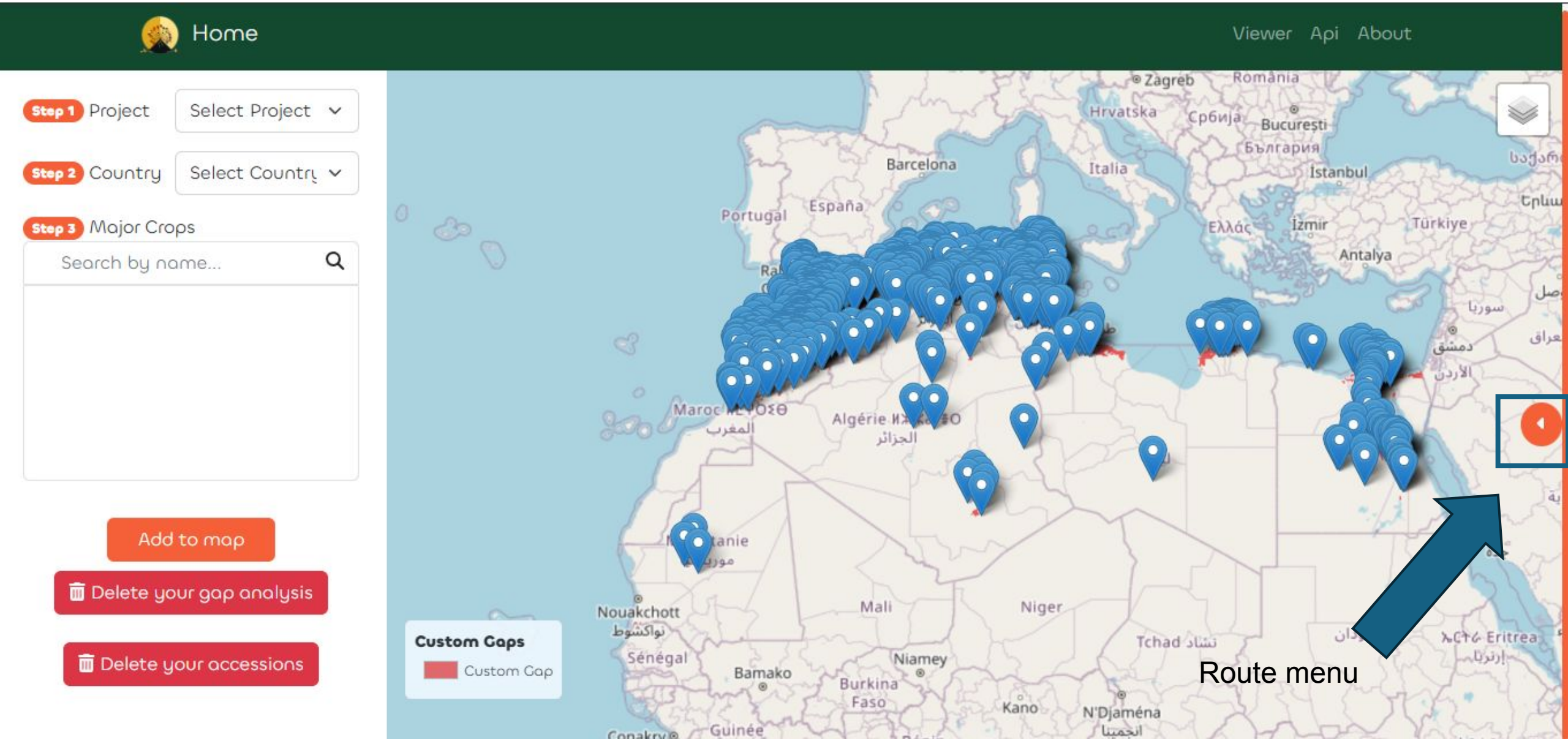


Before continue go for the following questions:

- **Are the potential areas coherent with the previous knowledge of the species?**
- **Are previous collecting areas represented as red in the map?**
- **Are there missing areas where you know the species is present?**

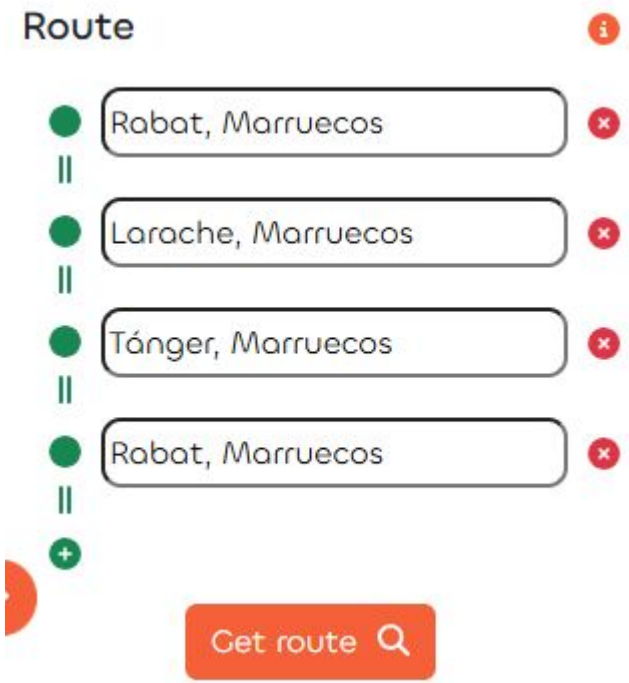
Problems with gap analysis outputs

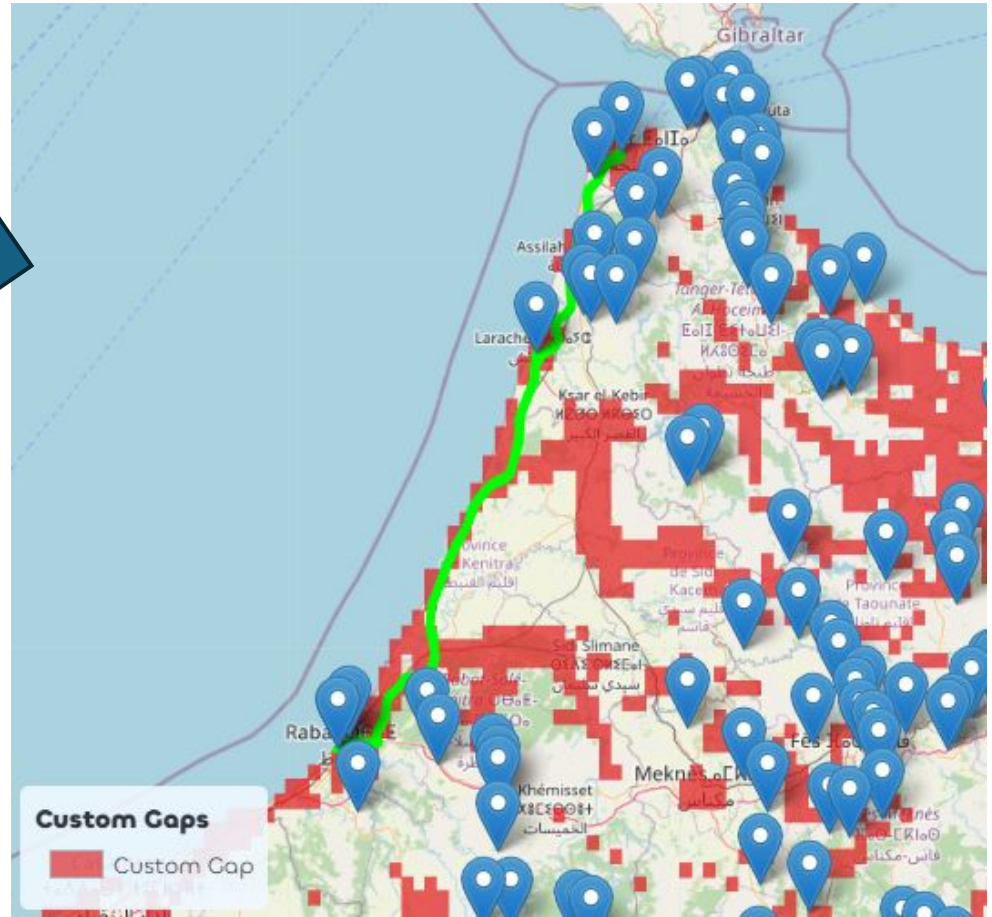
- **Are the potential areas coherent with the previous knowledge of the species? -> (Coherence)**
- **Are previous collecting areas represented as red in the map? -> (Omission errors)**
- **Are there missing areas where you know the species is present? - > (Commission errors)**


Home
Viewer
Api
About
Step 1 Project
Select Project
Step 2 Country
Select Country
Step 3 Major Crops
Search by name...
Add to map
Delete your gap analysis
Delete your accessions
Custom Gaps
Custom Gap
Route menu
Zagreb
Hrvatska
Srbija
România
București
България
Italia
Barcelona
España
Portugal
İstanbul
Ελλάς
İzmir
Türkiye
Antalya
Maroc
المغرب
Algérie
الجزائر
Nouakchott
Mali
Niger
Sénégal
Bamako
Niamey
Burkina Faso
Kano
N'Djaména
Tchad
Eritrea
Guinée

Route menu view

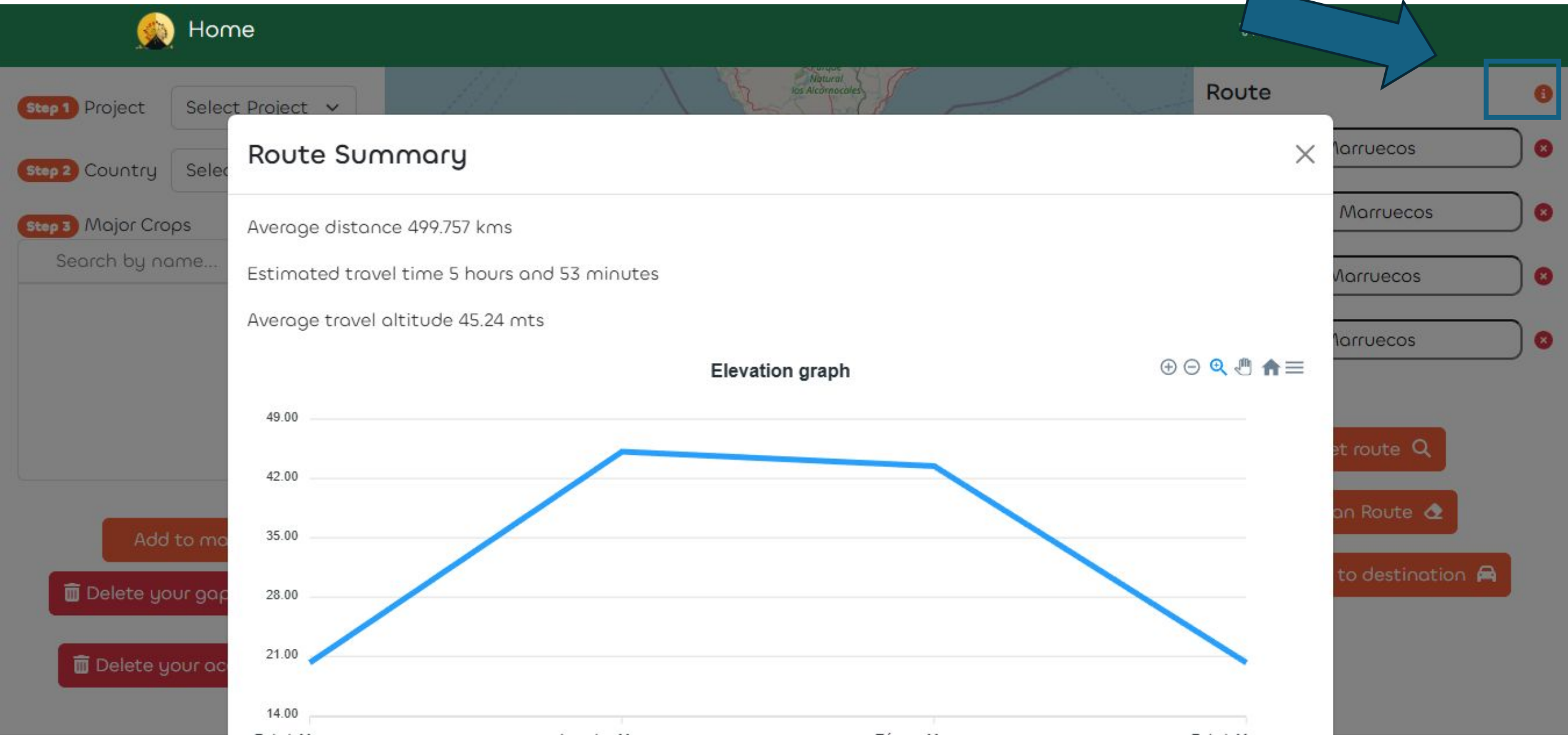
Lets imagine the following route to collect





your route is likely to pass through areas with a high probability of encountering the target species

Obtain instructions for Google maps

- Google Map navigation

Route summary