

# Tutorial

## DATA VISUALISATION TOOL



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P. PAZ-GARCIA, A. COCA-CASTRO & J.J. TELLO (2016) Data visualisation tool. Tutorial for the Terra-i project.  
Version 3.

### Description

This tool allows the user to visualize and obtain statistical data on decrease detections alerts from 2004 until the most recent data at different levels or target areas such as country, second administrative level, protected and indigenous areas or ecosystems. The information is expressed in line and bar graphs that show the time-series of habitat loss alerts within each year as well as its accumulated value, respectively. In addition, the tool allows downloading of: (1) reports\* that compile relevant information (rates of change, percentage of analyzed area, the most affected areas, the most affected years, among others); and (2) statistical tables of the target data (administrative levels, protected areas, indigenous areas or ecosystems) in .csv format.

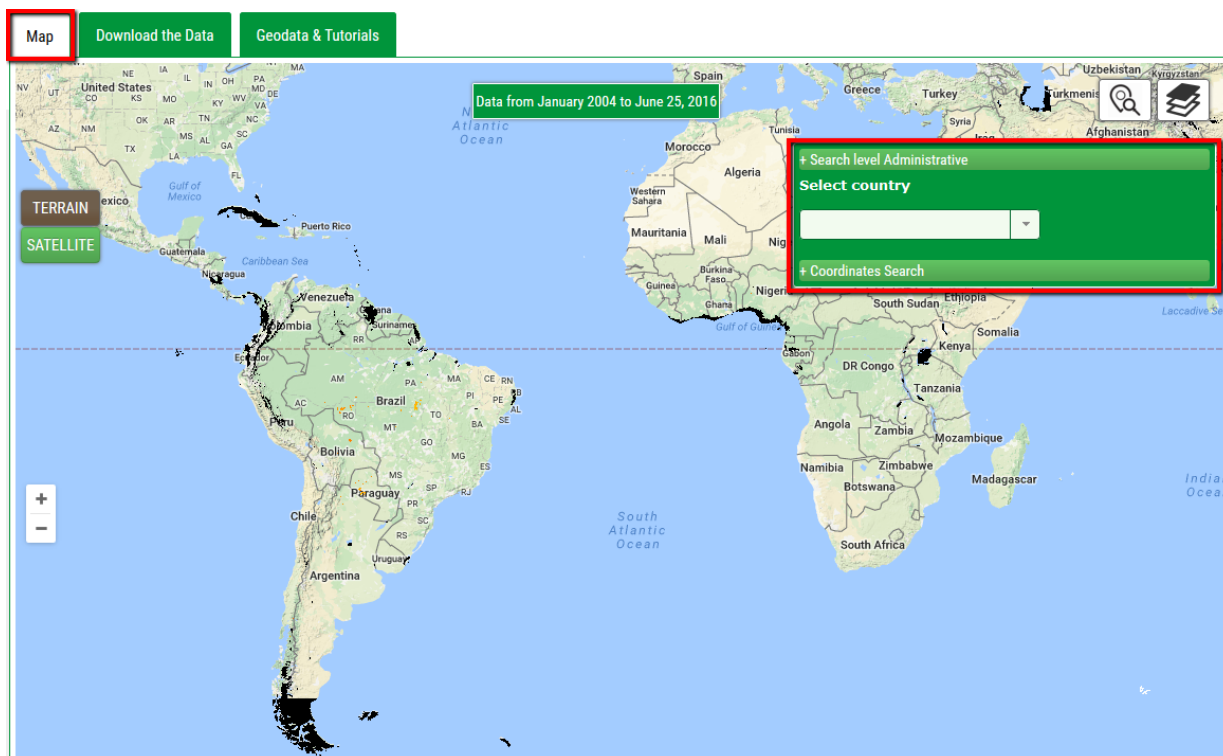
*Note:* \* These pdf reports are currently only available at the country level.

### Management

#### 1. Map

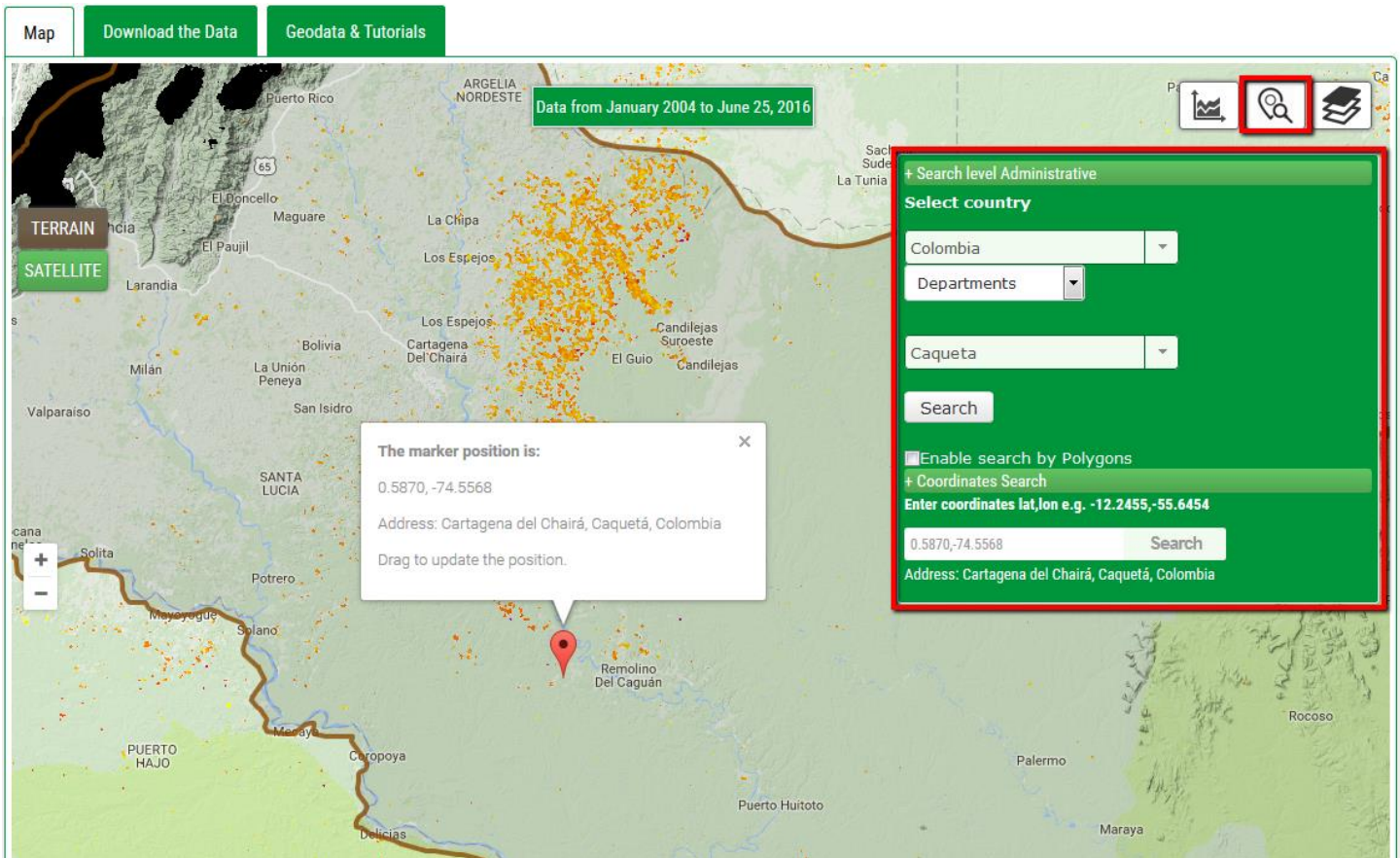
Select a country and then choose the target information to extract (national level, second administrative level, protected or indigenous areas, or ecosystems) (Figure 1).

The search button displays a window where you can search in different administrative levels (country departments, protected areas, indigenous areas, ecosystems). This control contains a checkbox to activate the polygon search at countries and departments, for the other levels (protected areas, indigenous areas, ecosystems) markers on the map are displayed, clicking on the polygon or the markers you can do the search. Also within this coordinate search option was included, this option displays a marker on the map showing the position (latitude, longitude) and the address.



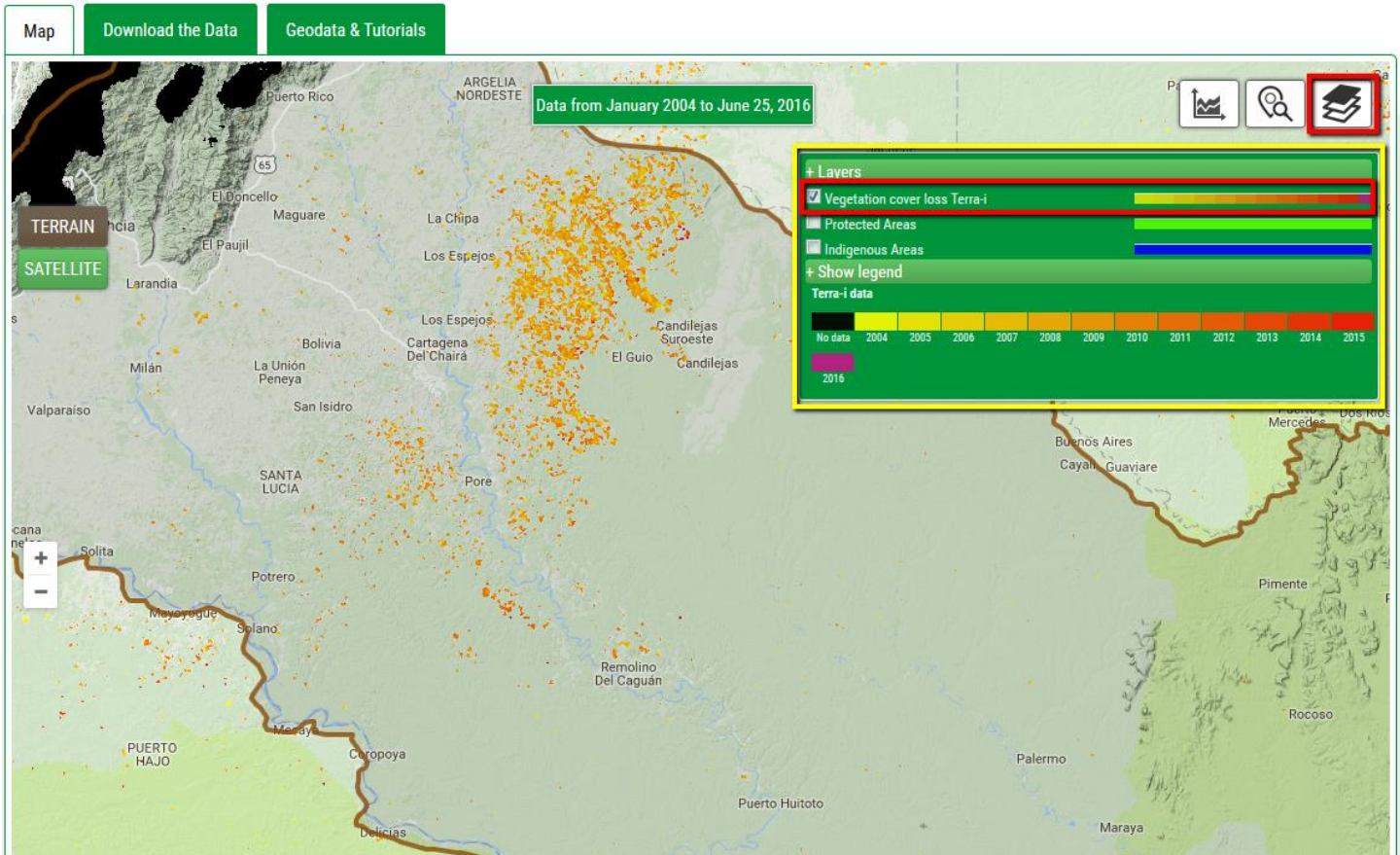
**Figure 1.** Initial interface to visualise the data. Selection of the target information to extract at the country level.

The viewing pane displays the Terra-i detections represented in a range of colors, from yellow to red, with yellow indicating the oldest detections and pink the most recent data analyzed. Figure 2 shows the habitat decrease detections alerts for the Department of Caquetá, Colombia, in which colored dots (pixels) represent detections from 2004 until the most recent data.



**Figure 2.** Decrease detections alerts for the Department of Caquetá (Colombia), 2004 to current version.

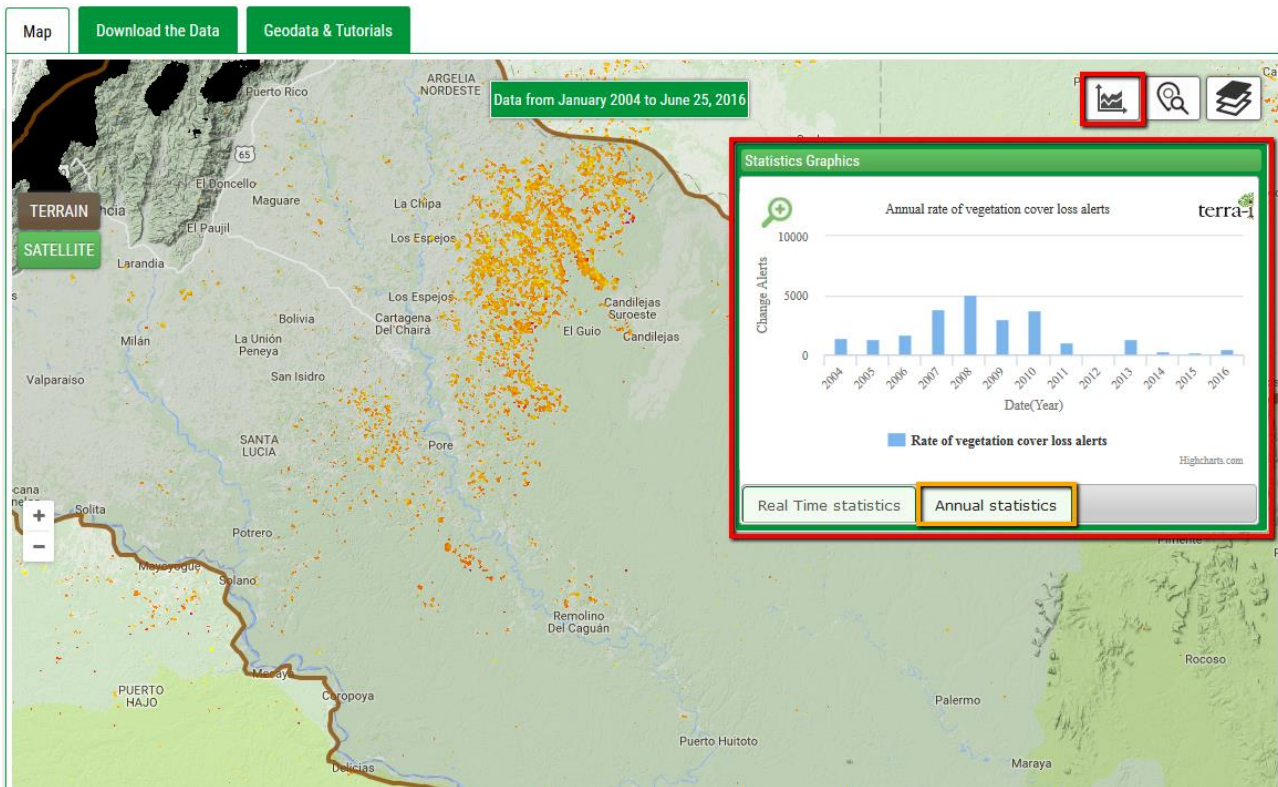
2. Layers button displays a window that allows you to toggle the layers we have available on the map; such as protected areas, indigenous areas. In this section, users now have the option to hide and show the layer of Terra-i data. In addition, the legend of the data is shown.



3. The statistics button is activated when a search is performed, and displays a window with dynamic statistical graphics (near real time and annual cover loss). In each graphic is an icon in the top left corner to zoom in on the graph. When zoom is performed at the graphic download icon appears in the top right corner of the chart.

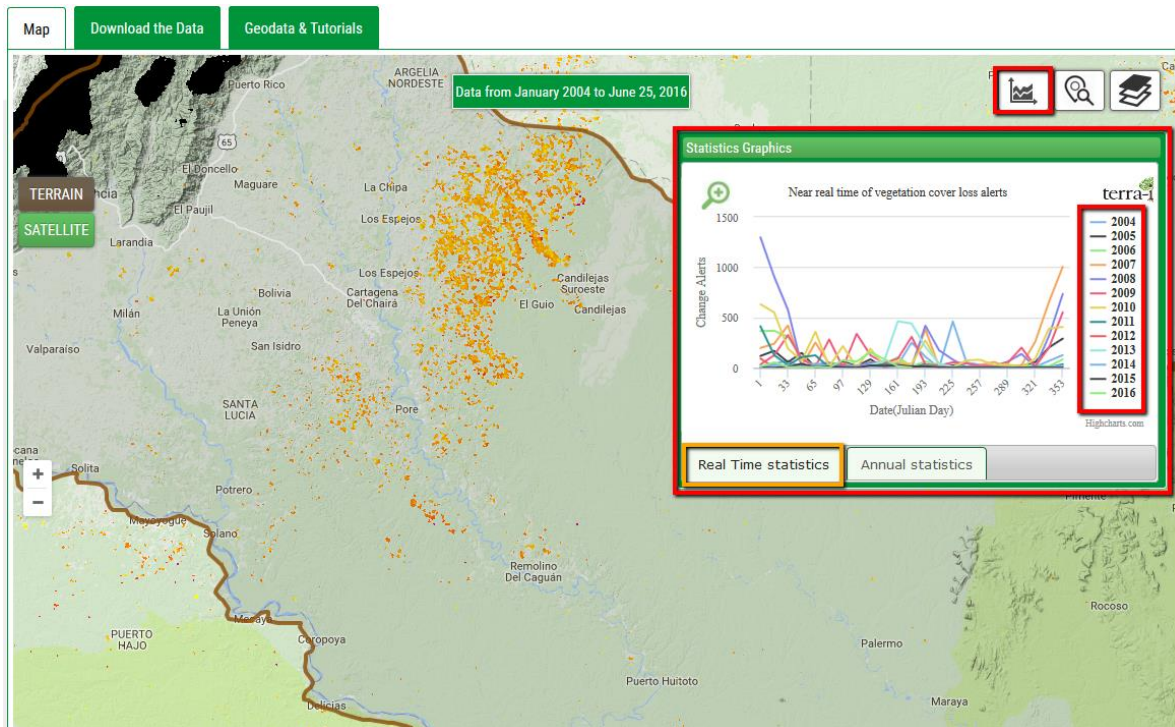
Under this tab, the annual rates of change (alerts per year) are displayed in bar charts from 2004 until the last update. This chart may indicate which year(s) were most affected by habitat loss alerts, an analysis that can be done by different administrative levels or other areas of interest.





Note: The charts can be downloaded and/or printed in different image formats (PNG, JPEG, and SVG) or as a document (.PDF).

4. The graphic of statistics in near real time has on the right side the legend of the different years as shown in the figure below in the red box. Initially is shown on the graphic the statistics for the last two years. The user can move the mouse over each line on the graphic to display values and toggle the year that you wish to view by clicking on it. When given zoom over the graphic can be made the same events and also download the graphic. This graphic is helpful to indicate which date or range of dates (in Julian days) reported the largest area change in alerts per year.



Detailed value information can be obtained placing the mouse cursor over a bar. Bar charts can also be downloaded and/or printed in different image formats (PNG, JPEG, and SVG) or as a document (PDF).

5. This section allows detection data to be downloaded, including a full report (.pdf format). The report contains relevant information for posteriori analyses such as total decrease rates as well as the most affected years by country, second administrative level, ecosystems, and/or protected and indigenous areas. The main aim of these reports is to deliver to the user a synthesis of information extracted from the Terra-i tool. In addition, the user can download tables in .csv format with information from different levels (national, second and third administrative level, ecosystems, protected and indigenous areas). Each table contains the area change (hectares) by Julian period within the years analyzed as well as the estimate of the annual decrease rate.

Finally, a short text on the distribution and reference sources of the data includes a description, limitations, and recommendations.



# HERRAMIENTA DE VISUALIZACIÓN DE DATOS TERRA-I

## Tutorial





Map **Download the Data** Geodata & Tutorials

Click on the following links to download the data

National level dataset:

-  [Full report \(pdf\)](#)
-  [Table with national level statistic \(csv\)](#)

Other administrative level:

-  [Table with Departments level statistics\(csv\)](#)
-  [Table with Protected areas level statistics\(csv\)](#)
-  [Table with Indigenous areas level statistics\(csv\)](#)
-  [Table with Ecosystems level statistics\(csv\)](#)

In order to generate these data, we first project the data into a [Lambert Azimuthal Equal Area projection](#)

If a MODIS pixel was detected by Terra-i it is counted as fully changed which can lead to an over estimation of the real rate. Moreover, Terra-i spatial resolution (~250m) does not allow to observe small scale events. The rates in hectare presented in the tables and reports should therefore be used as an indicator of the rate trend but should not be considerate as the exact trend present in the analyzed area.

DATASET: The data distributed here is in CSV format for different administrative level. These data are derived from the Terra-i output at 250m spatial resolution, in decimal degrees and datum WGS84. It is derived from the USGS/NASA MODIS data. CIAT processed this data to provide habitat change maps. The detections were made using algorithms described by Reymondin et al. (2012).

Additional data sources:

- Countries limit: [Global Administrative Unit Layers \(GAUL\) by FAO](#).
- Protected areas: [World Database of Protected Areas Annual Release 2009](#).
- Indigenous areas: [World Database of Protected Areas Annual Release 2009 - Query Indigenous Lands](#).
- Ecosystems: [Global Terrestrial Ecoregions by WWF Release 2003](#).

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**Note:** \* These pdf reports are currently only available at the country level.

6. Section Geodata and tutorials, you can find manuals on data visualisation with ArcGIS, how to download our data, how to use the visualisation tool and how to calculate the changed area in hectares. Also find a link to go to the download section ASCII data by tile.

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### TUTORIALS

- 1) Data Visualization with ArcGIS [Download \(PDF\)](#)
- 2) How to download our data [Download \(PDF\)](#)
- 3) How to use our online visualization tool [Download \(PDF\)](#)
- 4) How to calculate the changed area in hectares [Download \(PDF\)](#)

To download our data, you must have an account on our website, if you already have login [here](#), but you can create it by filling the [registration form](#).