



Grant Agreement 823805 MAIL H2020 MSCA RISE 2018

Decision Support System for marginal lands management - General description



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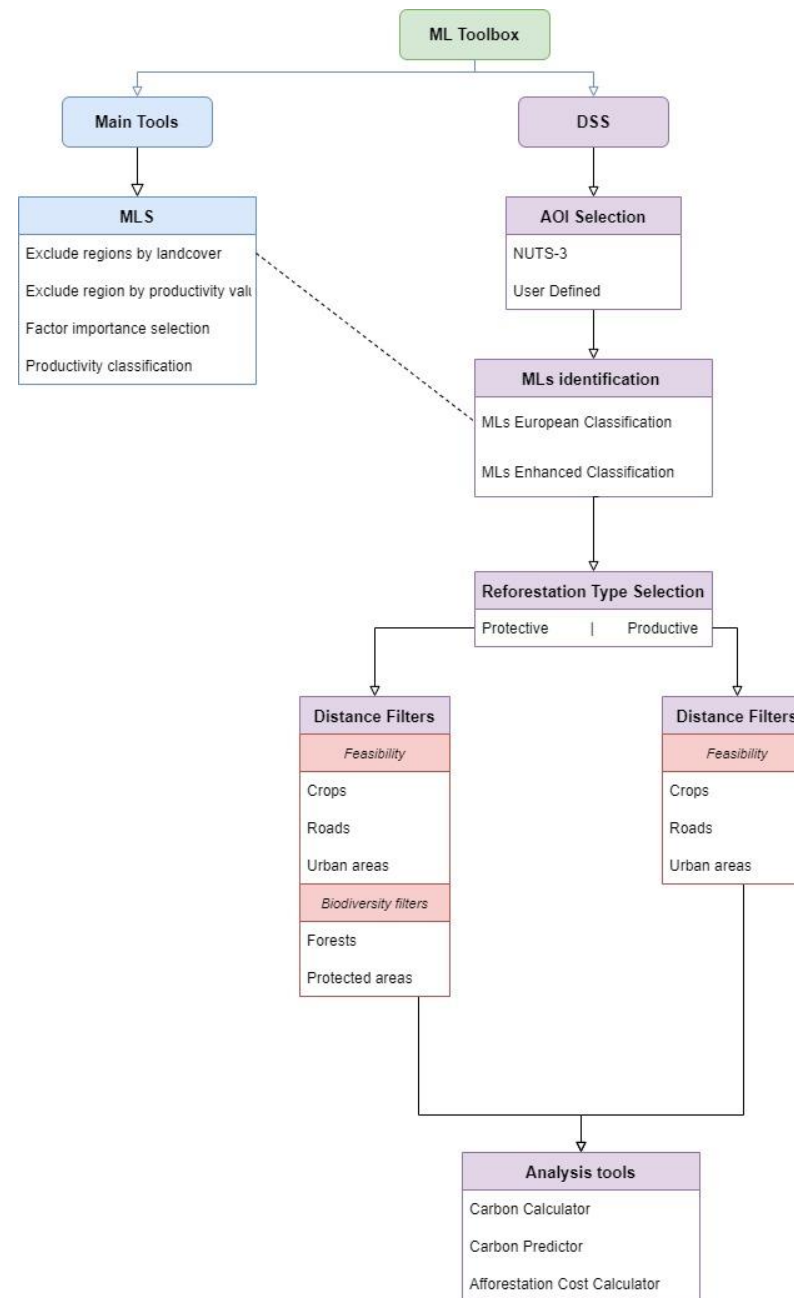


Marginal Lands Conference, 13 December 2021

MAIL toolbox: structure

- MAIL toolbox
 - Main tools
 - Exclude regions by land cover
 - Exclude regions by productivity values
 - Factor importance selection
 - Productivity Classification
 - DSS:
 - Area Selection
 - Identification of MLs
 - Distance Filters
 - Analysis tools

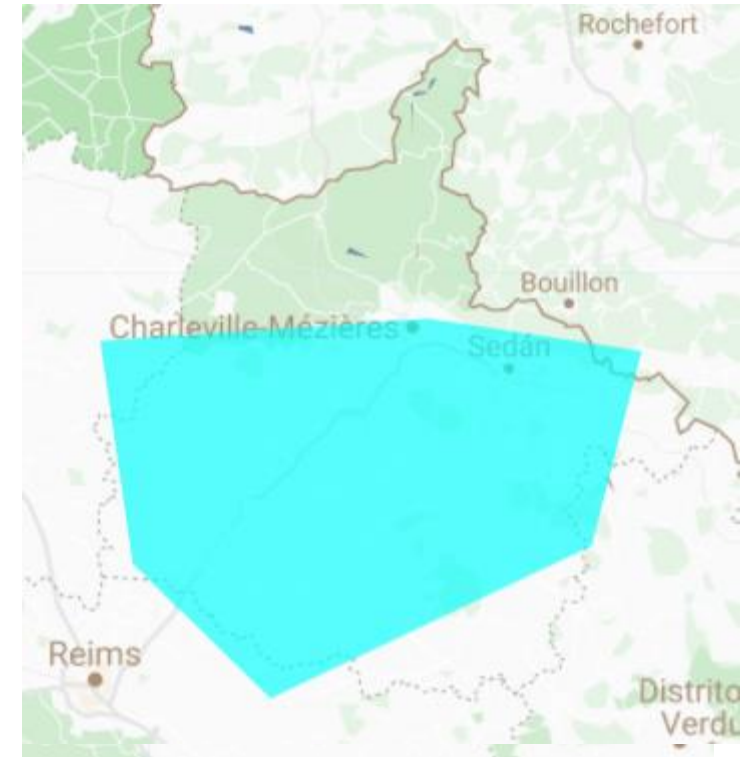






DSS: toolbox

- Define the area of interest:
 - NUTS 3: using GAUL level 2
 - User defined polygon





DSS: toolbox

- Define the area of interest:
 - NUTS 3: using GAUL level 2
 - User defined polygon

MLs Afforestation Decision Support System

1. Select your area of interest

1.1. Select a NUT 3 region.

Albania

All regions

1.2. Or draw a custom area.

Select Area

Remove Area(s)



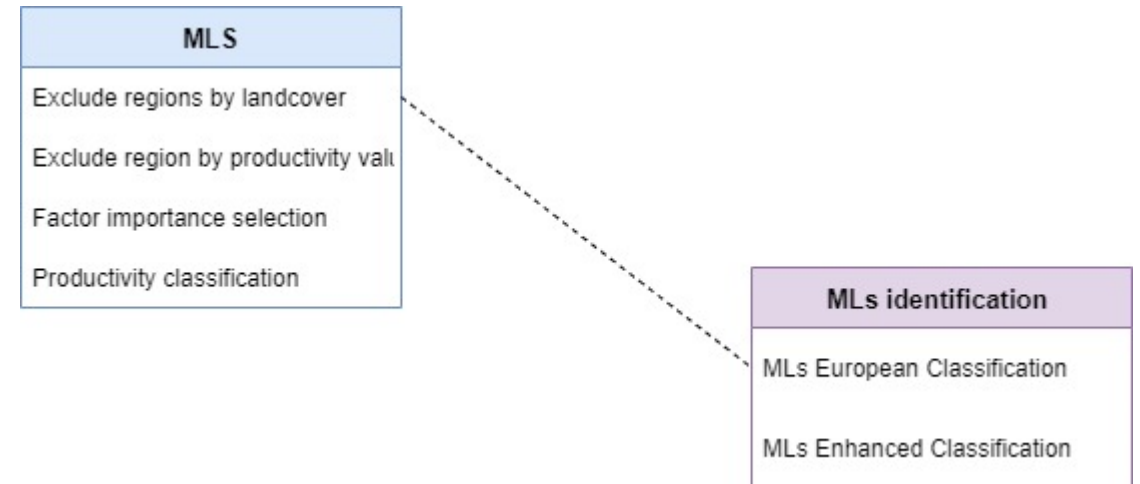
DSS: Identification of MLs

- MLs European Classification
- MLs Enhanced Classification

2. ML Identification Method

Choose a Marginal Land identification method.
The MLs European Classification uses a general MLs definition for Europe
The Enhanced Classification improves the identification at local scale.

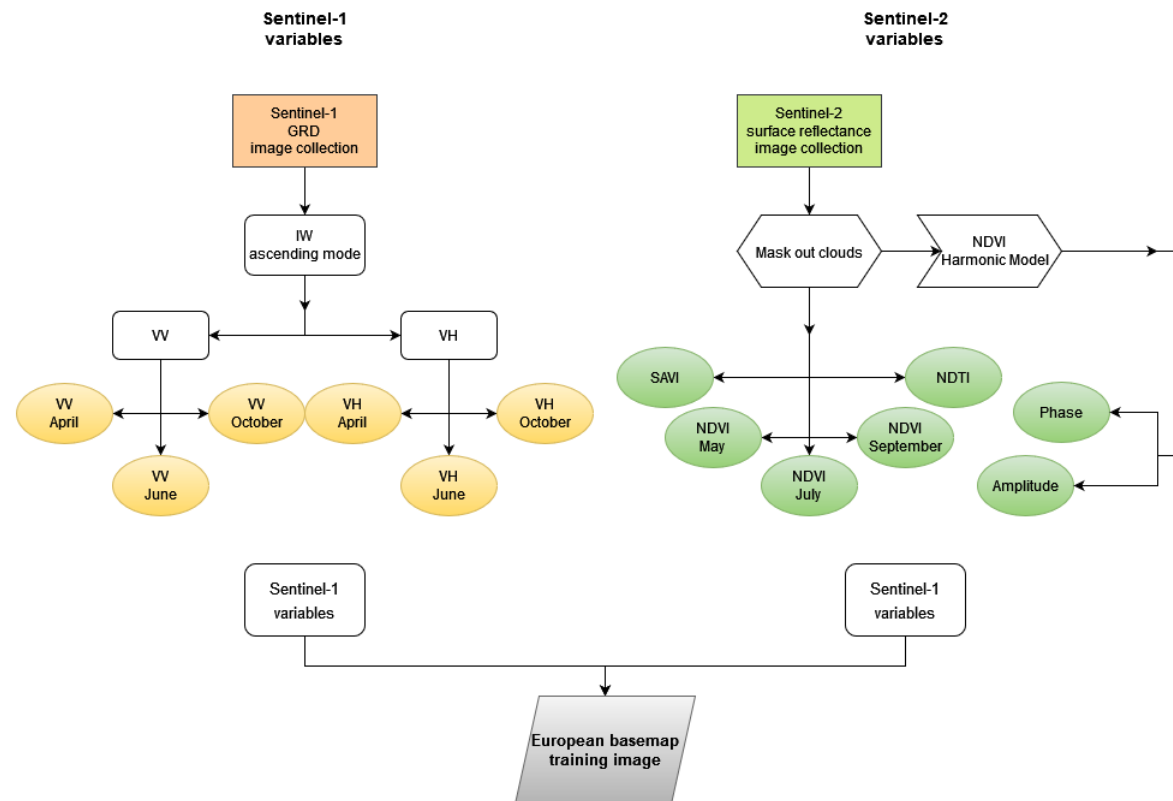
Select MLs Identification Method ↕



European Basemap Training Layer

European Basemap Training Layer

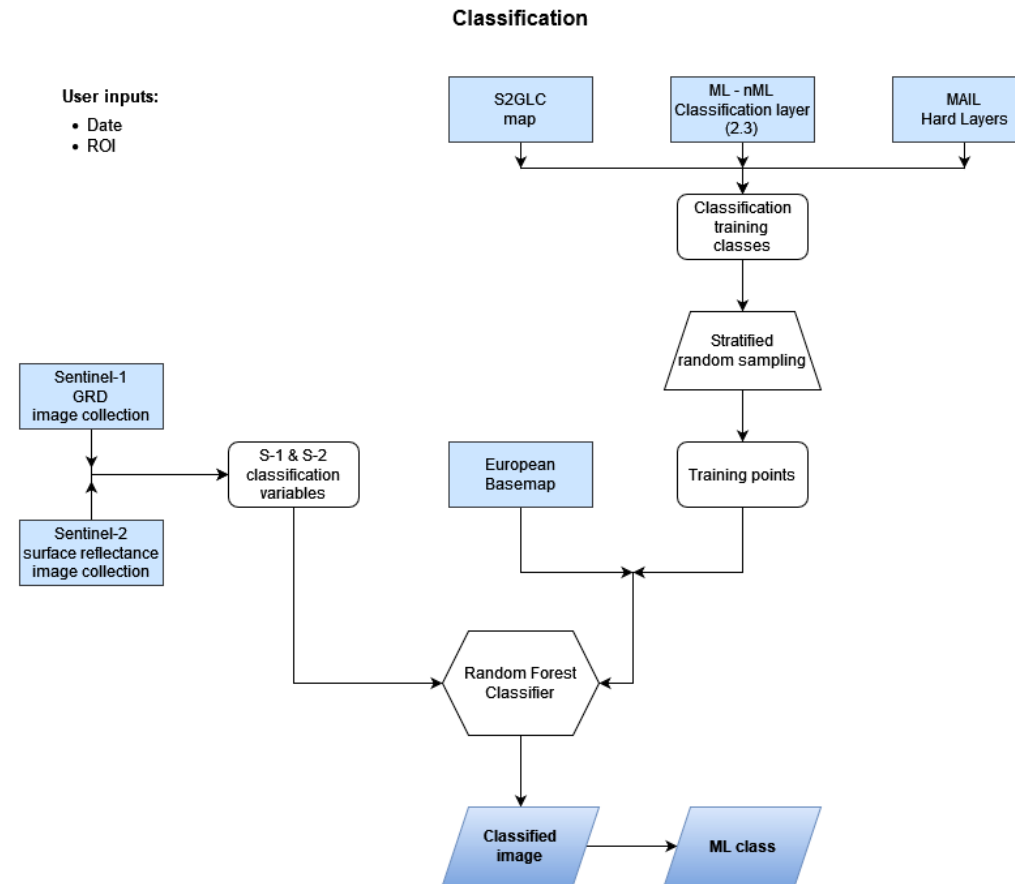
Dates: 4/2017 - 4/2019



Authors: Michał Krupiński and Georgios Spanos

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Classification



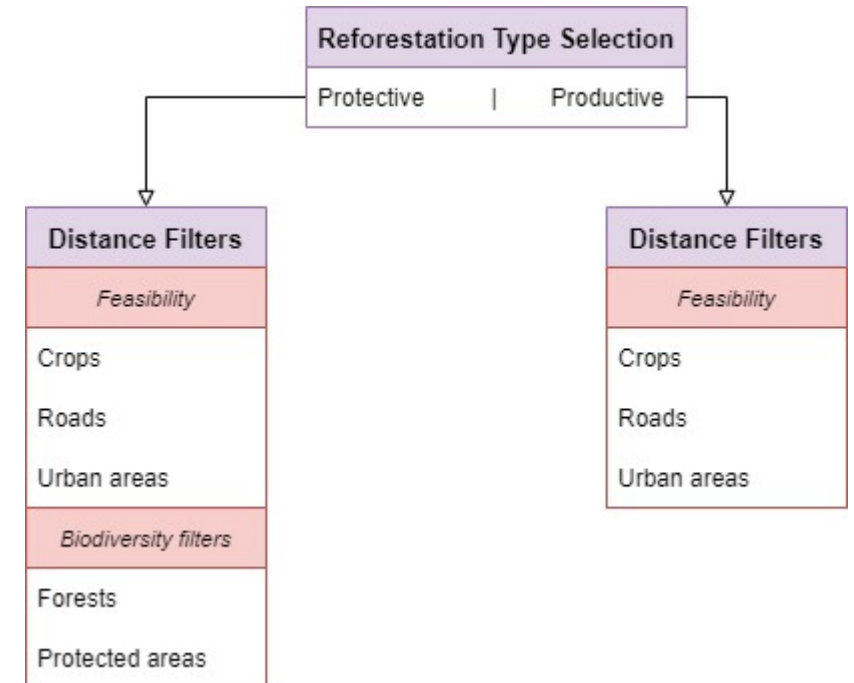
Authors: Michał Krupiński and Georgios Spanos

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Distance Filters

- Two reforestation scenarios
 - Protective :
 - Distance filters applied:
 - Feasibility:
 - Crops
 - Roads
 - Urban Areas
 - Biodiversity:
 - Forests
 - Protected Areas
 - Productive:
 - Distance filters applied:
 - Feasibility:
 - Crops
 - Roads
 - Urban Areas





Distance Filters

3. Type of Reforestation

Select your reforestation objective and obtain the most suitable areas. Define the maximum distance to (closer than) or from (further than) a given area. By default it is set to distance to. Max distance 5000 m

productive

Crops ☐ further than

Built-up ☐ further than

Roads ☐ further than

Apply

3. Type of Reforestation

Select your reforestation objective and obtain the most suitable areas. Define the maximum distance to (closer than) or from (further than) a given area. By default it is set to distance to. Max distance 5000 m

protective

Forest ☐ further than

Protected Areas ☐ further than

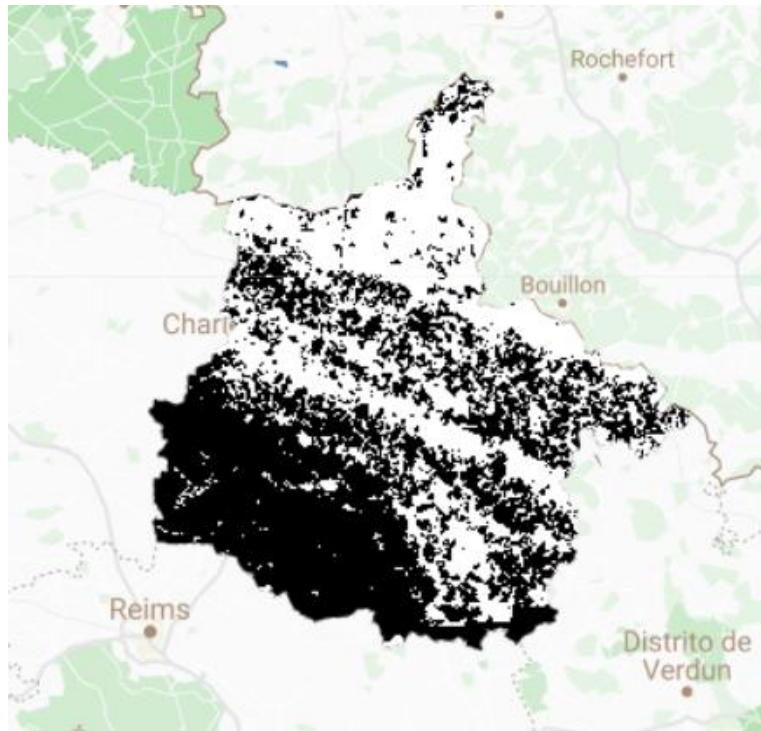
Crops ☐ further than

Built-up ☐ further than

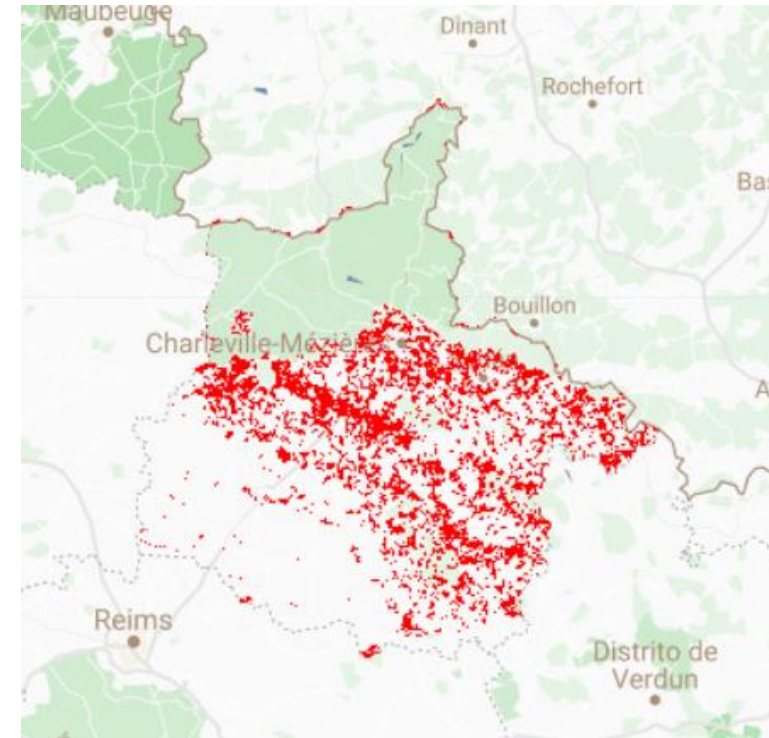
Roads ☐ further than

Apply

Distance Filters



Distance Mask



Masked MLs Enhanced Classification



Analysis Tools

- Analysis Tools
 - Carbon Calculator:
 - Calculates carbon for a given DBH for a selection of species using biomass equations. (Forrester et al. 2017)
 - Carbon Predictor:
 - Predicts DBH (Schelhaas et al. 2018)
 - Applies Carbon calculator biomass equations
 - Afforestation Cost Calculator:
 - Retrieves the cost of planting one tree based on: slope, distance from cities, soil texture and labour cost.

Analysis tools
Carbon Calculator
Carbon Predictor
Afforestation Cost Calculator



Access ?



Access ?



Free

Open

Google Earth account required



Access ?



Free

Open

Google Earth account required
(but it's free too)



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More information ...



More information ...

Dedicated section with tutorials within Mail MOOC



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News published on <http://marginallands.eu/>



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The screenshot shows the Mail website interface. At the top, there is a green header bar with social media icons (Facebook, Twitter, YouTube, Instagram, RSS). Below this is a navigation menu with links: Home, Project (dropdown), Partners (dropdown), Dissemination (dropdown), News (dropdown), Contact, and Members (dropdown). The Mail logo is centered in the navigation bar. Below the navigation bar, the main content area is divided into two columns. The left column contains a 'Newsletter Subscription' form with two input fields: 'Your Name (required)' and 'Your Email (required)'. The right column contains a search bar with a 'Search' button and an 'Archives' section listing 'November 2021', 'October 2021', and 'January 2021'.



References

- Analysis Tools

- Forrester, D. I., Tachauer, I. H. H., Annighoefer, P., Barbeito, I., Pretzsch, H., Ruiz-Peinado, R., ... & Sileshi, G. W. (2017). Generalized biomass and leaf area allometric equations for European tree species incorporating stand structure, tree age and climate. *Forest Ecology and Management*, 396, 160-175.
- Schelhaas, MJ., Hengeveld, G.M., Heidema, N. *et al.* Species-specific, pan-European diameter increment models based on data of 2.3 million trees. *For. Ecosyst.* **5**, 21 (2018).
<https://doi.org/10.1186/s40663-018-0133-3>



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Thank you for your attention!



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