

H2020 SOCIETAL CHALLENGES

Climate action, environment, resource
efficiency and raw materials

The Industrial Problem

Neiker was interested in elaborating high-resolution maps of carbon stocks and soil texture properties in different land use at 0-30cm depth in the Basque Country.

Research group

BCAM Knowledge Transfer Unit



The aim of the BCAM KTU is to develop
mathematical solutions for scientific
challenges based on real-life applications.

Company

Neiker

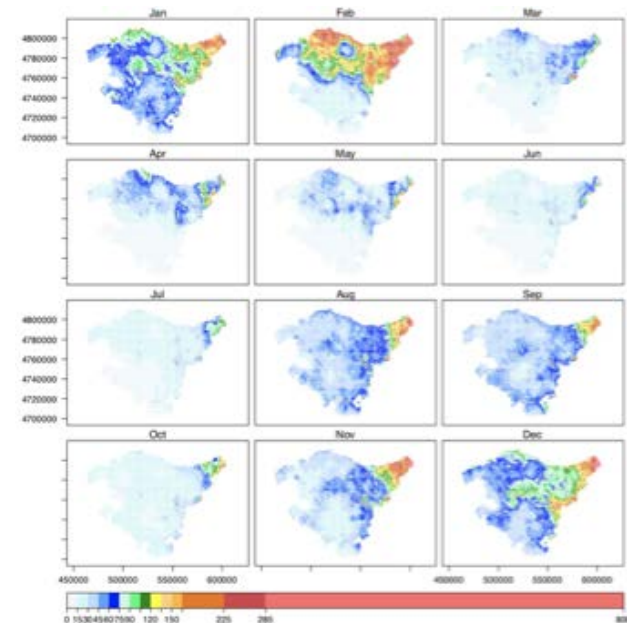
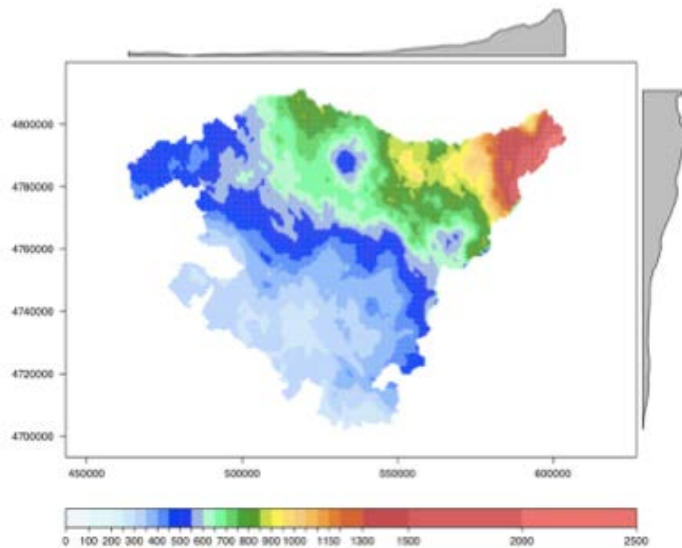


Neiker is the Basque Institute for
Agricultural Research and Development aiming
to improve the agro-livestock and forestry
sectors in the Basque Country.



Challenges & Goals

- To compute the soil erosivity factor (R-factor) in $\text{MJ mm ha}^{-1} \text{h}^{-1} \text{yr}^{-1}$.
- To identify areas of susceptible erosion.
- To relate with climate and environmental variables.
- To predict organic carbon stock (Mg C/ha).
- To predict soil texture properties (%sand, %clay and %silt).



Predicted R-factor Map (left), R-factor by month (above).

Results & Benefits to the company

- An unified mathematical framework for spatial prediction of rain erosivity factor and soil properties at high-resolution is developed.
- These maps contribute to agricultural planning of crops, forest management and environmental protection.
- Stock carbon and soil texture maps are publicly available at GeoEuskadi (webpage: <https://www.geo.euskadi.eus/>).



Predicted carbon stock map available at GeoEuskadi.

High-resolution maps of soil provide valuable information for the agricultural and forestry industry.

