www.BioBoost.eu

Biomass based energy intermediates boosting biofuel production

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Deliverable

Geoportal of biomass potential in EU27+CH

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Publishable Summary

The Geoportal (Figure 1) presents the analysis of the biomass potential in the EU-27 with their possible use for energy purposes. Estimates were made for spatial unit's NUTS-3. The web application allows interactive browsing the spatial data presenting density and technical potential of the all kinds modelled biomass types. An interactive map is based on the Web browser on the visitor side (client side), when releasing data (i.e., the server side [server-side]).

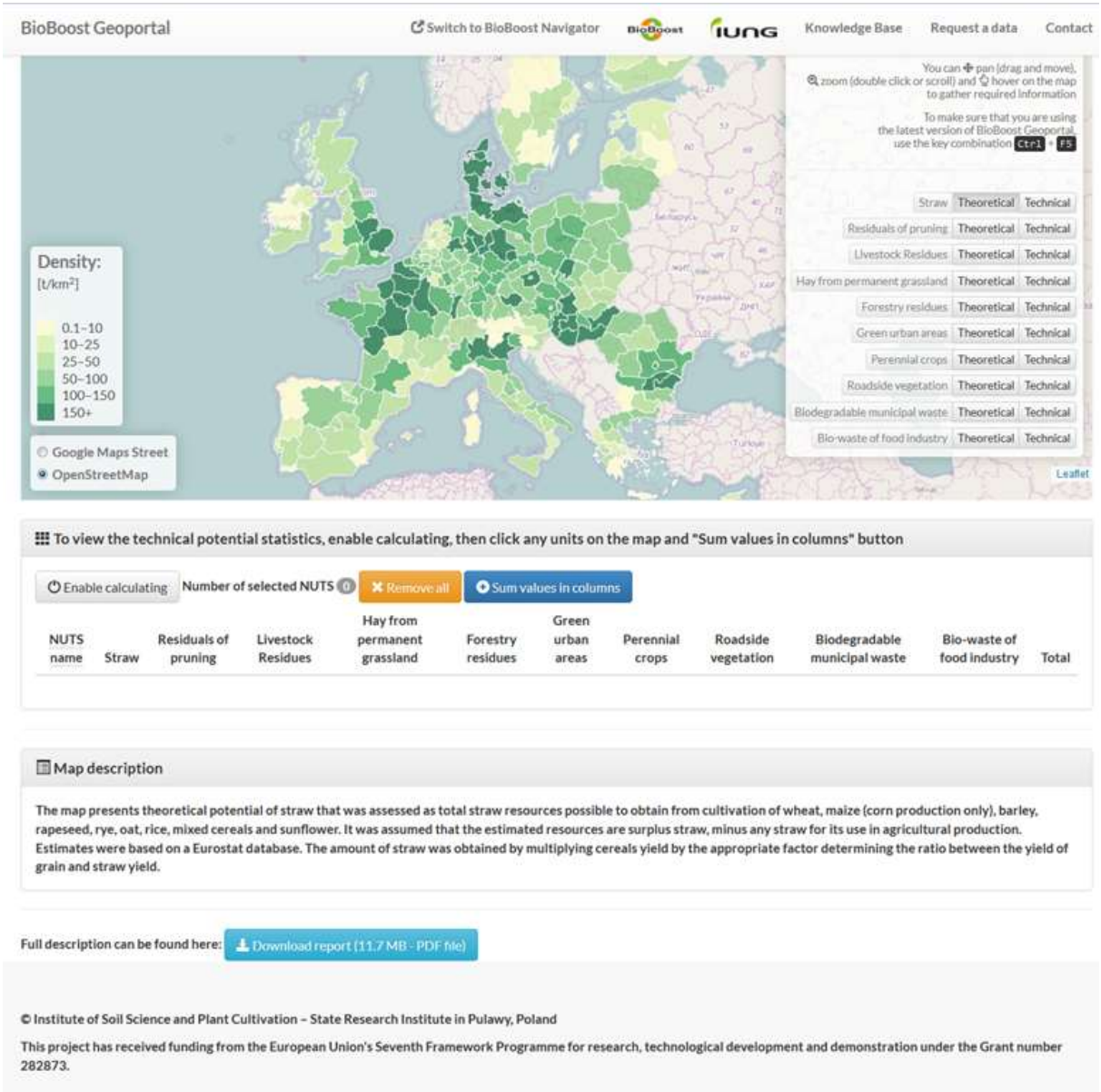


Figure 1 Geoportal for presenting the biomass potential in EU-27

Report

The main purpose of the Geoportal is dissemination of WP1 results as digital maps in GIS formats. The Geoportal presents the analysis of the biomass potential in the EU-27 with their possible use for energy purposes. Estimates were made for spatial unit's NUTS-3.
The web application allows interactive browsing the spatial data presenting density and technical potential of the all kinds modelled biomass types.
An interactive map is based on the Web browser on the visitor side (client side), when releasing data (i.e., the server side [server-side]). Service does not require special action, any special infrastructure, databases, applications, and any plugins (Flash, Java), or preinstalled GIS software. The geoportal is located on IUNG servers (ServerName bioboost.iung.pl, ServerAlias www.bioboost.iung.pl bioboost.iung.pulawy.pl www.bioboost.iung.pulawy.pl.

To create the page the following formats, standards and libraries were used:

- HTML 5 - language to create the structure and content of web pages,
- CSS 3 and CSS 2.1 - specification to create the appearance of web pages,
- JavaScript - programming language,
- Leaflet.js library (open source; language library responsible for displaying the map on the website):
- Google Maps provider plugin by Pavel Shramov
- source data: NUTS-3, units with attributes (name, value identifiers) together with the geometry,
- source data in a GeoJSON format,
- develop a shortcut: Geographic JavaScript Object Notation
- result of the conversion of ESRI Shapefile format and optimize the application Mapshaper,
- with Google Maps JavaScript API ver. 3 (application programming interface)
- OpenStreetMaps Tiles API

Interactive maps are based on a web browser and are supporting operations like:

- panning and zooming
- display of selected object attributes
- change of a base layer between OpenStreetMap and Google Maps
- change the contents of overlay layer

The Geoportal has a knowledge base where user can find important information about databases, organisation and geographical information system (Figure 2).

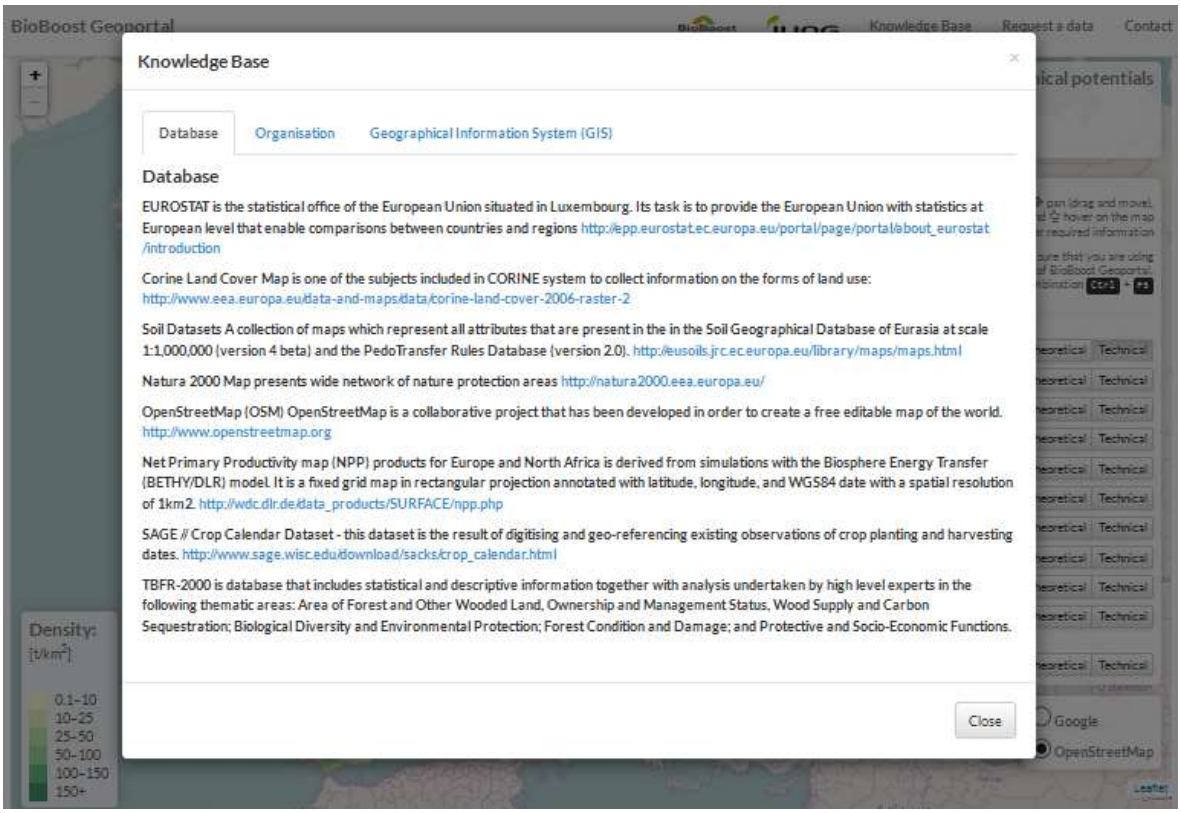


Figure 2 Knowledge base

The user is allowed to request a data (Figure 3). The user is kindly asked to feel the form and send the request to the responsible person. The form consist the questions about:

E-mail address
First/Last Name
Organization Name
The type of your Organization:
- o Private Company
- o Research Organisation
- o University
- o Public Administration (Ministries, Agencies, Municipalities....)

Other Specify
Address:
Country:
Please indicate the purpose for which the data will be used. You should be specific and describe in details (at least 30 characters)
Please indicate the type of requested data
Type of biomass
Country
NUTS3 number

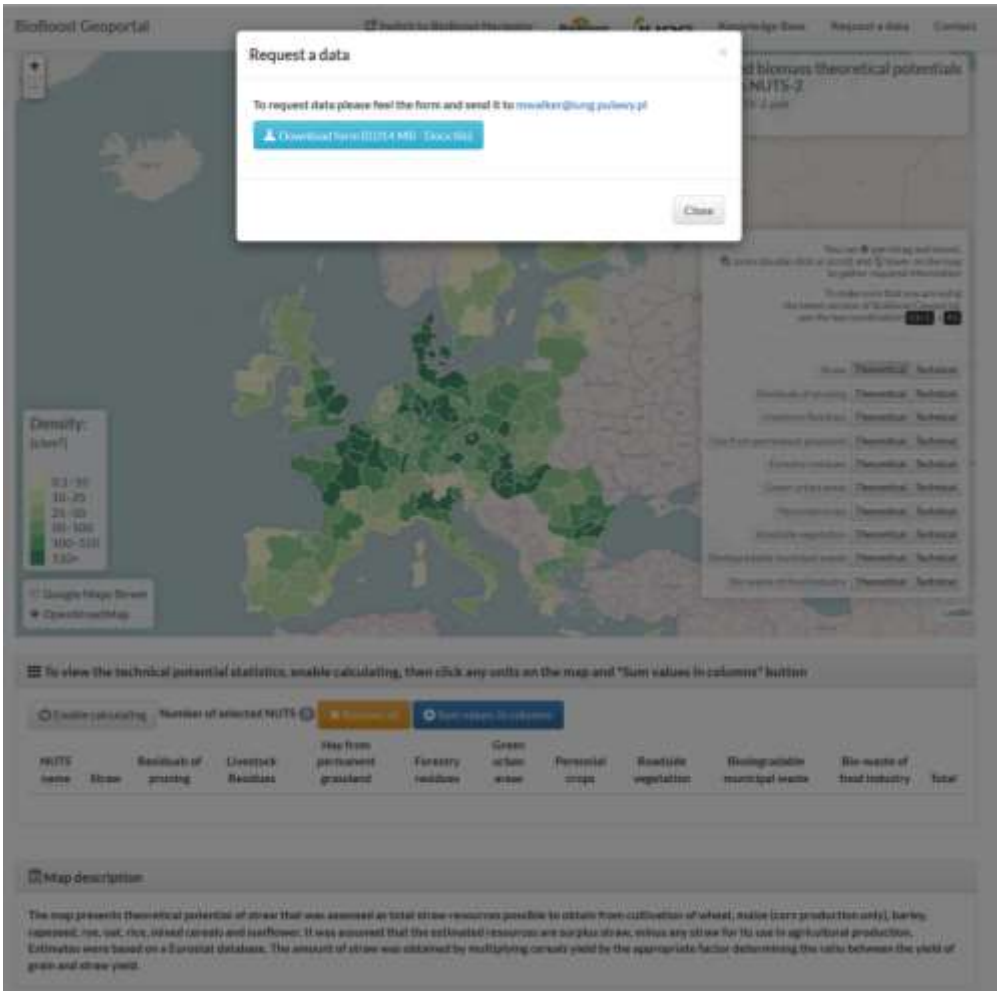


Figure 3 Request data form

The user is able to use supporting operations to fully explore the geoportal. The system allows panning and zooming (Figure 4). It will display selected object attributes in the table if mouse is moved on one of the NUTS3 (Figure 5)

One can choose which kind of biomass potentials should be presented on the map by clicking on the baton Technical or Theoretical It is possible to change of a base layer between OpenStreetMap and Google Maps (Figure 6).

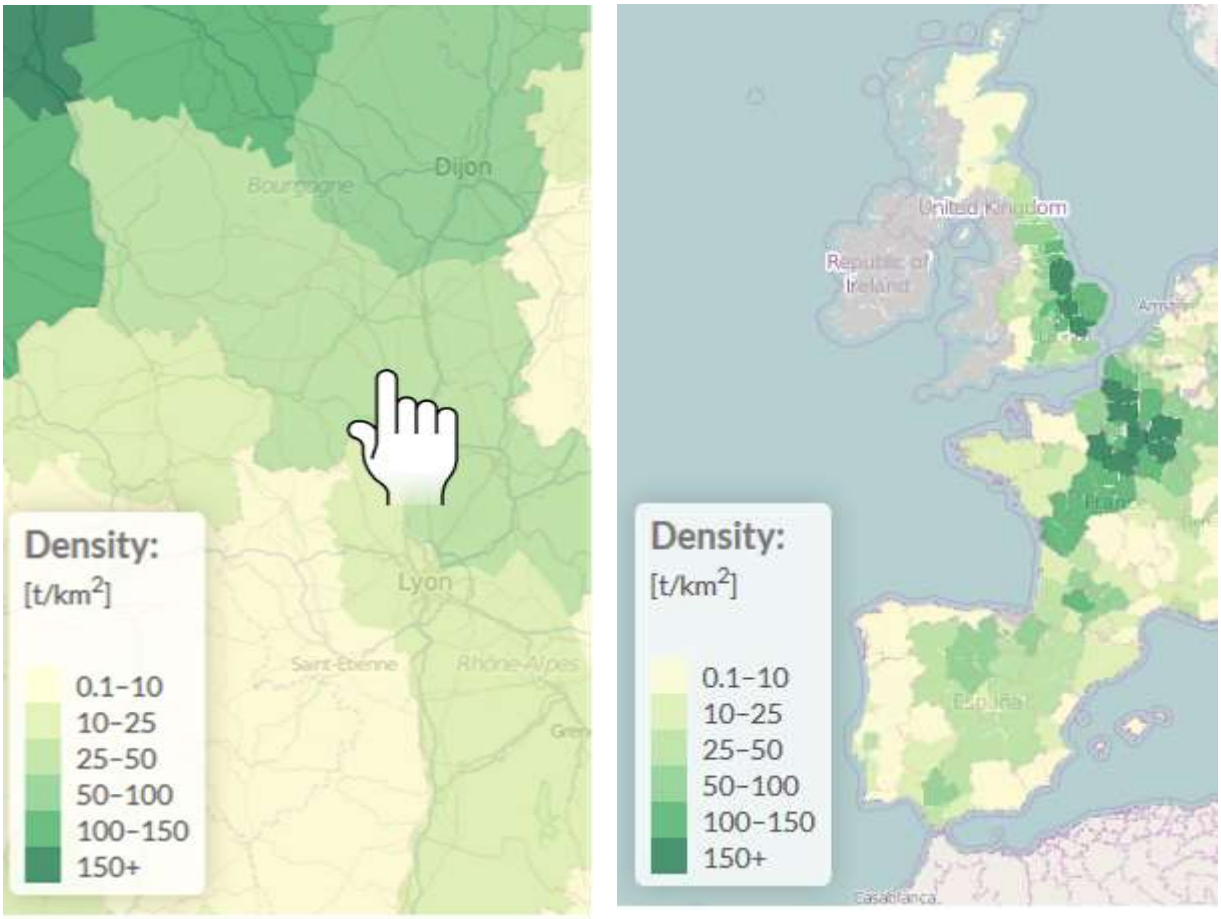


Figure 4 Geoportal supported operations (panning and zooming)

Figure 5 Geoportal supported operations (display of selected object attributes)

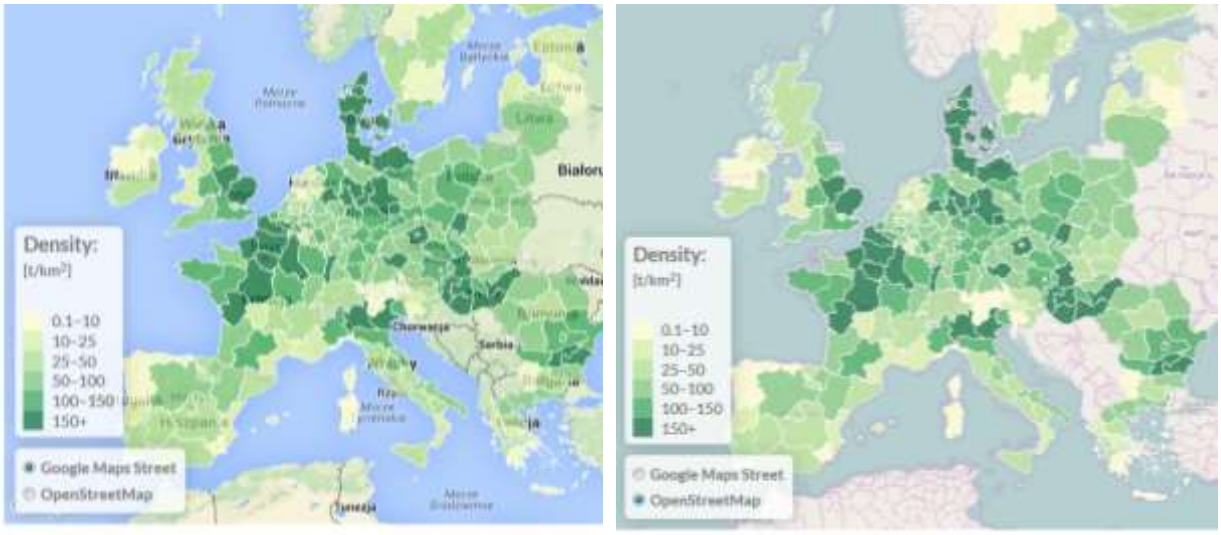


Figure 6 Geoportal supported operations (type of potential and change of a base layer)

The application "biomass calculator" allows calculation of biomass potential available in the area of interest. To start calculation its necessary to enable calculation. By moving a cursor you can select up to ten NUTS-3 and calculate total biomass potential available in the area of interest (Figure 8). It will also sum up the total biomass potential for specific region as well as the total biomass potential of specific type of biomass (Figure 9).

Figure 7 The biomass calculator

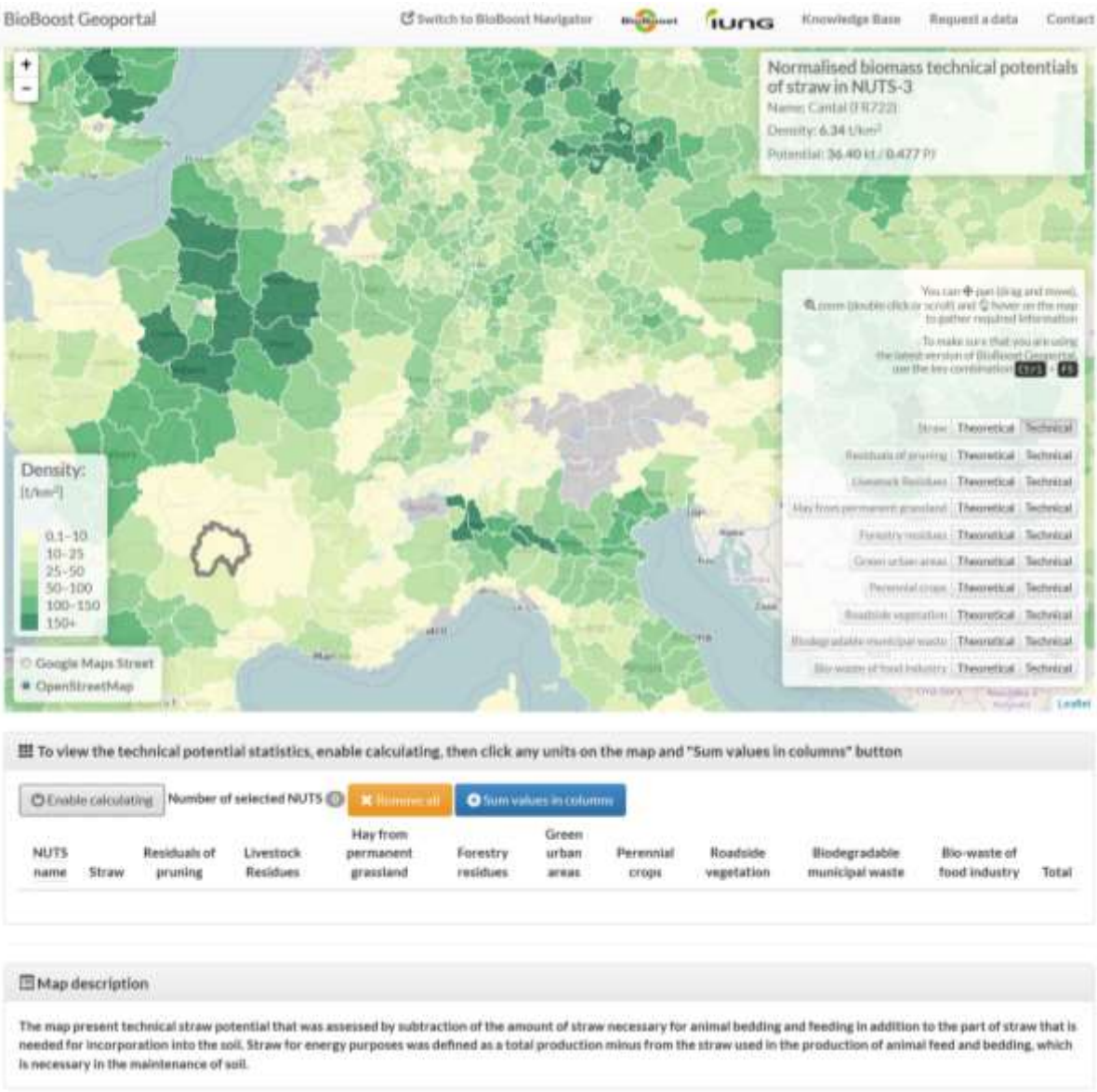
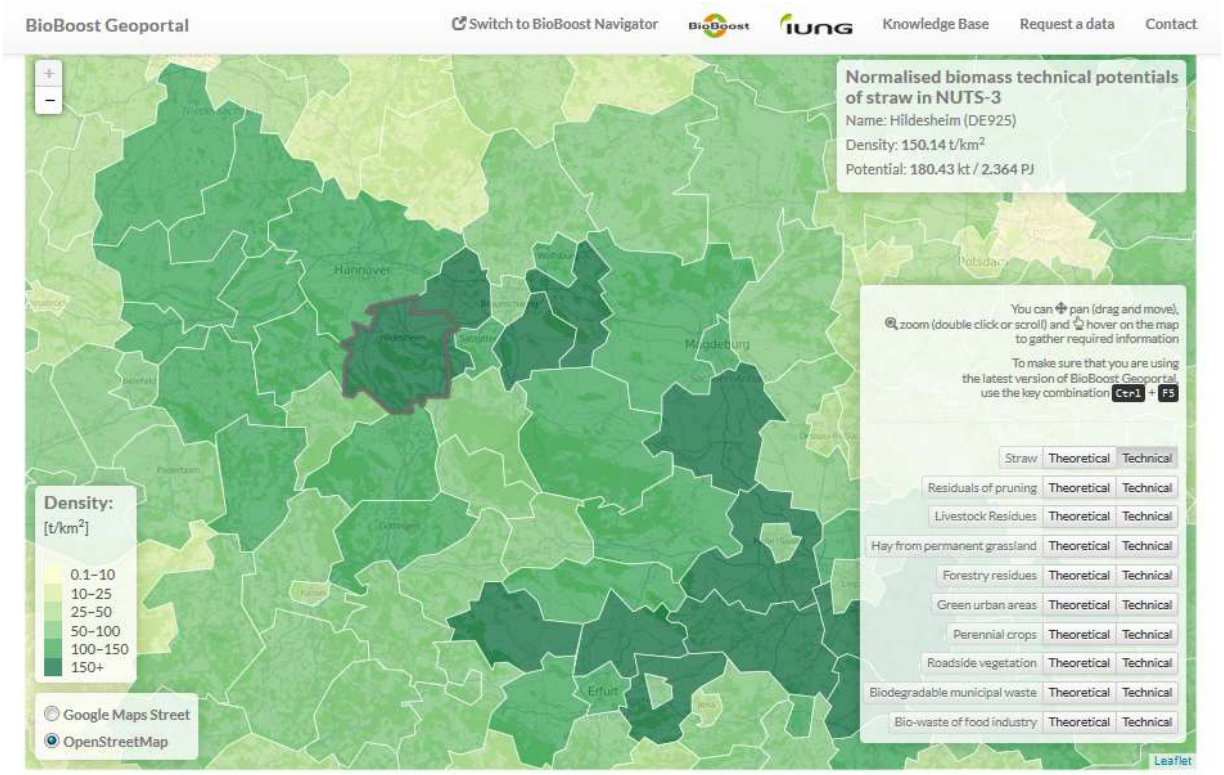


Figure 8 Selecting area of interest



To view the technical potential statistics, enable calculating, then click any units on the map and "Sum values in columns" button

Enable calculating | Number of selected NUTS 10 | Remove all | Sum values in columns

NUTS name	Straw	Residuals of pruning	Livestock Residues	Hay from permanent grassland	Forestry residues	Green urban areas	Perennial crops	Roadside vegetation	Biodegradable municipal waste	Bio-waste of food industry	Total
Region Hannover	238.30	0.00	0.00	0.00	66.55	4.31	32.70	5.56	215.39	0.00	562.79
Nienburg (Weser)	159.52	0.00	0.00	0.00	31.00	0.09	24.03	1.08	15.82	0.00	231.55
Minden-Lübbecke	132.22	0.00	0.00	0.00	15.84	0.27	17.73	1.84	57.58	0.00	225.46
Schaumburg	95.97	0.00	0.00	0.00	27.64	0.06	11.02	1.02	29.21	0.00	164.93
Hameln-Pyrmont	100.83	0.00	0.00	0.00	45.19	0.37	12.97	0.94	27.53	0.00	187.82
Hildesheim	180.43	0.00	0.00	0.00	50.55	0.44	20.01	2.16	50.85	0.00	304.44
Peine	86.67	0.00	0.00	0.00	6.62	0.06	8.42	0.95	22.39	0.00	125.12
Gifhorn	129.11	0.00	0.00	0.00	77.77	0.69	19.92	1.26	25.08	0.00	253.81
Celle	28.83	0.00	0.00	0.00	106.93	0.48	14.55	1.25	28.82	0.00	180.86
Soltau-Fallingbostel	39.99	0.00	0.00	0.00	101.20	0.58	17.85	1.58	18.64	0.00	179.85
Total	1191.86	0.00	0.00	0.00	529.30	7.35	179.20	17.63	491.30	0.00	2416.64

Figure 9 Biomass potential calculation for selected region

The Geoportal allows to download complete Deliverable D.1.2. with specific descriptions of biomass potential calculation (Figure 10).

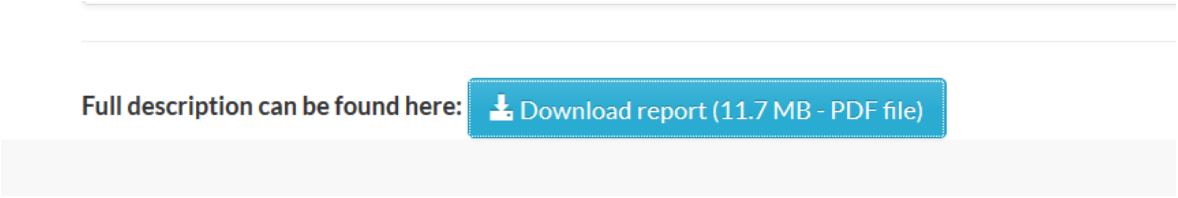


Figure 10 The download button for D.1.2.