



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

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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.

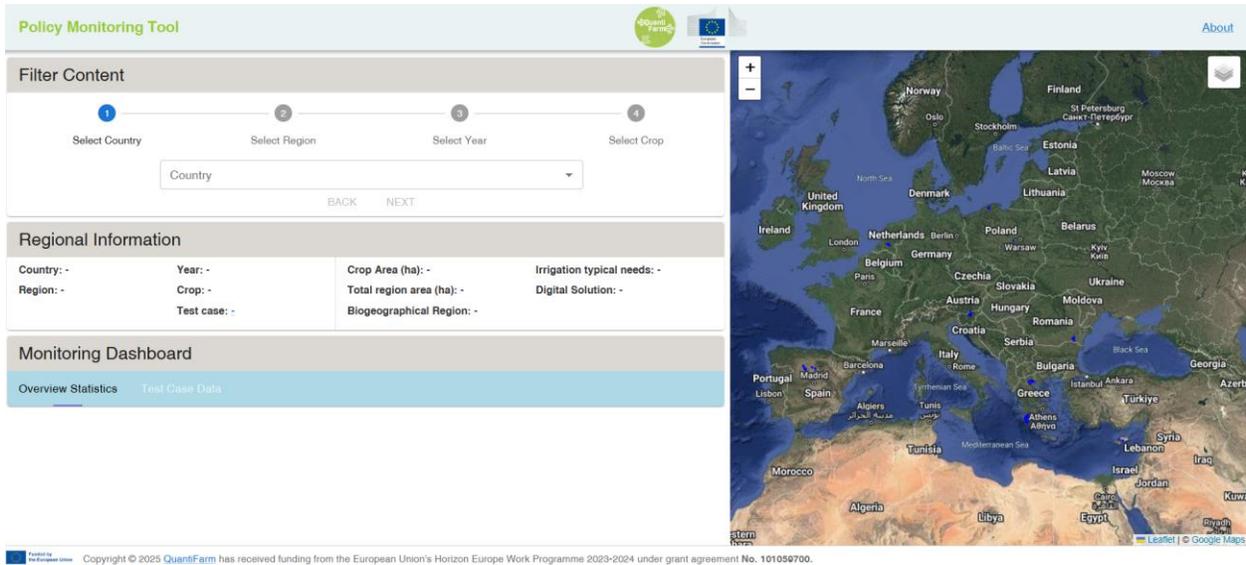
From a wider perspective, the tool functionalities revolve around the following three pillars:

- **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>

The screenshot displays the QuantiFarm Toolkit interface. On the left, a sidebar lists various tools: Recommendations Tool, Cost and Benefit Calculators, Benchmarking Tool, Advanced Decision Support Tool, and Policy Monitoring Tool (which is highlighted). The main content area is titled "Policy Monitoring Tool" and features a row of 12 national flags representing the tool's test cases. Below the flags, the text describes the tool's purpose: providing a visual policy monitoring dashboard with analytical reports, summary tables, and graphical charts. It details the data sources, including Earth Observation (EO) data, open European GIS datasets, and policy monitoring sources like FADN and Eurostat. The text also outlines the three pillars of the tool's functionality: Generalised Indicators Tracking, DATS vs. Non-DATS Parcel Performance, and Regional Benchmarking. At the bottom of the main content area, there is a button to "Open Policy Monitoring Tool" and a link to "Download User Manual". A footer note states that the source code of the tool is available [here](#). The bottom of the page features the European Union logo and the text "Funded by the European Union", along with a disclaimer: "Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them."

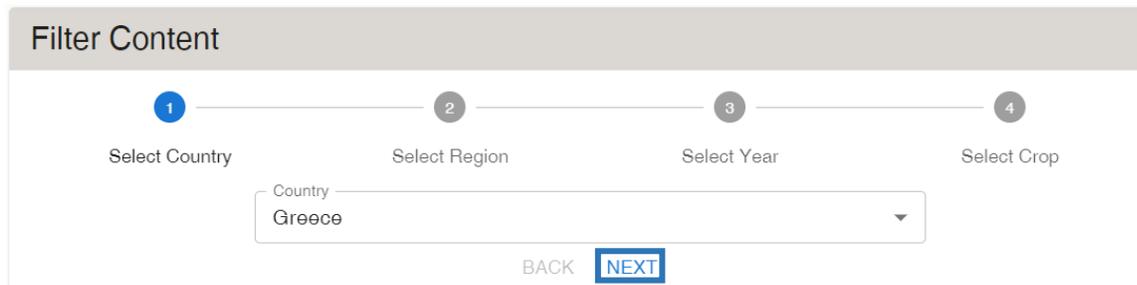
And press “Open Policy Monitoring Tool”. User registration and/or login credentials are not required for redirection to the subsequent landing home page.



Filter contents

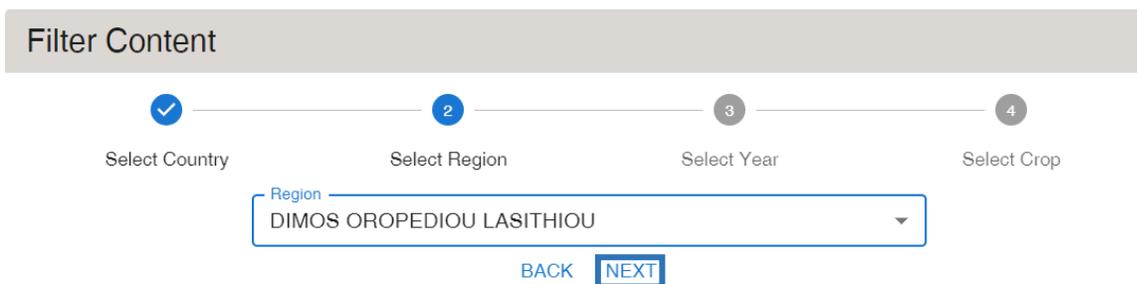
Selection of Country of interest

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

Filter Content

Select Country Select Region **3** Select Year 4 Select Crop

Year
2023

BACK **NEXT**

Selection of Crop of interest

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

Filter Content

Select Country Select Region Select Year **4** Select Crop

Crop
Potato

BACK **FINISH**

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

Policy Monitoring Tool

Filter Content

Select Country: Select Region: Select Year: Select Crop: 4

Crop: Potatoes

BACK FINISH

Regional Information

Country: Greece	Year: 2023	Crop Area (ha): 284.3	Irrigation typical needs: 3500-4000 m ³ /ha (source)
Region: DIMOS OROPEDIU LASITHIU	Crop: Potatoes	Total region area (ha): 26051.1	Digital Solution: SF DSS/ App
	Test case: TC1	Biogeographical Region: Mediterranean	

Monitoring Dashboard

Overview Statistics Test Case Data

Land Cover Distribution

Herbaceous wetland: 0.0 % Mangroves: 0.0 %

Permanent water bodies: 0.2 % Moss and lichen: 0.0 %

Snow and ice: 0.0 % Tree cover: 13.7 %

Bare / sparse vegetation: 10.9 % Shrubland: 7.0 %

Built-up: 0.9 %

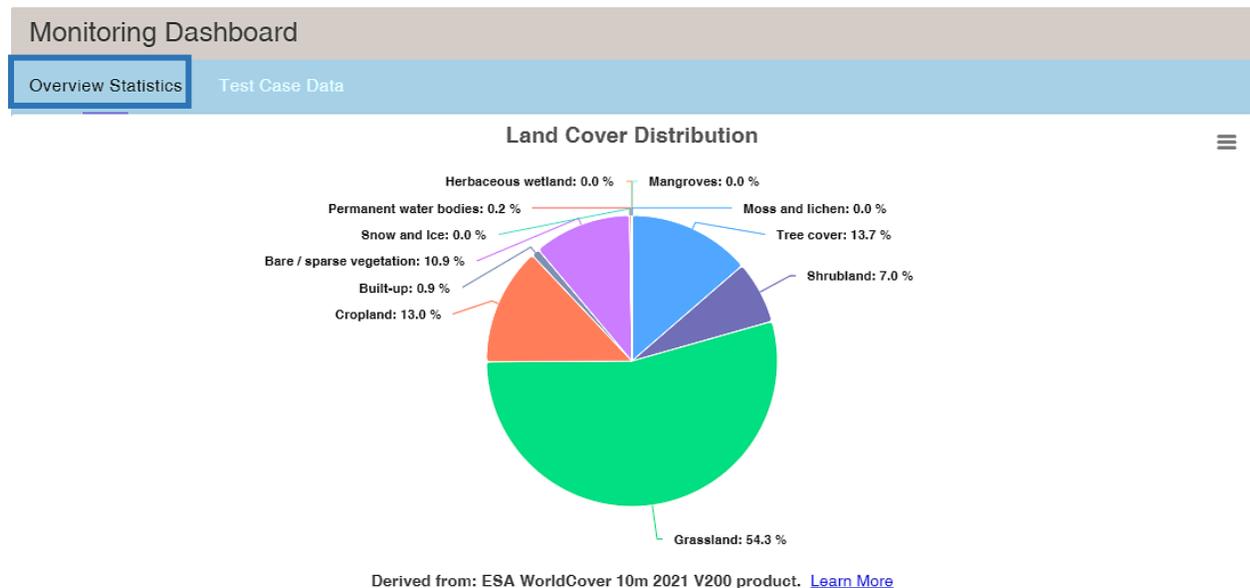
Region Name: DIMOS OROPEDIU LASITHIU
Country: Greece
Area (ha): 26051.1

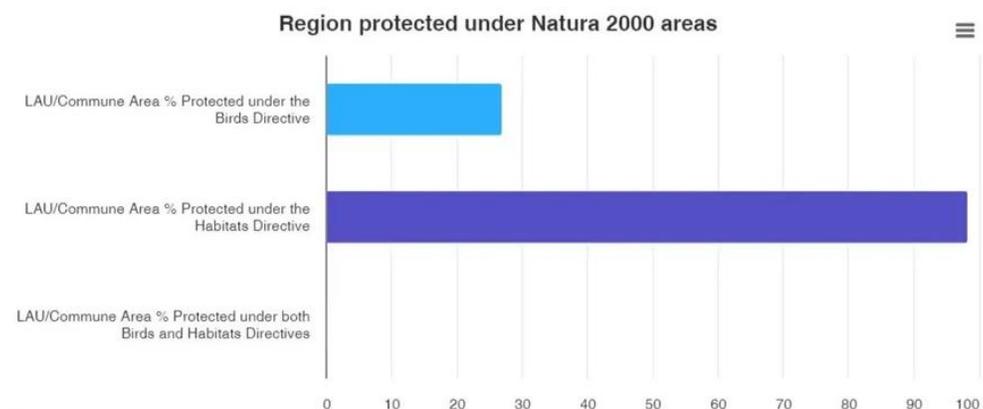
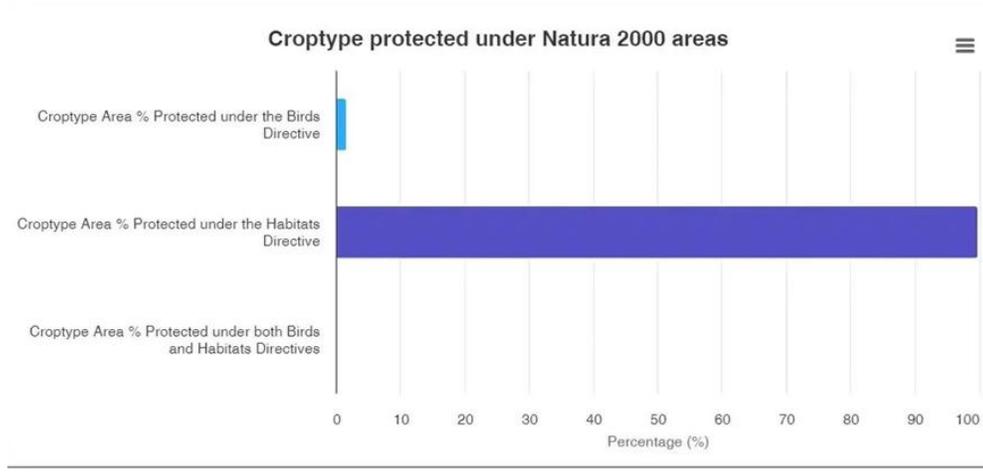
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Statistics tab

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





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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.

Policy Monitoring Tool

Filter Content

- Select Country:
- Select Region:
- Select Year:
- Select Crop: Potatoes

Regional Information

Country: Greece	Year: 2023	Crop Area (ha): 284.3	Irrigation typical needs: 3500-4000 m ³ /ha (source)
Region: DIMOS OROPEDIU LASITHIU	Crop: Potatoes	Total region area (ha): 26051.1	Digital Solution: SF DSS/ App
	Test case: TC1	Biogeographical Region: Mediterranean	

Indicator Categories:

- DAT
- DRUGS
- ELECTRICITY
- FEED
- FERTILISER**
- FUEL
- LABOUR
- OUTPUT
- PESTICIDE
- PRODUCTIVITY
- SOCIAL
- WATER

FERTILISER Variable

Legend: With DATS (blue), Without DATS (green)

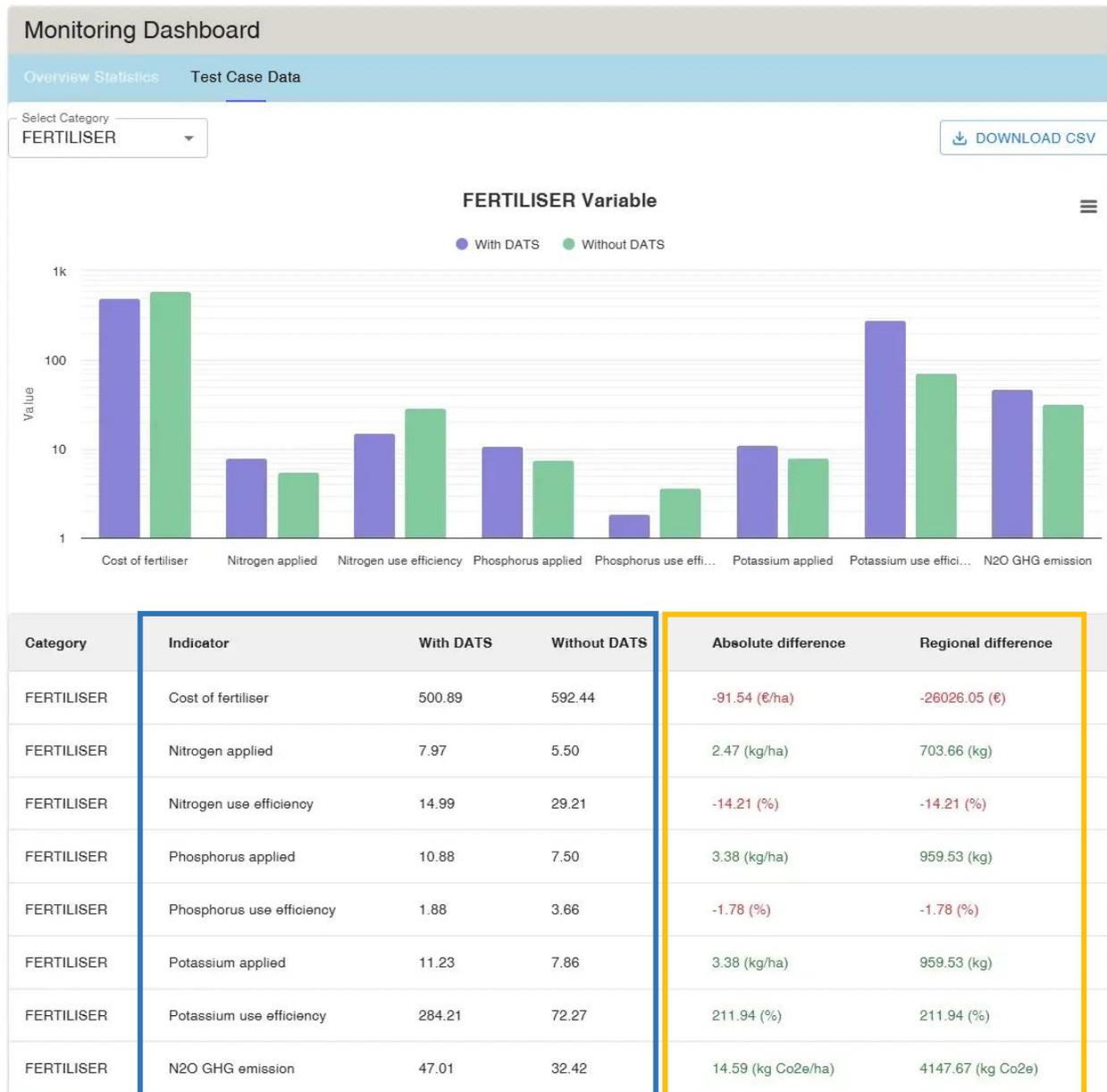
Region Name: DIMOS OROPEDIU LASITHIU
Country: Greece
Area (ha): 26051.1

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Fertilizers category

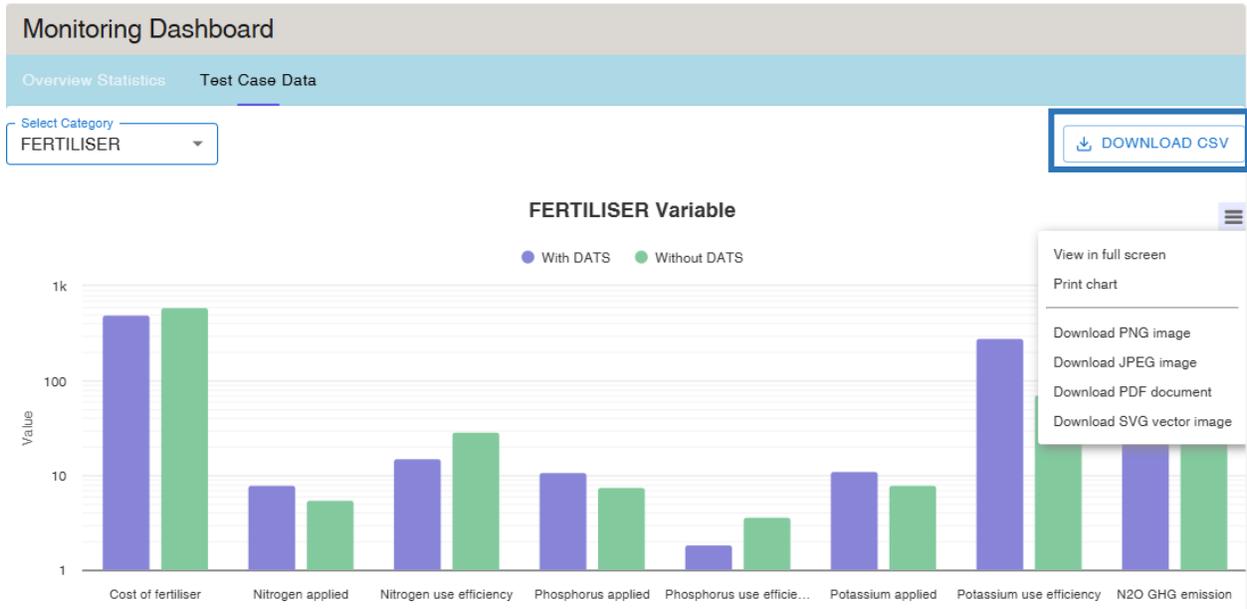
In the navigation bar after the user select, the respective indicators under the category are populated. For demonstration we can see the “FERTILIZERS” category to browse interactive graphs and tables regarding:

- 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).



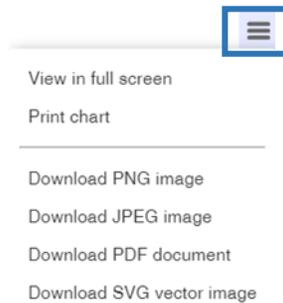
Customize and export graphs

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.