e-SOTER Burkina Faso

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Landform map

4 approaches:

- WP1: default + adapted
  Adjustment of settings in the workflow proposed in “SRTM-based procedure to delineate SOTER Terrain Units on 1:1 and 1:5 million scales” to increase the detail in the pu delineations.

- WP3 Scilands: 1: 250 000

- WP3 Cranfield: 1: 250 000
15 units with a unique combination of slope, relief intensity, hypsometry and flatness class.
50 units with a unique combination of slope, relief intensity, hypsometry and flatness class.
WP3 SciLands

1:250 000 scale
WP1 Default

1:1 million scale.
WP1 Adapted

1:1 million scale
Terrain units map

- **Parent material layer** derived from the Carte Géologique de la République de Haute-Volta, 1: 1000000.

- **WP1: default + adapted**
The parent material layer is included as an input in the wp1 process.

- **WP3: Scilands**
  the landform map is combined with the parent material layer and then is filtered conserving the delineations of the landform map. Operations: landform map code * 100 + parent material layer code. Then using the nibble tool pixels under a minimum number of pixels threshold are filtered.
Terrain units map – WP1 adapted
Digital Soil Map

- **Inputs:** African Soil Profiles Data Base (v1.1 and v1.2) to calibrate the model + geospatial data as environmental covariates.

- **Tools:** Random Forest R packages for (soil) data modelling and prediction.

- **Output:** Digital Soil Class Map in FAO88.
AfSPv1.2 correlated
Geospatial datasets


- USGS layers

- Soil maps: ORSTOM soil map, WRB dominant soil from FAO for Africa, % of soil class based in HWSD in FAO88.

- World grids layers.

- Preprocessing: download, reprojection, resample, clipping, index calculation...
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80% of coincidences of soil class between predicted versus point data
Terrain units map – SciLands
Digital soil map
e-SOTER map
1 Landform
01 Parent Material layer code 1, CSA
Consolidated siliceus acid
006 Soil unit/group: Gleysol, GLe
Soil component percentages

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>GLe</td>
<td>82.454442</td>
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<tr>
<td>RGe</td>
<td>17.545558</td>
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How some of the products explains the spatial variability of soil properties?

<table>
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<tr>
<th>Linear model</th>
<th>Terrain Units wp1 adapted</th>
<th>Terrain Units SciLands wp3</th>
<th>Digital Soil Map</th>
<th>Dominant Soil Map</th>
<th>WRB Dominant Soil Map (FAO)</th>
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