GSNmap report

Country name

2022-10-13

Contents of the summary:

* Specify the data products generated (mandatory & additional)

All national maps were generated following the Country guidelines and technical specifications for Global Soil Nutrient and Nutrient Budget Maps (GSNmap) Phase I (FAO, 2022). All layers and accompanying standard deviation layers were created using a digital soil mapping approach based on the Quantile Regression Forest algorithm.

The following table (Table 1) summarizes the data points used for generating a national GSNmap product.

| Data type | Source | Number of points | Year(s) |
| --- | --- | --- | --- |
| Soil Profile Data | XX | XX | XX |
| Topsoil | XX | XX | XX |

# Soil Attribute: Total Nitrogen

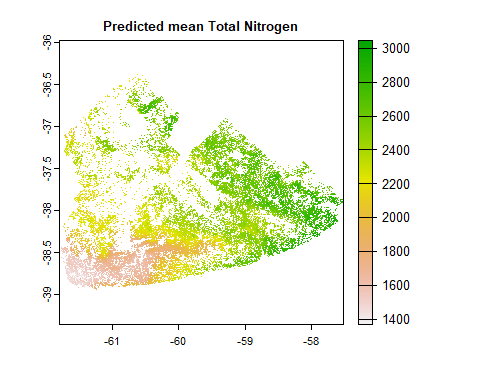
## Descriptive statistics of input data

Overview of the input data used for the Total Nitrogen soil property map

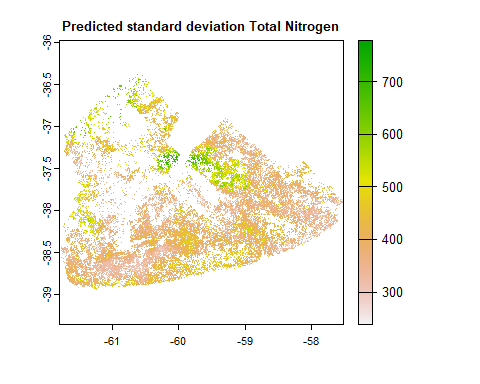
| mean | min | median | max | Number of points | Unit |
| --- | --- | --- | --- | --- | --- |
| 2342.1 | 938.2 | 2398.4 | 3378.1 | 119 | ppm |

## Resulting maps

### Predicted mean

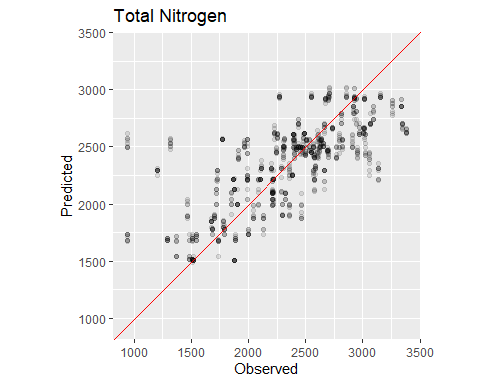


### Predicted standard deviation



## Accuracy assessment

### Observed vs Predicted

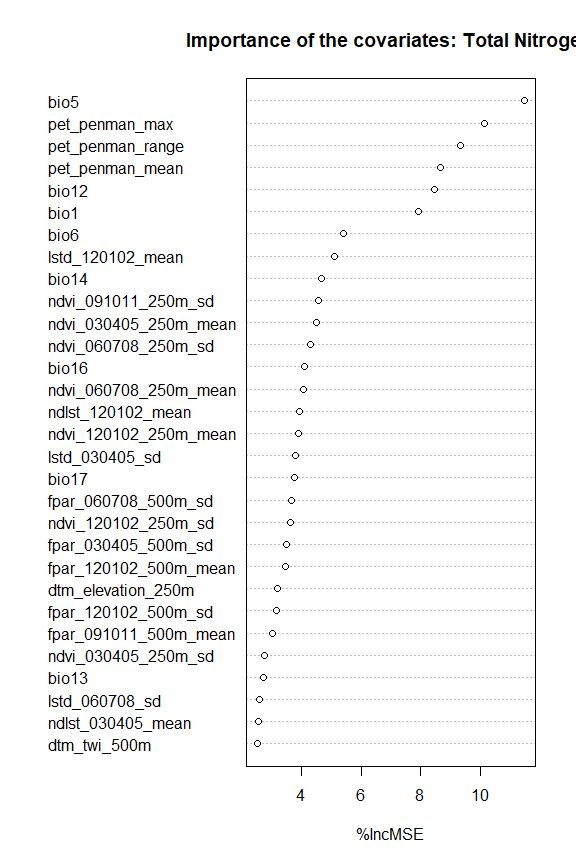


### Accuracy indicators

Accuracy Indicators: Total Nitrogen

| ME | MAE | RMSE | r | r2 | MEC |
| --- | --- | --- | --- | --- | --- |
| -12.76 | 268.12 | 370.25 | 0.71 | 0.51 | 0.5 |

### Importance of the covariates



# Soil Attribute: Available Phosphorous (Bray)

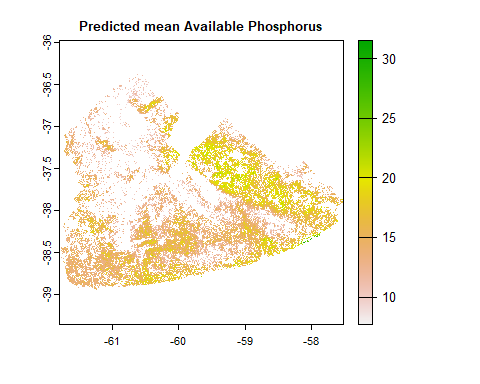
## Descriptive statistics of input data

Overview of the input data used for the Available Phosphorus soil property map

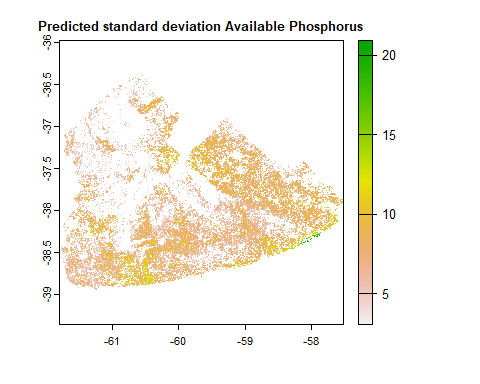
| mean | min | median | max | Number of points | Unit |
| --- | --- | --- | --- | --- | --- |
| 15.1 | 4.2 | 13.5 | 54.6 | 119 | ppm |

## Resulting maps

### Predicted mean

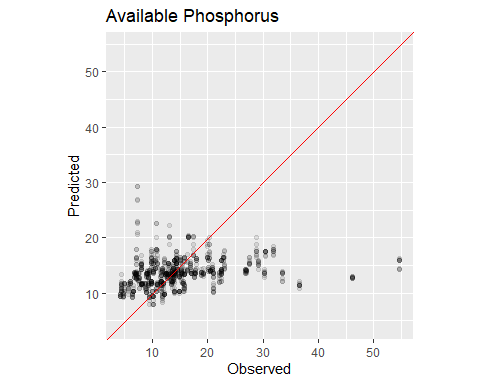


### Predicted standard deviation



## Accuracy assessment

### Observed vs Predicted

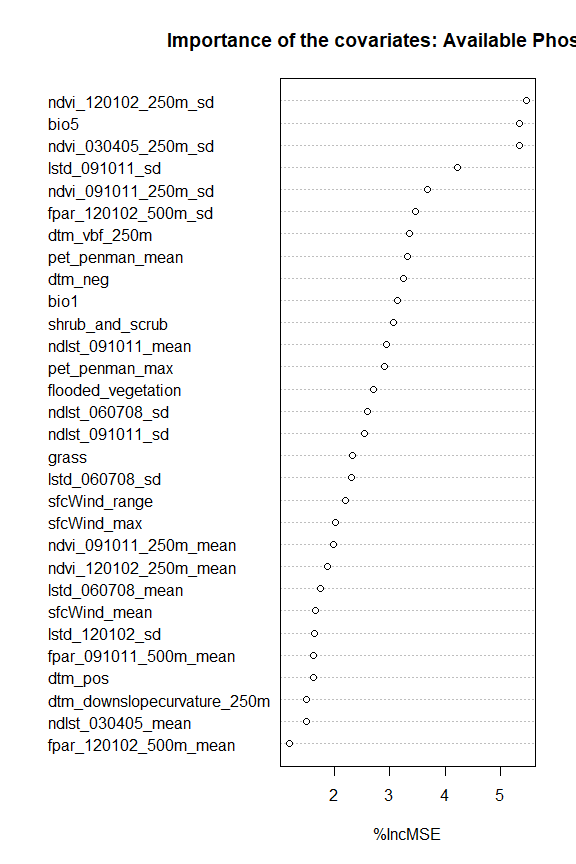


### Accuracy indicators

Accuracy Indicators: Available Phosphorus

| ME | MAE | RMSE | r | r2 | MEC |
| --- | --- | --- | --- | --- | --- |
| 1.3 | 5.22 | 7.97 | 0.26 | 0.07 | 0.04 |

### Importance of the covariates



# Soil Attribute: Soil Organic Carbon

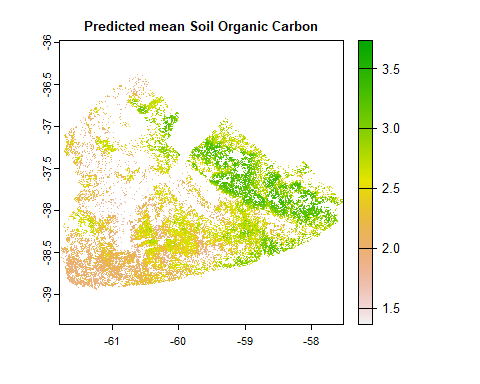
## Descriptive statistics of input data

Overview of the input data used for the Soil Organic Carbon soil property map

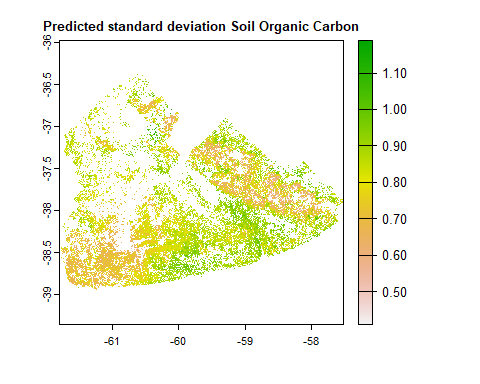
| mean | min | median | max | Number of points | Unit |
| --- | --- | --- | --- | --- | --- |
| 2.6 | 0.3 | 2.7 | 4.5 | 264 | percent |

## Resulting maps

### Predicted mean

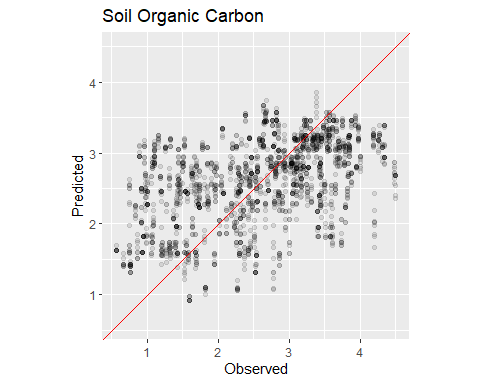


### Predicted standard deviation



## Accuracy assessment

### Observed vs Predicted

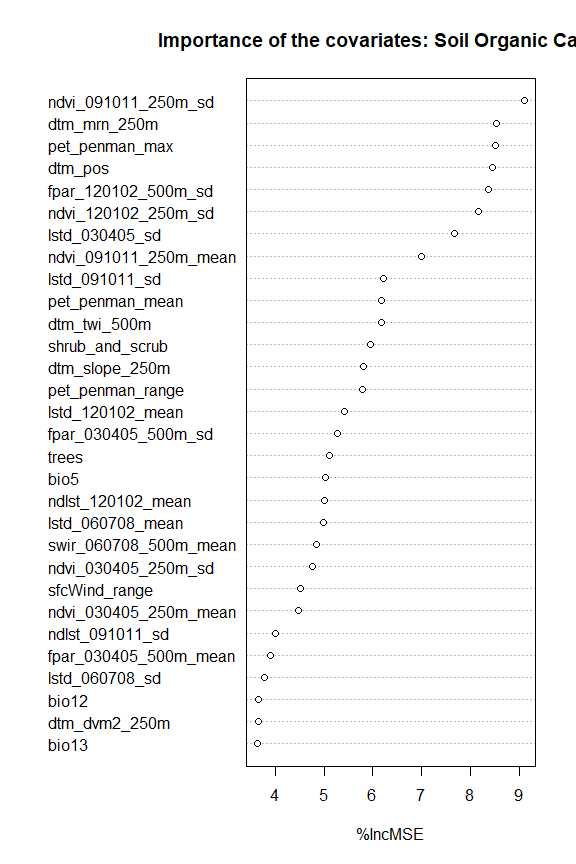


### Accuracy indicators

Accuracy Indicators: Soil Organic Carbon

| ME | MAE | RMSE | r | r2 | MEC |
| --- | --- | --- | --- | --- | --- |
| -0.03 | 0.69 | 0.86 | 0.48 | 0.23 | 0.21 |

### Importance of the covariates



# References

*FAO.* 2022. Country guidelines and technical specifications for global soil nutrient and nutrient budget maps GSNmap: Phase 1. Rome. <https://doi.org/10.4060/cc1717en>