[DesirMED] - WP4 - Cross update T4.1 and T4.2

Updated on 19.12.2024 by Vuong Pham

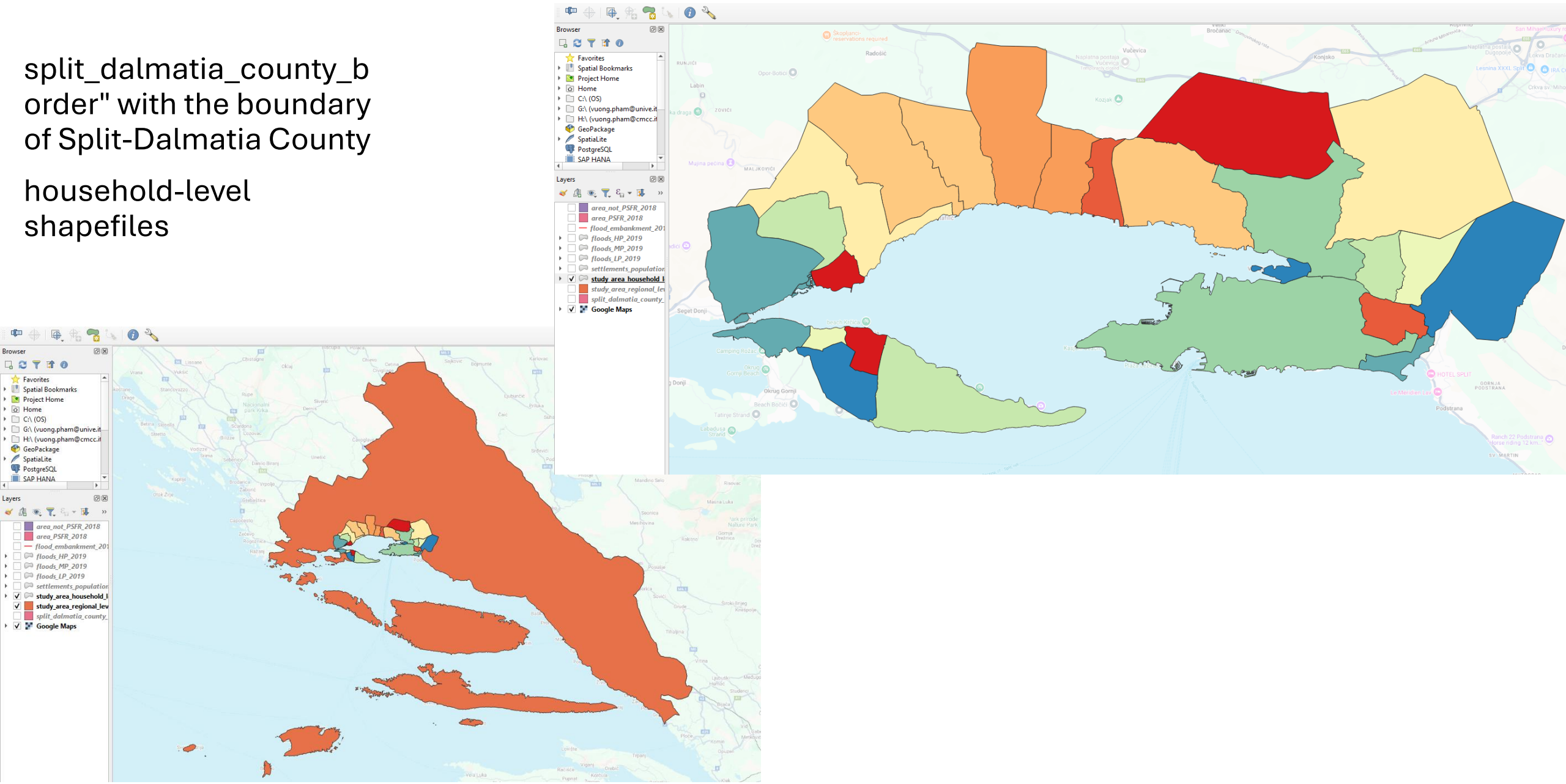# Table of content

Data overview of SDC

Task T4.2: Risk profiling

Updated on 12.12.2024 by Vuong Pham

Administrative layers

split_dalmatia_county_border" with the boundary of Split-Dalmatia County

household-level shapefiles

settlements_population

Vector layer "settlements_population" with the boundaries of settlements within Split-Dalmatia County, including population data for each settlement for 2011 and 2021

Maybe 2001 since they report only every 10 years.
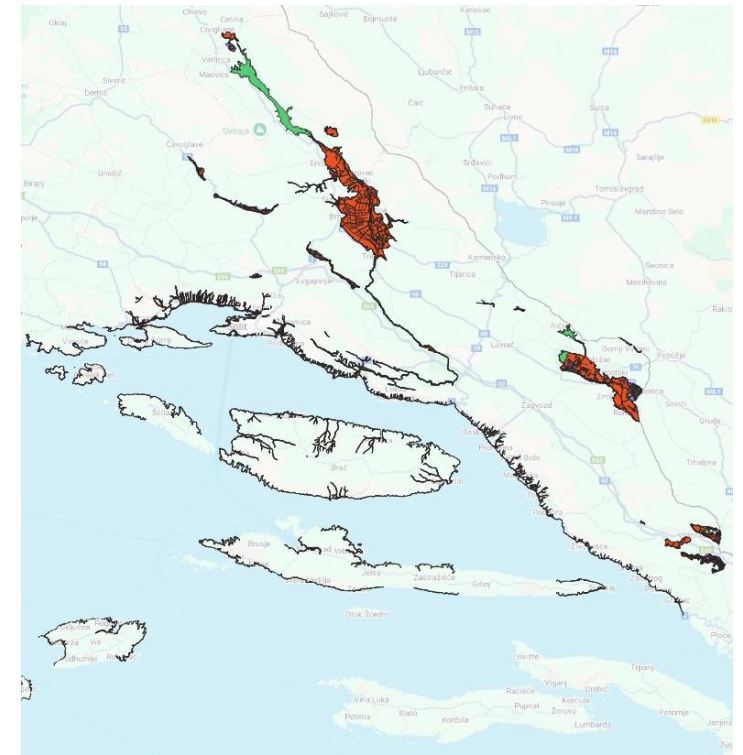
@S: Split man and woman.

@D: Other global data might be available: age: 2000 – 2020

=> Coping capacity level.
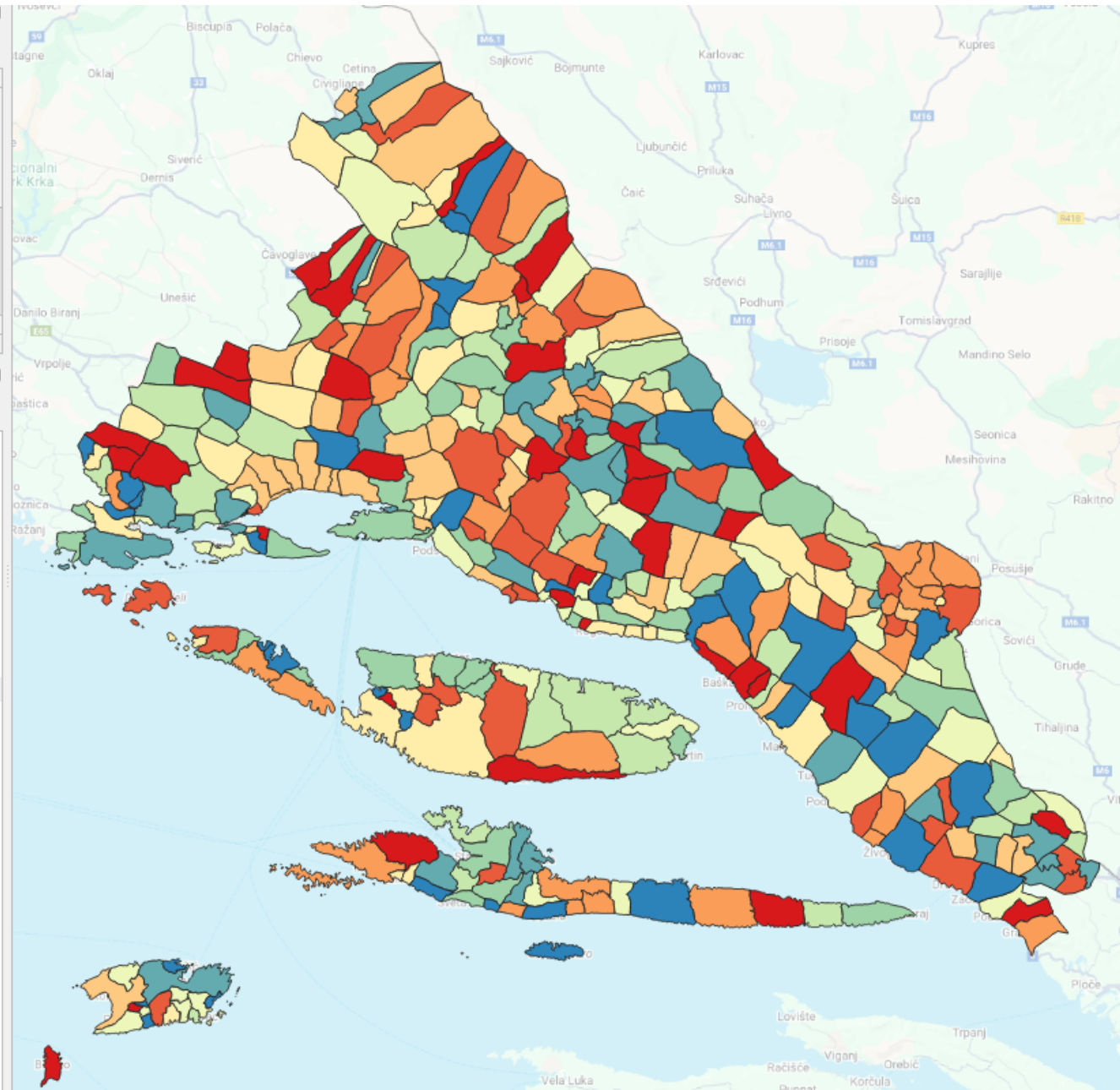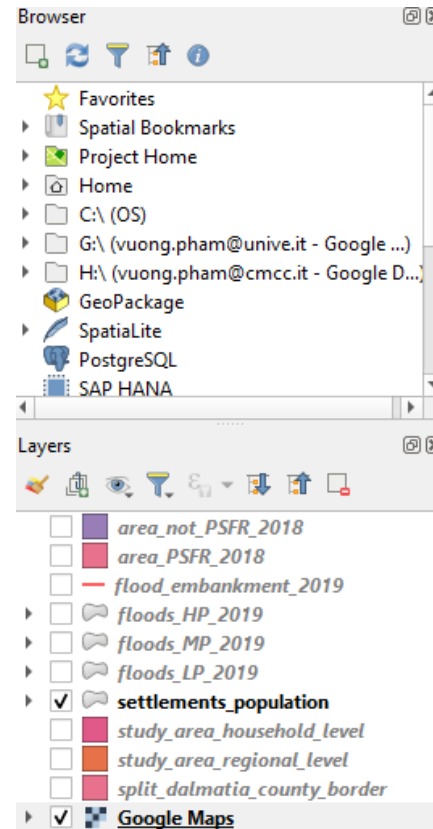
Floods with probabilities of occurrence

Floods with a high/medium/low probability of occurrence (RP = ~25, 100, 1000 years)
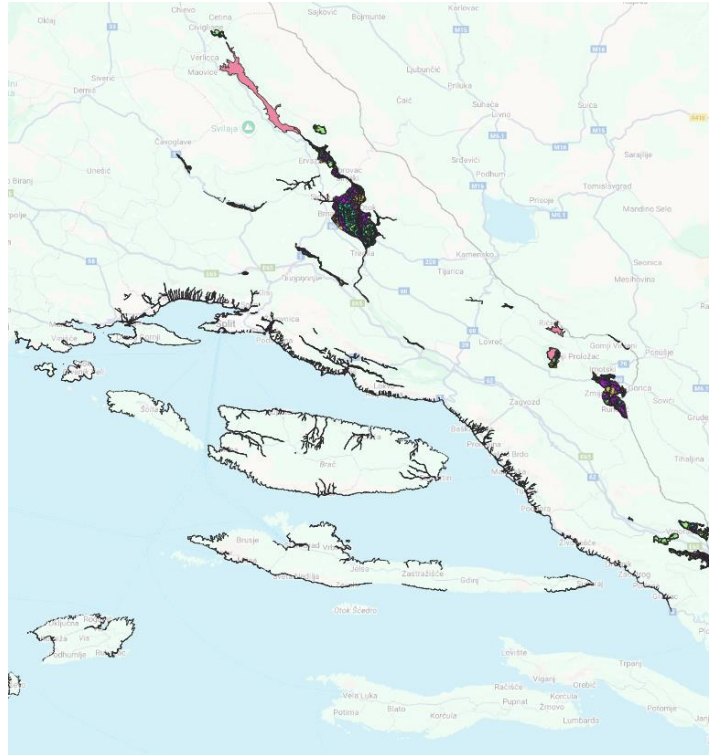
Compare with the JRC data. They have several return periods. Uncertainty analysis

Areas of Potentially (or NOT) Significant Flood Risks

areas that has (NOT) been declared as "Areas of Potentially Significant Flood Risks" by the Preliminary Flood Risk Assessment 2018
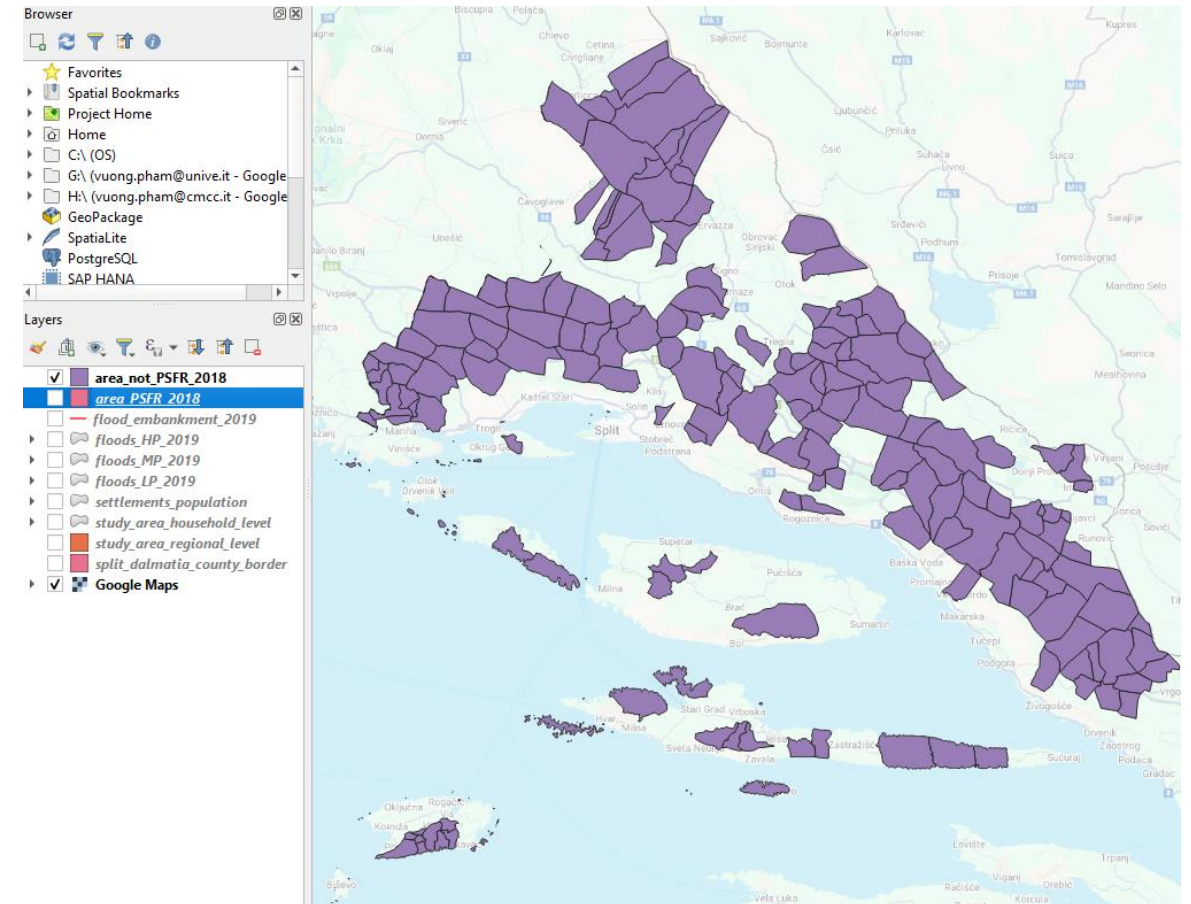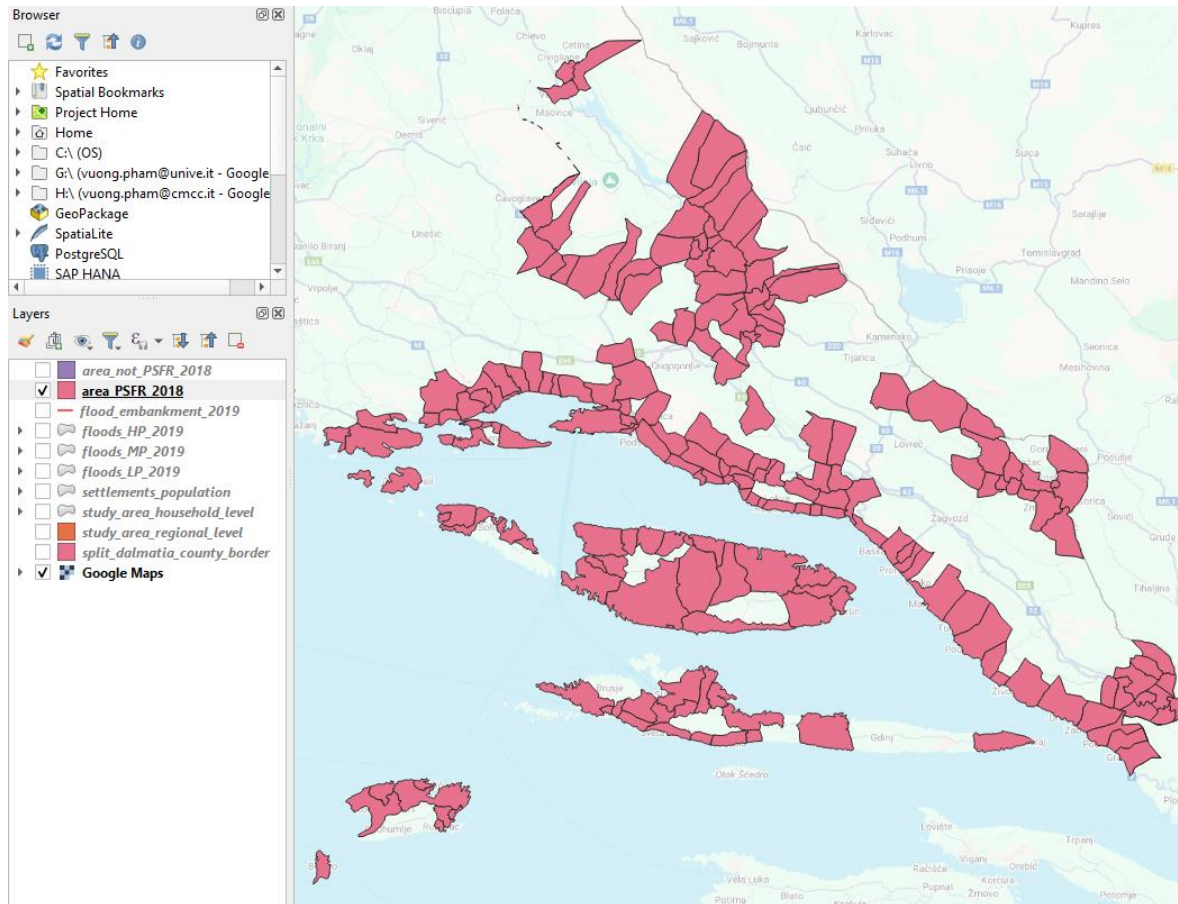
@S: check if they have new data, e.g., 2025

flood_embankment_2019

flood_embankment_2019
" - the location of the
flood embankment

Reported damages

We are sending you Excel tables ("2010.-2018. Reported damages" and "2019.-2023. Reported damages") containing data on reported damages at the county level for the period from 2010 to 2023. For more detailed levels (**settlement**) of damage data, it is necessary to request the data, which we have done, and we'll send it to you as soon as we receive it
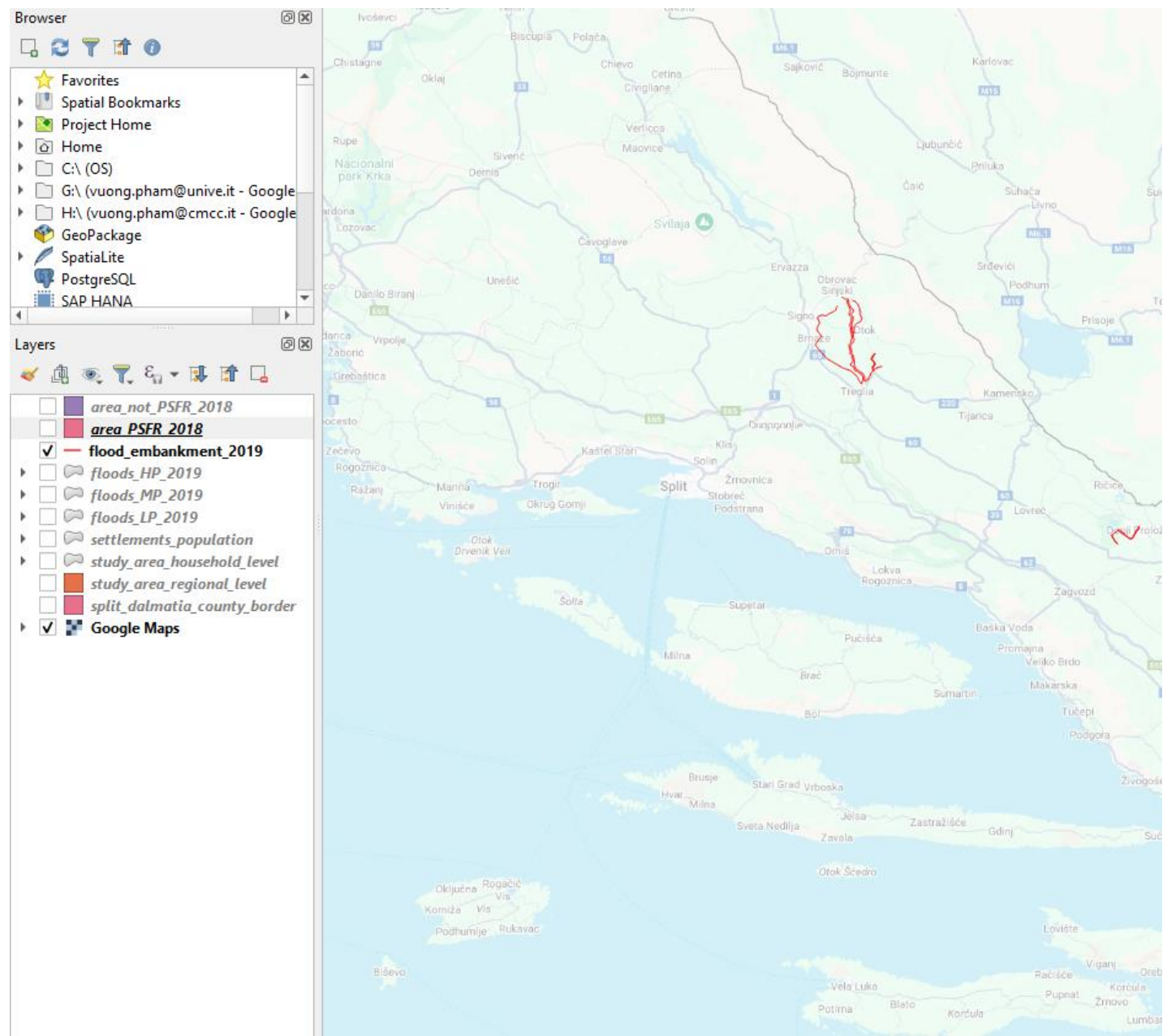
⇒@S: Yearly only.

⇒The finest cale is settlement level only but not building level.

⇒ Possible to work at the building level.

Reported damages in the Natural Disaster Damage Register for the period from 2010 to 2018

SPLIT-DALMATIA COUNTY

RBR	YEAR	DROUGHT	HAIL	FLOOD	STORM,BURA	FIRE	FROST	RAIN, PRECIPITATION, SNOW	OTHER	TOTAL
0	1	2	3	4	5	6	7	8	9	10
1.	2010.	0.00	2,966,634.65	2,916,072.62	0.00	0.00	0.00	0.00	0.00	5,882,707.27
2.	2011.	0.00	6,839,476.32	0.00	6,491,653.20	214,700,803.49	0.00	0.00	0.00	228,031,933.01
3.	2012.	7,986,906.00	0.00	17,416,894.06	0.00	7,991,670.08	27,501,540.35	0.00	0.00	60,897,010.49
4.	2013.	0.00	10,802,112.60	0.00	0.00	0.00	0.00	0.00	0.00	10,802,112.60
5.	2014.	0.00	5,636,429.62	2,822,819.11	0.00	0.00	0.00	0.00	0.00	8,459,248.73
6.	2015.	0.00	2,609,051.06	0.00	3,737,418.49	329,414.00	0.00	0.00	0.00	6,675,883.55
7.	2016.	0.00	1,689,275.72	0.00	0.00	0.00	4,626,263.68	0.00	0.00	6,315,539.40
8.	2017.	234,069.89	0.00	0.00	0.00	334,831,868.28	58,982,915.14	0.00	0.00	394,048,853.31
9.	2018.	0.00	5,100,287.33	0.00	0.00	4,099,318.02	0.00	0.00	0.00	9,199,605.35

* values are in HRK (KUNA); exchange rate in EUR (1€=7.53HRK)

Reported damages in the Natural Disaster Damage Register for the period from 2019 to 2023

SPLIT-DALMATIA COUNTY

RBR	YEAR	EARTHQUAKE	STORM AND HURRICANE WINDS	FIRE	FLOOD	DROUGHT	HAIL, FREEZING RAIN	FROST	EXCEPTIONAL SNOWFALL	SNOWDRIFT AND AVALANCHE	ICE ACCUMULATION ON WATERCOURSES	LANDSLIDE, FLOW, SLUMPING, AND TOPPLING OF SOIL	OTHER PHENOMENA	TOTAL
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	2019.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.	2020.	0.00	11,719,142.40	0.00	3,058,655.38	0.00	0.00	0.00	2,913,094.60	0.00	0.00	0.00	0.00	17,690,892.38
3.	2021.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.	2022.	0.00	0.00	0.00	2,511,912.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,511,912.26
5.	2023.*	0.00	0.00	0.00	1,119,275.22	0.00	64,550.61	0.00	0.00	0.00	0.00	0.00	0.00	1,183,825.83

Source: Ministry of Finance

* Since 2023, the amounts of reported damages have been expressed in euros

From 2019 to 2022, the amounts were expressed in HRK (kuna) (1€=7.53HRK)

A ML approach to evaluate coastal risks related to extreme weather events in the Veneto region (Italy)
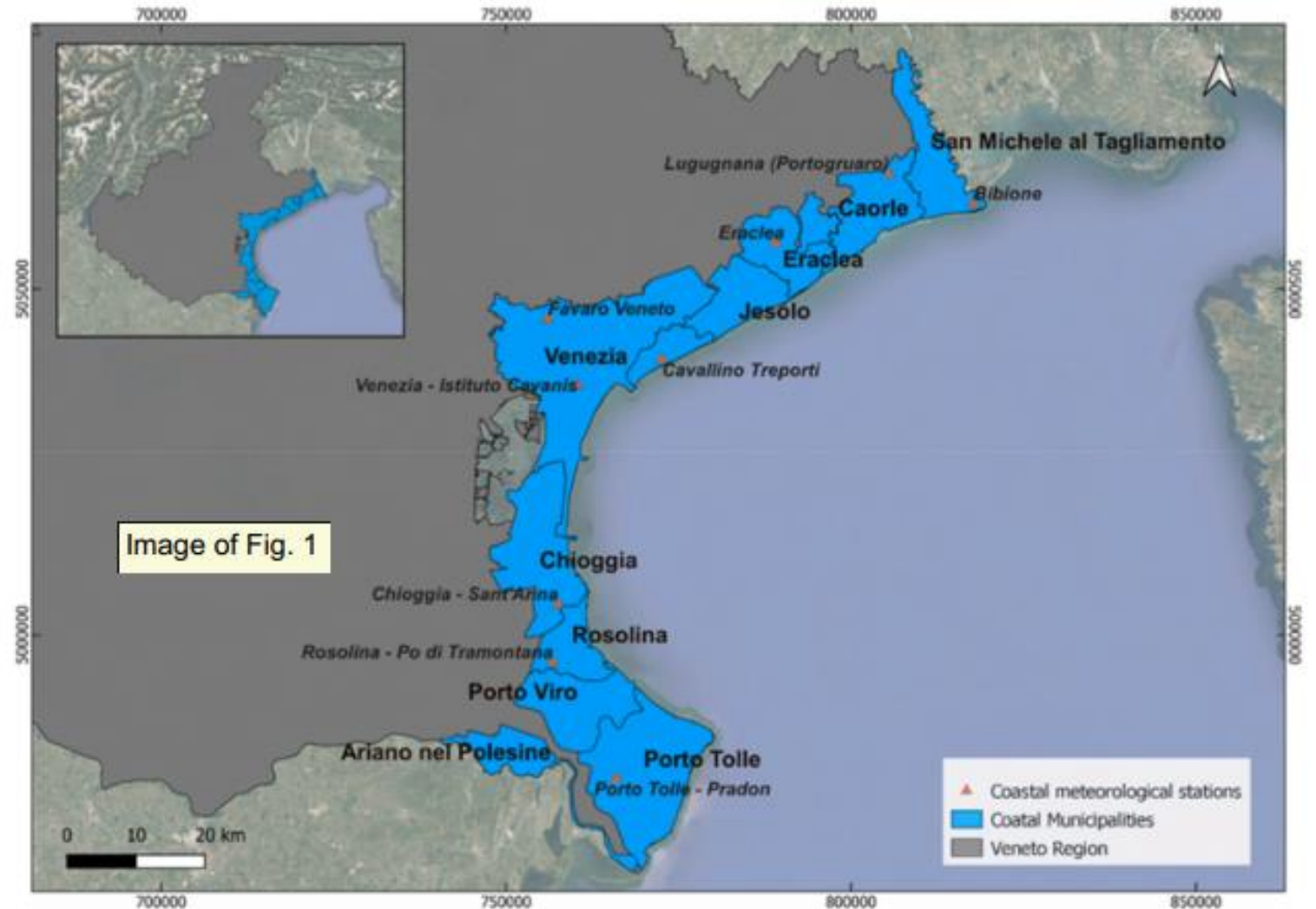
- Municipality level

Fig. 1. Coastal municipalities of Veneto Region and their meteorological stations.

A ML approach to evaluate coastal risks related to extreme weather events in the Veneto region (Italy)

- Set of data needed for the assessment

- ? Do you have this data at a higher spatio resolution in SDC?

=> S: SDC do not have any other local and more detailed data

Table 1
Summary of input data used for the Machine Learning application in the Veneto coastal area.

Data category	Indicator	Spatial domain	Spatial resolution	Timeframe	Temporal resolution	Source
Exposure and vulnerability	Total area	Veneto region	Municipality	2022	unique value	ARPAV[a]
	Land-use type	Italy/EU	1 km	1990–2020	multi-year	JRC – LUISA platform[b]
	Population					JRC – LUISA population[c]
	Soil characteristics	Veneto region	1:50.000/1:250.000	2022	unique value	ARPAV Geoportal[d]
	Topography	Italy	10 m	2017	unique value	[55,56]
Atmospheric hazards	Total precipitation	Veneto region	Coastal monitoring stations	2009–2019	hourly and daily	ARPAV[1] and ESWD[e]
	Wind speed					
	Humidity					
Oceanographic hazards	Sea surface height	Mediterranean Sea	1/24° (~4 km)	1987–2023	hourly and daily	CMEMS[f]
	Significant wave height					
Impacts	Damages and service interruption	Veneto region	Municipality	2009–2019	daily	Veneto Region[g]

^a Regional Environmental Protection Agency of the Veneto region (ARPAV): https://www.arpa.veneto.it/dati-ambientali/open-data.
^b Land Use-based Integrated Sustainability Assessment (LUISA) modelling platform developed by the European Commission's Joint Research Centre (JRC): https://data.jrc.ec.europa.eu/collection/luisa.
^c Land Use-based Integrated Sustainability Assessment (LUISA) modelling platform for population developed by the European Commission's Joint Research Centre (JRC): https://data.jrc.ec.europa.eu/dataset/jrc-luisa-population-ref-2014.
^d Geoportal developed by the Regional Environmental Protection Agency of the Veneto region (ARPAV): https://gaia.arpa.veneto.it/.
^e European Severe Weather Database (ESWD): https://eswd.eu/.
^f Copernicus Marine Service (CMEMS): https://doi.org/10.25423/CMCC/MEDSEA_MULTIYEAR_PHY_006_004_E3R1.
^g Veneto Region – Post-Emergency Disaster Events Management Office: https://bur.regione.veneto.it/BurvServices/Pubblica/sommarioDecretiPGR.aspx?expand=19.

Progress of landscape achetyes

Task T4.1: landscape achetyes

Updated on 12.12.2024 by Vuong Pham

Github platform by Deltares

Github platform by Deltares

Focus of This Repository

This repository supports the development and open source sharing of codes and analytical information useful to complete both tasks **Work Package 4 (System Knowledge, Data & Design)**, particularly:

1. **Task 4.1**: Identifying Key Landscape Features

   - Characterizing Mediterranean landscapes in terms of climate resilience, resources, and ecosystem services.
   - Mapping landscape interconnections to understand shared resources and services.

2. **Task 4.2**: Developing Regional Risk Profiles

   - Synthesizing climate-related risks across Demonstrating and Replicating Regions.
   - Creating risk profile metrics that integrate climate and socioeconomic scenarios.

For more information on the broader scope of DesirMED, visit the official Horizon Europe Project page.

Repository Highlights

This repository provides:

- **Python Scripts and Tools**: Geospatial analysis and climate-risk assessment.

- **Interactive Dashboards**: Visualize data and key metrics related to Mediterranean ecosystems.

- **Reports and Publications for both task will here:**

  - D4.1 Report: Landscape Characterization
  - D4.2 Report: Regional Climate Risk Profiles

Github platform by Deltares
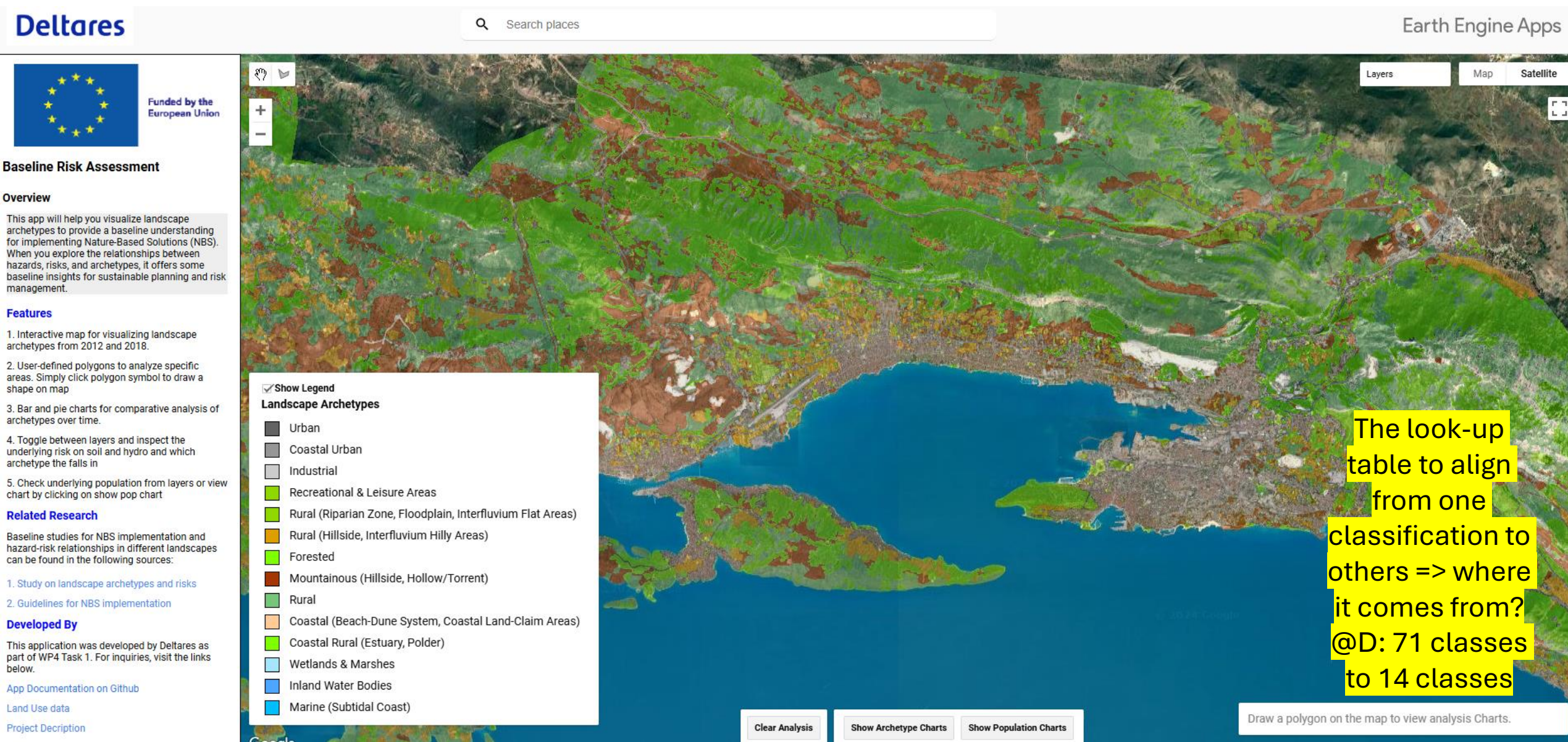
Note

- @D: Grant access to the UNIST team

- @D: Upload the metadata on the shared folder so T4.2 can use some of the layers. E.g., governance

- @all: Make sure there are not any overlapping with other tasks

Potential collaboration between T4.1 and T4.2

Updated on 12.12.2024 by Vuong Pham

T4.1 and T4.2

- Data shared since both tasks have SDC as the Demo case

=> Upload data in the shared folder with metadata, instruction, and presentation (if needed)

- Both Deltares and UNIST are developing platforms to store, share, and disseminate the results. Specifically, webGIS (both), GitHub (Deltares), and ArcGIS story map (UNIST).

=> Grant access to frontrunners to edit and update these platforms

- Communication: Google Group (Deltares), email loop, frontrunner meetings.

=> Keep frontrunners in the regular track.

Next

- @Deltares: The landscape archetype is still not very clear. E.g., how to integrate info on governance, socio-economic

- @UNIST: check the progress of the WebGIS and ArcGIS story map; we need the draft to share with all regions. Also, check local and more detailed data on each dimension of risk (i.e., hazard, exposure, and vulnerability). For instance, damage data at the building level, population ages, gender, education level, etc.

- @all: we aim to have the draft of both tasks for the SDC (i.e., landscape archetype, multi-risk assessment, webGIS and ArcGIS story map) then disseminate the results with all regions. We also share working pathways, technical documentation, and tutorials. If DRs and RRs want to make the same application, we can provide support,

- @all: Make sure there are not any overlaps with other tasks