STATPLANET 2.2
User Guide

http://www.sacmeq.org/statplanet
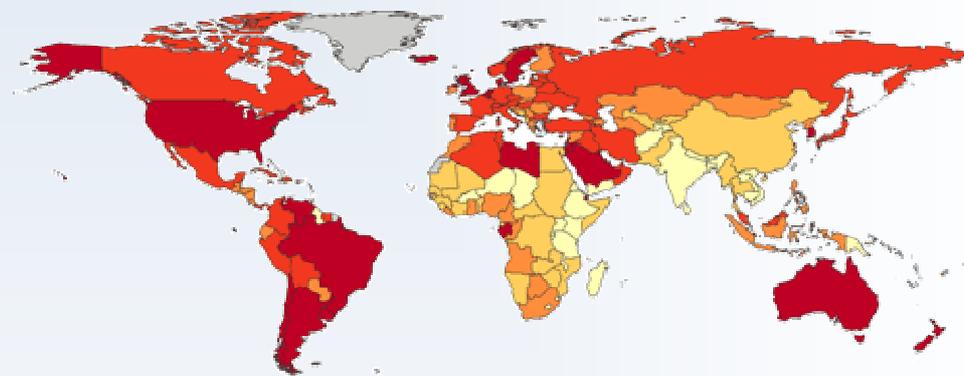
Author: Frank van Cappelle

April 2010

Table of Contents

1. What is StatPlanet

StatPlanet is a powerful interactive data visualization and mapping tool. It is used by international organizations such as UNESCO, SACMEQ and the Global Environmental Facility to communicate and more easily interpret data. One of the greatest strengths of StatPlanet is that it enables also non-technical users to explore statistics through its user-friendly interface. Moreover, the software automates the normally complex processes of converting raw data into interactive maps and visualizations. This enables even non-technical users to create interactive maps and visualizations with relative ease. The software can be downloaded and used free of charge.

Three versions of StatPlanet are currently available: StatPlanet, StatPlanet Map Maker and StatPlanet Graph Maker. The original StatPlanet comes with data for over 250 indicators on world development, and for 210 countries, in the following domains: demographic, education, environment, gender, health and socio-economic. The data comes from many different sources, such as UNESCO, SACMEQ and the World Health Organization. StatPlanet Map Maker and Graph Maker are downloadable versions of StatPlanet through which it is possible to add and visualize your own data, as well as import your own map boundaries. They are available both as a stand-alone application for offline use, and as a web-based application which can be published online.

The aim of StatPlanet is to promote evidence-based decision making by improving and facilitating the communication and interpretation of information. StatPlanet does this by providing (i) attractive interactive visualizations which facilitate the interpretation of information, (ii) a user friendly interface that is accessible also to non-technical users, (iii) automated data visualization (including the processes of merging and synchronizing data from different sources), and (iv) an easy to disseminate software system which can enable anyone to explore and create data visualizations - regardless of technical skills, availability of Internet connectivity, and computer hardware or software.

StatPlanet was conceptualized and is being developed by Frank van Cappelle since 2005. Since 2008, the development of a tailored version of StatPlanet is being undertaken as part of the SACMEQ research programme at the UNESCO International Institute for Educational Planning (IIEP).

For more information:

- SACMEQ website: http://www.sacmeq.org/statplanet

- UNESCO website: http://www.iiep.unesco.org/?id=703&

2. StatPlanet system requirements

StatPlanet was designed to be usable in as many places as possible. It can be used online as well as offline for those without an Internet connection. It is very small in size (less than 3 MB), which makes it easy to disseminate. For example, it can be distributed via USB flash drive (USB stick) and is small enough to send as an e-mail attachment. The software does not require installation. This is important for dissemination as many people do not have the necessary administrator rights on their workplace PC to install new software.

StatPlanet runs in the Adobe Flash Player, which has the following minimum system requirements[1]. As can be seen in the table the system requirements are low, and any computer purchased within the past 7 years should be able to run StatPlanet.

Windows®	Macintosh	Linux®
Intel® Pentium® II 450MHz, AMD Athlon™ 600MHz or faster processor (or equivalent)	PowerPC® G3 500MHz or faster processor Intel Core™ Duo 1.33GHz or faster processor	Modern processor (800MHz or faster)
128MB of RAM	128MB of RAM	512MB of RAM, 128MB of graphics memory
128MB of VRAM*		

*Recommended for GPU hardware acceleration–dependent features. Flash Player will use software mode for systems that do not meet the system requirements.

---

[1] http://www.adobe.com/products/flashplayer/systemreqs/

3. StatPlanet features and user guide
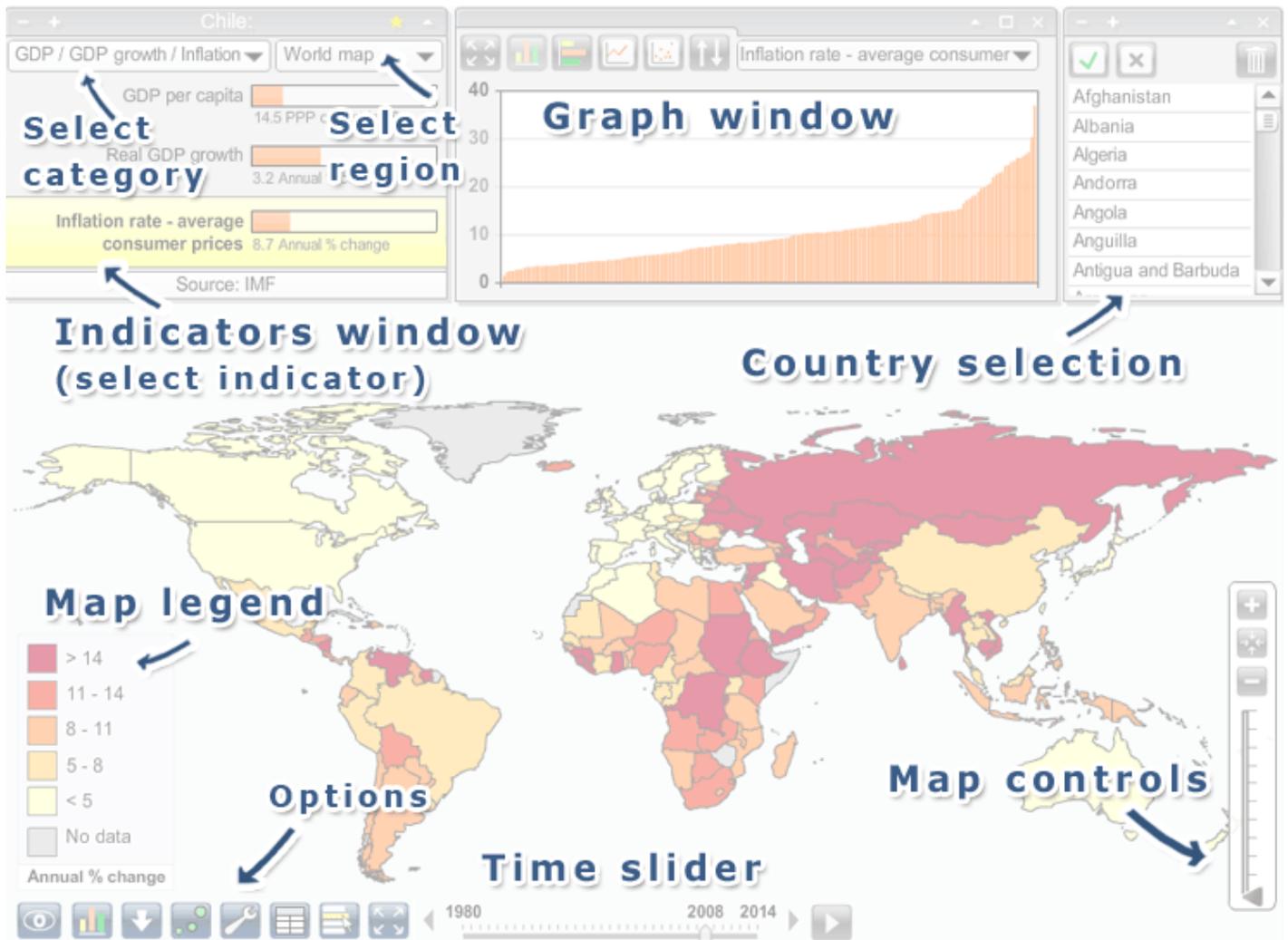
3.1 Thematic map

Choropleth Map

This is the main thematic map type in StatPlanet. The map legend shows which map colors are associated with each data range (for example, higher values may be shaded in increasingly darker colors). Both the map colors and the data range can be customized (see *Map legend* below). In version 2.1, the possibility of creating qualitative or descriptive maps was introduced. These types of maps convey non-numerical information, such as which languages are spoken in different regions.

Proportional Symbol Map

A proportional symbol map scales symbols (usually circles) according to the indicator being mapped. In Statplanet the symbol can represent either a country or a region within a country. To

create one, click the 'proportional symbol map' button in the bottom-left corner of the screen. The proportional symbol map is overlaid on top of the choropleth map. If you have bookmarked an indicator, the symbol map represents the data for the bookmarked indicator, whereas the choropleth map represents the data for the selected indicator. (If the bookmarked indicator is currently selected, both the symbol map and the choropleth map represent the bookmarked indicator).

Select country on the world map

- **Mouse over country**: Moving the mouse over a country on the world map brings up a popup containing information about that particular country for the selected indicator (as well as the bookmarked indicator, if there is one). In addition, the country data for all indicators in the current category is shown in the i*ndicators window*.

- **Click on country**: You can select a country by clicking on it in the map. This will highlight the country in the graph, and can also be used to define a custom region. See also the *country selection window*.

Map legend

Map colors: Clicking on any of the colors in the legend will bring up a color selection window. In this window you can change both the colors (either Sequential or Diverging color schemes), as well as the number of color classes (between 3 and 9). The color schemes are from the Color Brewer website (http://colorbrewer2.org/), which is an excellent resource for more information on selecting map colors.

Data range: To adjust the data range of the map legend, click on the top or bottom value. Use the popup to increment or decrement the value, or enter a whole new value. The intermediate values will be adjusted automatically.

Custom maps (national / regional / state maps etc.)

You can use StatPlanet Map Maker to insert your own maps, using the included map template (map.fla). This requires the Adobe Flash software. (See: *5. Importing a map into StatPlanet*)

Save map

Tou can find the save map button in the bottom-left corner of the screen. To change the image type, size or quality, use the options window. This feature is only available in the online version on the StatPlanet website. However, it is possible to save an image of a map produced with your own data if you download StatPlanet Map Maker. You need to open StatPlanet in the directory 'Offline', click the icon shown on the left, and then follow the on-screen instructions. Please include a reference to StatPlanet if you are publishing the image.

Map navigation controls:

The map zoom controls are normally hidden from view. Move the mouse towards the bottom-

right of the screen to make them appear.

- **Zoom**: You can zoom in and out of the map using the 'zoom in' and 'zoom out' buttons, or by dragging the zoom slider up or down. If your mouse has a scroll wheel, you can also use this to zoom in and out.
- **Moving the map**: click and drag the map with the mouse to move it to a new position.
- **Restore map position**: the button shown on the left restores the map to the original coordinates for the selected region.

## 3.2 Indicators window

Select category
Use the drop-down menu in the top of the indicators window to select a new category (online version only).

Select regions
Use the drop-down menu in the top of the indicators window to select and zoom into a different region, such as 'Africa' or 'Europe'. It is also possible to select countries to define a custom region (see *Country selection window*).
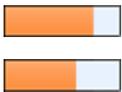
Indicator bars
The bars are scaled in proportion to the maximum value of that particular indicator for all countries in the selected region. For example, if the value for country X is 20 and the maximum value for all countries is 100, the bar will be scaled at 20%. You can also scale the bars as a percentile by selecting 'Percentile' as the Visualization type in the options window.

Bookmark indicator
Click the 'star' button in the indicators window to bookmark the selected indicator. The bookmarked indicator will stay even when you switch to another category. This allows you to (i) create scatter plot graphs, (ii) compare the bookmarked indicator with indicators from other categories, and (iii) compare two indicators through the choropleth map (representing the selected indicator) and the proportional symbol map (representing the bookmarked indicator).

Indicator definitions
If a definition exists for an indicator, the definition will appear in a popup when moving the mouse over the indicator. The definition only shows for the indicator which is selected or bookmarked.

3.3 Graph window

Bar chart
Click the 'graph' button in the bottom-left corner of the screen to open or close the Graph

window. You will find the same graph button in the graph window. Use this button to switch between horizontal and vertical bar charts.

Use the "sort" button to sort the graph from lowest to highest, highest to lowest, highest to lowest starting in the middle, or alphabetically.

Time series
In the top left of the Graph window (see "Bar chart" above) you will find the time series button. When you click on this button, a list of countries appears which you can add to the time series graph. Click on a country to add it to the graph, and click on it again if you wish to to remove it. (See also **Country selection window** below).

Use the "sort" button to sort the time series labels.

Scatter Plot
In the top left of the Graph window (see "Bar chart" above) you will find the scatter plot button. Clicking on the button will automatically use the selected indicator as the x-axis variable. You need to select a second indicator as the y-axis variable.

The x-axis and y-axis variables can be selected in the Graph window (see below), or in the Indicators window (see **Bookmark indicator** above).

Press the 'play' button to see an animation of changes over time, with each bubble moving to the corresponding x and y positions (depending on whether data is available for each time interval). If 'Show trails' is selected (next to the play button), each bubble will leave a trail to mark previous positions over time.

Select x-axis / y-axis indicator
Click on the x-axis or y-axis label, then select an indicator from the drop-down menu**.**

Use the drop-down menu in the top of the graph window to change the scale of the 'bubbles' according to a selected indicator.

Use the 'options' icon in the graph window to show or hide the trendline. Move the mouse over the trendline to see the slope and trendline equation.

Adjust graph size
To change the graph size, move the mouse to the sides or corners of the graph window until you see the cursor change to look like the one shown on the left. Click and hold down the left mouse button, then drag the window to the size you want . Release the mouse button once you have the right size.

Adjust graph scale
The graph scale can be adjusted by clicking on the top or bottom graph values. The value can then be edited in the popup window.

3.4   Options window

Click the 'options' button in the bottom-left corner of the screen to open the options window.

Map:

- Map colors: map background, map borders, map text color, map text outline color, etc.);

- Map text size;

- Map symbol size (proportional symbol map symbols);

- Map legend - estimate best value distribution: adjust the values so that there is a more equal distribution of countries for each color class. This will usually result in a map with a better distribution of colors. If this is switched off, the value range for each color class will be set at equal intervals based on the highest and lowest value in the data range.

- Map legend - show maximum & minimum values

- Map legend colors.

Graph/Chart:

- Graph colors: background, bar & scatter points, scatter point borders;

- Graph text size;

- Transparency level of graph area (bars / bubbles);

- Size of bubbles (scatter plot graph);

- Bullet graph.

General options:

- Animation duration;
- Decimal places shown;
- **Adjust the map/graph scale**: StatPlanet automatically adjusts the map and graph scale to suit the data set. However, in some cases you may wish to keep it fixed, for example if you made some changes to it yourself. You can set (or prevent) the automatic updating of the map/graph scale on (i) changing indicator, (ii) changing region, (iii) changing year. The default setting is for StatPlanet to adjust the scale when changing indicator or region, but not year.
  If you have chosen to not have the map scale updated, the map legend has a shortcut which you can use to 'refresh' the map legend at at any time for the current indicator, year and region:

- Choose to view statistics as **percentiles**.

Save/export map: (online version only)

- Set the **image type**: PNG or JPEG
- Change the **image size** as % of original
- Change the **image quality** (for JPEG images only)

3.5 Data table window

Click the 'table' button in the bottom-left corner of the screen to get a data table of the selected indicator. If an indicator has been bookmarked, the data for both the bookmarked and selected indicator will be displayed. The table also shows the mean, standard deviation and range.

Online version (StatPlanet website): Save / Export table
You can save the table as a .CSV file which can be opened by most spreadsheets (such as Excel). You can find the save table button in the top-right corner of the table window.

Offline version: Copy table
The offline version of StatPlanet does not allow you to save the data as a file. Instead, you can copy the entire table into Excel using the 'copy' button, and then 'paste' it in Excel. If you do not have Excel, you can also do the following: (i) paste the data into a basic text editor such as Notepad, (ii) save the document as 'data.html', (iii) open the file using your Web Browser.

3.6 Selecting countries

Countries can selected in various ways. An efficient way of finding and selecting a country is through the country selection window, as explained below. However, a country can also be selected by clicking on it in the world map, in the data table window, or in the bar chart or scatter plot graph. In each case the country will be highlighted in all of these StatPlanet components.

Click the 'select' button in the bottom-left corner of the screen to get a list of countries. Then click to select the countries you wish to show on the map or in the graph window. To narrow down the list of countries, select a region from the drop-down menu in the top-right corner of the screen. You can also press the first letter of a country name to quickly jump to a country in the list.

Select button
Press the Select button to confirm your selection. Any variables which are not selected will be removed from view.
Note: for the time series graph, there is no need to press this button as the countries will appear in the graph window as soon as you click on them.

Deselect All button
Press the Deselect All button to clear your selection.

Refresh button
The Refresh button . It only appears after you have clicked the Select button.

Remove countries
To remove countries, select the countries you wish to remove and press this button.

3.7   Time slider

Use the slider or click on the arrow buttons to change the year. Click on the play button to show changes over time as an animation, starting from the beginning. The animation speed can be set in the Options window.

3.8   View menu (show/hide items)

Move the mouse over the 'View' button in the bottom-left of the screen to see various options for showing or hiding map & graph elements, and other StatPlanet components.

- Show or hide country/region names on the map or graph (country names can be shown in full, in abbreviated form or as ISO3 codes);
- Show or hide country statistics on the map or graph (country statistics can only be shown on the horizontal bar chart);
- Show or hide the map popup and its components - bar chart, indicator and statistic;
- Show or hide various windows.

3.9   Window options (resizing/scaling)

Shrink / enlarge windows: Use the buttons shown on the left to shrink or enlarge the StatPlanet windows. This may be useful for space management when you have several windows open at the same time, or to focus in on certain areas.

Minimize / maximize windows: Use these buttons to minimize or maximize the windows. The **indicators window** has a special minimized state in which indicators can still be selected.

11

Adjust graph window size
Drag and drop the graph window borders to adjust the size.

Fullscreen: Click on this button in the bottom-left of the screen to either switch to fullscreen mode, or go back to normal window mode.

Additional notes:

- When switching categories, StatPlanet will remember which year was selected and check if data exists for this year in the new category. If there is no data for this year, it will select the year closest to the previously selected year for which data is available in the new category.
- When switching maps (e.g. world map to country map, or from regional map to district map), StatPlanet will check if the same category and indicator exist in the new map. If it cannot be found, the first category/indicator in the data set will be selected.

4. Add or Import Data using StatPlanet Map Maker

4.1 Basic steps for adding data

Note: to add your own data you need to download StatPlanet Map Maker: http://www.sacmeq.org/statplanet
Once you have downloaded the ZIP file and extract the files to a location of your choice, you can get started with the steps below.

STEPS:

1. OPEN data editor

Open the file **StatPlanet_data_editor.xls** – make sure that Macros are enabled.
To remove the example data, click on the button **Clear data**.

2. IMPORT data

Click on the **Import data** button and select the file[2] containing the data you wish to import. See also:
- **4.2:** Importing data
- **4.7:** Adding data manually (does not require Excel).

3. SAVE data

Click on the **Save data** button, saving the data as **data.csv**
(a comma delimited text file).

A copy of the file is also saved in the directory 'web' for publishing online, and one in the directory 'offline' for viewing in a stand-alone desktop application.

AFTER STEP 3, RUN STATPLANET:

- Click on **StatPlanet.exe**
- **Browser**: In the directory 'Web' click on **StatPlanet.html** to run StatPlanet in your web-browser.

To publish StatPlanet containing your data **online**, all you need to do is to upload the contents of the folder **Web** to a web-server. This folder contains the following files:

- StatPlanet.html   (the webpage which displays your interactive map)
- StatPlanet_small.html (alternative with smaller map embedded inside a webpage)
- StatPlanet.swf   (file which shows loading progress)
- content.swf   (the actual software)
- data.csv   (the data)
- AC_RunActiveContent.js (required to run 'Flash' content)

---

[2] A number of sources of publicly available data sets are linked from the StatPlanet website:
http://www.sacmeq.org/statplanet/data.html

Contents of StatPlanet_Map_Maker.zip

- **Docs:**
  - User Manual (User_Manual_StatPlanet.pdf)
  - StatPlanet Software License (License_Terms.pdf)

- **World_Map**
  - Create interactive maps using your own data, with the included World Map
  - It is possible to focus the map on a particular region on loading StatPlanet
  (e.g. Africa, Asia, Europe, etc. or a custom defined region)
  - Click on StatPlanet.exe to launch, or StatPlanet_data_editor.xls to edit

- **Custom_Map**
  - Import your own map into StatPlanet
  - map.fla = the map template to import your map
  (requires Adobe Flash CS3 or higher)
  - map_example.fla = an example map using the province map of Kenya

4.2   Importing data

The Data Editor enables the automatic importing of data. You can import any file which can be read by Excel (e.g. CSV, TXT, XLS, XLSX). The Data Editor automatically recognizes the structure of your data, and can also recognize almost all the different spellings of country names. Therefore, unless there are spelling mistakes in the country names, in most cases the import should go smoothly.

The Data Editor will look for country names and associated statistics in your file wherever they are located, and will automatically restructure the data in the format that is accepted by StatPlanet.

Note that for the import to be successful, country names should not appear more than once in the data file. Also note that StatPlanet sees a "dot" as the decimal separator. In case of problems, please see **Troubleshooting** below.

Headers not recognized

Headers (or variables) in the data file which are not recognized are displayed once the import is complete. For example, if in your data file the country 'Afghanistan' is indicated with the abbreviation 'Afg', this abbreviation will not be recognized by the data editor. To fix the problem, go to the Excel sheet 'Country names' and add 'Afg' in an empty cell below the corresponding country - 'Afghanistan'. You can use the same approach for other headers in your data set so that the import macro can correctly identify them. Then, run the import macro again to import the data correctly.

Note that the import macro removes spaces in country names and converts special characters (e.g. "é") into regular characters (e.g. "e") during the import. This allows for a wider range of country name spellings to be detected. Whether country names use upper or lowercase does not matter. The data import macro recognizes English and French country name spellings and a number of variations of these spellings. Data importing has been successfully tested with many different sources - each of which have different data structures and country name spellings (including data from IMF, PISA, SACMEQ, UIS, UNAIDS, UNDP, UNESCO, UNICEF, UNSTATS and WHO).

4.3   Troubleshooting

If you have saved your data but it cannot be read by StatPlanet, most likely there is a problem with the data structure. Please see point 4 below to see how to structure data by year (or other time point). Data should start with the more recent time point. Also make sure that the indicators listed for each year are exactly the same, and are listed in the same order.

If the import fails, check your data file for the following issues:

1. **Spelling of country names**: If the spelling of any of the country names cannot be identified, the data for these countries will not be imported. **4.3 Importing data** above explains how to solve this problem.
2. **Merged cells**: Most commonly the merged cells are 'headers' For example, two columns or rows of data may have the same header (e.g. "Life Expectancy"). To fix this problem, split the merged cells (Right click -> Format Cells -> uncheck the box 'Merge cells'). One of the two cells will now be empty, leaving one of the columns (or rows) without a header. To fix this, copy and paste the header into the empty cell as shown below.

Life Expectancy	
2000	**2005**
76	76
59	62

Life Expectancy	Life Expectancy
2000	**2005**
76	76
59	62

3. **Country names appear more than once**: If the same country name appears more than once in your data file, the import macro will only import the data associated with the first one. The easiest way to fix this problem is to create separate files for each list of country names, and import them one by one.
4. **No year indicated in the data file, or cannot be detected**:
   All indicators are arranged according to year. You need to add the year to your data set as the header of a row or column (depending on how your data is structured). Alternatively, you can import the data and add the year afterwards. The data needs to be structured as follows (see for example the structure of the sample data in StatPlanet_data_editor.xls):

   - Group (sort) your indicators according to year. Insert a new row above each group of indicators. In this new row add the year in the YEAR column. Leave the neighbouring cell in the INDICATOR column blank;
   - Note that the YEAR column should be blank in the cells next to the indicators:

YEAR	INDICATOR
2001	
	indicator1
	indicator2
2000	
	indicator1
	indicator2

5. **Decimal point:** StatPlanet reads a "dot" as decimal separator (for example 0.75), and a "comma" as a thousands separator (for example 1,000).

4.4   Optional parameters

In StatPlanet_Data_Editor.xls, there are several columns which can be used to define optional parameters. The different columns and their usage is explained below.

1. **SOURCE:** The source of your data can be added in the same row as the year, and can optionally be specified for each year in the dataset (otherwise it is assumed that the source specified for the first year in the series is the same source as for the other years). You can choose to use HTML code if you want to add a link to the source website, for example: My Source

2. **DESCRIPTION:** Add a description for each indicator in this column, which will appear as a popup in StatPlanet when moving the mouse over the indicator.

   To reduce file size, you never have to repeat a description more than once:

   (i) If you have data for several years, you only need to add a description for the list of indicators below the first year in the series. When a different year is selected, StatPlanet will automatically grab the description from the first year. (Note that for each year you need to have the same list of indicators, in the same order).
   (ii) If you have two or more indicators with the same description, you only need to enter the description once. For the other indicators, instead of a description enter the Excel row number where the description you want to re-use is located.

3. **UNIT:** The unit only needs to be specified for the list of indicators below the first year in the series.

4. **MAP:** In this column you can customize the map legend for each indicator as follows:

   (i) Map legend with custom values
   (ii) Map legend with custom colors
   (iii) Map legend with custom colors & values
   (iv) Qualitative map legend: custom colors and labels

   These examples are included in StatPlanet Data Editor, using the 'Life Expectancy' data from WHO to illustrate the first three types of map legend. The Qualitative map legend uses fictional data. Additional customizations can also be specified in the sheet 'Settings'
   (*See also: 4.8 Changing settings and appearance*).

   (i) Map legend with custom values

   Use the following format to specify the values for the map legend, as well as the number of color classes:
   0=[value0] 1=[value1] 2=[value2] 3=[value3] 4=[value4]
   etc.

   - Example 1a: A legend with 4 color classes:
     0=[55] 1=[40] 2=[20]

   - Example 1b: A legend with 5 color classes:
     0=[70] 1=[65] 2=[60] 3=[55]

Map legend for Example 1b:

With max / min values hidden	With max / min values shown
> 70	70 - max value
65-70	65-70
60-65	60-65
55-60	55-60
< 55	min value – 55

(ii) Map legend with custom colors

Use the following format to specify the colors for the map legend, as well as the number of color classes:
0=[color0] 1=[color1] 2=[color2] 3=[color3] 4=[color4]
etc.

- Example 2: A legend with 4 color classes:
  0=[0x238B45] 1=[0x66C2A4] 2=[0xB2E2E2] 3=[0xEDF8FB]

(iii) Map legend with custom colors and values

Use the following format to specify the colors for the map legend, as well as the number of color classes:
0=[color0][value0] 1=[color1][value1] 2=[color2][value2] 3=[color3][value3] 4=[color4]

Note that this format is slightly different from the previous ones, because 5 colors are specified (colors 0 to 4) but only 4 values (values 0 to 3). As illustrated in example 1b above, a legend with 5 color classes requires only 4 values to be specified (a legend with 4 color class requires only 3 values, and so on).

- Example 3: A legend with 4 color classes and custom values:
  0=[0x2171B5][3] 1=[0x6BAED6][2] 2=[0xBDD7E7][1] 3=[0xEFF3FF]

(iv) Qualitative (descriptive) map legend

Use the following format to specify the map legend colors, the corresponding labels, as well as the number of color classes. Countries are assigned a value which corresponds to one of the numbers below. For example, if the country 'Afghanistan' is given a value of '0', it will be associated with 'color0' and 'label0'.

0=[color0][label0] 1=[color1][label1] 2=[color2][label2] 3=[color3][label3] 4=[color4][label4]
etc.

- Example 4: A legend with 5 color classes:
  0=[0xE41A1C][Category 1] 1=[0x377EB8][Category 2] 2=[0x4DAF4A][Category 3]
  3=[0x984EA3][Category 4] 4=[0xFF7F00][Category 5]

Map legend for Example 4:

Color	Label
0xE41A1C	Category 1
0x377EB8	Category 2
0x4DAF4A	Category 3
0x984EA3	Category 4
0xFF7F00	Category 5

5. **GRAPH:** If you wish to use your own maximum and minimum values for the graph, you can set them here. Specify the minimum and maximum values in parentheses in the following format:

[min value][max value]

For example, for a minimum value of 0 and a maximum value of 80, enter the following:

[0][80]

6. **SYMBOL:** *Deprecated in StatPlanet v2.2 to reduce the file size.* You can specify the symbol you wish to use for the proportional symbol map. If none are specified, StatPlanet will use the circle symbol. To indicate that you want to use a different symbol for a particular indicator, enter one of the following in the corresponding row in the SYMBOL column:
   (i) book
   (ii) electricity
   (iii) pc
   (iv) phone
   (v) stickfigure
   (vi) typewriter
   (vii) water

7. **OPTIONS / TYPE:** A number of new options are currently being implemented to enable greater control over the visualizations in StatPlanet. In future versions the two columns OPTIONS and TYPE will be used to specify these options.

8. **Country information on mouse over country**
   Country-specific information can be shown in a popup when the mouse moves over the country on the world map or in the graph window. This information needs to be added in the very first row in the empty cell below the corresponding country name. (These cells are empty, because country data starts in the next row).

   You can insert plain text, for example:

   My text

Or you can insert text as HTML with formatting, for example:

My text

9. **Link to to web-page or document when clicking on a country:**
   Links to documents or web-pages can also be specified in the row below the corresponding country name. The document or web-page will open when the user clicks on a country for which a link has been specified. An example of a link would be:

   http://www.mywebsite.com/document.pdf

   It is also possible to have both text and a download link, by inserting the link as HTML code. For example:

   Insert additional information here

4.5   Adding other types of data (provinces/continents/etc.)

StatPlanet Map Maker can be used to graph any kind of data - not just country data. You can add your own types of data as follows:

1. Open StatPlanet_data_editor.xls and in the worksheet "Import" go all the way to the last country at the end of row 2.

2. In the empty cells in row 2, add the names of your new data types (for example "Sub-Saharan Africa").

3. Press the button **Save data**. The names of your new data types have now been added.

Note: It is possible for the 'Import' function to recognize the types of data you just added. Simply add them in the sheet 'Country names', but make sure you add them in the correct columns (i.e. the same columns to which you added them in the sheet 'Import').

4.6   Custom regions

You can add, remove or change the region names in the worksheet 'Data'. To define which countries are in your custom region, add the ISO3 codes for those countries in the same row as your region. You can also define the region coordinates and zoom level so that the map will zoom into the region you have defined. In StatPlanet you can get the map coordinates and zoom level by moving the mouse to the bottom-right corner of the screen (so the zoom controls appear). The map coordinates and zoom level will be shown in the bottom of the screen.

4.7   Adding data manually / without macros

You can also edit the data file directly (for example, if you are using software other than Excel). Open the file **data.csv** and add or copy your data below the header "GLOBAL" i.e. from row 16 onwards.

If the software you are using can open Excel files, you can also edit the data in the file StatPlanet_data_editor.xls, inside the worksheet 'Data'. This worksheet has been formatted for easy editing.

When you are done, save the data as a 'comma seperated' csv file and replace the file **data.csv**.

4.8   Changing settings and appearance

Go to the worksheet 'Settings' to customize StatPlanet, such as the appearance of the map. After making any changes to the settings, press the button **Save Settings**. You can try out all the different options 'live' in StatPlanet (see for example the 'Appearance' tab in the Options window).

4.9   Changing language and translation

StatPlanet has been translated in French, Spanish, Bahasa Indonesia (courtesy of the Government of Indonesia) and Dutch. You can use any of these translations or create your own translation in the worksheet 'Text-Translations'. Click the corresponding save button to save the translation you wish to use.

5. Importing a map into StatPlanet Map Maker

To create custom interactive maps using StatPlanet, you need the following:

- StatPlanet Map Maker

- Adobe Flash CS3 or higher

- A map file in vector format, either Adobe Illustrator (.ai), FreeHand (.fh*, .ft*), or Adobe Flash (.swf).

For an example of what the final result could look like, see the file 'map_example.fla' (shown below).

➔ *See also: 5.2 Converting images into a suitable vector format.*

StatPlanet Example Map (map_example.fla)
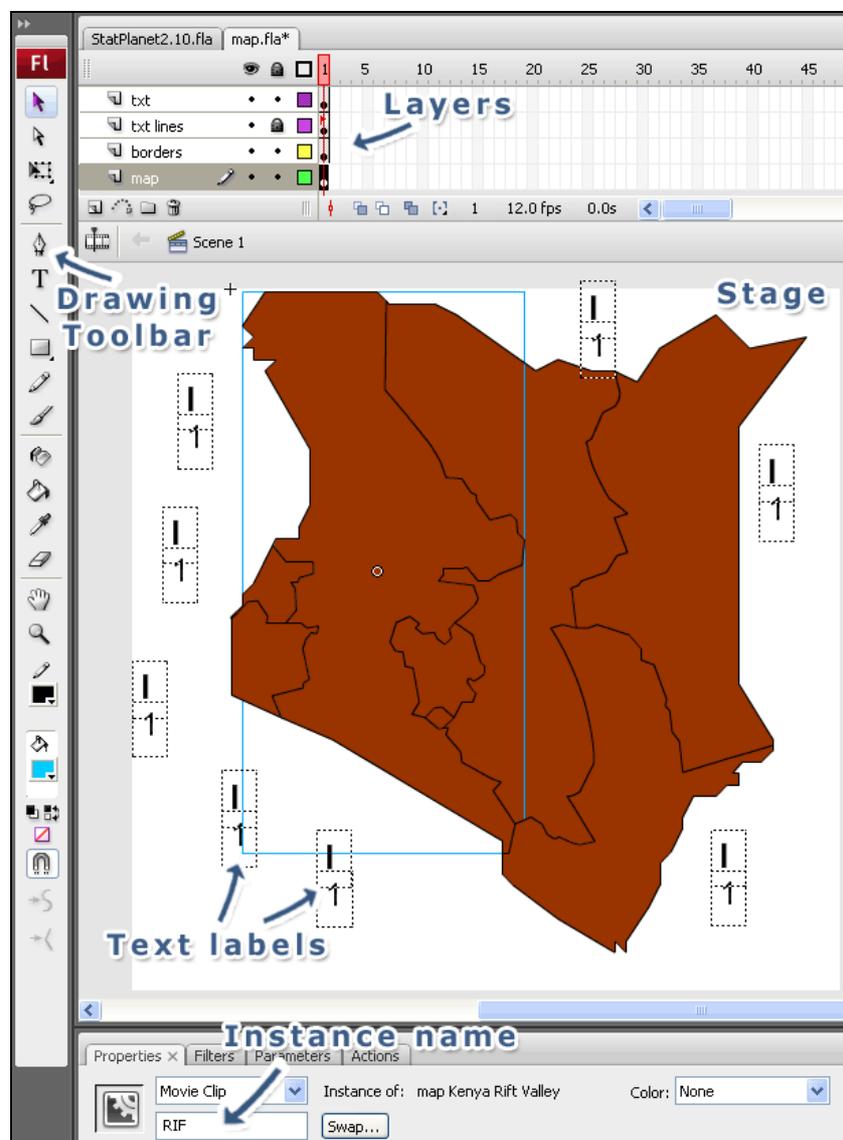
5.1 Using the map template

To prepare the map so it can be loaded into StatPlanet, you need to open the **map template** - 'map.fla' - which is in the 'StatPlanet_Custom_Map' folder. This file contains the following four layers:

- Map layer: This layer will contain the map shapes (e.g. regions or provinces).

- Borders layer: This layer will contain the map borders.

- Txt layer: This layer will contain the text labels for your map.

- Txt lines layer: You do not need to make any changes to this layer. (It is in this layer that lines will be drawn when StatPlanet is opened, linking the text labels with the corresponding map region).

Step 1. Map layer

Before inserting your map into the map template (map.fla), it may be easiest to edit it first in a new document.

- Open a new document (File -> New).

- Import your map. Go to File -> Import to Stage, and select your map file.

- Once the map is imported, select and remove the details you do not need such as text labels, roads, etc. (Click outside the selected area to deselect it, then click on any of the details you wish to remove and press delete).

- Select all (Edit -> Select all).

- Break apart the shapes of your map by pressing CTRL+B (or using the menu: Modify -> Break Apart). You may need to repeat this several times until the shapes cannot be broken apart any further.

  - **What to do if a rectangle appears which covers your map:**
    In some cases a rectangle may suddenly appear which was previously hidden from view. If this is the case, click anywhere outside the selection area to deselect it. Then click on the rectangle and press 'delete'. You should now see the map again. (Note: if you did 'Break Apart' one too many times, the rectangle and your map merge, and the map disappears. You will need to go back and redo this, and remove the rectangle while it is still a seperate shape).

- Select all (Edit -> Select all).

- Copy the map (Edit -> Copy).

- Open the map template (map.fla).

- Select the first frame in the timeline in the layer 'map' (normally in the top of the screen, see also the example screenshot above - the first frame looks like a white rectangle with a circle in it).

- Paste your map (Edit -> Paste in Place).

- Double-click on the map borders. This should normally select all the borders in one go. Otherwise, hold down the Shift key and double click on the remaining borders. Once you have all your borders selected, change the border thickness in the Properties Panel below. Click on the drop-down which currently has 'Solid -----------' selected, and change this to 'hairline'. If the borders are different colors, make them one color by clicking in the color selection box to the left of the border thickness selection. Select any color (for example black).

- Now select the different shapes of your map one by one and convert each of them into a Movie Clip. To convert them into a Movie Clip, press F8 (or use the menu: Modfiy -> Convert to Symbol).

- o **What to do if shapes do not seperate properly:**
  In some cases the shapes of your map may not have seperated properly, because the borders are not properly joined up. You can either draw existing borders to make them join up, or draw them in using the pencil tool. To join them up, you can click on the edge of one of the lines just at the point where it does not join up, and drag the line to where it should join. Alternatively, click on the Pencil Tool in the Drawing Toolbar (normally on the left). Then draw in the lines where the gap exists. If this is done correctly, the shapes should now be seperated.

- o **What to do if your map consists only of map boundaries, not shapes:**
  If your map consists only of map boundaries or borders, you can fill the boundaries with the 'Paint Bucket Tool'. Select the 'Paint Bucket Tool' in the Drawing Toolbar (normally on the left) and click within the map boundaries you wish to fill. It can be filled using any color.

- Assign an instance name to each of the movie clips. The instance name can be entered in the properties panel which is normally below the stage (see also the example screenshot above).

- The instance name cannot contain spaces. Therefore, you may wish to assign a 'code' rather than the actual name. The actual name can be defined later in the StatPlanet Data Editor, where it can include spaces.

- The size / position of the map can be adjusted at a later stage in the Data Editor (in the Excel sheet 'Settings').

Step 2. Borders layer

- Once you have created the map Movie Clips, your borders may have become hidden from view. To make them appear again, you need to select all the map Movie Clips you just created one by one, while holding the SHIFT key. Once you have selected all of them, select Edit -> Cut. You should see the map boundaries reappear.

- Now select the map borders by double-clicking on any part of them. This should normally select all the borders in one go. Otherwise, hold down the SHIFT key and double click on any of the borders which are not yet selected. Once you have selected all the borders, press CTRL + G (or use the menu: Modify -> Group).

- Once you have grouped all the map borders, you can place all the Movie Clips back again. Select Edit -> Paste in Place. While the Movie Clips are still selected, right-click on any of them, and from the popup menu select Arrange -> Send to Back. Now your map borders should appear on top of the map.

- Click anywhere outside the selection area to deselect it. Then click somewhere on the map borders. This requires some precision so that you do not accidentally click on one of the map Movie Clips instead. Once you have selected the borders, go to Edit -> Cut. Then select the first frame in the 'borders' layer in the timeline panel, and go to Edit -> Paste in Place.

- While the borders are still selected, turn them into a Movie Clip by pressing F8 (or using the menu: Modfiy -> Convert to Symbol).

- In the Movie Clip properties panel below the stage, give the Borders Movie Clip the instance name: borders.

Step 3. Txt layer

- All the text label movieclips should be inside a 'container' movieclip called 'txt container'. This is already included in map.fla. If you double-click on any of the text labels, you will go inside the 'txt container' movieclip. Now you can click on and move around the three labels which are included in map.fla.

- To create more text labels for your map, click on any of the text labels, copy them (Edit -> Copy) and then paste (Edit -> Paste). Drag each of the text labels to their corresponding map region.

- You do not need to edit these text labels. All you need to do is give each of them an instance name corresponding to the ones you have assigned for the map regions. In StatPlanet, the text labels will automatically display a name and value according to its instance name.

- Note: Do not change the size of the text labels (or its container movieclip). Instead, define the size of the map text in StatPlanet_data_editor.xls, under Settings (Map text size).

Step 4. Publish your map file

- Once your map is ready, publish the file (File -> Publish).

- Go to the directory containing map.fla. You should see a new file, 'map.swf'. Copy and paste this file into the directory Offline (for the offline version of StatPlanet) and Web (for the online version of StatPlanet), replacing the existing 'map.swf'.

Step 5. Linking the map in StatPlanet Data Editor

- In StatPlanet_data_editor.xls, first insert the 'real names' of your map regions, and then the 'instance names' or codes which you used in the map file (map.fla).

- In the sheet 'Import', replace the example names (which are Kenya province names) with your own names, in the order that you wish. Then press the button 'Save data'.

- Go to the sheet 'data' (see the sheet names in the bottom left). The names you have entered should appear in the first row. A few rows lower you should see a list of example codes (CEN, COA, EAS, etc.). Replace these codes with the codes (instance names) you have used in the map file. The code in each column should correspond to the name given in the first row of the same column.

- Go back to the sheet 'Import' and enter your data. You can also use the 'Import data' button to import your data from a file automatically. If the import fails, it is most likely because the names or headers in the file you are importing could not be recognized. In that case, you need to add them in the sheet 'Country names'. See also Importing data.

- Once the data has been added, press the button 'Save data'.

- Go back to the directory Offline and open StatPlanet.exe to see your map in action. Or go to the directory Web and open the file StatPlanet.html to open it in a web-browser. If you wish to publish your interactive map on a website, copy and paste the contents of the folder 'Web' to the web-server. See also the file 'StatPlanet_small.html' for an example of how the map can be integrated into an existing web-page.

5.2 Converting images into a suitable vector format

Converting a GIS shape file (.SHP) into a vector format recognized by Adobe Flash

Maps for GIS (Geographic Information Systems) are commonly exchanged as ESRI Shapefiles. Such files can be converted into Adobe Illustrator vector files using software such as ArcGIS or MAPublisher. Converting the file in ArcGIS can be done as follows: select 'File -> Export Map'. In the 'Save as' drop-down select 'AI' as the file format. Then click on 'Save'. Adobe Illustrator (AI) files can be imported directly into Flash.

You may also wish to open the image first in Adobe Illustrator, export the image as a Flash SWF file, and import the SWF into Flash. Importing an SWF file sometimes leads to better results than importing an AI file.

If you do not have access to such software, you could try a free Shapefile to SVG converter called shp2svg. See below for converting an SVG image into a format recognized by Flash.

Converting a vector image (such as SVG) into a vector format recognized by Adobe Flash

Use Adobe Illustrator to open the file, and then export the file into the right format. It seems that the best results are achieved when using Adobe Illustrator to export the image as an Adobe Flash SWF, then importing the SWF into Flash.

If you do not have Adobe Illustrator, you could try converting the file using the free vector graphics editor Inkscape. You may also wish to try this free SVG2SWF conversion tool.

Converting a Bitmap image into a vector format (e.g. GIF, JPG, PNG, BMP)

It is impossible to perfectly convert a Bitmap image into a vector one, but with some experimentation it is possible to achieve good results. To convert a Bitmap image, first import it into Flash (File -> Import to Stage). Then select the image, and select Modify -> Bitmap -> Trace Bitmap.

You will need to experiment with the following trace settings to get optimal results:

- **Color threshold:** Increase this value to decrease the number of colors in the resulting vector image. (When comparing two pixels, if the difference in the RGB color values is less than the color threshold specified here, they are considered to be the same color).

- **Minimum area:** Increase this value to decrease the number of shapes in the resulting vector image. This is the number of surrounding pixels considered when assigning a color to a pixel.

- **Curve fit:** How smoothly the outlines will be drawn.

- **Corner threshold:** Select how many corners you wish to keep.

The following values illustrate what settings to use if you wish to create a vector that most closely resembles the original bitmap. However, the settings below are not recommended due to the large number of shapes created. These settings may also cause the Flash software to crash.

- **Color Threshold:** 10

- **Minimum Area:** 1 pixel

- **Curve Fit:** Pixels

- **Corner Threshold:** Many Corners

Manually tracing the outlines

If automatically tracing the image does not lead to the desired results, you can draw the outlines by hand. Unless your map if quite large or complex, this is not necessarily a very long process. It can be done as follows:

1. Convert the map into a Movie Clip (Modify -> Convert to Symbol).

2. In the properties panel below, click on the 'Color' drop-down and select 'Alpha'. Change the value to around '30%' (so you can still see the outlines of the map clearly).

3. Insert a new layer (Insert -> Timeline -> Layer).

4. Select the Line tool for the Drawing Toolbar, and draw the outlines in this new layer following the outlines of the map in the layer below. Make sure that all the lines are touching. To draw a curve, first draw a straight line. Then, click somewhere in the middle of the line, and drag it one way or another.

5. Select the Paint Bucket tool and click inside the borders to create your map regions. If it does not work, the borders you have drawn are probably not touching. Zoom in to see if you can detect the breach.

6. Remove the bottom layer containing your bitmap image.

7. Follow the steps in **5.1** to convert your map for use in StatPlanet.

5.3 Importing GIS / Shapefiles.

This requires StatPlanet Lite (see http://www.sacmeq.org/statplanet/StatPlanet-lite.html)

Instructions for loading your own GIS shapefiles into StatPlanet:

1. Go to the folder 'GIS_Shapefile_Map', and then the sub-folder 'map'.

2. Remove the included map shapefiles (a USA map), and copy your own shapefiles here.

3. Rename your files (e.g. xxx.shp and xxx.dbf) to map.shp and map.dbf

4. Open the StatPlanet_data_editor.xls file. Click on the button 'Setup shapefile' (in the top-left).

5. Select the map.dbf file in the 'map' sub-folder, and follow the instructions.

6. Run StatPlanet.html to see the results with the included sample data.

You can now start importing your own data for the map.
Edit the StatPlanet.html to change the dimensions of the map.
The font and interface components can be enlarged through the Excel sheet 'Settings'.

You can find free shapefiles (regional / administrative boundaries maps) for most countries here:

- Map Library - http://www.maplibrary.org/ - Public domain maps for most countries in the world.
- UN SALB - http://www.unsalb.org/ - Second Administrative Level Boundaries data set project. These maps are free but copyright rests with the UN. The maps are validated by the National Mapping Agencies (NMA) of each UN Member State.

Instructions for loading shapefiles without using Excel:

1. Copy your map shapefiles as explained above.

2. Copy and paste the ID and Names column from the map.dbf file to replace the existing ones in the file data.csv

3. Copy the ID column header name, and paste it under 'DBF-ID' in row 3/column 4 in the file data.csv.

Note: The ID column may not contain spaces, symbols or numbers, and should have unique values only.

GIS Shapefile Reader - Source Code

The source code for reading the shapefiles is included in the directory SHPreader. It can be compiled to the file SHPreader.swf, which is read by StatPlanet.

The code was written by Edwin van Rijkom under the LGPL license, with some additions by Andy Woodruff, and some slight modifications for use in StatPlanet.

If you wish to change the names of the map files being read, you can change this in SHPreader.as, and publish it as SHPreader.swf through the file SHPreader.fla.

For more information, see: http://shp.riaforge.org/