QuantiFarm Toolkit –
Directions for using the “Policy monitoring tool”

Document Version: 2 - Date 1-4-2025

Author: Georgios Charvalis – g_charvalis@neuropublic.gr

Table of Contents

Overview

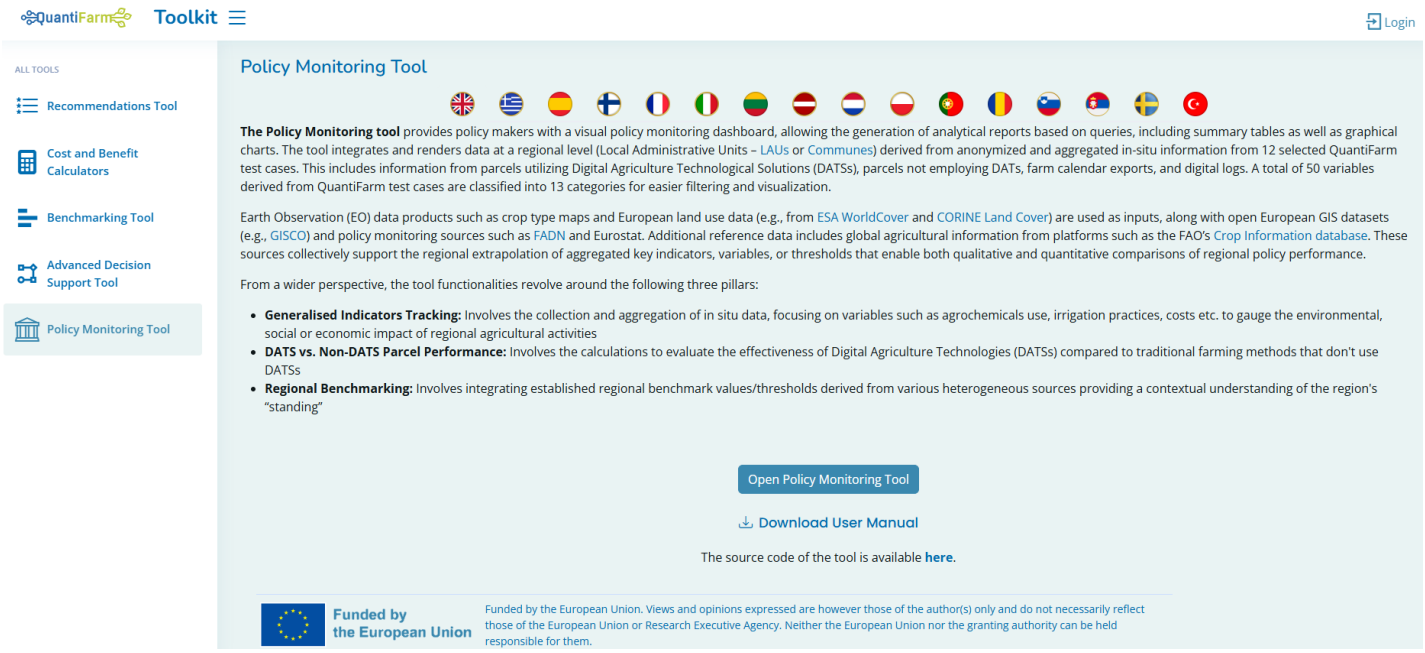
The Policy Monitoring tool provides policy makers with a visual policy monitoring dashboard, allowing the generation of analytical reports based on queries, including summary tables as well as graphical charts. The tool integrates and renders data at a regional level (Local Administrative Units – LAUs or Communes) derived from anonymized and aggregated in-situ information from 12 selected QuantiFarm test cases. This includes information from parcels utilizing Digital Agriculture Technological Solutions (DATSs), parcels not employing DATs, farm calendar exports, and digital logs. A total of 50 variables derived from QuantiFarm test cases are classified into 13 categories for easier filtering and visualization.

Earth Observation (EO) data products such as crop type maps and European land use data (e.g., from ESA WorldCover and CORINE Land Cover) are used as inputs, along with open European GIS datasets (e.g., GISCO) and policy monitoring sources such as FADN and Eurostat. Additional reference data includes global agricultural information from platforms such as the FAO's Crop Information database. These sources collectively support the regional extrapolation of aggregated key indicators, variables, or thresholds that enable both qualitative and quantitative comparisons of regional policy performance.

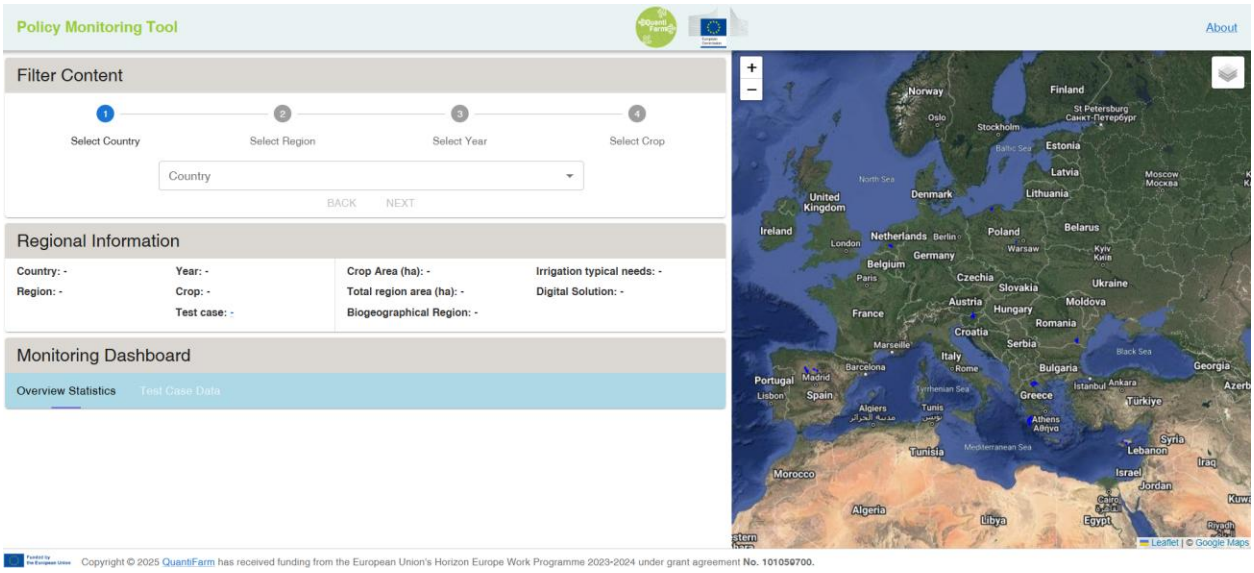
From a wider perspective, the tool functionalities revolve around the following three pillars:

- Generalised Indicators Tracking: Involves the collection and aggregation of in situ data, focusing on variables such as agrochemicals use, irrigation practices, costs etc. to gauge the environmental, social or economic impact of regional agricultural activities
- DATS vs. Non-DATS Parcel Performance: Involves the calculations to evaluate the effectiveness of Digital Agriculture Technologies (DATSs) compared to traditional farming methods that don't use DATSs
- Regional Benchmarking: Involves integrating established regional benchmark values/thresholds derived from various heterogeneous sources providing a contextual understanding of the region's "standing"

The user must first visit: https://quantifarmtoolkit.eu/tool6.html



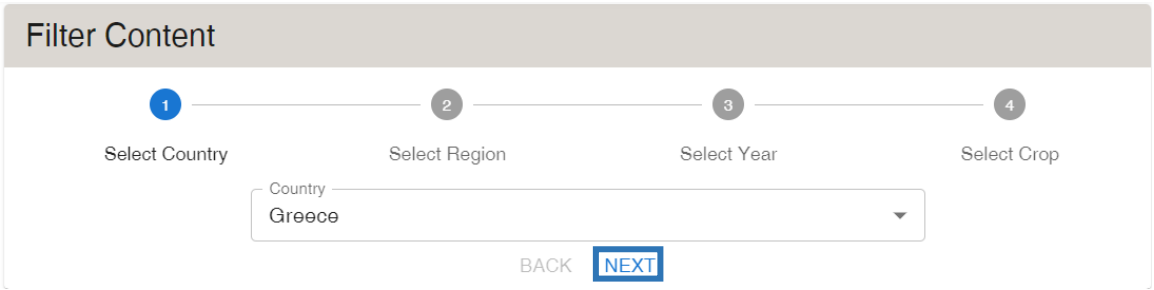
And press “Open Policy Monitoring Tool”. User registration and/or login credentials are not required for redirection to the subsequent landing home page.



Filter contents

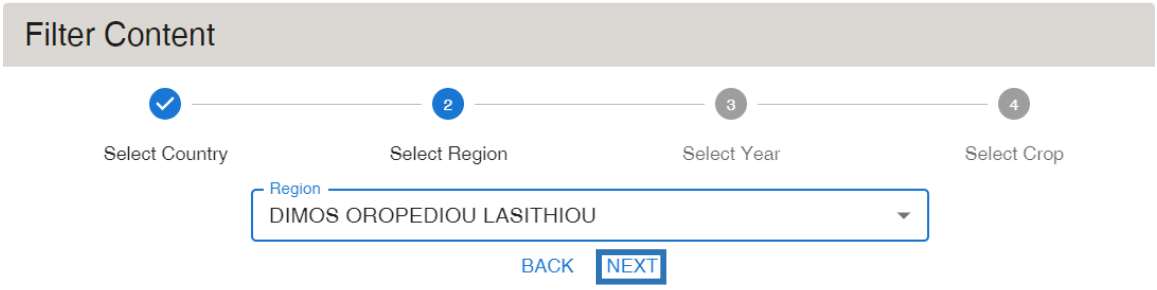
Selection of Country of interest

In the filter content bar browse the available countries, make a selection, and press next



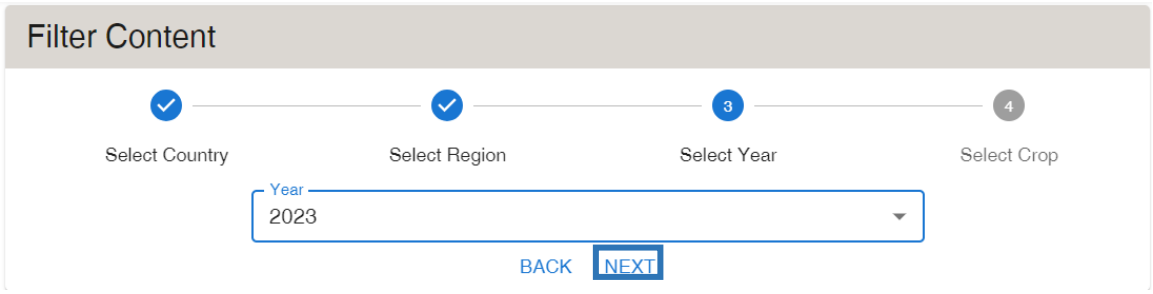
Selection of Region of interest

In the filter content bar, browse the available regions, make a selection, and press next



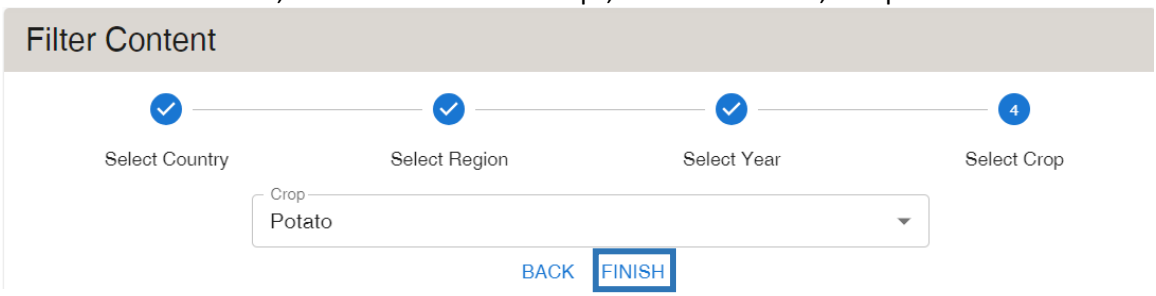
Selection of Year of interest

In the filter content bar, browse the available years, make a selection, and press next



Selection of Crop of interest

In the filter content bar, browse the available crops, make a selection, and press next

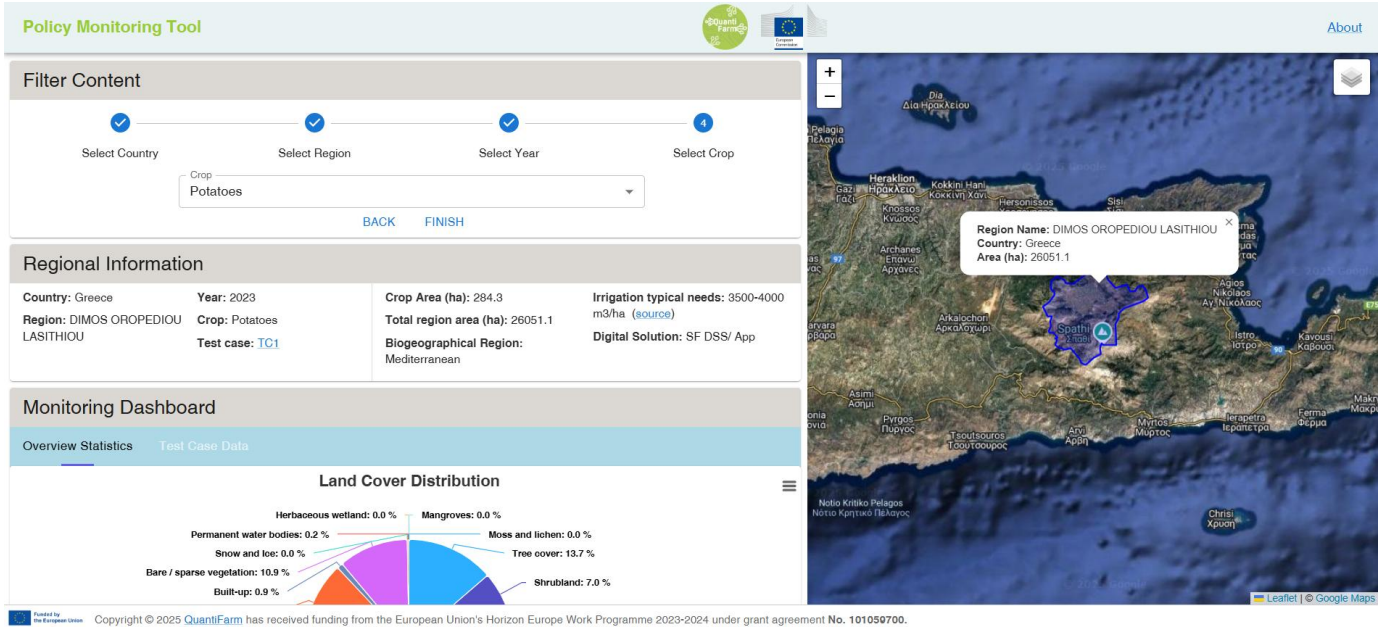


Browsing indicators and statistics

The Policy Monitoring Tool is now initialized and has loaded data and indicators derived from the Quantifarm test cases.

The user can:

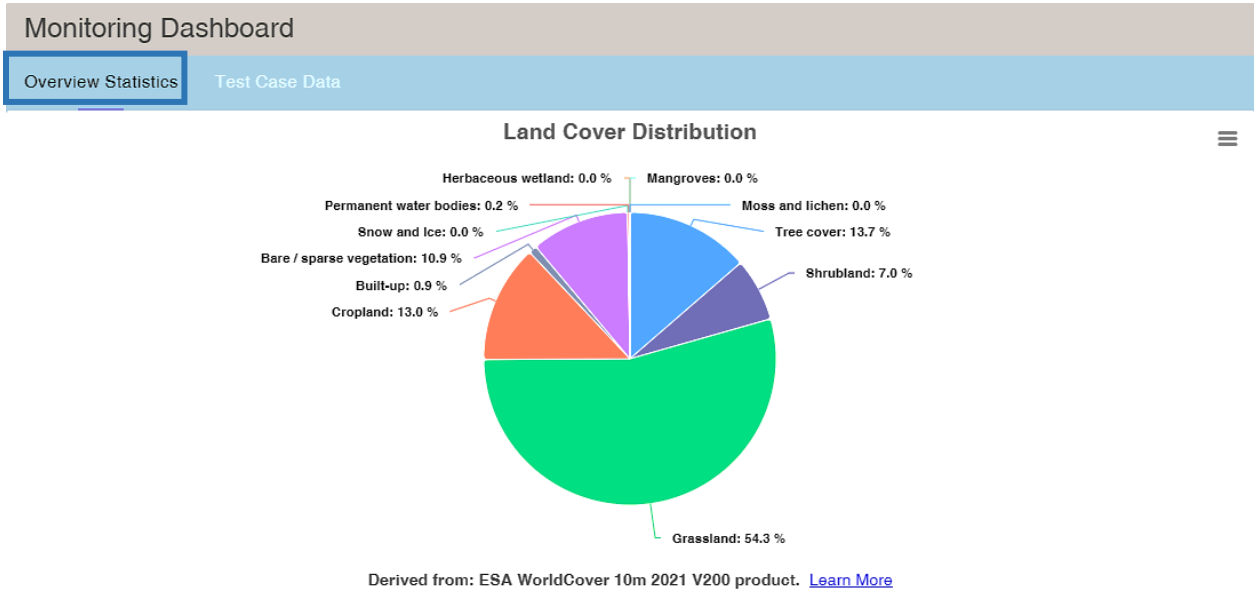
- View and browse the selected region in a web map
- View the respective regional information of their selection
- View and browse the test case data containing indicator statistics, tables, and graphs

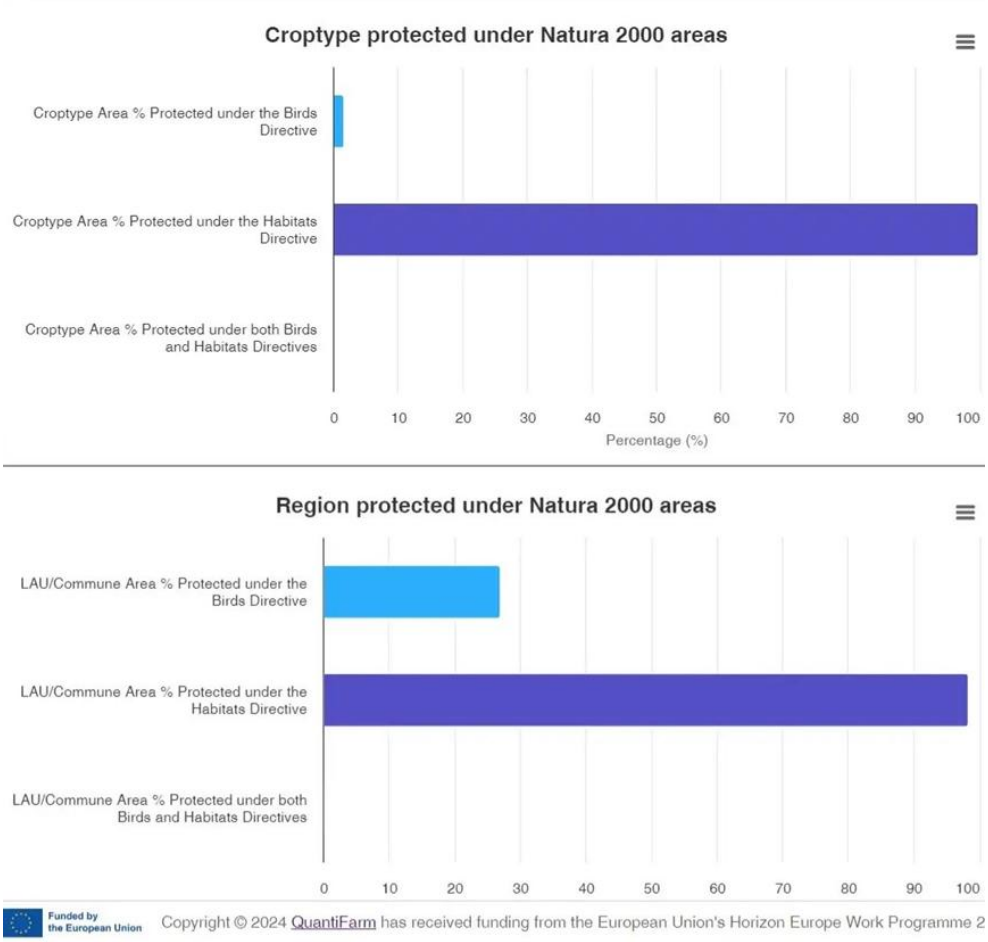


Statistics tab

In the navigation bar the user can click the “Overview statistics” tab to browse graphs with statistics regarding:

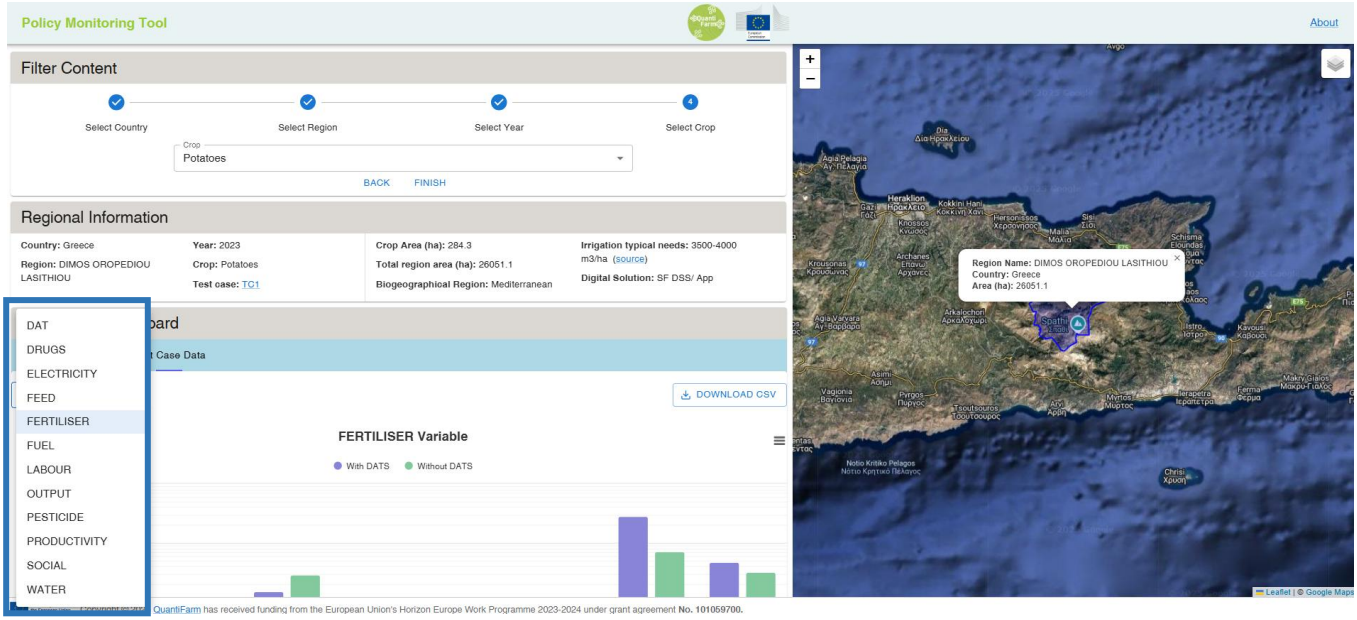
- The land cover distribution of the selected region
- Croptype area protected under Natura2000 zones of the selected region
- Regions protected under Natura2000 zones of the selected region





Indicators categories

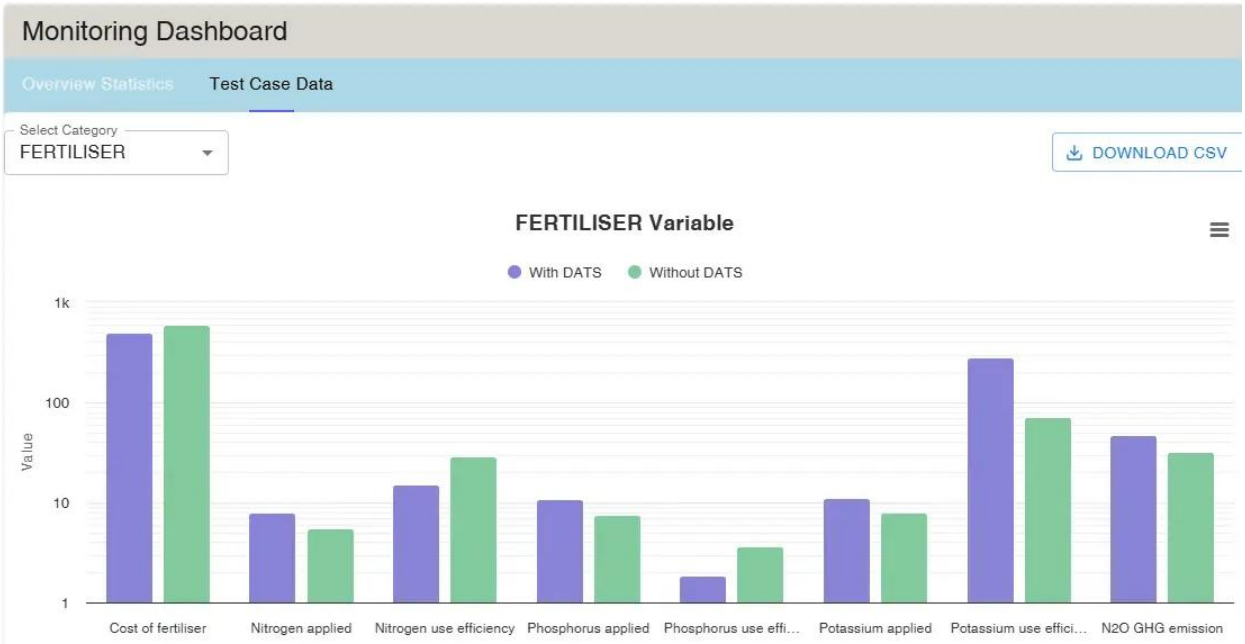
A total of 50 indicator variables derived from QuantiFarm test cases are classified into 13 categories which are listed so the user can select.



Fertilizers category

In the navigation bar after the user select, the respective indicators under the category are populated. For demonstration we can see the “FERTILIZERS” category to browse interactive graphs and tables regarding:

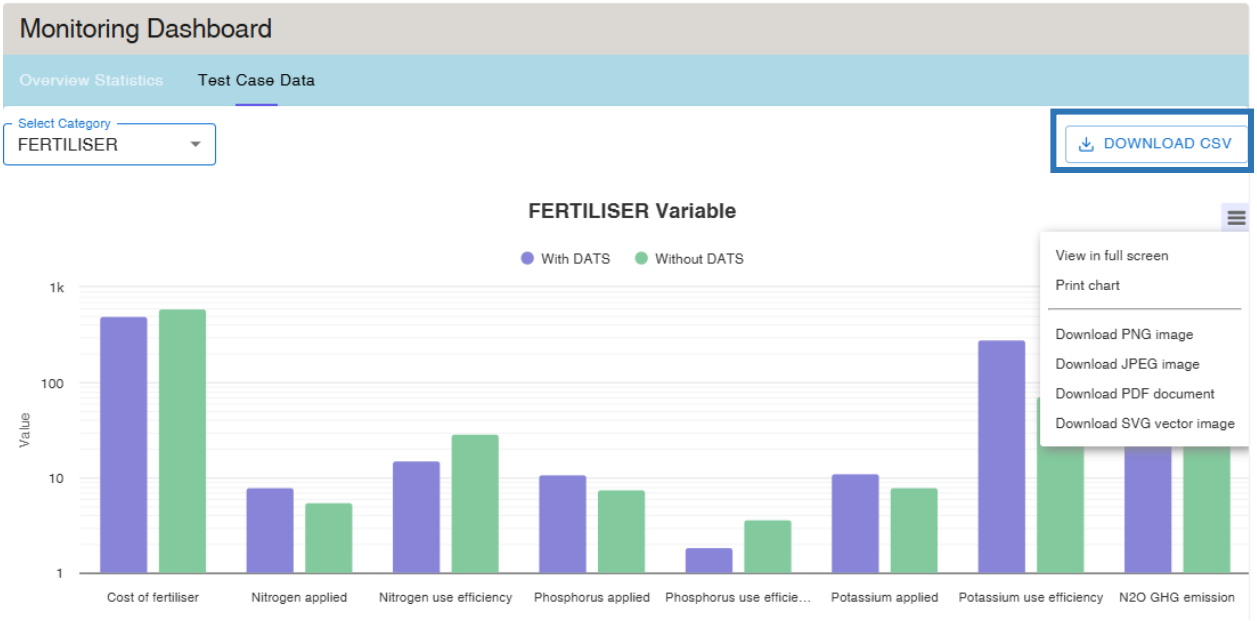
- Regional averages of 8 fertilizer related indicators used from parcels with DATS and parcels without DATS of the selected region (blue box)
- Absolute difference (benefit or deficit) of indicators in parcels utilizing DATS compared to those without. This difference is extrapolated in a regional level for every indicator in the last column called regional difference (orange box).



Category	Indicator	With DATS	Without DATS	Absolute difference	Regional difference
FERTILISER	Cost of fertiliser	500.89	592.44	-91.54 (€/ha)	-26026.05 (€)
FERTILISER	Nitrogen applied	7.97	5.50	2.47 (kg/ha)	703.66 (kg)
FERTILISER	Nitrogen use efficiency	14.99	29.21	-14.21 (%)	-14.21 (%)
FERTILISER	Phosphorus applied	10.88	7.50	3.38 (kg/ha)	959.53 (kg)
FERTILISER	Phosphorus use efficiency	1.88	3.66	-1.78 (%)	-1.78 (%)
FERTILISER	Potassium applied	11.23	7.86	3.38 (kg/ha)	959.53 (kg)
FERTILISER	Potassium use efficiency	284.21	72.27	211.94 (%)	211.94 (%)
FERTILISER	N2O GHG emission	47.01	32.42	14.59 (kg Co2e/ha)	4147.67 (kg Co2e)

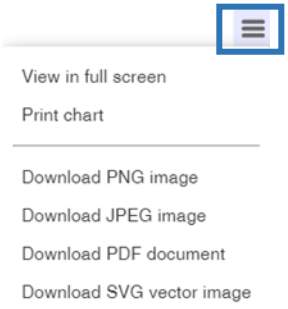
Customize and export graphs

Graph customization and export options



A “Download CSV” option is available at the top right corner of the graphs, allowing users to access all aggregated variables for the selected year and Test Case in an easy to reuse, open, text-based .csv format (blue box).

Then the graphs can be viewed, printed, and downloaded by clicking the respective burger icon.



Various export options are available for visualization, printing in various formats including .png, .jpg, .PDF, .svg.