

MAPMAN'S



2012
EDITION

GUIDE TO GIS IN IFRC FOR DUMMIES

**STEP-BY-STEP
MAP-MAKING**

**KEEP ME ON YOUR
DESK**



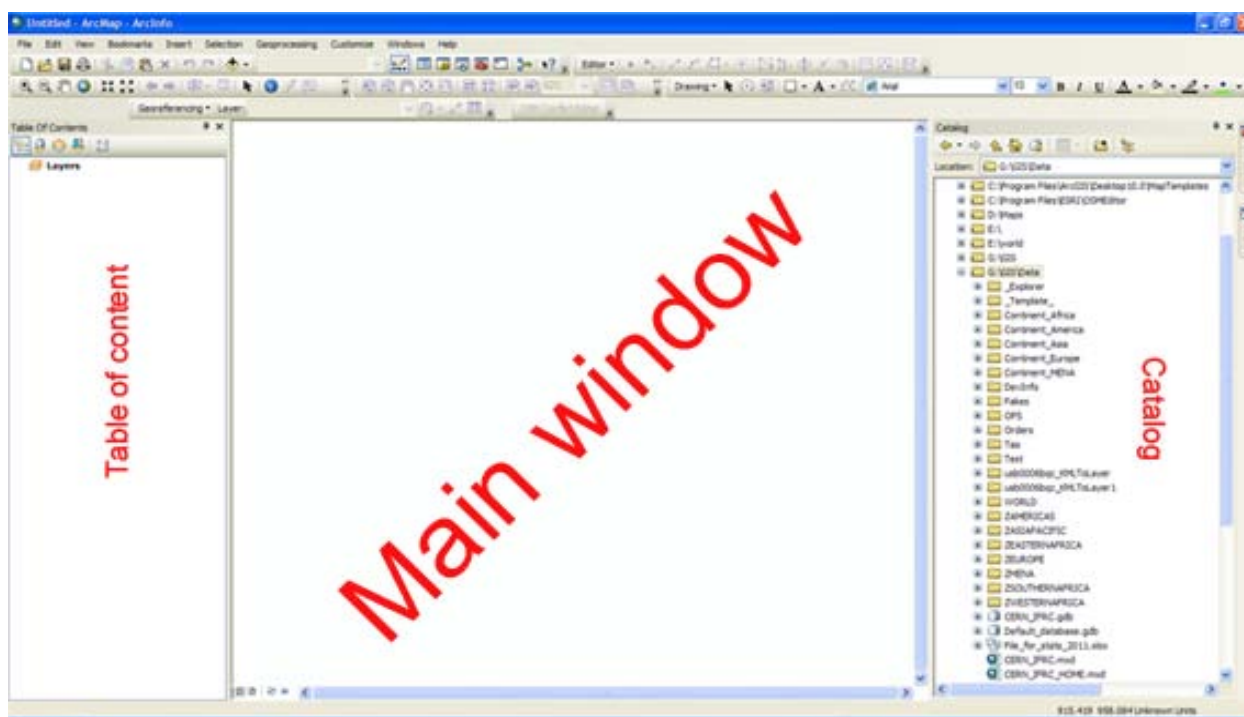
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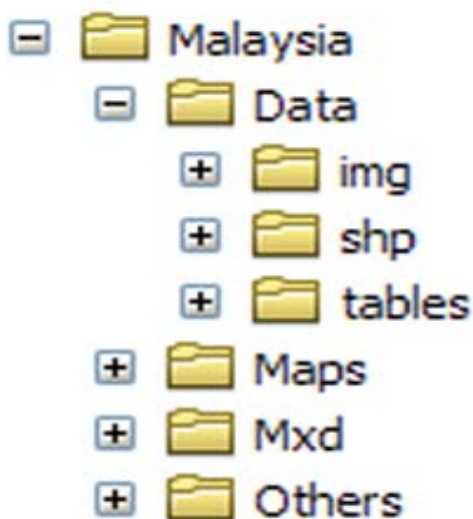
1. GETTING STARTED

1.1. LET'S OPEN THE SOFTWARE - ARCGIS



The catalog shows all your files (shp, mxd, raster ...). You can drag-and-drop files in the main window. The files will appear in the table of content (TOC) where you can “play” with. !!! You have to be connected to the folder....

1.2. STRUCTURE OF THE CATALOG



Files are organized by Zone and then by country. But files that are global are stored in the WORLD folder.

← Country name

← Data (what you will use to do the map)

← Images (raster...)

← All the shapefiles – see below its structure

← Excel sheets, other tables

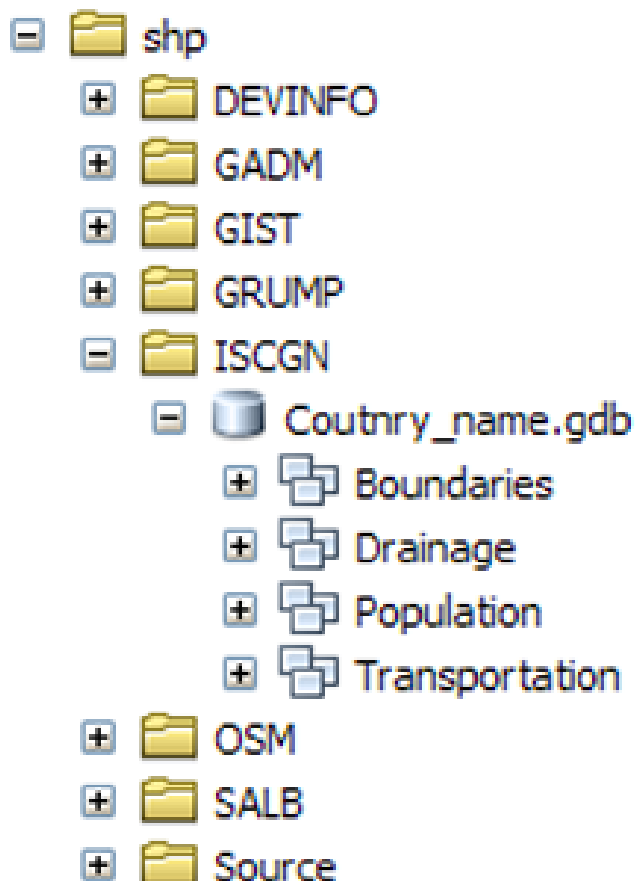
← Final product (pdf or jpg)

← Working document in mxd format (default of ArcGIS)

← Any other sources you could use (report ...)

Remember that there are three types of shapefiles:

The shapefiles (point , line or polygon) are organized by source:



Devinfo: admin boundaries worldwide

GADM¹: admin boundaries (updated more often)

GIST²: repository of various data

GRUMP³: Settlements and urban extend

ISCGM⁴: Thematic layers: elevation, vegetation, land-cover, land-use, transportation, drainage systems, boundaries and population centers

OSM⁵: Open Street Map – Very detailed

SALB: Admin boundaries – not very updated...

Source: Any other source: duplicate the folder and change its name to reflect the source.

Inside each source folder, there's a Geodatabase (country_name.gdb) with four types of data:

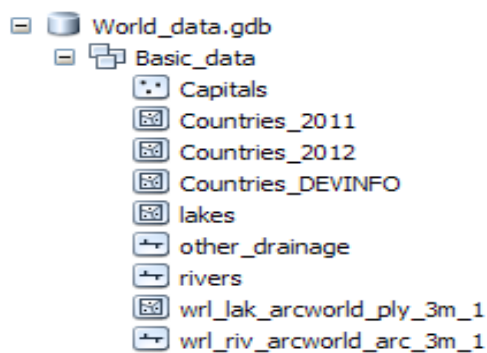
Boundaries: All the admin boundaries of this country as down as possible. Level 1 is international, 2 is national, 3 smaller (province or so)...

Drainage: Rivers, lakes, dams – Natural features as well (forest ...)

Population: Settlements, urban area ...

Transportation: Airports, roads, railroads ...

1.3. MAIN INTERNATIONAL DATASETS



Worldwide datasets that are really the starting point of any map are in the World_data geodatabase in the Basic_data folder:

You should use the *Countries_2012* as it reflects the international boundaries as of January 1, 2012. Previous versions of the dataset are kept for old maps.

Lakes and *rivers* are the mains lakes and rivers in the world. More detailed datasets are *wrl_lak_arcworld_ply_3m_1* and *wrl_riv_arcworld_arc_3m_1*.

¹ <http://www.gadm.org/>

² <https://gistdata.itos.uga.edu/> Requires login and password - Free

³ <http://sedac.ciesin.columbia.edu/gpw/index.jsp>

⁴ <http://www.iscgm.org/login.html> Requires login and password – Free – Data produced by National Organization!

⁵ <http://downloads.cloudmade.com/> Quality varies a lot because it's voluntary

2. LAYERS

2.1. MANAGING THE DATA LAYERS

To hide and show layers: Next to each layer name in the TOC, you'll see a box with a check mark. Clicking in that box allows you to toggle the visibility of a layer. Toggle the top layer on and off to show the layer underneath.

Rearranging the order of layers: If you decide that you want to have the layers in a different order, simply click and hold on the name of the layer and drag it above or below any other layer in order to switch its position. Remember that the check box must be checked in order for you to actually see a layer, regardless of its position.

If you need to get rid of a layer, right-click on the layer name in the Table of Contents (TOC), and choose REMOVE. This does not delete the original data file from the folder where it is stored. It simply removes the link to it from your map. ArcGIS has a storage system that is like a filing cabinet. When you add a map layer to an ArcMap, ArcMap makes a link to what's in the filing cabinet. When you remove a layer from your ArcMap, the link is broken; the file itself is not thrown away.

If your layer names are a bit cryptic, you can rename any layer by highlighting the layer name, clicking again (not a fast double-click), and typing in a new name.

2.2. NAMES AND LOCATIONS

ArcGIS is very picky about names and locations for folders and files. Here are the rules. Ignore them at your peril!

- The name must be short; some operations and file types can't be more than 8 characters long and many others not more than 13 characters long.
- Do not start a file name with a number or an odd character.
- You must be absolutely certain that there are NO SPACES in any name that you use for files and folders, and that there are no oddballs characters. If you want a space in the name, you must put in an underscore, not a space.

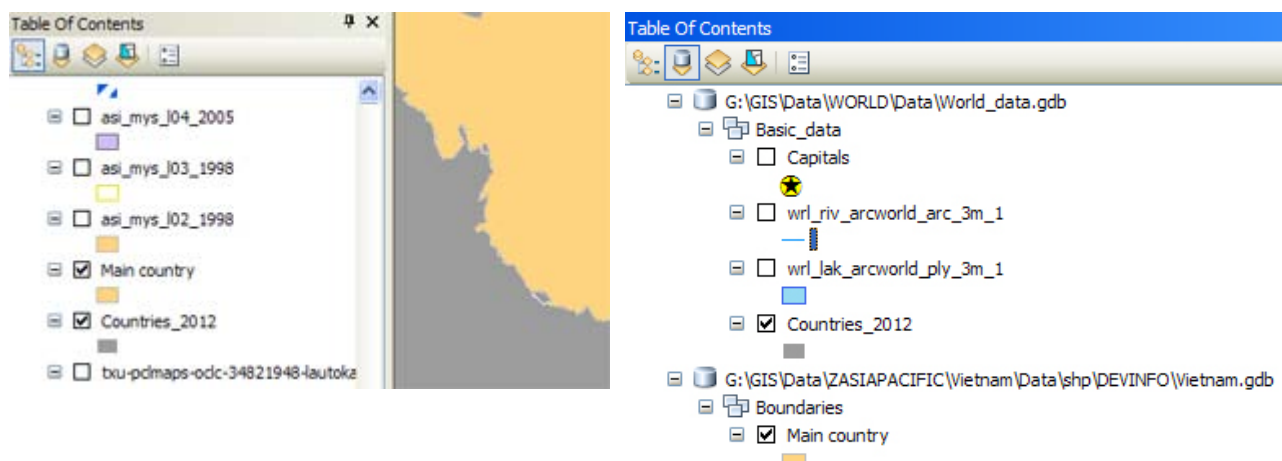
In order to prevent broken links, you must always check the box in the FILE > MAP DOCUMENT PROPERTIES:

Pathnames: ☒ Store relative pathnames to data sources

So, whatever letter the HD on which you store the data and .mxd has, links will be ok.

2.3. VIEW THE LAYERS

You can sort the layer either by drawing order or by source



3. CREATE A MAP

3.1. DIFFERENT TYPE OF DISASTERS

There are three possibilities that can also be combined in maps:

- 1.- Point: A specific city, an epicenter, a landslide, refugee camp, outbreak of epidemic... See Earthquake on page 16
- 2.- Line: The path of a typhoon (see page 12) or population movements (see page 20)
- 3.- Polygon: Affected area (see flood example on page 6)

3.2. ADD THE DATASETS

Just drag the datasets you need from the Catalog into the Main window.

They will appear in the TOC where you can move them up or down to display them on the map.

Add only the layers that make sense on the map. There's no need to show too many features. The map will become unreadable.

Then select the affected areas (could be places or districts ...):

Right-click on the dataset – OPEN ATTRIBUTE TABLE

Select the affected places/areas. For multiple selections, use the ctrl key.

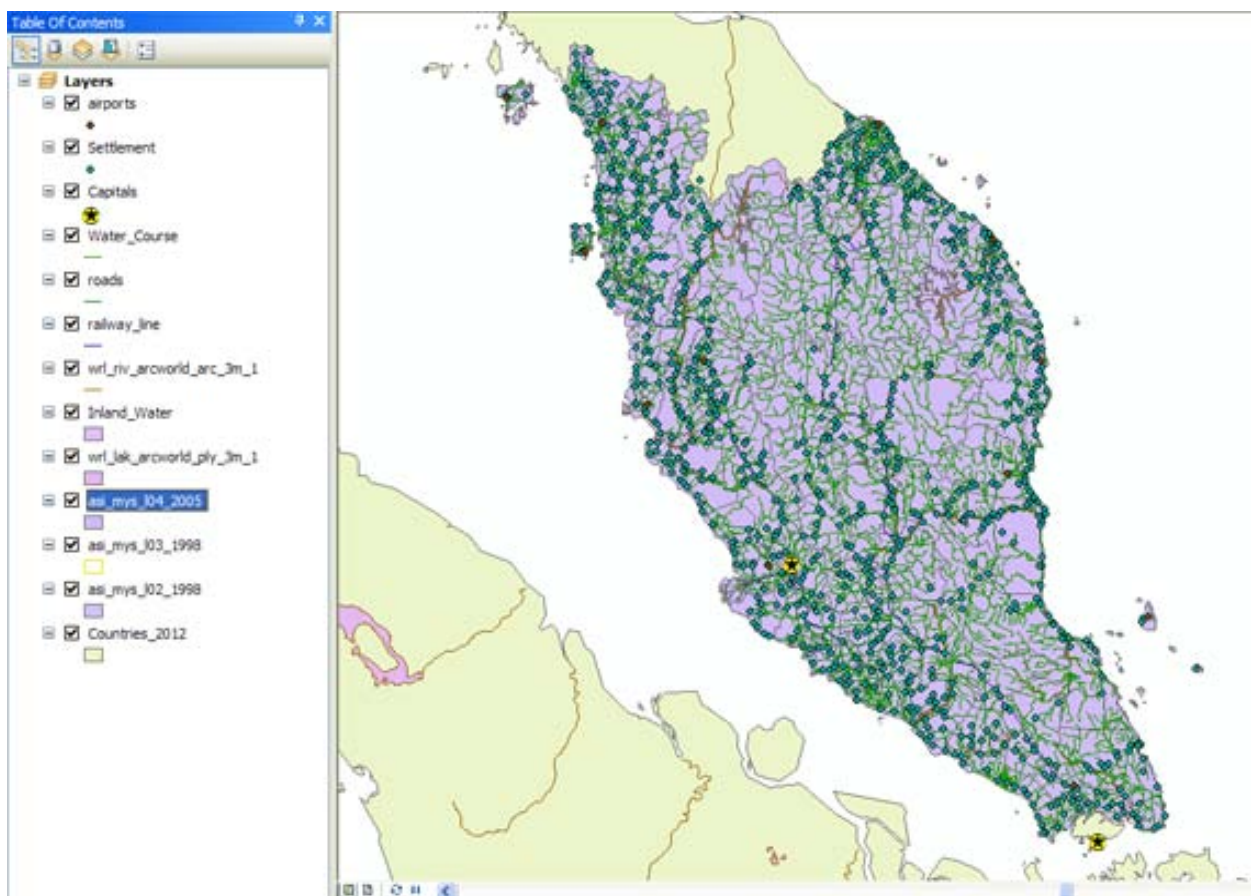
Then, right-click on the dataset again – SELECTION – CREATE LAYER FROM SELECTED FEATURE

There's now a new layer on the top of the TOC. Move it down so it's not on top of all the information.

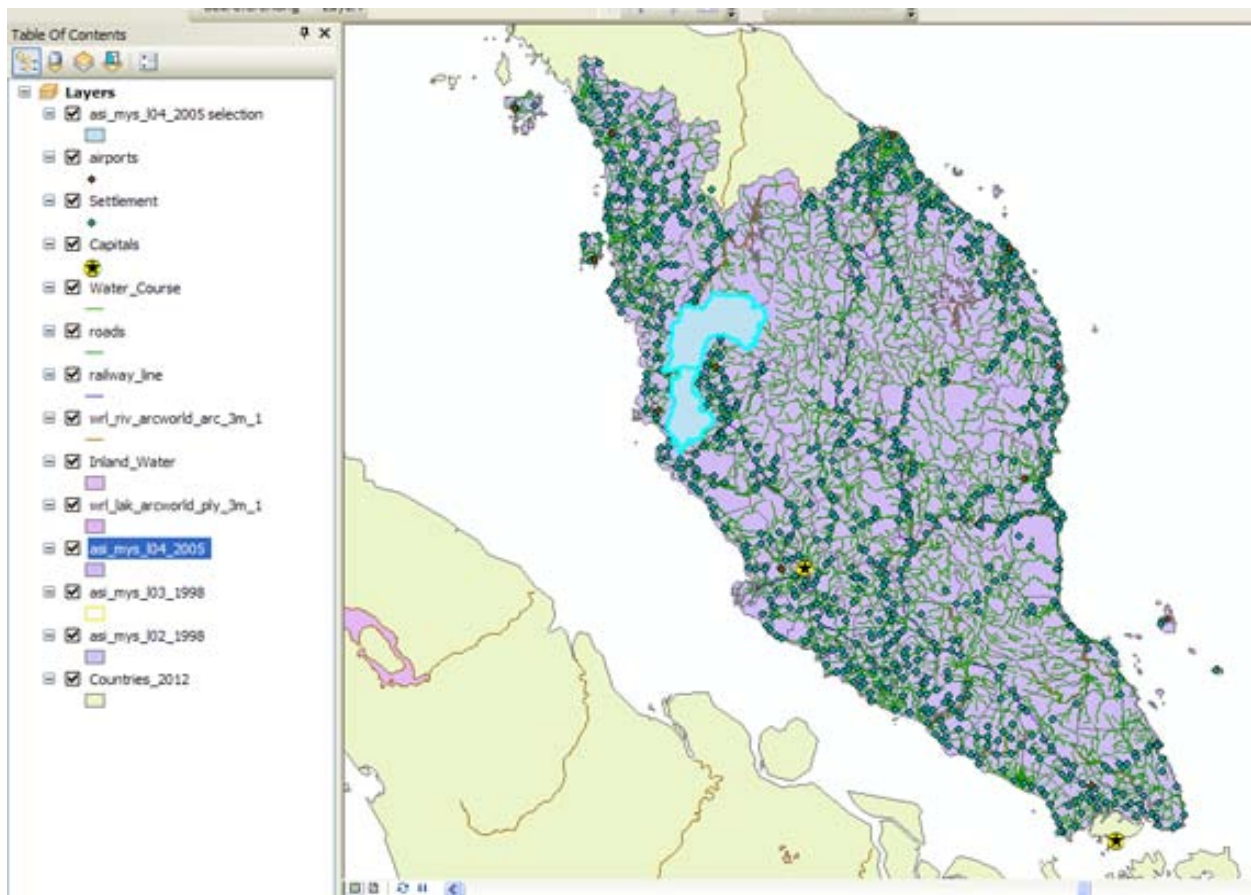
Then, you apply symbology, labels and template.

EXAMPLE: FLOODS IN PERAK, MALAYSIA

First step, add all the datasets:

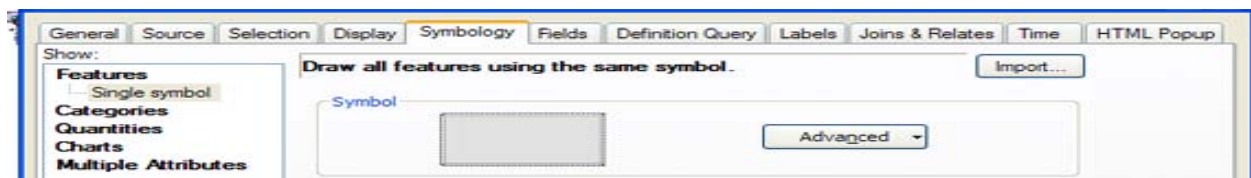


Select the affected areas, in this example, Kuala Kangsar and Perak Tengah, create the layer and rename it



3.3. DESIGN, LABELS AND SYMBOLOGY

To change the symbology, add, change or remove labels, right-click on the dataset you want to edit and open the PROPERTIES:



Tabs most used are SYMBOLOGY for the "color"/logo and LABELS

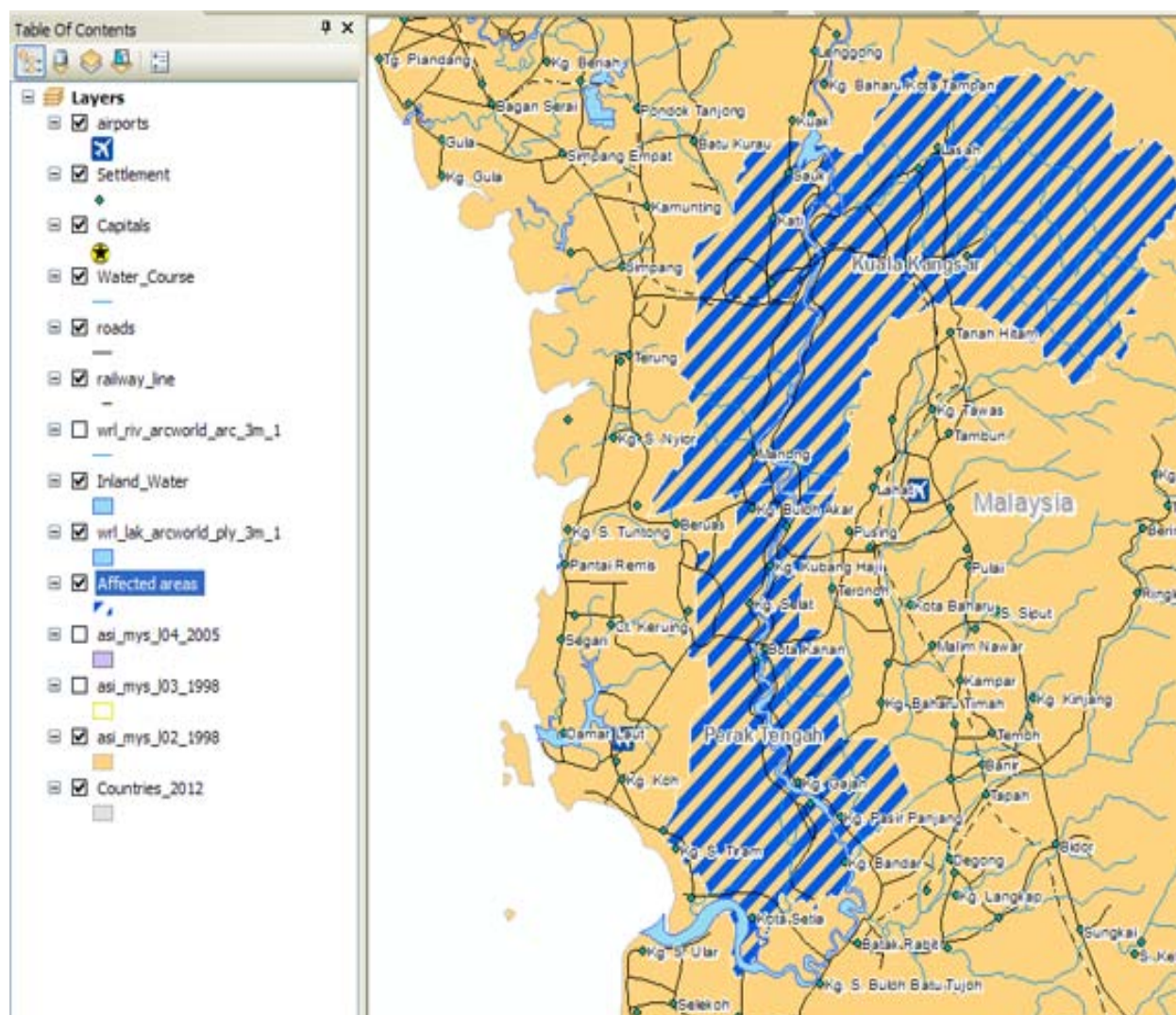
To change the symbol, click on it and choose from the Symbol selector the appropriate one.

Affected areas are indicated with stripes colored according to the graphic chart in annex.

Affected places are indicated with a logo according to the graphic chart in annex.


All labels have to be created according to the graphic chart in annex.

And after some work, you should get this:



3.4. TEMPLATES

Once you are done with the map, you have to change the layout and put it into the appropriate template. They are three different templates depending on the shape of the country and on the use of the map:

In the LAYOUT palette, choose CHANGE LAYOUT 

Then, choose the adapted template, next, finish.

Make sure the scale is adapted; you can edit it by double-clicking it.

Edit the legend to keep only the relevant info.

Check the “fine prints” to include all the sources, to put the name of the file and the creator.

Change “Country: Disaster” at the top as well as document code, Glide number⁶ and date.

See more explanation on the template in the style guide on page 35

⁶ <http://www.glidenumber.net> If code not already created, contact frederic.zanetta@ifrc.org

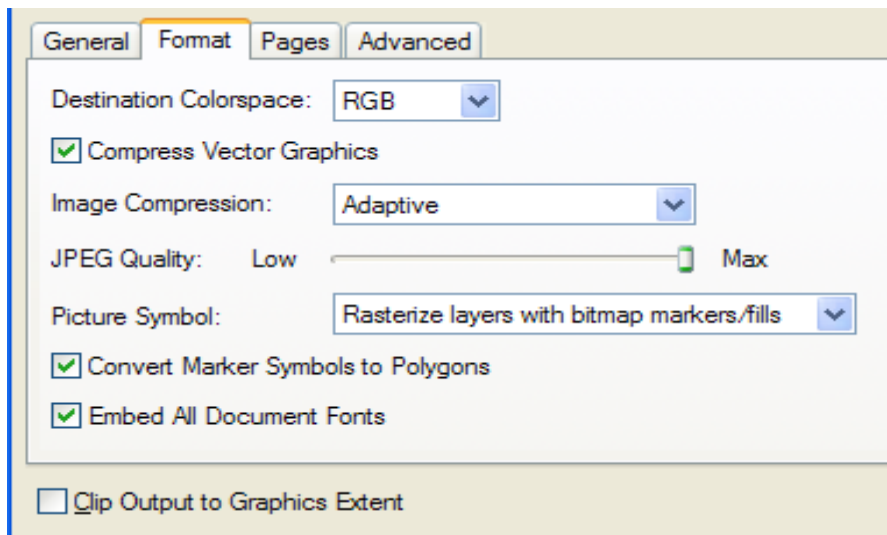
3.5. EXPORT

FILE > EXPORT MAP...

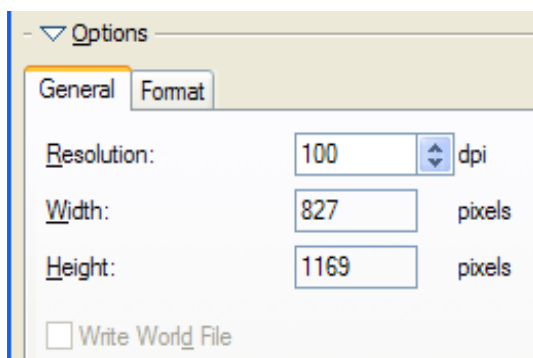
Save as type: PDF – for use as stand-alone product or to be integrated in the IB, DREF or EA.

In OPTIONS, select in the GENERAL tab a resolution of 100 dpi

And select the following in the FORMAT tab:



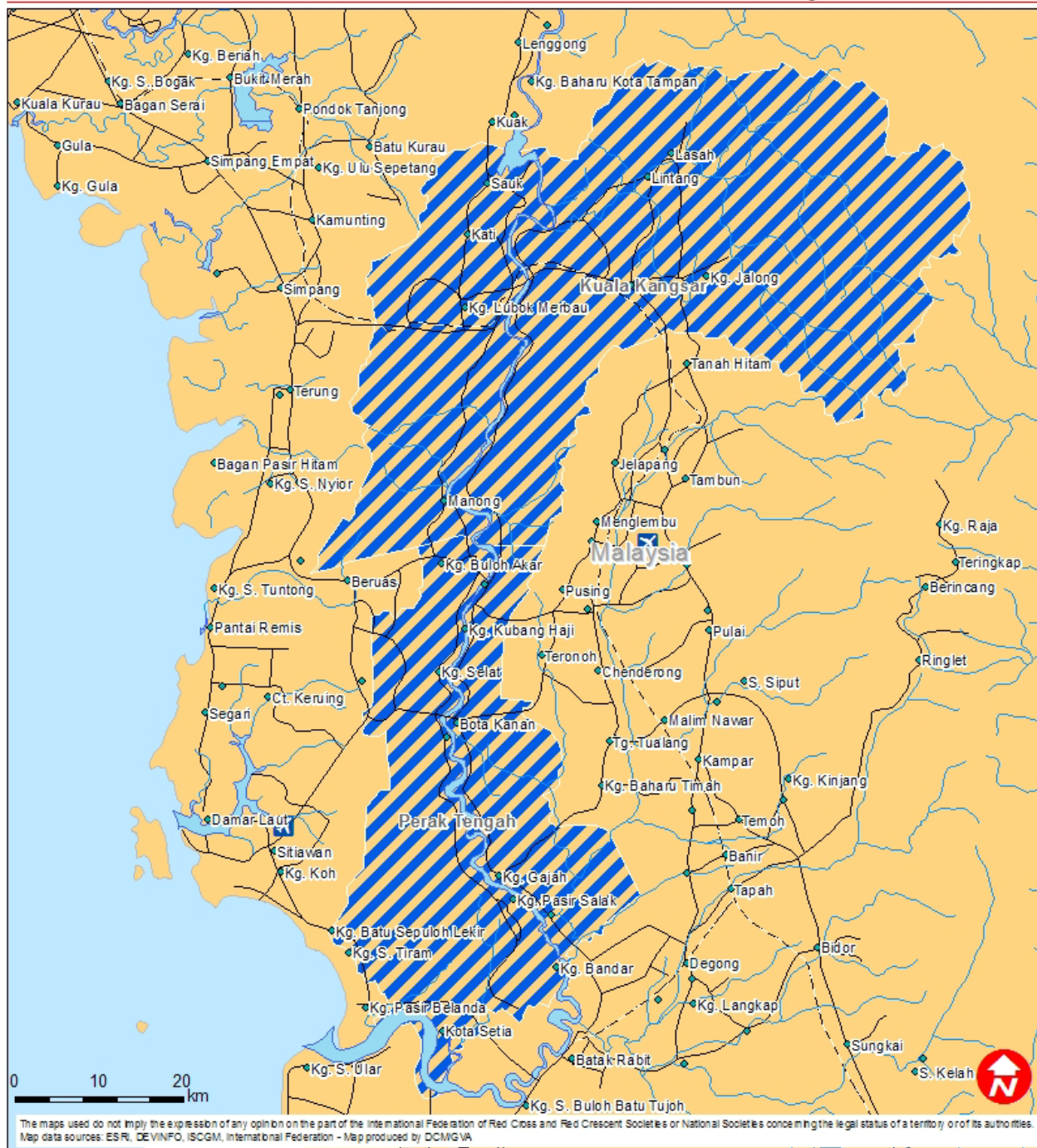
Save as type: JPEG – for use as image to be inserted in a PowerPoint, in a Word document or on the web.




SAVE, that's it!



Malaysia: Floods



 Affected areas

4. HOW TO ADD THE PATH OF A TYPHOON

4.1. GET THE PATH – ON THE WEB

To get the path, go to <http://www.weather.unisys.com/hurricane/>

Locate the storm you are interested in, right-click on the “Tracking information” and save the file in “G:\GIS\Data\WORLD\Data\Track_from_Unisys\YEAR\” in this format: “storm_name.dat”

4.2. PREPARE THE DATA IN EXCEL

Now, you’ll have to transform that in a format that ArcGIS can understand:

Open Excel and from Excel, open the file you just saved. Make sure you choose All Files in the Files of type drop-down.

You’ll see a dialogue box. Choose the following options:

Fixed width, start import at raw 3 – press next

Check the break lines, so the title of each column has the correct info in its column (esp. the STAT one that is very often split in two – in that case, remove the break line around 48) – press Finish

Check that you have high number at the bottom of the ADV column, no 12 – 24 – 48 – 72 (these are forecast)

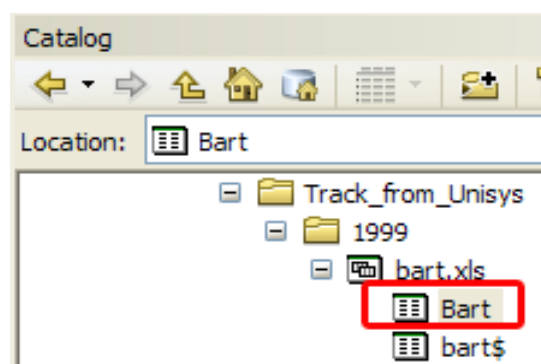
Select the cells not empty and type the name of the storm in the name box (top left)

Save as an excel file: storm_name.xls in the same folder as the .dat file – Exit Excel

4.3. ADD THE DATA IN ARCGIS

Open the catalog window, click on the plus sign next to the storm_name.xls file you just created.

Right-click on the table named storm_name but with no \$ sign.



Select CREATE FEATURE CLASS > FROM XY TABLE ...

X Field = LON, Y Field = LAT

Coordinate System of Input Coordinates> Select > Geographic Coordinate Systems > World > WGS 1984.prj

ADD - OK

Output: the same folder as above (2011), name of the file is: XYstorm_name.shp – Save as type: Shapefile

SAVE - OK

Drag and drop the XYstorm_name.shp file to the main map window

Right-click on it in the Table of content left panel and choose ZOOM TO LAYER to see the result

Now, you have the points of BART (the storm I choose for this example, it's a 1999 one...) on the map

We now need to turn that into a line so

OPEN ARCTOOLBOX PANEL

Go to DATA MANAGEMENT TOOLS > FEATURES > POINTS TO LINE –
double click

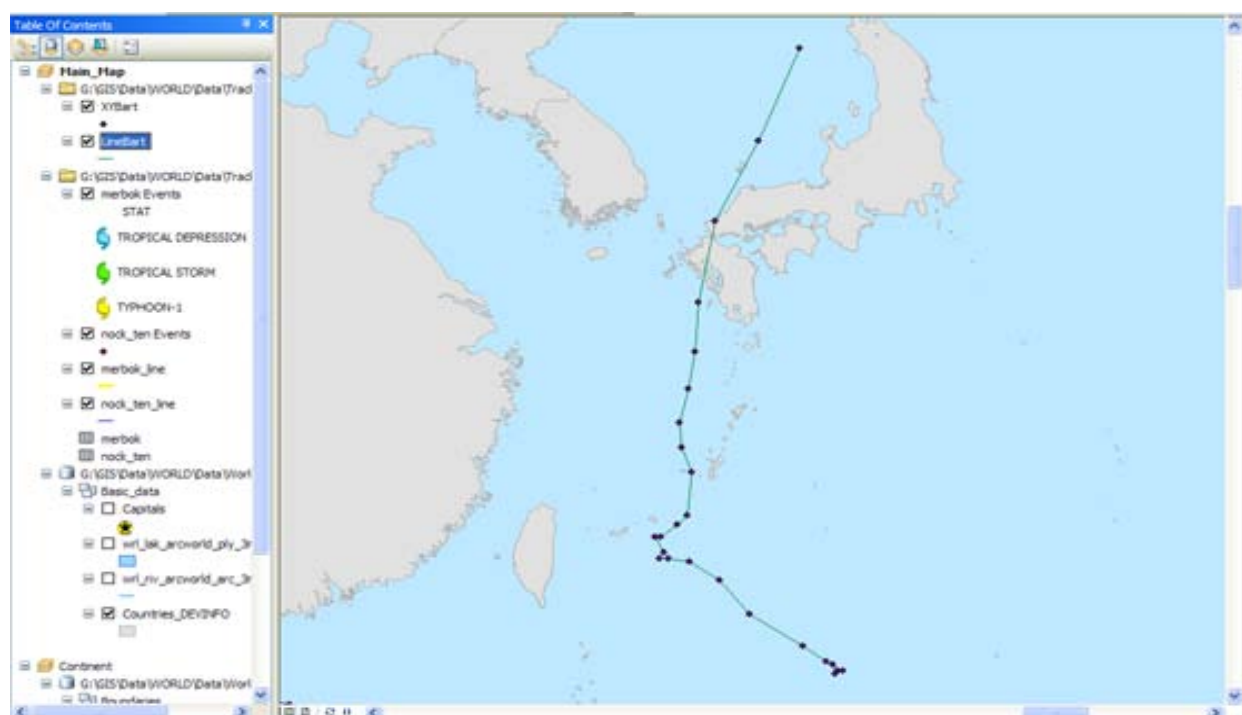
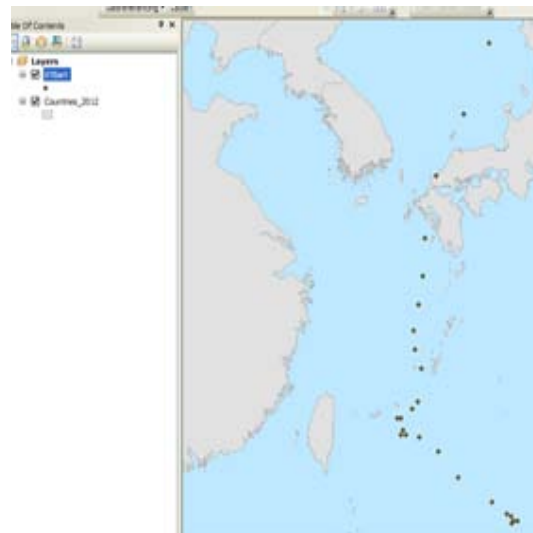
Input features is XYstorm_name

Output is (Linestorm_name – make sure you put it in the right folder
(the year one))

Sort field is ADV

OK

Voila



4.4. COSMETICS

Right-click on *XYstorm_name*

PROPERTIES > SYMBOLOGY

On the left, choose CATEGORIES > UNIQUE VALUES

On the right: Value field is STAT (the type of storm)

Click ADD ALL VALUES

Uncheck the box ALL OTHER VALUES

Make sure it's in the correct order (from depression to Typhoon 5), you can use that later for the legend

Then, let's put the right logo on every level of the storm

Double click on the first symbol (Trop dep), you'll see the symbol selector.

Navigate until you find the Storm Tropical depression blue symbol. If you don't see it, click on STYLE REFERENCE and make sure that DISASTERS_IFRC is ticked, set as default list, OK

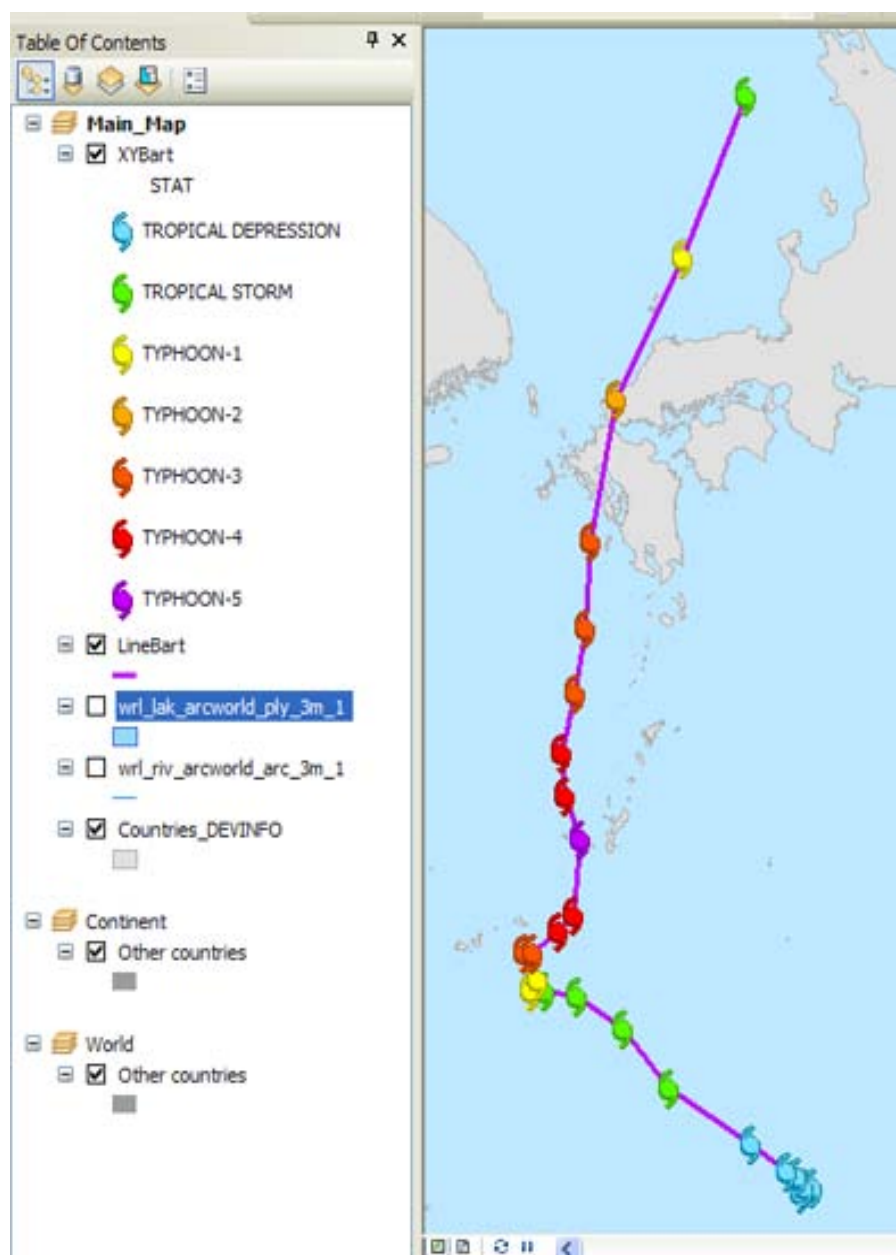
Select the symbol, OK

Repeat for all the storm symbols

When done, APPLY – OK



For the path, double click on the symbol of Linestorm_name, select the highest level of the storm (in that case Cat 5) – OK – DONE



Now, do the rest of the map (affected areas ...) but don't forget to put the two layers of the storm on top

5. HOW TO ADD AN EARTHQUAKE

5.1. GET THE EPICENTER – ON THE WEB

To get the epicenter, go to <http://earthquake.usgs.gov/earthquakes/catalogs/>

Past 7 Days

M 7+ earthquakes **Atom** **RSS 2.0** **CSV**

Updated: Wed Mar 07 14:51:18 UTC

M 5+ earthquakes **Atom** **RSS 2.0** **CSV**

Updated: Wed Mar 07 14:51:18 UTC

M 2.5+ earthquakes **Atom** **RSS 2.0** **CSV**

Updated: Wed Mar 07 14:51:18 UTC

Right-click on CSV (see image) and save the file in "G:\GIS\Data\WORLD\Tables\" in this format: "EQ_date.txt" (Replace date with today's date: ddmmyy)

You can also get a more precise CSV file on this dynamic map: <http://earthquake.usgs.gov/earthquakes/map/>

5.2. ADD THE DATA IN ARCGIS

Open the catalog window, right-click the file you just downloaded.

Choose EXPORT > TO DBASE (SINGLE)

Output location: G:\GIS\Data\WORLD\Tables\

Output Table: Same name as when you saved it, but .dbf

OK

Right-click on the EQddmmmy.dbf

Select CREATE FEATURE CLASS>FROM XY TABLE ...

X Field = LON, Y Field = LAT

Coordinate System of Input Coordinates> Select > Geographic Coordinate Systems > World > WGS 1984.prj

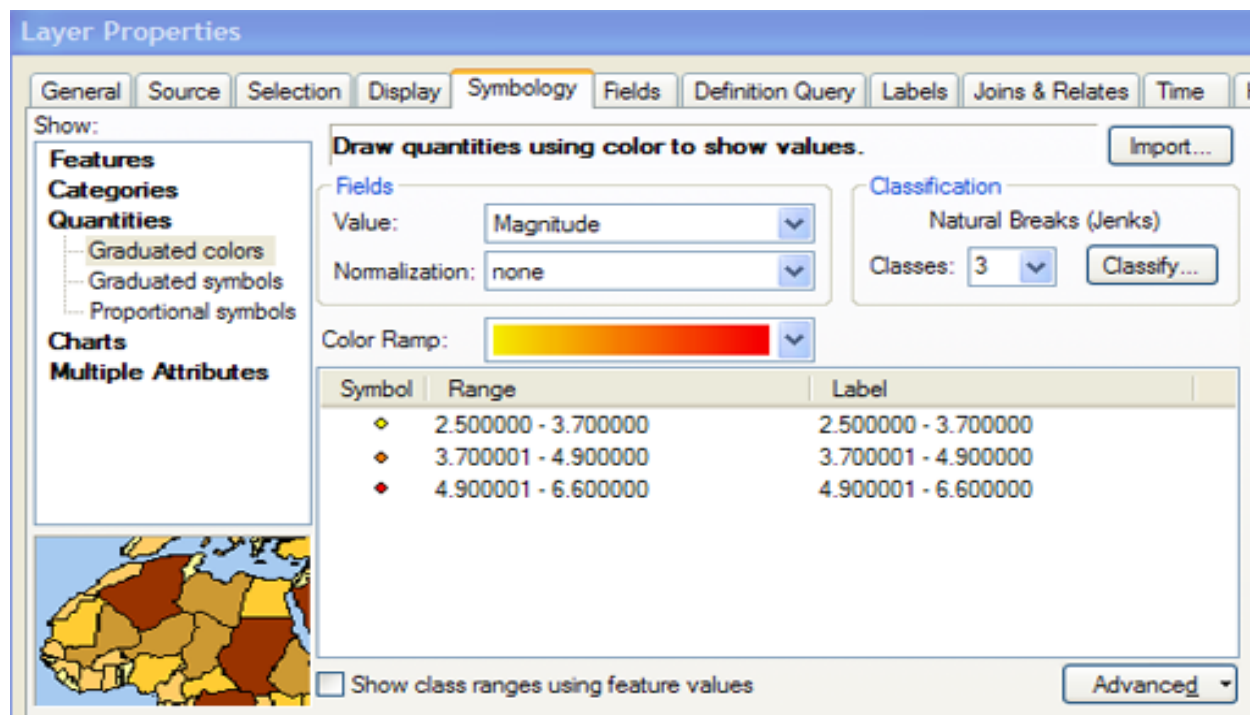
ADD - OK

Output: G:\GIS\Data\WORLD\Data\EQ\EQddmmmy.shp Save as type: Shapefile

SAVE – OK – You now have a shapefile with the earthquakes of the past 7 days. Just drag and drop it in the main window.

5.3. COSMETICS

In the TOC, locate you *EQddmmyy.shp* and right-click on it to show the properties. Select the SYMBOLOGY tab.

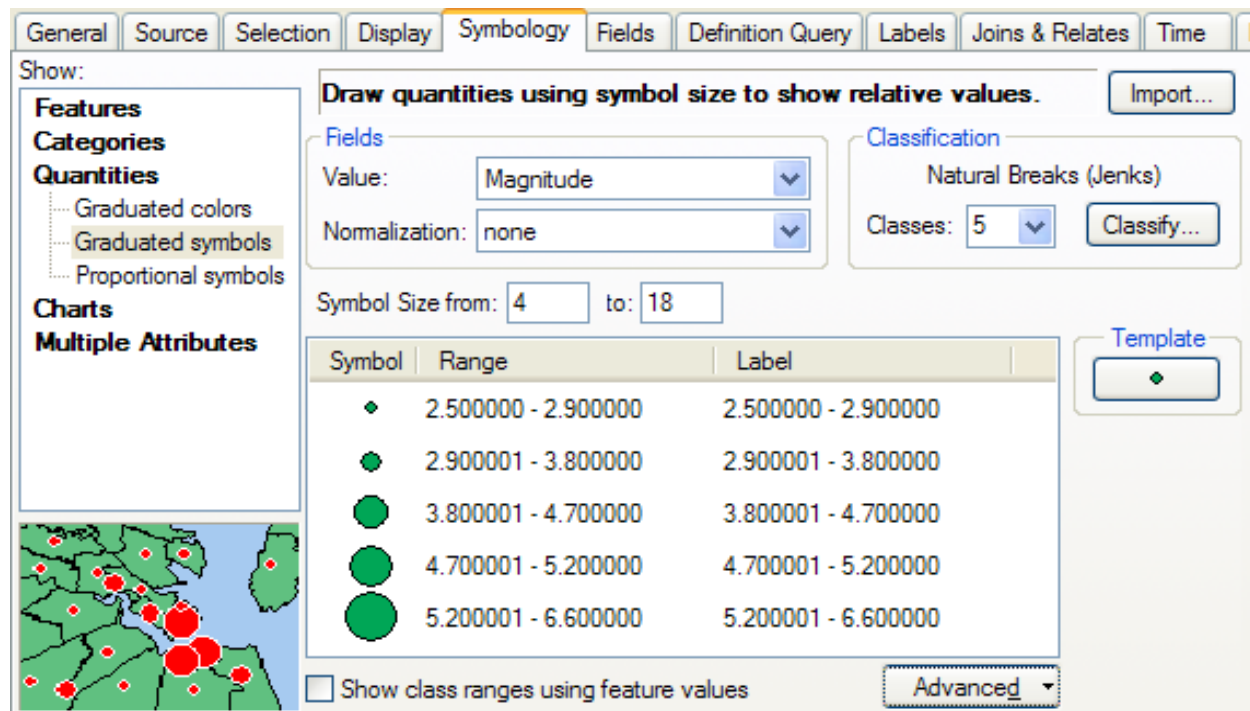


The idea is to have the size of the EQ symbol to vary according to the magnitude.

On the left, choose QUANTITIES > GRADUATED SYMBOLS

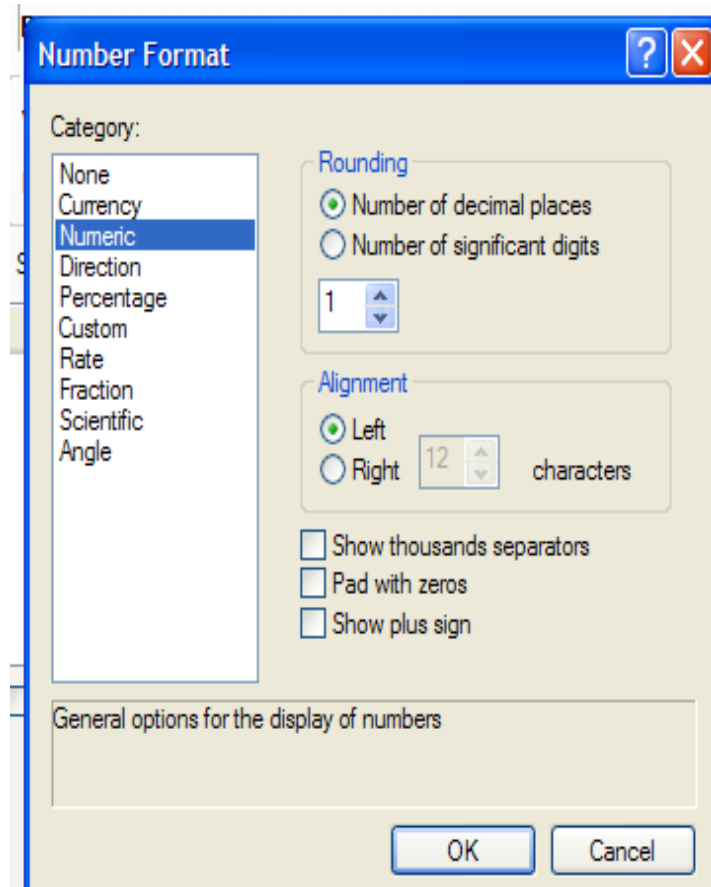
In the FIELDS box, choose Value: Magnitude

You should have this:



Click the template button on the right to choose the EQ symbol, change the Symbol size from 4 to 18 to 18 to 36

Click on the Label title to get the Format level box and make sure you have these values:



Click OK to close all the boxes.


It should now look like this:



Now, we will add some labels and identify the main earthquake:

First, let's select only the EQ that are relevant to us:

Right-click on the *EQddmmy* in the TOC, SELECTION> MAKE THIS THE ONLY SELECTABLE LAYER

Then choose the SELECT FEATURE TOOL () and draw a rectangle around the EQ you want to keep.

Right-click on the *EQddmmy* in the TOC, SELECTION> CREATE LAYER FROM SELECTED PICTURE → New layer is created but without the symbology. You can import it in PROPERTIES > SYMBOLOGY → in the top right corner, click on Import, select the layer that has the correct symbology (EQddmmy), click OK, OK, OK and that's it !

Now, label: PROPERTIES > LABELS, check top left "Label features...", then text string is "Magnitude", label Style is "Cities".

If everything went well, it should look like this:



Now, do the rest of the map (affected areas ...)

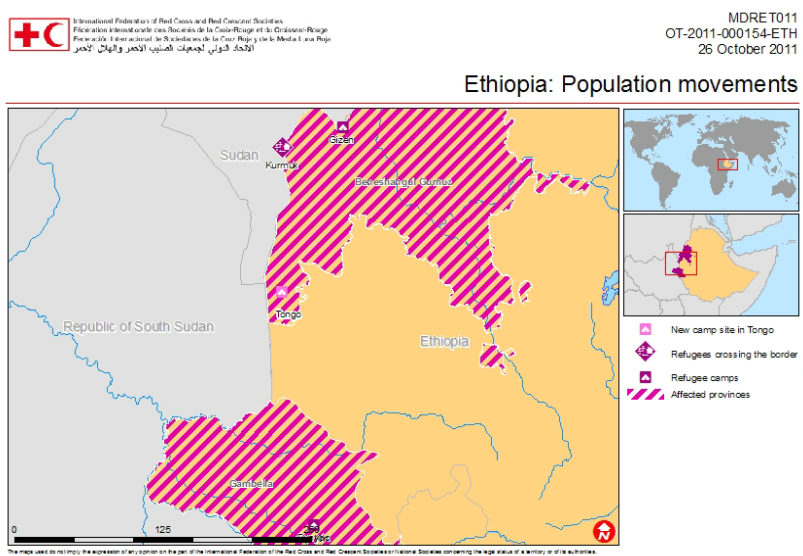
6. POPULATION MOVEMENT

6.1. ISSUES

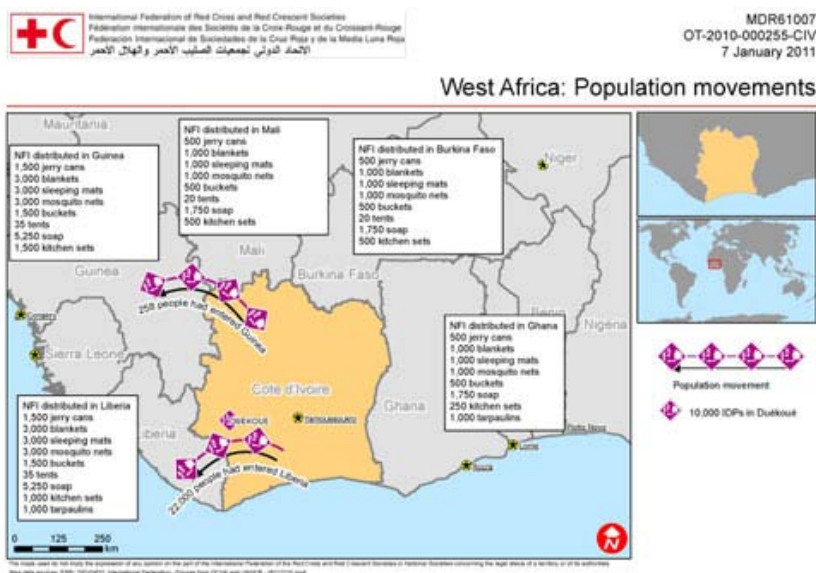
The main issue when mapping population movement is the quality of the information and the difficulty to find the places (usually remote and small...). It very often requires the use of “paper maps” geo-referenced⁷

6.2. EASY OPTION – PLACES ALREADY EXIST IN THE DATASETS

Example: information available: camps location, crossing points ... MDRET011 - Proceed as for floods (for affected provinces) and EQ (for camps, crossing points...)



Or, if you know from where to where populations are moving, you can draw like this:

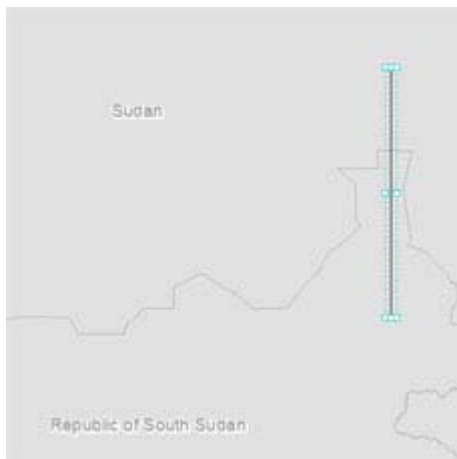


To do so, you will first use the drawing tools, from the Drawing palette. If it's not on your screen, load it by right-clicking on the palettes and check DRAW. It looks like this:



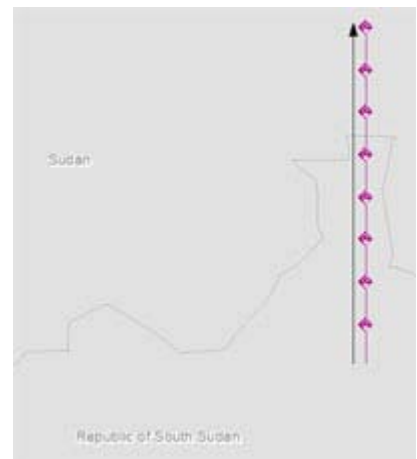
Click on the square to select the LINE or the CURVE and draw a line from the end point to the starting point.

⁷ Topographic maps for Africa that have already been georeferenced are available at
G:\GIS\Data\Continent_Africa\Data\img More on <http://www.lib.utexas.edu/maps/topo/>



Double click on the line and click on **CHANGE SYMBOL**. In the **SYMBOL SELECTOR**, choose **POPULATION MOVEMENT – OK**

You now have an arrow showing population movement from South Sudan to Sudan.

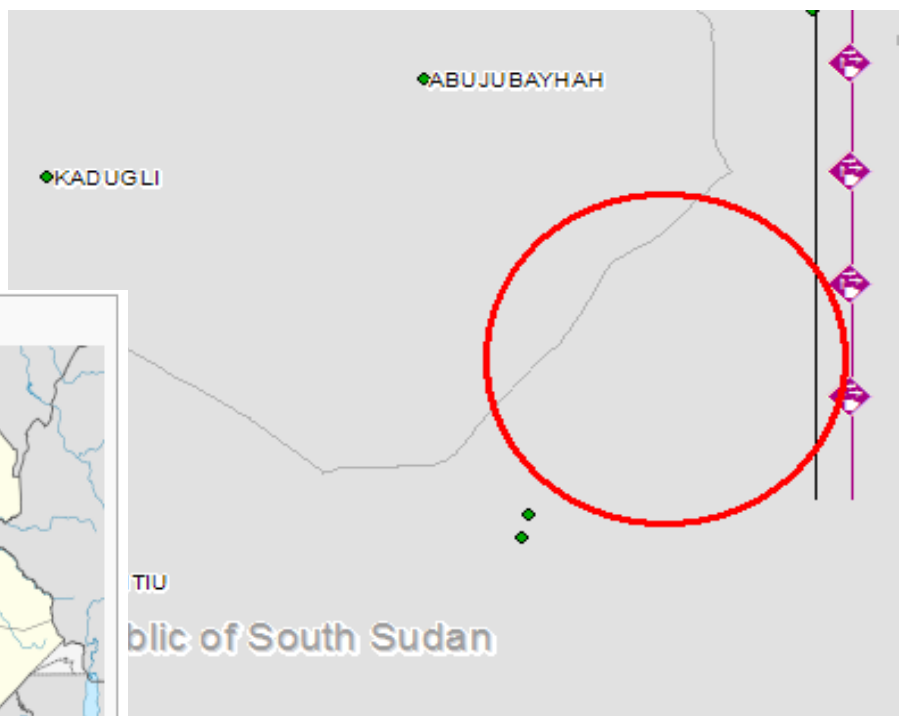


Remember that this is just a drawing! If you want a feature (this means, it will move when you move the map and when you change the zoom...), you need to select it, right-click on the **LAYER** in the **TOC** and choose **CONVERT GRAPHICS TO FEATURES...** You just have to change the output name and folder (in that case, `pop_mov.shp` in the Sudan folder). Check the box to delete graphics after conversion, OK and click YES in the next dialog.

6.3. NOT SO EASY OPTION – PLACES DOES NOT EXIST IN THE DATASETS – COORDINATES

Very often, the places do not exist in the dataset – you will need to create it.

But, with some research on the Internet, you find its coordinates. For example, we don't have the city of Kodok in our dataset; it should



be in the red circle somewhere.

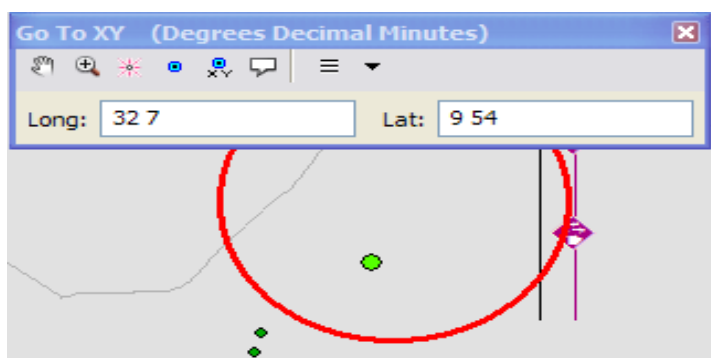
Quick search on Wikipedia:



So, how do you add it? Choose the **GO TO XY** tool from the **TOOLS** toolbar (lots of tool...)



In the Dialog, check the units in the title bar; make sure it's the same as the one you found. In this case, it's DEGREES DECIMAL MINUTES. You can change it by clicking on the arrow. In the Long, enter 32 7 and in the Lat 9 54. Click on the blue button. It will create a point at the coordinates you just entered.



It is a drawing... you need to convert it but this time, you will add it into the folder of other cities.

Select it, right-click on LAYERS in the TOC, CONVERT GRAPHICS TO FEATURES.

At the bottom of the dialog, click on the folder icon and navigate to the population folder of the source you used for other cities (in this case, it's GRUMP).

Save as type: FILE AND PERSONAL GEODATABASE FEATURE CLASSES, name it as the city (in this case Kodok).

Check the box to automatically delete... OK – OK – Yes

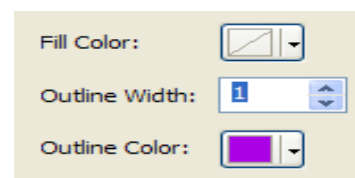
Do some cosmetic to give it a similar look as the other settlements. (PROPERTIES > SYMBOLOGY > IMPORT)

6.4. NOT SO EASY OPTION – PLACES DOES NOT EXIST IN THE DATASETS – PAPER MAP

Very often, the places do not exist in the dataset – you will need to create it. But you do not find it on Internet...

You can check on paper maps that have been scanned. In the continent_africa folder, there are some of them.

First, you need to transform the layers so you can see through: Unselect all the polygons one, just keep the COUNTRIES_2012 one, change its symbol to no color and change the outline to purple.



Now, load the africa_index.jpg from G:\GIS\Data\Continent_Africa\Data\img

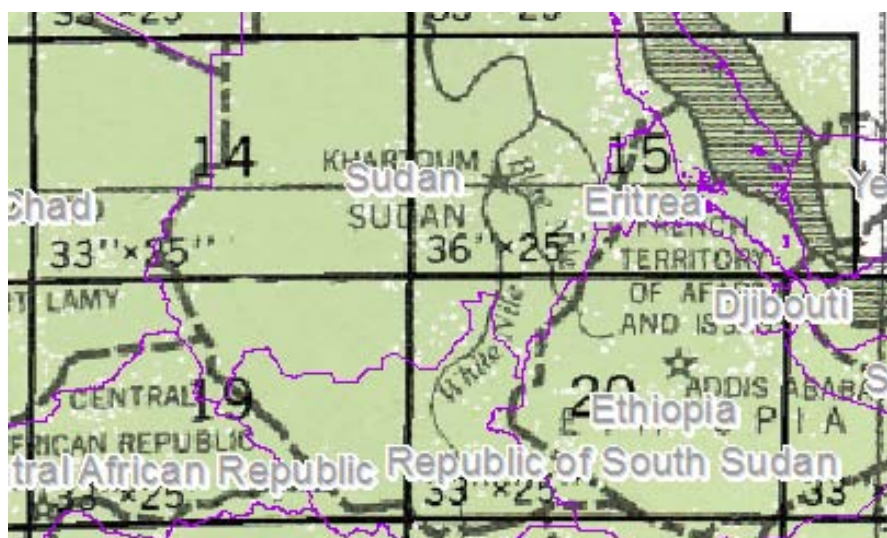
It's the index file that will help you identify which map you need to load next.

Zoom out so you can read the numbers...

The area we are working on is in map 20.

Locate (in the same folder) the image named txu-oclc-6589746-sheet20-7th-ed.jpg and drag it in the main window.

Zoom to the area of interest.



See the level of detail? You can find the Kodok point we created before, the purple border.



To create a new point for the village of Tingya, draw a point on it and convert it to a feature as you did for Kodok.

It's easy when the map is georeferenced... if it's not, you have to do it first.

7. DOWNLOADING FILES

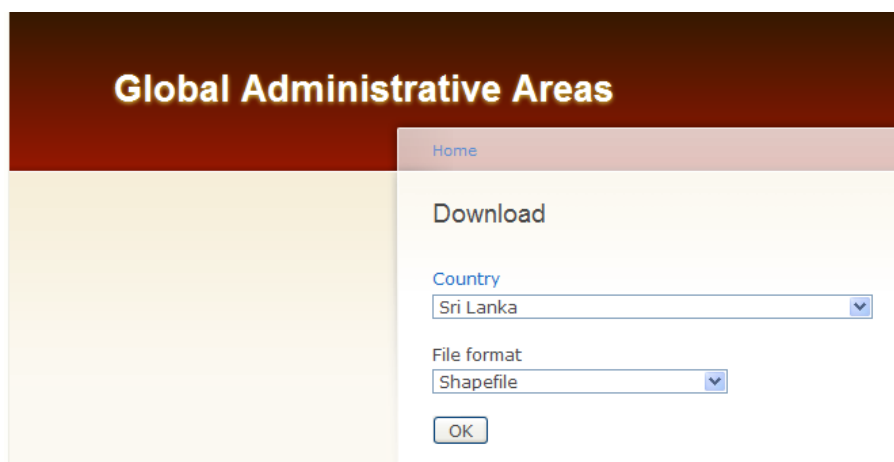
Most of the data you will download will be saved as a zip file on your computer. What to do with these files?

You will have to add them to the correct dataset, in the database, in the shp folder of the data folder of the country folder.

EXAMPLE: ADMIN BOUNDARIES FROM GADM FOR SRI LANKA

GET THE DATA

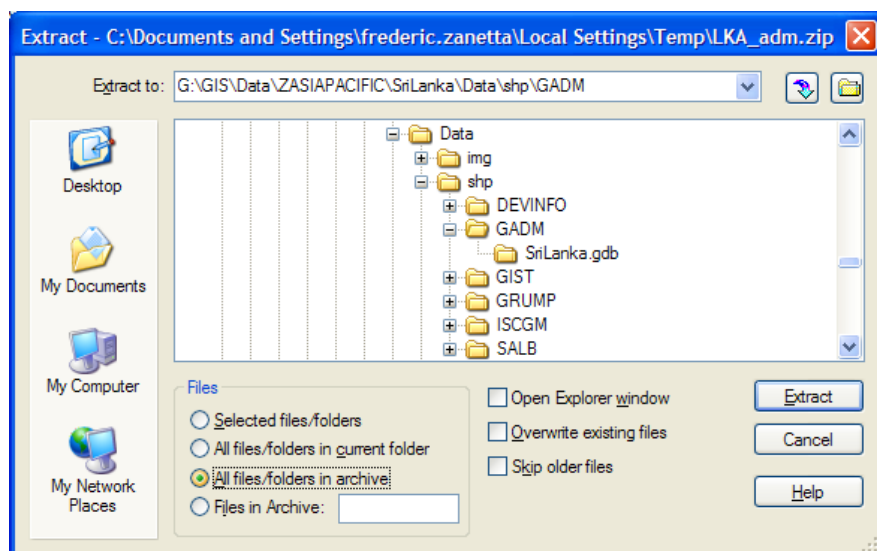
First, locate the data you want to download



Save the file on your desktop – Open it

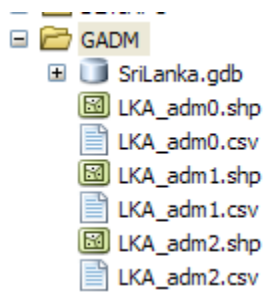
EXTRACT THE DATA

You will extract the files into G:\GIS\Data\ZASIAPACIFIC\SriLanka\Data\shp\GADM



You can now delete the Zip file.

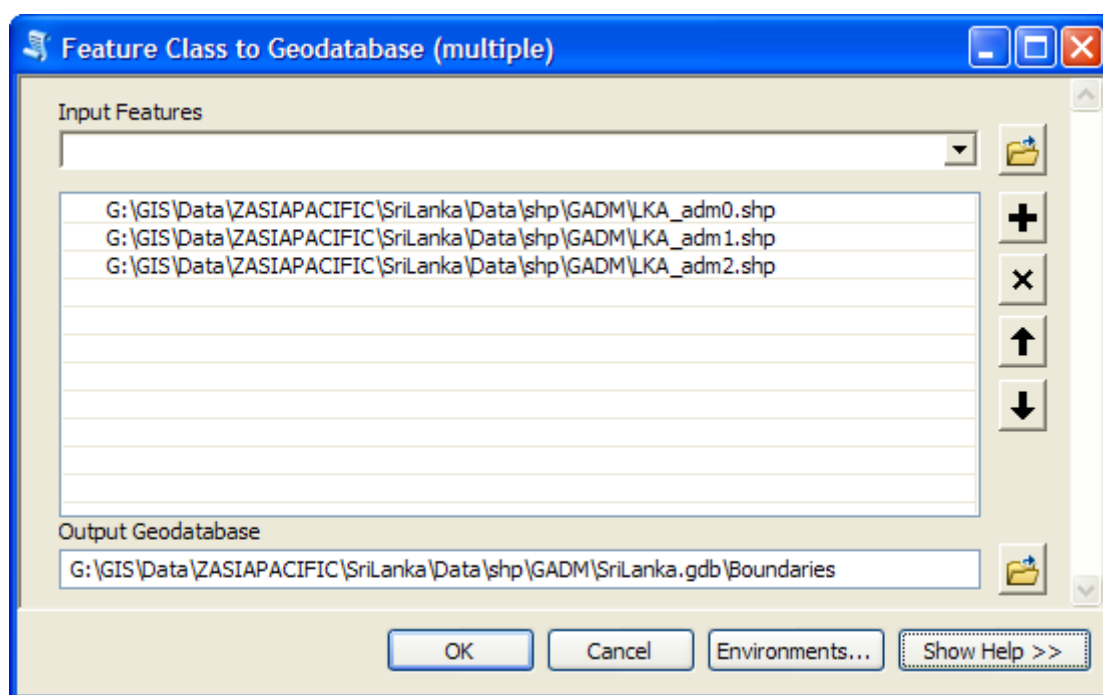
In ArcMap, in the Catalog, navigate to G:\GIS\Data\ZASIAPACIFIC\SriLanka\Data\shp\GADM, right-click on *GADM* > REFRESH, you should have this:



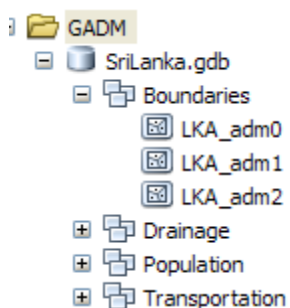
STORE THE DATA

Open *SriLanka.gdb*, right-click *Boundaries* > Import > Features Class (Multiples)

You can add the shapefiles by drag-an-drop or by clicking on the to-right folder



That's it; you just need to delete the files that you just moved as well as the csv ones:



8. GEOREFERENCING A MAP

8.1. FIND THE MAP

There are plenty of digital maps available online. Just find the one that suits your needs.

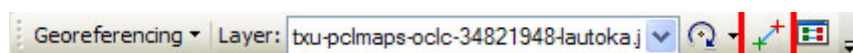
In this example, we will georeference a map for Fiji.

First drag and drop your map in the main window. You'll get a message about the coordinates, just say OK.

Zoom to the area you have to reference the map. Get some layers that help you to figure out if you are doing right or no.

8.2. GEOREFERENCE THE MAP

In the georeferencing toolbar, make sure you select the correct image.



Now, zoom to your map and locate a coordinate. Open the GO TO tool, check the units.

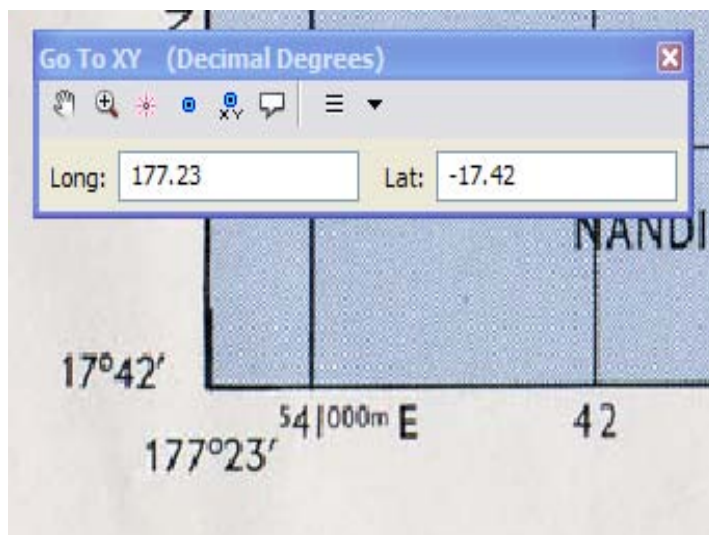
Click on the ADD CONTROL POINT (the tool with two crosses). Click on the point on the map that you have identified the coordinates. Then type the coordinates in the GO TO and click on the blue button to create a point. Zoom to this point

Reselect the ADD CONTROL POINT and click on the point you just created. It will move the map here.

Repeat in the three other corners of the map.

If you click on the little square right of the ADD CONTROL POINT, you'll open a table that allow you to delete a point.

Once you are happy with the result, click on
GEOREFERENCING > UPDATE GEOREFERENCING.



You will see that most of the time, there's a delta and that you should be aware of that.

Your map is now georeferenced. The next you will use it, it will be placed at the correct location

9. EXTERNAL DATA

9.1. INPUT DATA FROM EXCEL

If you want to display data at international level by country, first fill the Excel spreadsheet available here:
G:\GIS\Data\WORLD\Tables\countries2012_for_excel.xls

You can add as many columns as you want but DO NOT CHANGE what is already in the spreadsheet. I.e:

OBJECTID	ID_	NAME1_	NAME2_	Zone
----------	-----	--------	--------	------

Why? Because we will use NAME1_ as the primary key to connect this table with the *Countries_2012.shp*

If the map you want to produce is only for AP Zone, you can use this file instead:

G:\GIS\Data\ZASIAPACIFIC\Table\APcountries2012_for_excel.xls

In both case, make sure that you specify what type of information is in each column: Number or text! And DO NOT USE EXCEL 2007 extension .xlsx or you'll have problems. Save the files as .xls

9.2. JOIN A TABLE

Once you are done with you Excel table, right-click on it, EXPORT > TO DBASE (SINGLE)... so you generate a .dbf file.

Then right-click on the *countries_2012* on the top in the TOC, JOINS AND RELATES > JOIN

In the dialog box, in the drop down 1, choose NAME1_

In the 2, the table you want to join, in this example, it's *Donors_example.dbf*

In the 3, choose NAME1_

Then, in the Options: Keep all records

VALIDATE THE JOIN > OK

9.3. PIE CHARTS

You can have your data displayed as a pie chart



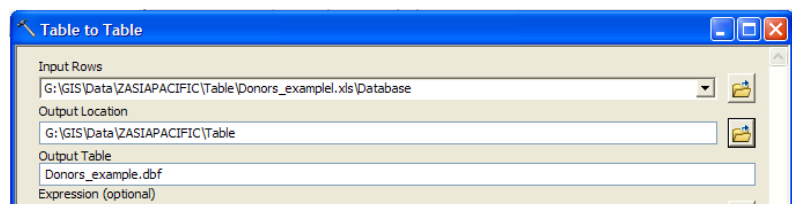
GET THE DATA

First step, NEW MAP, add the dataset *countries_2012*, add it a second time for the background.

In the Catalog, right-click on the table you will use and select EXPORT > TO DBASE (SINGLE)...

You will notice at the bottom that some fields are TEXT when they should be DOUBLE (for numbers....). To change that, right-click on one and select PROPERTIES then in the TYPE drop-down menu, select DOUBLE > OK Do that for all the fields that have to be numbers.

The rest of the options are on the image:



JOIN

Then, right-click on the *countries_2012* on the top in the TOC, JOINS AND RELATES > JOIN

In the dialog box, in the drop down 1, choose NAME1_. In the 2, the table you want to join, in this example, it's *Donors_example.dbf*, In the 3, choose NAME1_. Then, in the Options: Keep only matching records

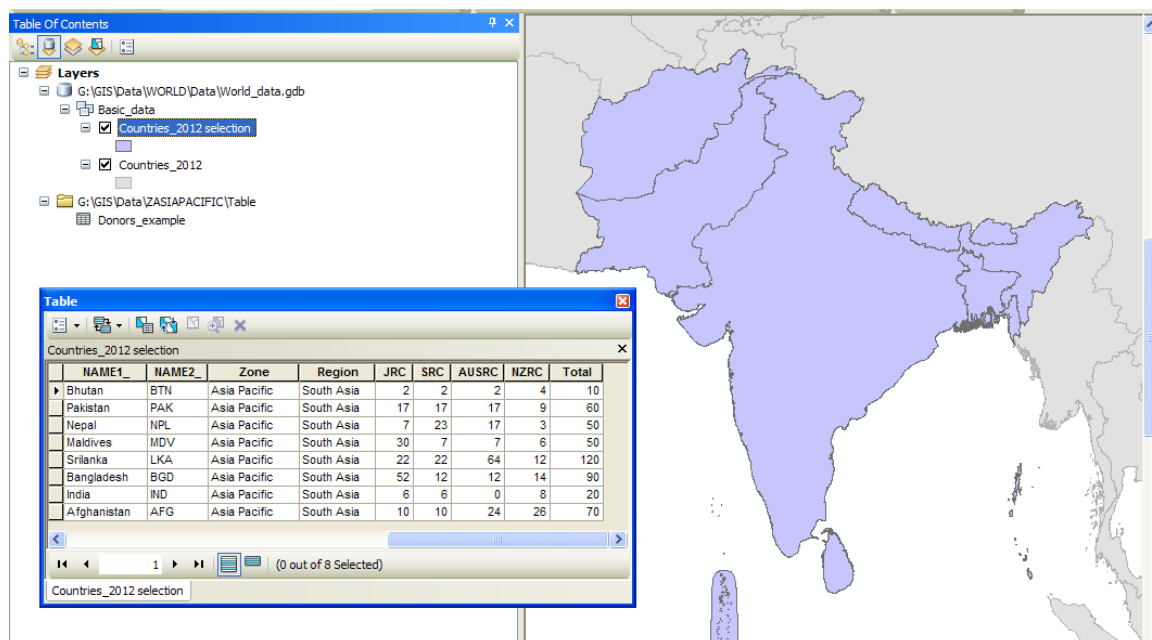
VALIDATE THE JOIN > OK

Right click again on it > OPEN ATTRIBUTES TABLE.

Select the countries you will be working with (in that case the one in South Asia)

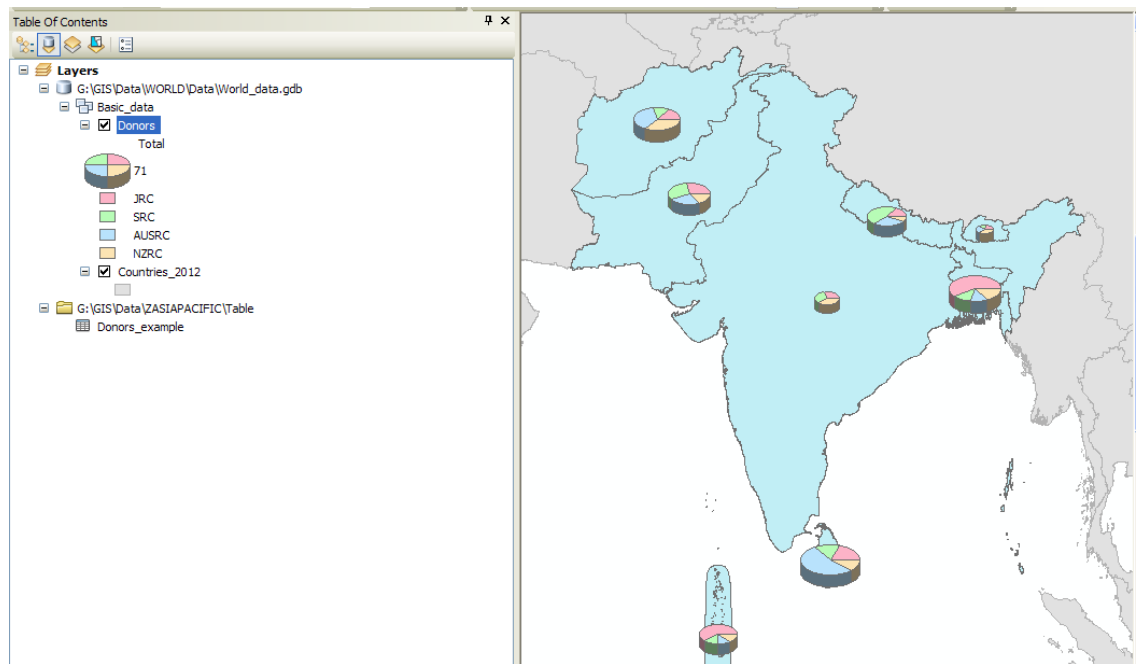
Right-click > SELECTION > CREATE LAYER FROM SELECTED FEATURES

You now have a layer with only the South Asia Country and if you look at the table, on the right, you will see the donor information.



CREATE THE PIE CHARTS

Let's display that info on the map. As you can see, we have information from four donors and Total, and we want to display pie charts showing two information: the pie chart itself will show the proportion of each donor, its size will show the total.



Rename the *Countries_2012* selection to *Donors*

Right-click on *Donors* > PROPERTIES > SYMBOLOGY, in the left part of the box, choose CHARTS:

In the FIELD SELECTION, select the donors data (JRC, SRC, AUSRC, NZRC) click on the > to move them to the right.

Click on the SIZE button and check "VARY SIZE USING A FIELD" and select Total (or F11 if you haven't rename it) from the dropdown menu.

Click OK and you will see the pie charts on the map.

NOW, COSMETICS...

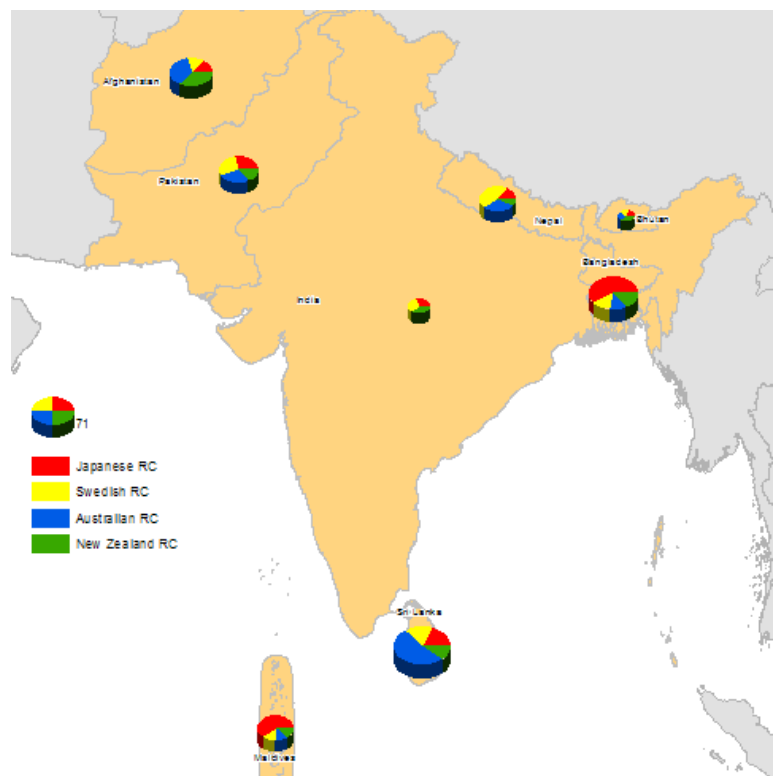
Right-click on *Donors* > PROPERTIES > SYMBOLOGY > PROPERTIES

Test the different option to see the results.

You can decide to have 2D charts instead of 3D...

Add a legend. To change the name of the donors, click on each of them in the TOC.

If you want to give the exact figures on the map, you will have to create labels with EXPRESSION...
More on page **Error! Bookmark not defined.**



9.4. ARCGIS ONLINE

If you don't have it already, create an account on [arcgisonline.com](https://arcgis.com) using your first name initial and your last name all attached (for example: fzanetta for Fred) and whatever password you want. Then, join the IFRC GIS group when you receive the invitation from Frederic.

We will use ArcGIS Online to do two things:

- 1.- Import features
- 2.- Share map packages

10. References – Style guide

10.1. TEXT AND LABELS

Title	Font	Underline	Bold	Italic	ArcGIS palette	Size	Mask	Colour	Align	Background	Example
Capitals	Arial	X			Black	8	1	White	Center		<u>Capitals</u>
Cities	Arial				Black	8	1	White	Left		Cities
Districts	Arial		X		Gray 60%	10	1	White	Center		Districts
Countries_DEVINFO	Arial				Gray 40%	14	1	White	Center		Country
Fine_print	Arial				Black	6			Left	White with border, margins 2, line call	Fine print
Title	Arial				Black	24			Right		Title
Top right box	Arial				Black	14			Right		Top right box
Legend	Arial				Black	10			Left		Legend
Rivers	Arial				Lapis Lazuli	8			Left		<u>River</u>

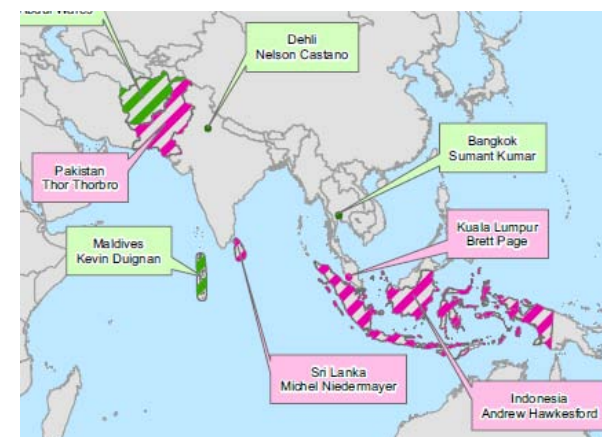
10.2. LABEL: EXPRESSION

It is possible to build an expression for label to display multiple fields of the table:

Right-click on the layer > PROPERTIES > EXPRESSION

Make sure the Parser (bottom of the dialog box) says VBScript. Add fields into the expression. If you want to insert a line break, write VBNewLine. If you want to insert a space or a word, use inverted commas: "word" ". Put a & (with a space before and after) between all words.

If you want to change the style, click the help button and scroll down to **ArcMap text formatting tags**



10.3. COLOURS

	R	G	B	ArcGIS palette	Border	Font>Unicode Character	Size	Colour of letter or top symbol
Disasters								
Geophysical		230	152	0	Seville Orange			
Hydrometeorologic		0	92	230	Lapis Lazuli			
Biological		38	115	0	Fir Green			
Technological		255	0	0	Mars Red			
Human related		168	0	132	Cattleya Orchid			
Earthquake		230	152	0	Seville Orange	ERS v2 Natural Events > 67	36	0-0-0
Tsunami		230	152	0	Seville Orange	ERS v2 Natural Events > 84	36	0-0-0
Volcano		230	152	0	Seville Orange	ERS v2 Natural Events > 70	36	0-0-0
Rockfall		230	152	0	Seville Orange	ERS v2 Natural Events > 68	36	0-0-0
Landslide		230	152	0	Seville Orange	ERS v2 Natural Events > 66	36	0-0-0
Subsidence		230	152	0	Seville Orange	ERS v2 Natural Events > 69	36	0-0-0
Tropical cyclone		0	92	230	Lapis Lazuli	ERS v2 Natural Events > 83	36	255-255-255
Local storm		0	92	230	Lapis Lazuli	ERS v2 Natural Events > 82	36	255-255-255
Floods		0	92	230	Lapis Lazuli	ERS v2 Natural Events > 74	36	255-255-255
Storm surge		0	92	230	Lapis Lazuli	ERS v2 Natural Events > 78	36	255-255-255
Avalanche		0	92	230	Lapis Lazuli	ERS v2 Natural Events > 66	36	255-255-255
Heat wave		0	92	230	Lapis Lazuli	ERS v2 Natural Events > 75	36	255-255-255
Cold wave		0	92	230	Lapis Lazuli	ERS v2 Natural Events > 80	36	255-255-255
Extreme winter conditions		0	92	230	Lapis Lazuli	ERS v2 Natural Events > 80	36	255-255-255
Drought		0	92	230	Lapis Lazuli	ERS v2 Natural Events > 73	36	255-255-255
Natural fire		255	255	255	White	ERS v2 Incidents > 84	36	0-92-230
Epidemic		255	255	255	White	ERS v2 Incidents > 105	36	38-115-0
Insect infestation		38	115	0	Fir Green	ERS v2 Natural Events > 86	36	255-255-255
Animal attack		38	115	0	Fir Green	ERS v2 Natural Events > 88	36	255-255-255
Meteorite		255	255	255	White	ERS v2 Incidents > 89	36	38-115-0
Explosion		255	255	255	White	ERS v2 Incidents > 89	36	255-0-0

Chemical spill		255	255	255	White	ERS v2 Incidents > 86	36	255-0-0
Collapse		255	0	0	Mars Red	ERS v2 Natural Events > 76	36	255-255-255
Gas leak		255	255	255	White	ERS v2 Incidents > 104	36	255-0-0
Poisoning		255	255	255	White	ERS v2 Incidents > 74	36	255-0-0
Radiation		255	255	255	White	ERS v2 Incidents > 102	36	255-0-0
Other		255	255	255	White	ERS v2 Incidents > 74	36	255-0-0
Fire		255	255	255	White	ERS v2 Incidents > 84	36	255-0-0
Air crash		255	255	255	White	ERS v2 Incidents > 107	36	255-0-0
Rail crash		255	255	255	White	ERS v2 Incidents > 113	36	255-0-0
Road accident		255	255	255	White	ERS v2 Incidents > 116	36	255-0-0
Boat sinking		255	255	255	White	ERS v2 Incidents > 110	36	255-0-0
Civil unrest		168	0	132	Cattleya Orchid	ERS v2 Incidents > 66	36	255-255-255
Complex emergency		168	0	132	Cattleya Orchid	Does not exist as a font	36	255-255-255
Food insecurity		168	0	132	Cattleya Orchid	ERS v2 Incidents > 65	36	255-255-255
Population movement		168	0	132	Cattleya Orchid	ERS v2 Incidents > 67	36	255-255-255

Zones

Africa		255	158	0	
Europe		197	0	255	
Asia Pacific		230	230	0	
Americas		145	171	247	
MENA		56	168	0	Leaf Green

Other

Cities		178	178	178	30% grey	Simple Marker Circle	4	
Capitals		255	255	0	Solar Yellow	ESRI Default Marker > 92	14	0-0-0
Airport		0	77	168	Ultra blue	ESRI ArcPad > 72	15	255-255-255
Port		0	77	168	Ultra blue	ESRI ArcPad > 85	15	255-255-255
Countries around (small maps)		156	156	156	40% grey			

Countries around (main map)		225	225	225	10% grey	178-178-178	
Lakes		151	219	242		64-101-235	
Main country		255	212	128		190-190-190	
Orange 1		255	204	153			
Orange 2		255	153	64			
Orange 3		255	125	0			
Orange 4		255	82	38			
Refugee camp		168	0	132	Cattleya Orchid	ESRI ArcPad > 80	15 255-255-255

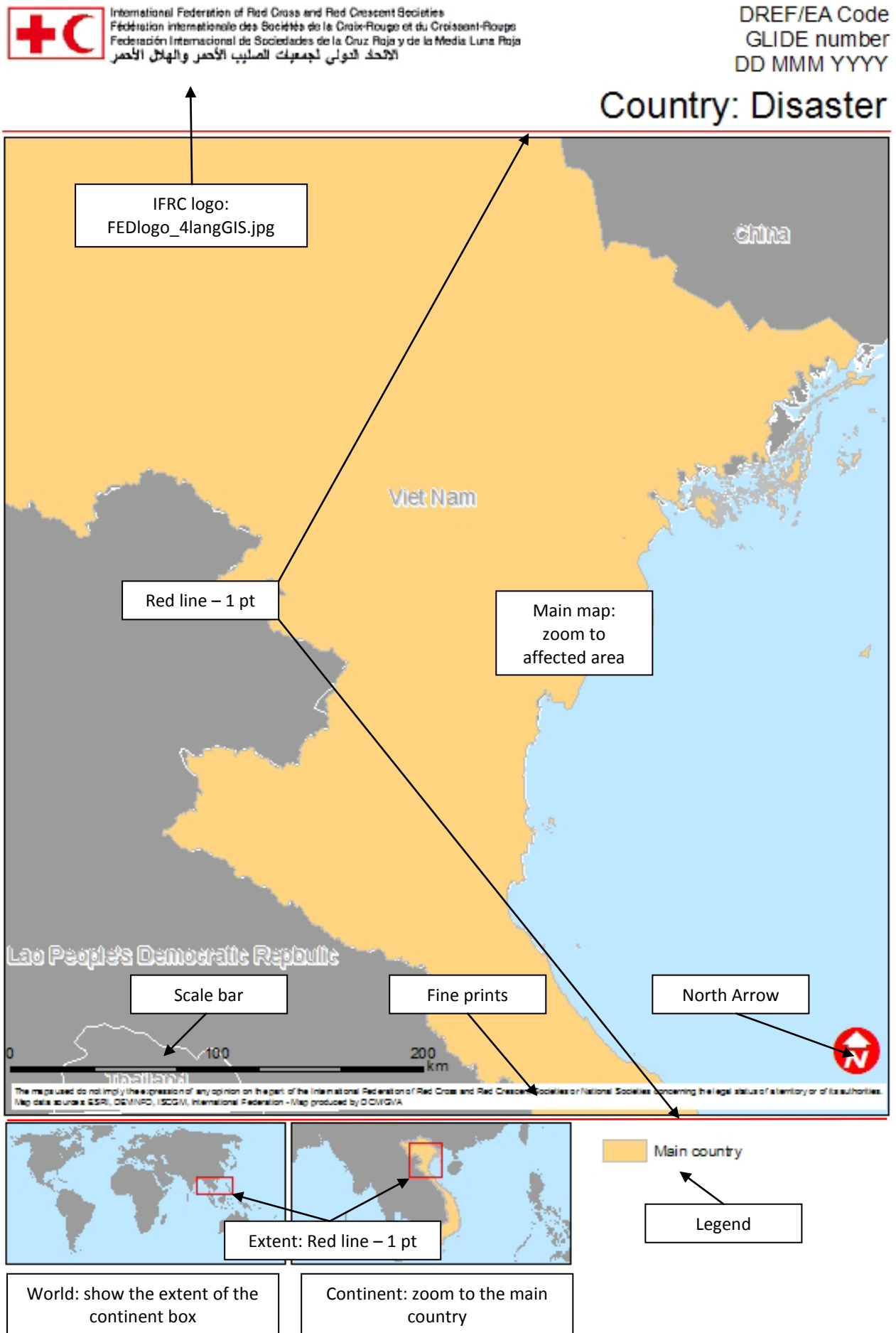
Teams

Basic square						255-255-255	ESRI Default Marker > 34	15	
ERU Health		76	230	0	Quetzel Green	255-255-255	Arial Black > 69	8	0-0-0
ERU ITT		178	178	178	30% grey	255-255-255	Arial Black > 69	8	0-0-0
ERU Logistics		230	0	169	Peony Pink	255-255-255	Arial Black > 69	8	255-255-255
ERU Relief		0	92	230	Lapis Lazuli	255-255-255	Arial Black > 69	8	255-255-255
ERU Watsan		0	255	197	Tourmaline Green	255-255-255	Arial Black > 69	8	0-77-168
ERU Base camp		255	0	0	Mars Red	255-255-255	ESRI ArcPad > 80	15	255-255-255
FACT		255	0	0	Mars Red	255-255-255	Arial Black > 70	8	255-255-255
RDRT		255	0	0	Mars Red	255-255-255	Arial Black > 82	8	255-255-255

Storms

Unknown		225	225	225	10% grey	78-78-78	ESRI Climate & Precipitation > 207	18
Tropical depression		85	255	0	Medium Apple	56-168-0	ESRI Climate & Precipitation > 207	18
Tropical storm		115	223	255	Apatite Blue	0-132-168	ESRI Climate & Precipitation > 207	18
Category 1		255	255	0	Solar Yellow	168-168-0	ESRI Climate & Precipitation > 207	18
Category 2		255	170	0	Electron Gold	168-112-0	ESRI Climate & Precipitation > 207	18
Category 3		255	85	0	Fire Red	168-56-0	ESRI Climate & Precipitation > 207	18
Category 4		255	0	0	Mars Red	168-0-0	ESRI Climate & Precipitation > 207	18
Category 5		197	0	255	Amethyst	132-0-168	ESRI Climate & Precipitation > 207	18

10.4. A4 TEMPLATES (PORTRAIT OR LANDSCAPE – SAME ELEMENTS)



10.5. SCALE BAR, NORTH ARROW AND FINE PRINT



Scale bar: One division, 4 subdivisions - Unit: KM – Format: Arial, 12, black - Bar: Black, 2 pt



North arrow: ESRI North, Unicode 73, size 30, color Mars Red, white background (ESRI Default Marker, Unicode 33, size 30)

Fine print: “The maps used do not imply the expression of any opinion on the part of the International Federation of Red Cross and Red Crescent Societies or National Societies concerning the legal status of a territory or of its authorities. Map data sources: ESRI, DEVINFO, ISCGM, International Federation – Map MAPNAME.mxd produced by DCM/GVA”

Sources are an example. MAPNAME.mxd is the filename. Producer is department/airport_code. Today, it can be DCM/GVA if produced by Fred or PMER/KUL if produced by Tiff and the team

10.6. A1 TEMPLATES

There are three A1 templates for printing on the Canon iPF605; they have the same elements as the A4 ones.

- A weekly situation of the Appeals and DREFs,
- A standard portrait – to be used for operations or country map
- A standard landscape – to be used for operations or country map

10.7. PROJECTIONS

The projection used in IFRC is Robinson. To change the projection, *Layers* > *PROPERTIES* > *COORDINATE SYSTEM*

Robinson is in *Predefined* > *Projected Coordinates Systems* > *World*

When doing a map for Pacific (or if needed), it is possible to use the AsiaPac projection. It is the same as Robinson but the Central_Meridian was changed to 180 so that Russia and Alaska are connected...

10.8. NAMING CONVENTION

Use the same naming convention as the one of PMER.

- IB - Countrycode2letters disaster2letters ddmyy numericalorder : CNfl13031201.mxd
- DREF & Appeal: Appeal code.

10.9. ADD A SYMBOL IN THE STYLESHEET

In the *Symbol Selector*, you can load style sheets. For example, on the left image below, you can see the *Disaster_IFRC* style sheet.

To add a symbol or to create a new one, you have to use the *Style manager*: Go to CUSTOMIZE > STYLE MANAGER

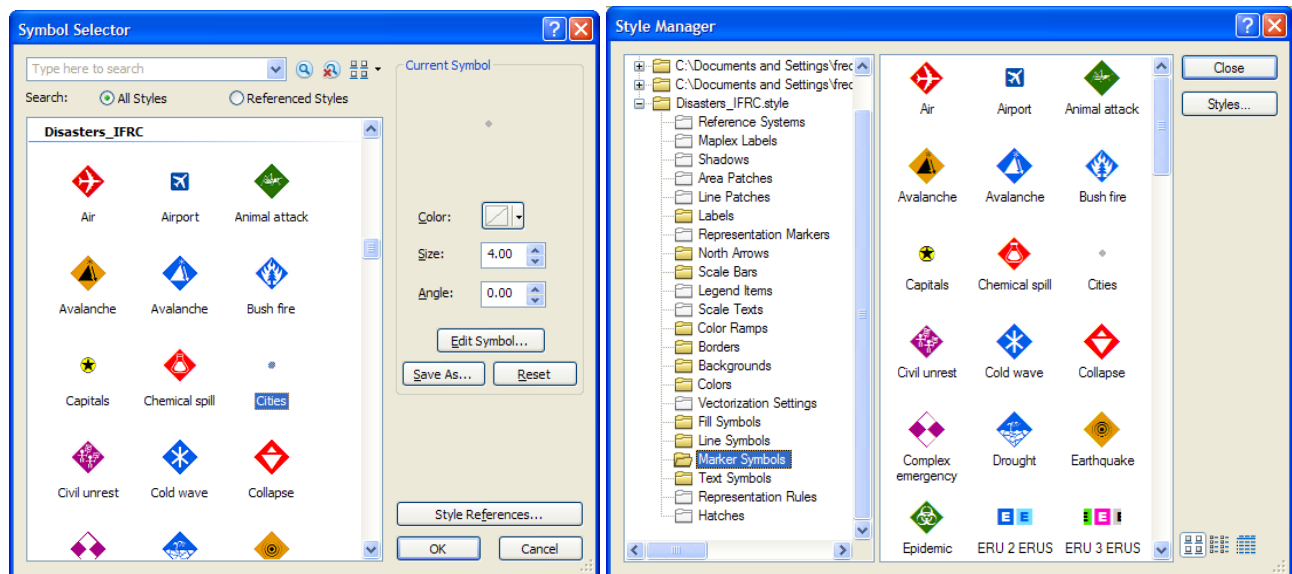


Image on the right: You can see all the style sheets that are loaded in the *Symbol Selector*.

Every style components are stored here: Labels, colors, symbols...

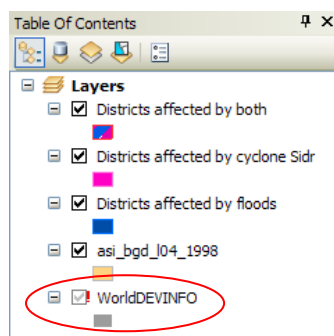
To add a symbol, click on MARKER SYMBOLS, right click in the right part of the window CREAT NEW > MARKER SYMBOL

Symbol Property Editor will open. If you want the symbol to be a drawing or a logo that you already have, make sure it's bmp format, select in the Type drop down menu *Picture Marker Symbol*, select your picture, adjust the size, OK

11. TROUBLESHOOTING

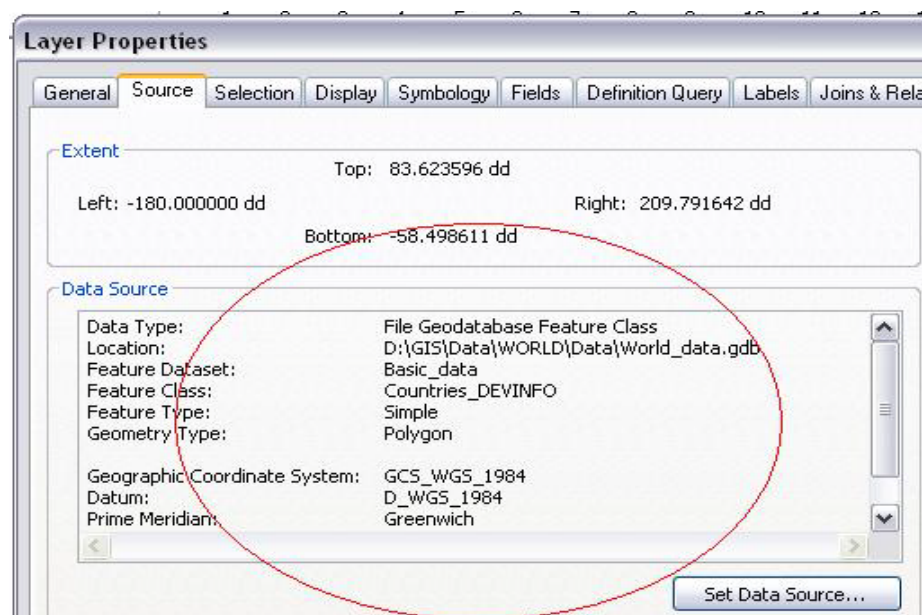
11.1. HOW TO FIX BROKEN LINKS

If you move a dataset, a feature, a raster, anything that is used on the map, the link with this object will be lost. This is indicated in the TOC by a shaded checkbox and a red exclamation mark.

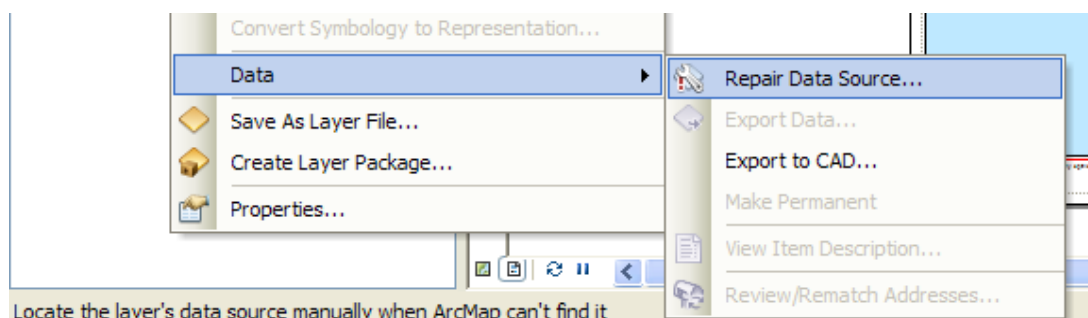


To fix that, you need to restore the link with the object.

First, identify what the source of the object is: PROPERTIES > SOURCE:

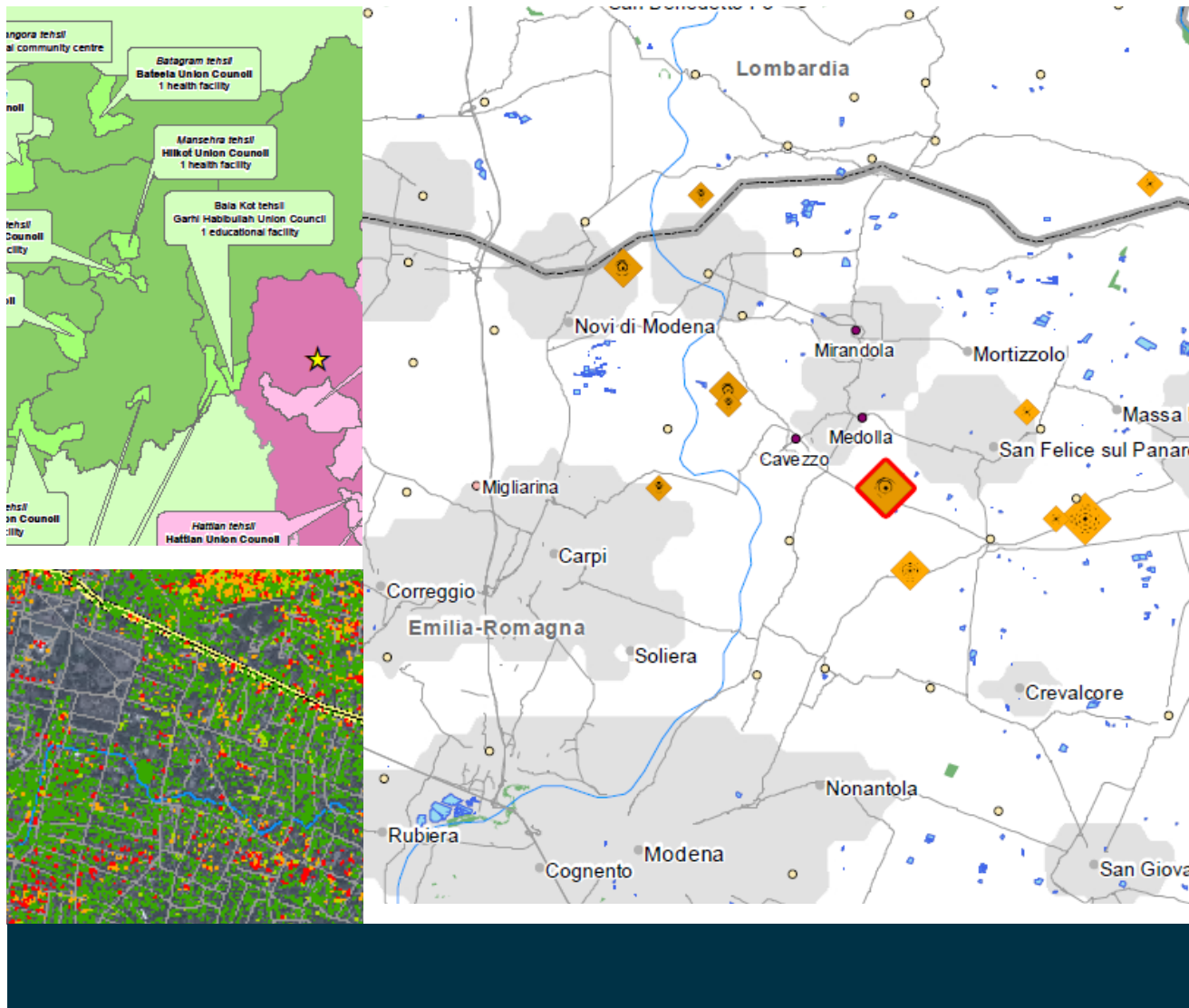


You can either click on SET DATA SOURCE and navigate to the object, but this will only correct the path for this object or right-click on the layer DATA > REPAIR DATA SOURCE, this will fix all broken links that have the same path.



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Maps

Step-by-step guide

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