



OPENJUMP



Indian Institute of Science
Bangalore - 560012

CiSTUP

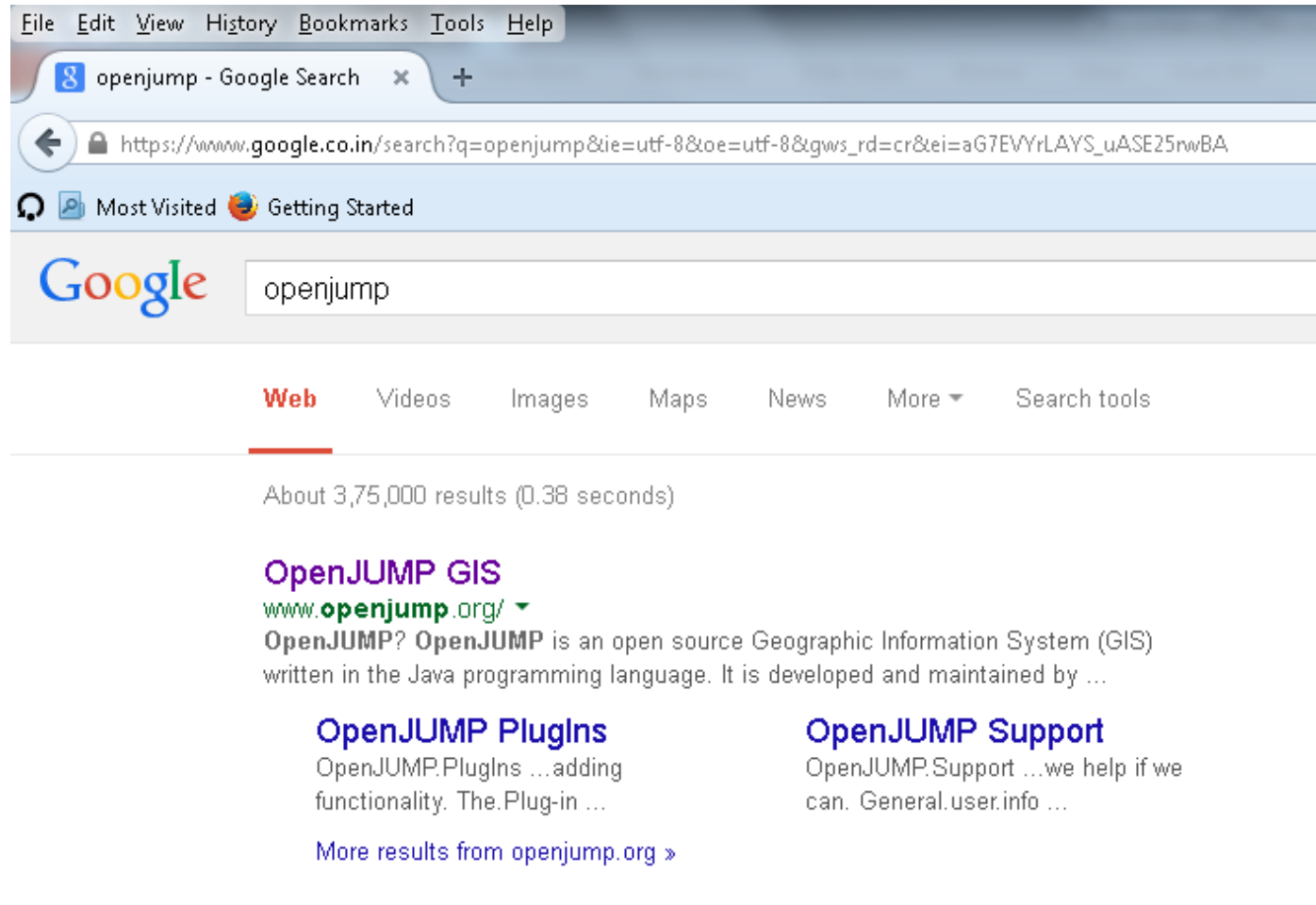
FOSS 4G workshop, 21 to 24 August 2015

Open Jump

- Free and open source software
- Written in the Java programming language.
- Developed and maintained by a group of volunteers around the globe.
- OpenJUMP started as JUMP GIS
- Basic GIS works can be handled with the tool (Vector).

Downloading OPENJUMP

- www.openjump.org



The screenshot shows a web browser window with a Google search for "openjump". The search results are displayed on the "Web" tab, showing approximately 3,750,000 results in 0.38 seconds. The top result is "OpenJUMP GIS" from www.openjump.org/. Below this, there are two columns of results: "OpenJUMP Plugins" and "OpenJUMP Support".

File Edit View History Bookmarks Tools Help

openjump - Google Search

https://www.google.co.in/search?q=openjump&ie=utf-8&oe=utf-8&gws_rd=cr&ei=aG7EVYrLAYS_uASE25rwBA

Most Visited Getting Started

Google openjump

Web Videos Images Maps News More Search tools

About 3,75,000 results (0.38 seconds)

OpenJUMP GIS
www.openjump.org/
OpenJUMP? OpenJUMP is an open source Geographic Information System (GIS) written in the Java programming language. It is developed and maintained by ...

OpenJUMP Plugins
OpenJUMP.Plugins ...adding functionality. The.Plug-in ...

OpenJUMP Support
OpenJUMP.Support ...we help if we can. General.user.info ...

[More results from openjump.org »](#)

OPEN JUMP

[openjump](#) ×

[openjump plugins](#) ×

[openjump support](#) ×

[openjump wiki](#) ×

[the jpp](#) ×

[become involved](#) ×

[links](#) ×

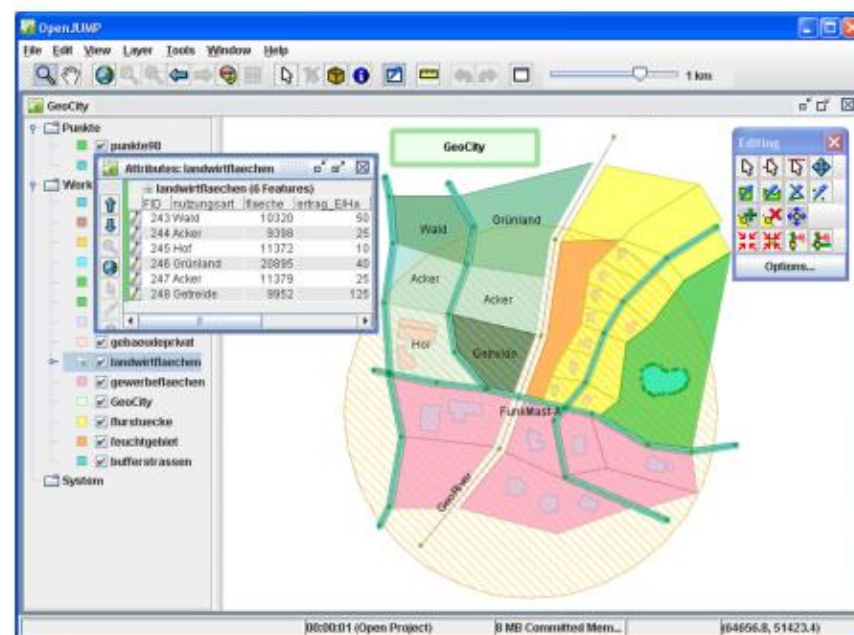
[contact us](#) ×

download links

OpenJUMP 1.8.0 is the latest release from the 1st December of 2014. [Download OpenJUMP here.](#)

Feel free to search [past releases](#) and [plugins](#) in our [sourceforge files section](#).

There are [Development Snapshots](#) available too for those who don't



















what is openjump?


OpenJUMP is an open source Geographic Information System (GIS) written in the Java programming language. It is developed and maintained by a group of volunteers from around the globe. OpenJUMP started as JUMP GIS

Looking for the latest version? [Download OpenJUMP-Installer-1.8.0-r4164-PLUS.exe \(44.3 MB\)](#)

Home / OpenJUMP / 1.8.0

Name	Modified	Size	Downloads / Week
↑ Parent folder			
readme.txt	2014-12-01	7.7 kB	17  
OpenJUMP-1.8.0-r4164-src.zip	2014-12-01	8.3 MB	30  
OpenJUMP-1.8.0-r4164-apidocs.zip	2014-12-01	10.6 MB	2  
OpenJUMP-Installer-1.8.0-r4164-PL...	2014-12-01	44.3 MB	188  
OpenJUMP-Installer-1.8.0-r4164-CO...	2014-12-01	20.2 MB	OpenJUMP-Installer-1.8.0-r4164-PLUS.exe
OpenJUMP-Installer-1.8.0-r4164-PL...	2014-12-01	44.3 MB	60  
OpenJUMP-Installer-1.8.0-r4164-CO...	2014-12-01	20.2 MB	4  
OpenJUMP-Portable-1.8.0-r4164-PL...	2014-12-01	43.6 MB	58  
OpenJUMP-Portable-1.8.0-r4164-CO...	2014-12-01	19.1 MB	4  
Totals: 9 Items		210.5 MB	376

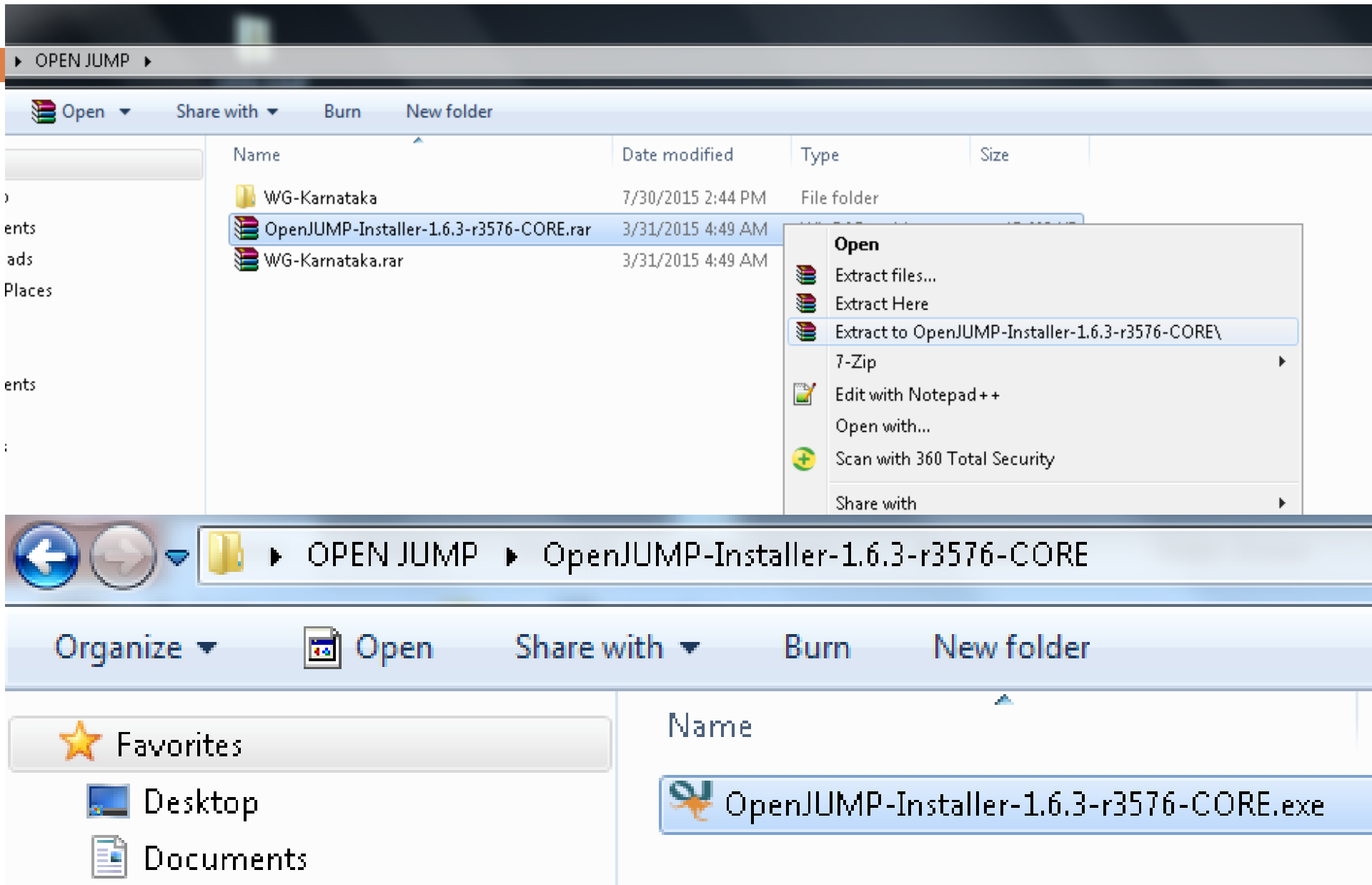
Email an invoice & get paid faster



Recommended

- JUMP Database Query
- Mentaers
- mySonar

Installation



Language Selection




Please select your language

- English
- français
- Deutsch
- italiano
- 日本語
- español
- Dansk
- Ελληνικά

1

IzPack - Installation of OpenJUMP



Welcome to the installation of OpenJUMP 1.6.3 rev.3576 CORE!

This software is developed by:
- jump pilot project <jump-pilot-devel@lists.sourceforge.net>


The homepage is at: <http://openjump.org/>

Step 1 of 6

Next Quit

2

IzPack - Installation of OpenJUMP



Please read the following information:

OpenJUMP ReadMe file

Version 1.6.3 release rev.3576

29. May 2013

Contents

1. Licensing
2. Installation instructions
3. Running OpenJUMP
4. Support
5. OpenJUMP history
6. Credits


1. Licensing

Step 2 of 6

Previous Next

3

IzPack - Installation of OpenJUMP



Please read the following license agreement carefully:

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

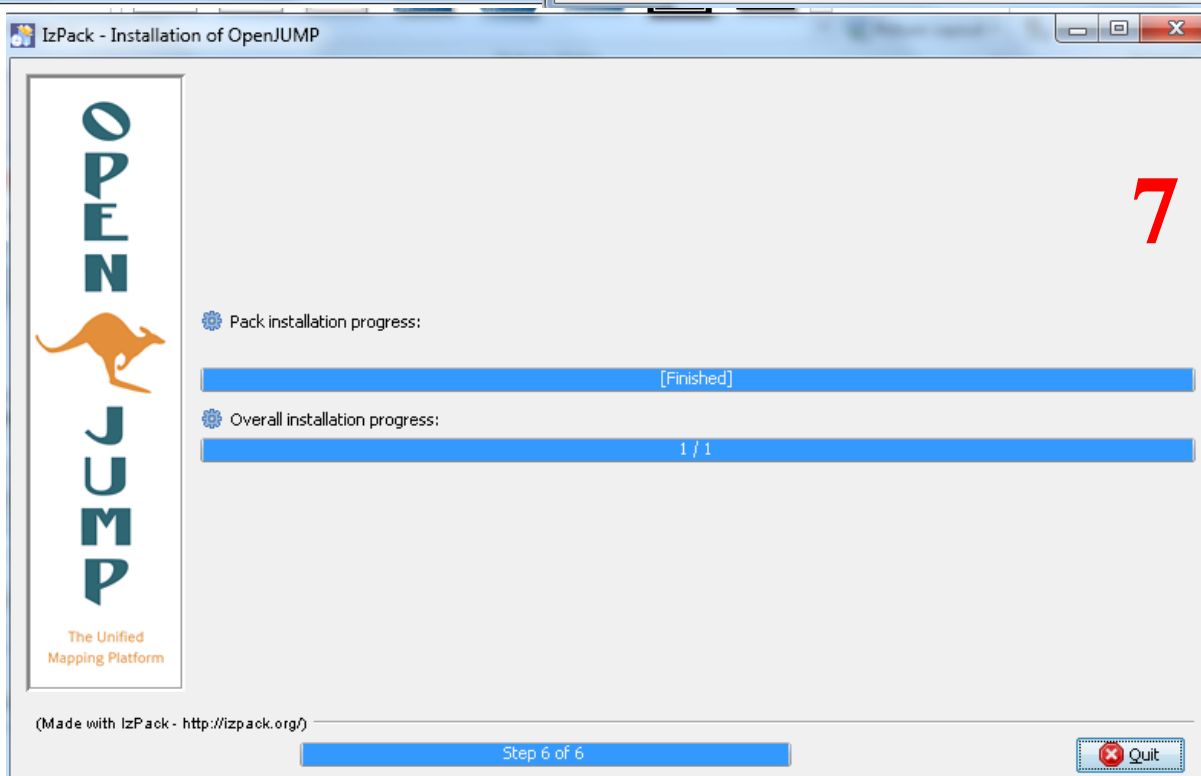
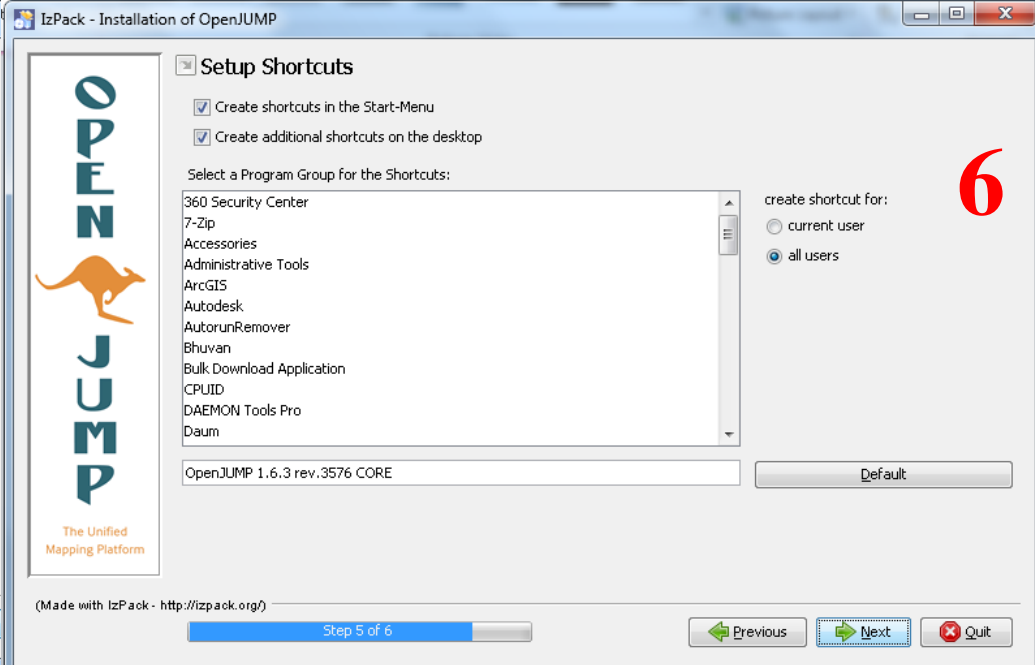
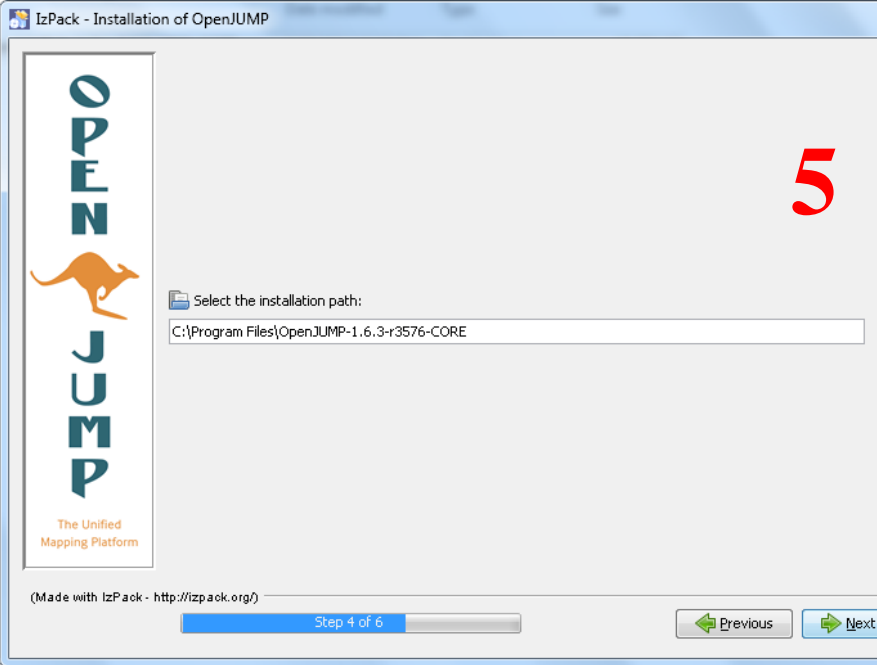
I accept the terms of this license agreement. ←

I do not accept the terms of this license agreement.

Step 3 of 6

Previous Next Quit

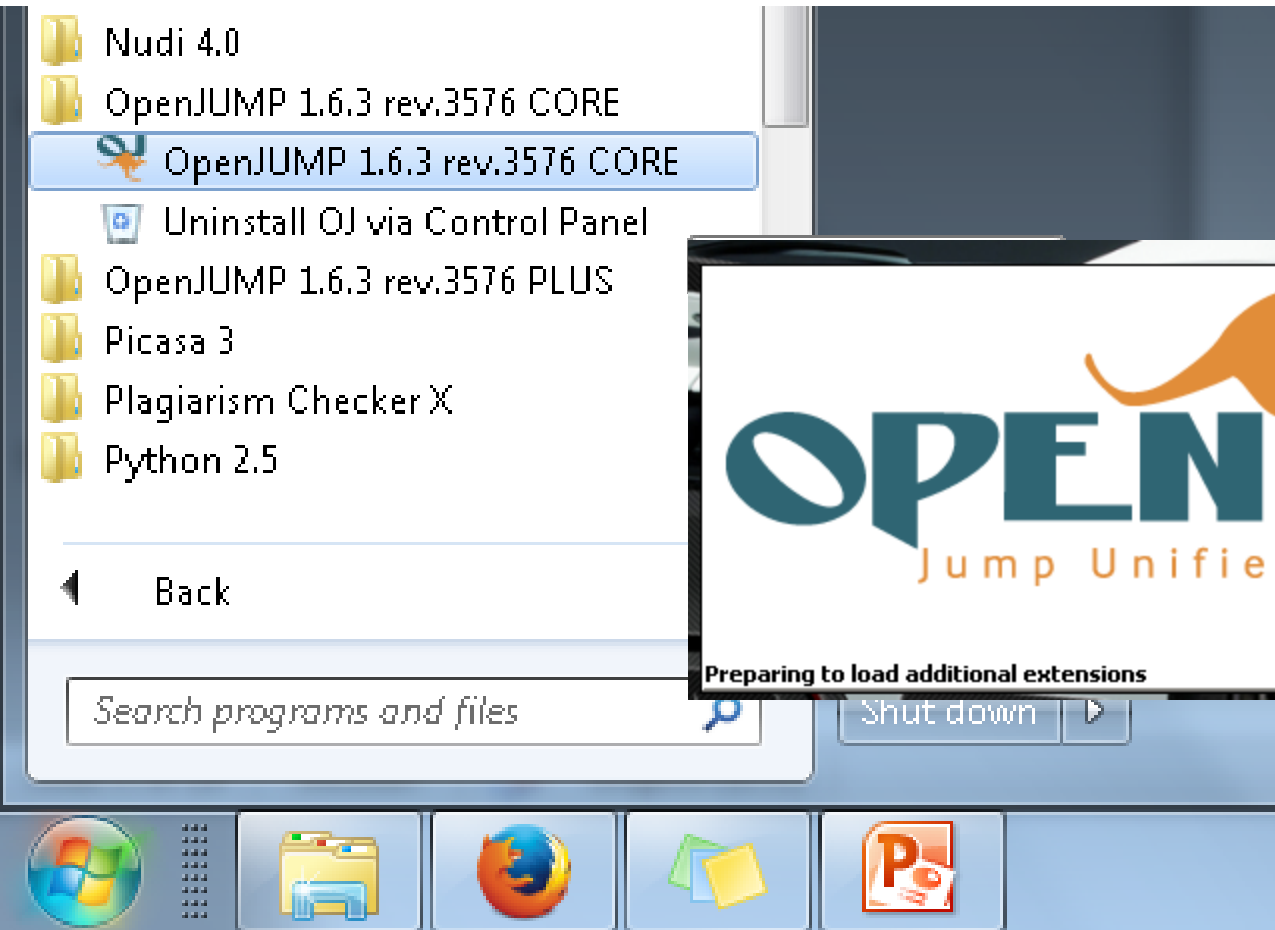
4



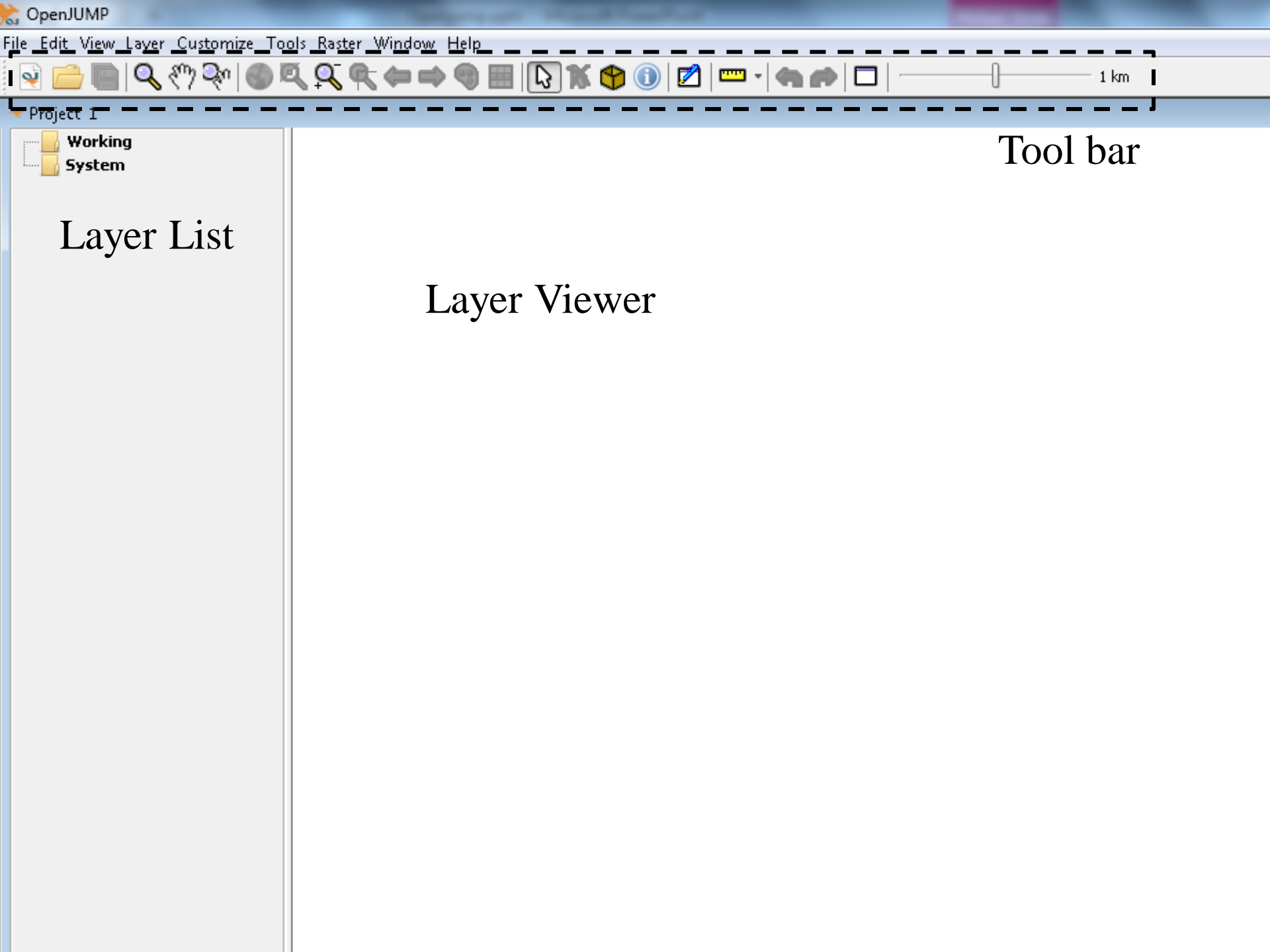


OPENJUMP

Starting with Openjump



Preparing to load additional extensions



- Working
- System

Layer List

Layer Viewer

Tool bar

Toolboxes



Tool Bar



Zooming



Panning



Show all data



Zoom to selected item



Zoom to fence



Next view



Previews view



Next view



Change layer visualisation



Display attributes (also for modification)



Select items



Clear selection



Draw a fence



Show feature information



Editing toolbox



Measure



Undo



Redo

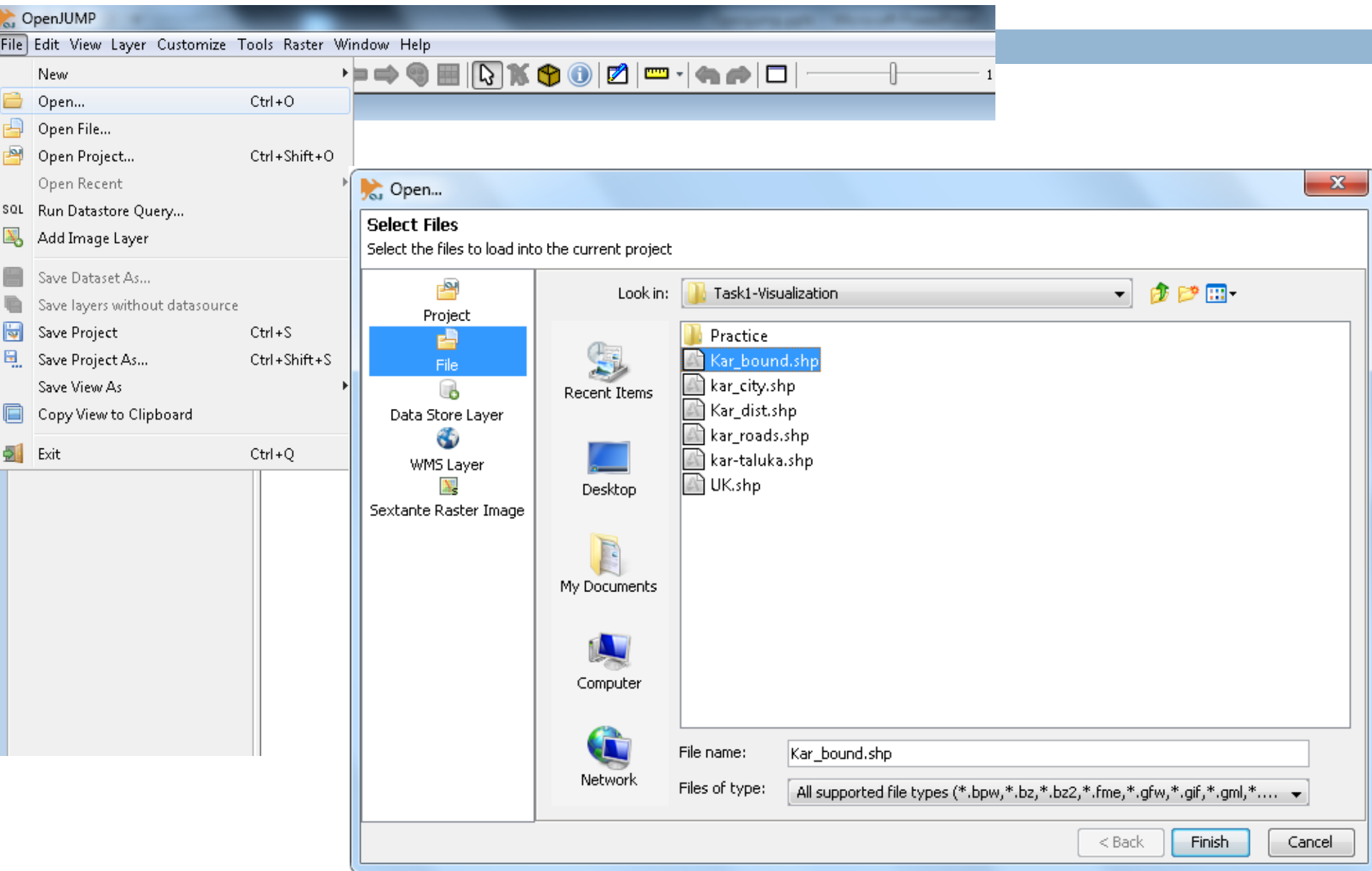


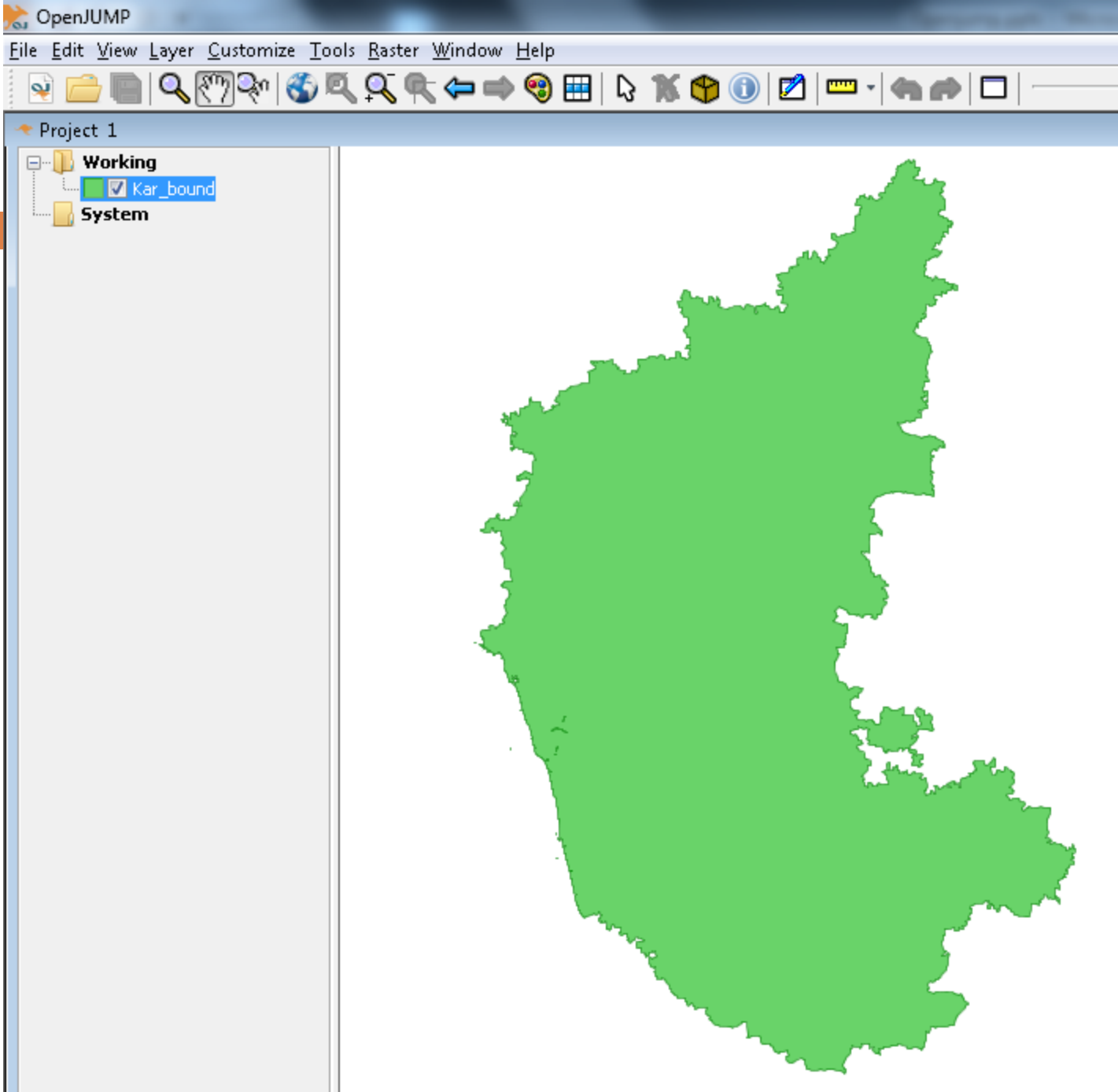
Output Window



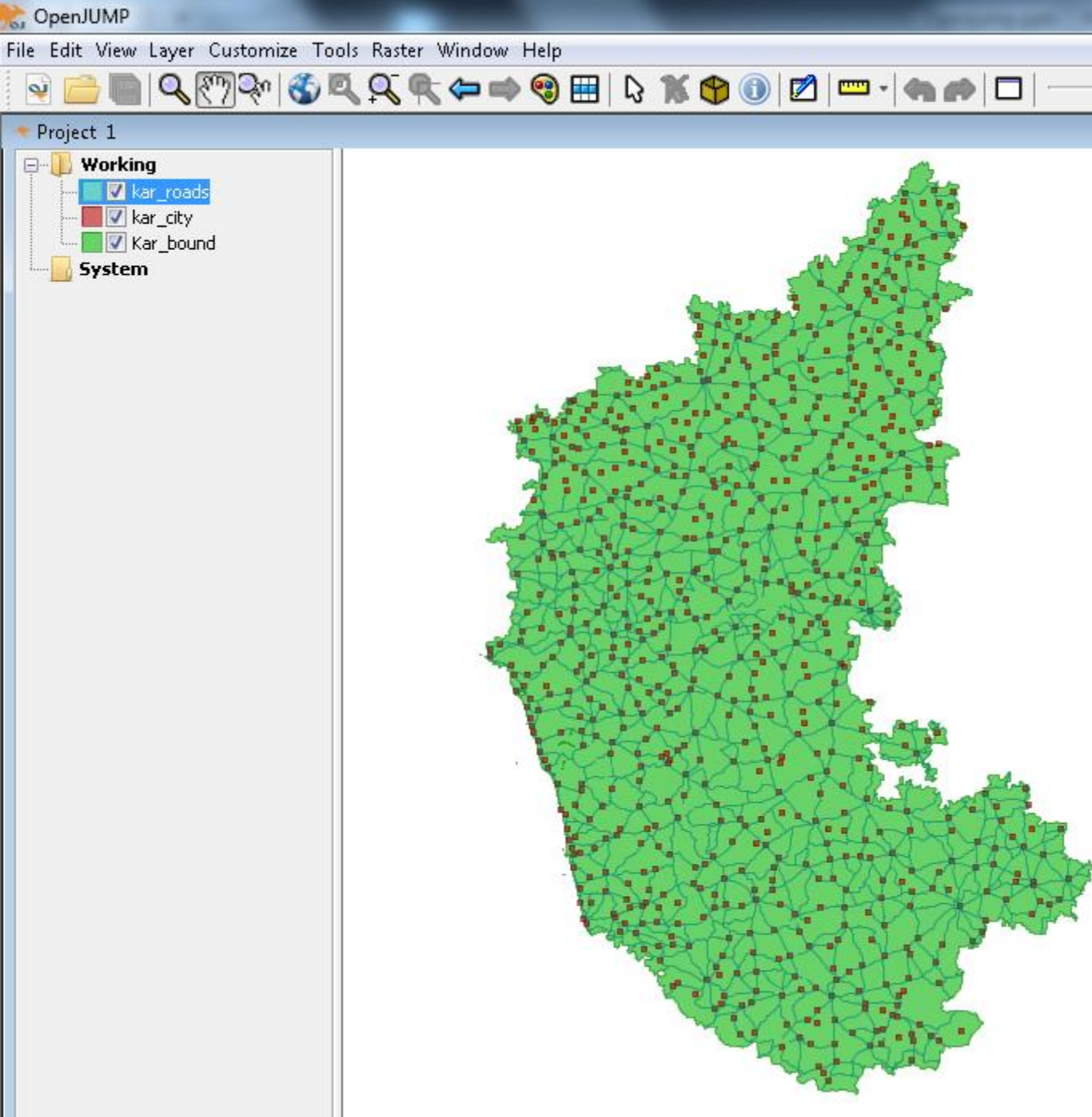
Fast Zooming

Adding and displaying Data





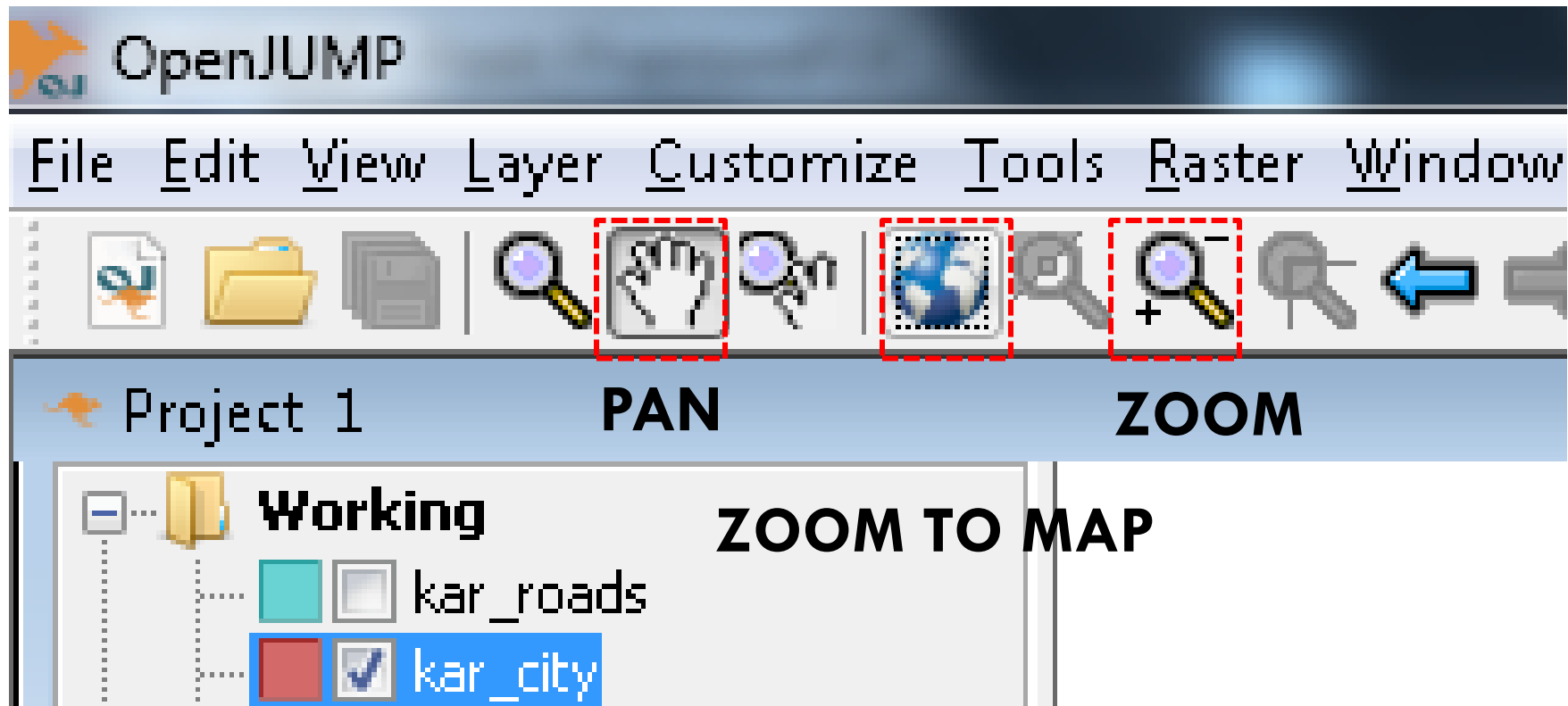
- Open Karnataka boundary



- Similarly open Roads and Cities.

Using tool boxes

- Use pan to move map
- Use zoom tool or mouse wheel to zoom in and zoom out
- Use Fit to window tool to fit the map to the window (centered)



About the map

The screenshot displays the OpenJUMP software interface. The main window shows a map with a green polygon representing a boundary. The 'Project 1' tree on the left lists layers: 'Working' (kar_roads, kar_city, Kar_bound) and 'System'. The 'Kar_bound' layer is selected, and its context menu is open, with 'Layer Properties' highlighted. The 'Layer Properties' dialog box is open, showing the 'Info' tab with the following details:

Property	Value
Layer Name:	Kar_bound
Number of Features:	1
Number of Points:	14227
Geometry Type:	MultiPolygon
Number of Attributes:	1
DataSource Class:	Shapefile
Charset:	windows-1252
Source Path:	C:\Users\erg_CWG\Desktop\OPEN JUMP\WG-Karnataka\OpenJump\Task1-Visualization\Kar_bound.shp
Extent:	xMin: 74.0543060302735 yMin: 11.574480056762695 xMax: 78.57746887207026 yMax: 18.455120086669922

Attribute information

The screenshot shows the OpenJUMP software interface. The main window is titled "Feature 2997 In kar-taluka (layer is uneditable)". The window displays the geometry of the feature as a POLYGON with 17 vertices. The attribute information is shown in a table below the geometry.

FID	ID_0	ISO	NAM
2822	105	IND	India
2823	105	IND	India
2824	105	IND	India
2825	105	IND	India
2826	105	IND	India
2827	105	IND	India
2828	105	IND	India
2829	105	IND	India
2830	105	IND	India
2831	105	IND	India
2832	105	IND	India
2833	105	IND	India
2834	105	IND	India
2835	105	IND	India
2836	105	IND	India
2837	105	IND	India
2838	105	IND	India
2839	105	IND	India
2840	105	IND	India
2841	105	IND	India
2842	105	IND	India

The main window also displays the geometry of the feature as a POLYGON with 17 vertices. The geometry is shown as a list of coordinates (X, Y) for each vertex, starting from 0:0 and ending at 0:16.

```
POLYGON ((
0:0 74.6427459716798 15.079019546508732,
0:1 74.64798736572266 15.075860977172908,
0:2 74.65387725830078 15.073730468750057,
0:3 74.66487884521496 15.076729774475098,
0:4 74.66883850097662 15.079840660095329,
0:5 74.67034149169928 15.089451789855957,
0:6 74.67344665527355 15.09260177612299,
0:7 74.67739105224615 15.093579292297306,
0:8 74.68358612060558 15.088460922241154,
0:9 74.68582153320318 15.091801643371639,
0:10 74.68782806396484 15.088920593261719,
0:11 74.69140625000011 15.091329574584961,
0:12 74.697250366211 15.093759536743164,
0:13 74.70456695556652 15.10215091705328,
0:14 74.71398162841797 15.082940101623649,
0:15 74.7210464477539 15.075301170349235,
0:16 74.72399139404308 15.074371337890739,
))
```

Buttons for "Format", "Compress", and "OK" are visible at the bottom of the window.

Schema

OpenJUMP

File Edit View Layer Customize Tools Raster Window Help

Project 1

Working

- kar-taluka
- Kar_dist
- kar_roads
- kar_city
- Kar_boun

System

kar-taluka

- Toggle V
- Editable
- Selectabl
- Remove :
- Layer Pro
- Zoom To
- View / Ed
- Schema
- Style
- Database
- Image La
- Save Data
- Save Sele
- Move Lay
- Move Lay
- Cut Selec
- Copy Sel
- Combine

Edit Schema: kar-taluka

Field Name	Data Type
GEOMETRY	Geometry
ID_0	Integer
ISO	String
NAME_0	String
ID_1	Integer
NAME_1	String
ID_2	Integer
NAME_2	String
ID_3	Integer
NAME_3	Integer

Apply changes Revert Changes

Integer
Double
Geometry
Object
Date
String

Changing colours (themes)

The screenshot shows the OpenJUMP software interface. On the left, the 'Project 1' tree view shows a 'Working' folder containing 'kar_roads', 'kar_city', and 'Kar_bound', and a 'System' folder. The 'Kar_bound' layer is selected, and its properties are shown in a list on the right, including 'Toggle Visibility', 'Editable', 'Selectable', 'Remove Selected', 'Layer Properties', 'Zoom To Layer', 'View / Edit Attributes', 'Schema', 'Style', 'Database', 'Image Layer Manager', 'Save Dataset As...', 'Save Selected Data', 'Move Layer Up', 'Move Layer Down', 'Cut Selected Layer', 'Copy Selected Layer', 'Combine Selected Layers', 'Add New Features', and 'Paste Items'.

The main window displays a map with a grid and several roads. A red arrow points from the 'Change Styles' dialog box to the 'Kar_bound' layer in the project tree. The 'Change Styles' dialog box is open, showing the 'Rendering' tab. The dialog box contains the following options:

- Fill: [Color selection box]
- Fill pattern: 1 [Pattern selection box]
- Line: [Color selection box]
- Line pattern: 3 [Pattern selection box]
- Sync line colour with fill colour.
- Line width: [Slider] 1
- Transparency: [Slider] 105
- Vertices. Size: [Slider] 4
- Preview: [Preview area]
- Point Display Typ: [Square] [Bitmap Change]

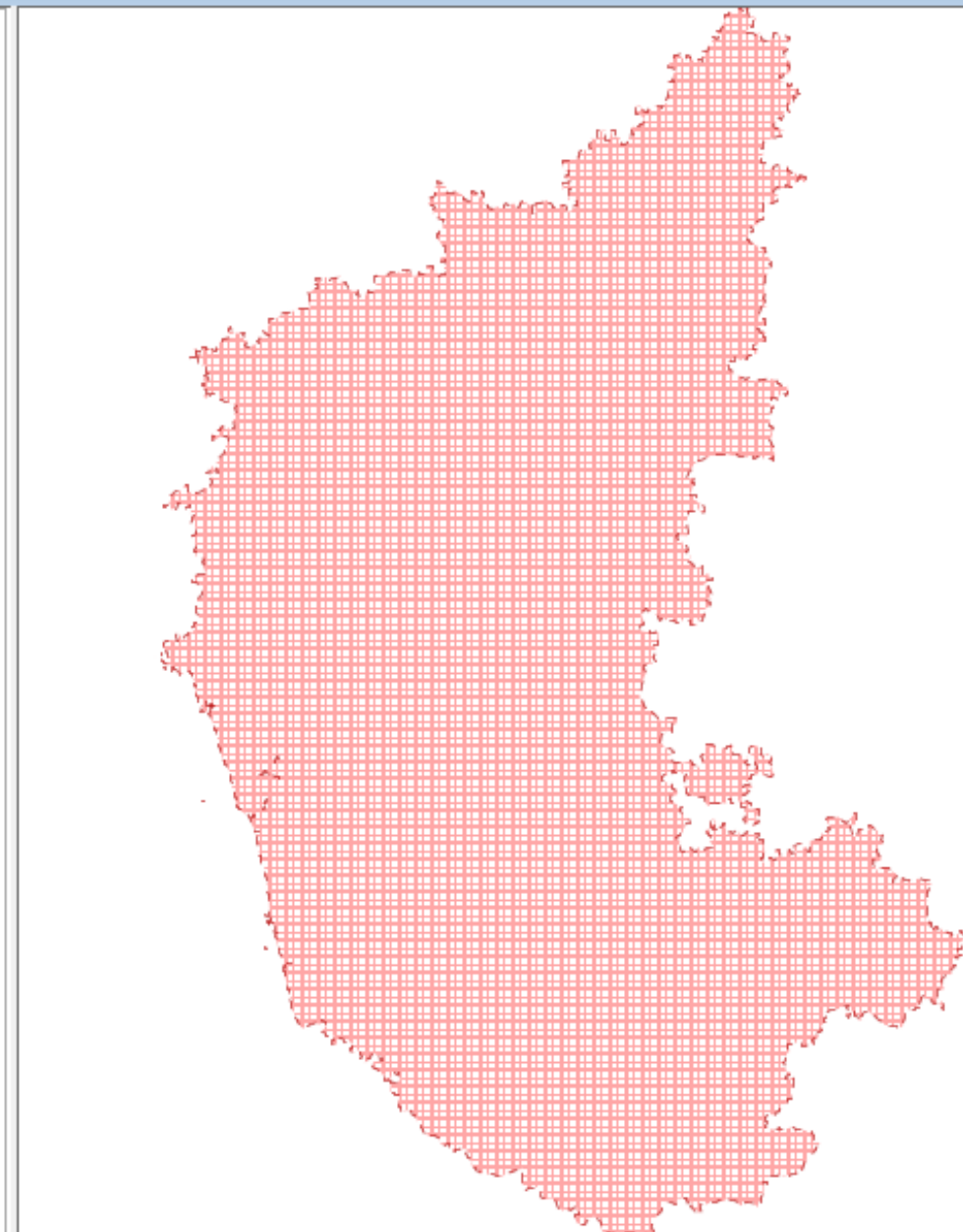
At the bottom of the dialog box are buttons for 'OK', 'Cancel', and 'Apply'. A 'Presets' list is visible on the right side of the dialog box, showing various color and pattern options.

You can use this dialog to change the colour, line width, and other visual properties of a layer.



Project 1

- Working
 - kar_roads
 - kar_city
 - kar_bound
- System



Load taluk data, change colours with respect to each district

Change Styles

Rendering Scale Colour Theming Labels Decorations

Enable colour theming

Attribute: NAME_2

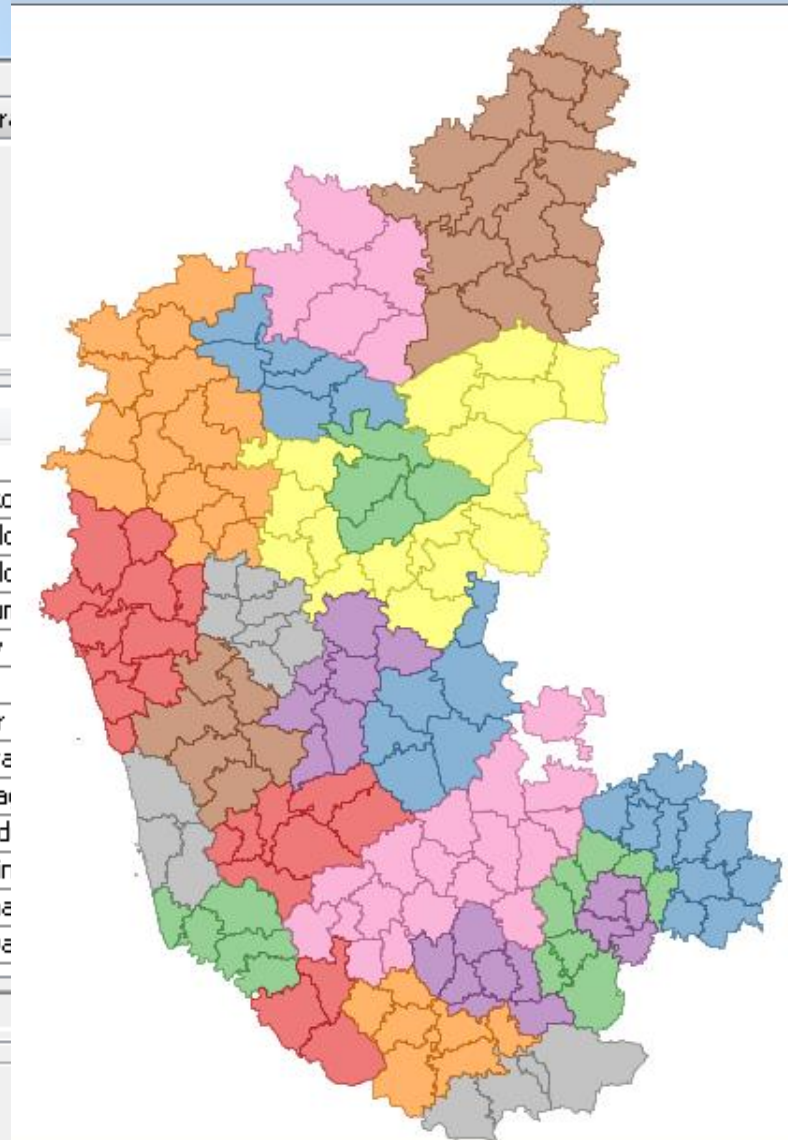
Classification Method: Unique Value

Colour Scheme:

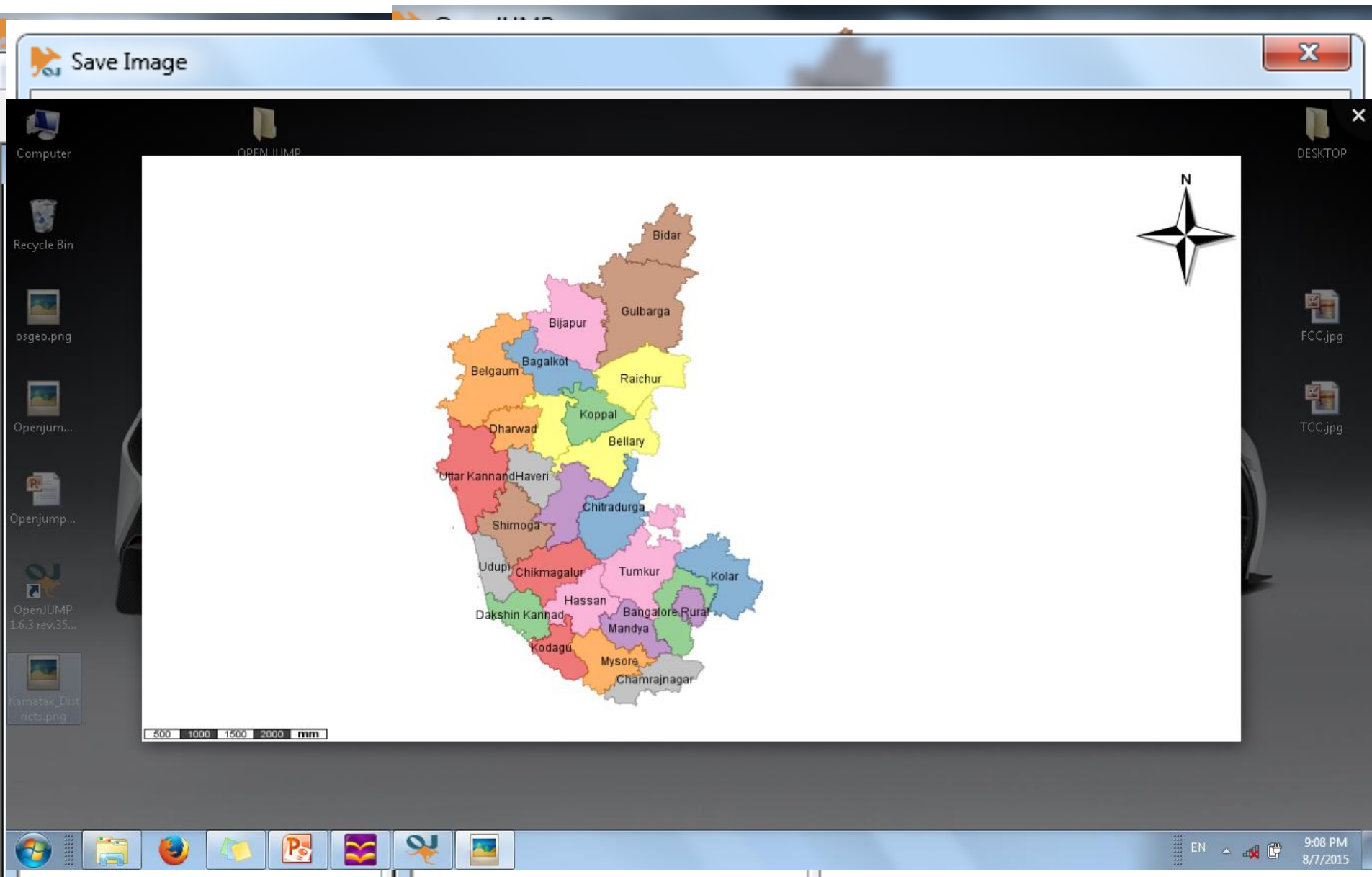
Attribut...	Attribute values	Label
	All other values	
	Bagalkot	Bagalko
	Bangalore Rural	Bangalc
	Bangalore Urban	Bangalc
	Belgaum	Belgaur
	Bellary	Bellary
	Bidar	Bidar
	Bijapur	Bijapur
	Chamrajnagar	Chamra
	Chikmagalur	Chikma
	Chitradurga	Chitrad
	Dakshin Kannad	Dakshir
	Davanagere	Davana
	Dharwad	Dharwa

OK Cancel Apply

You can use this dialog to change the colour, line width, and other visual properties of a layer.

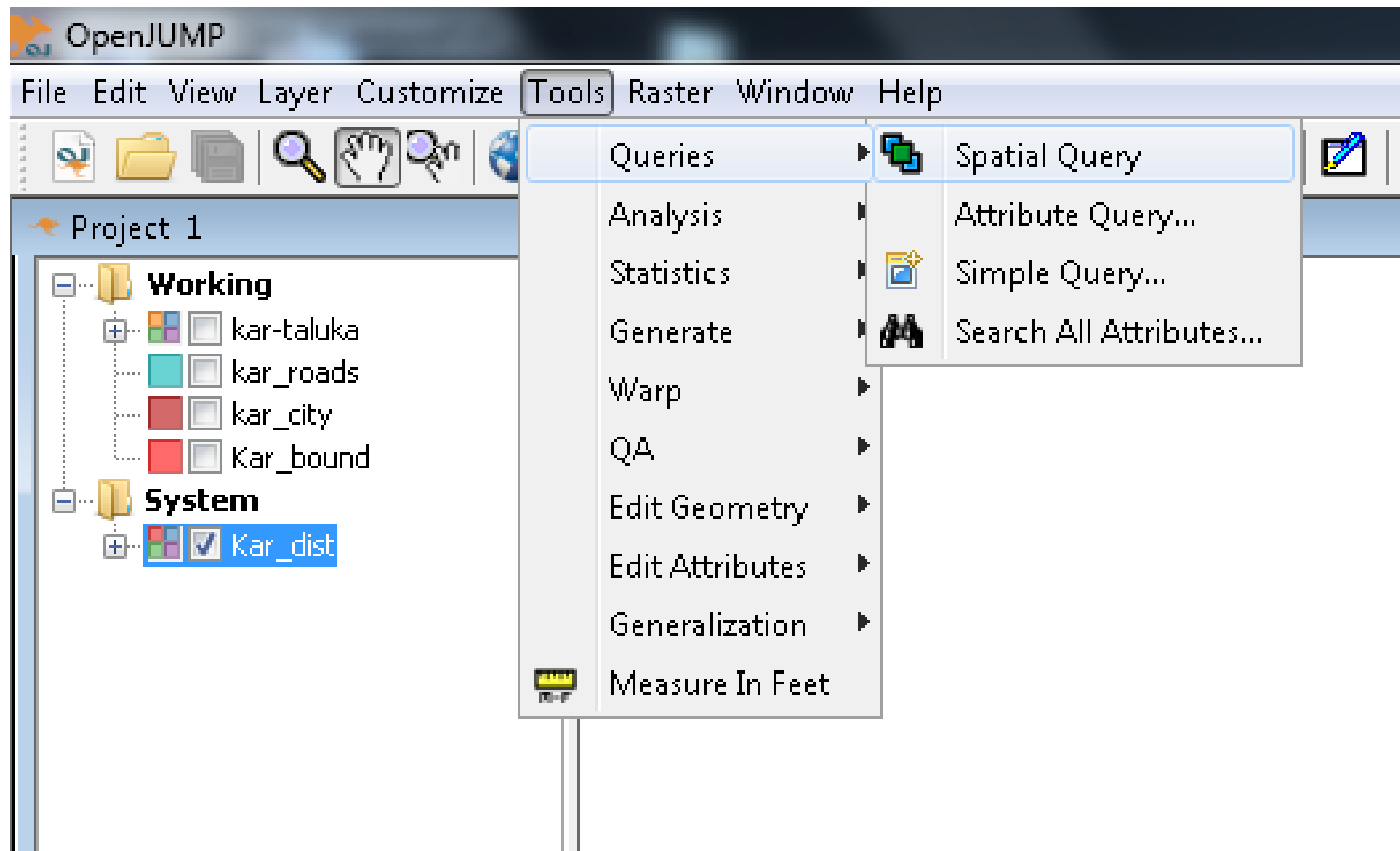


Output – Thematic Maps

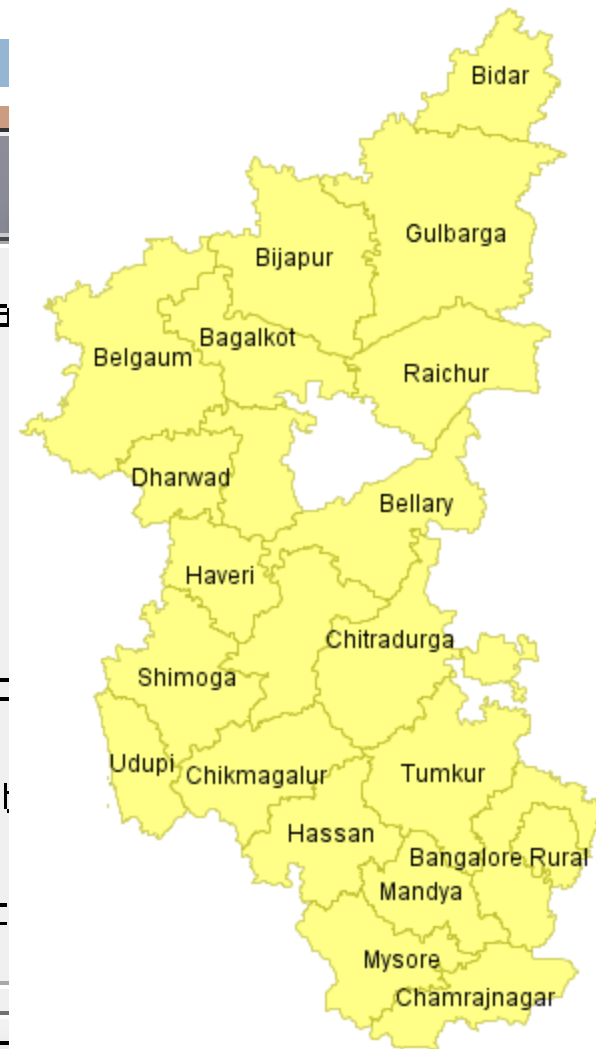
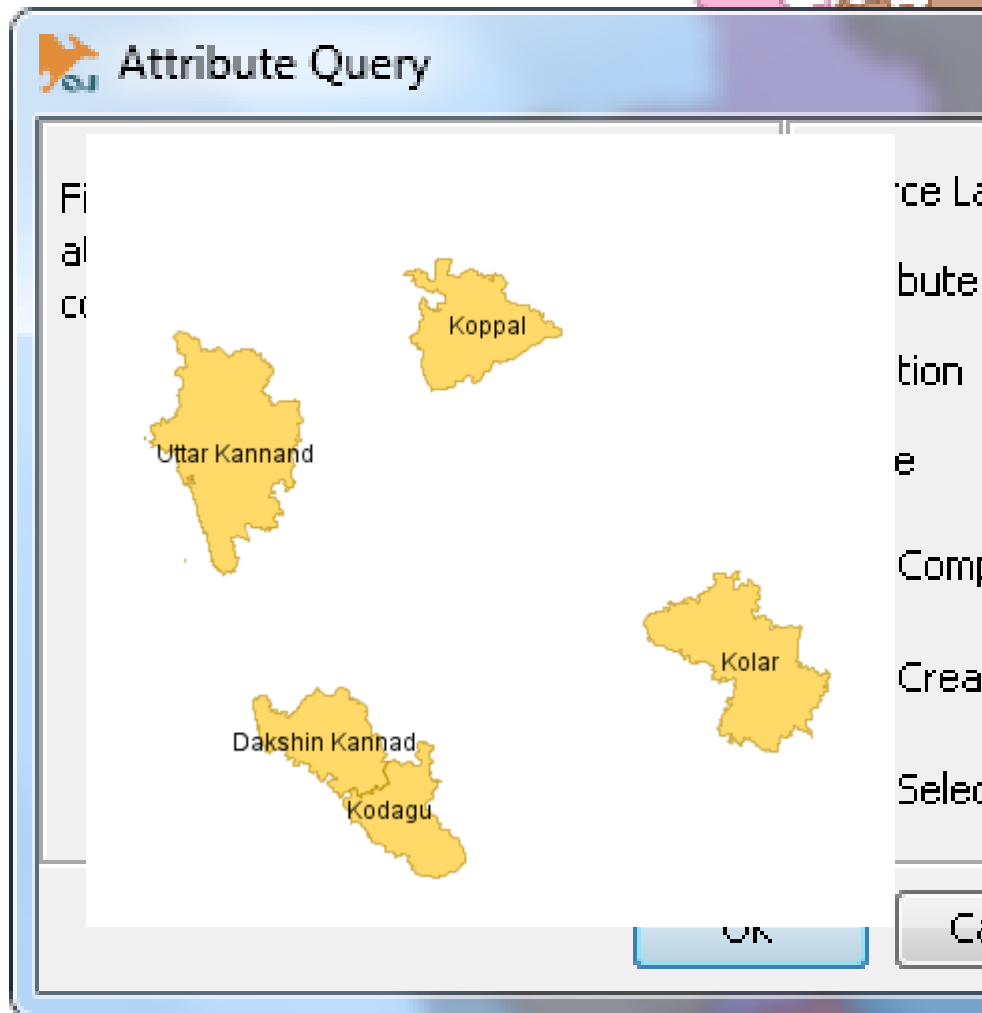


Querying

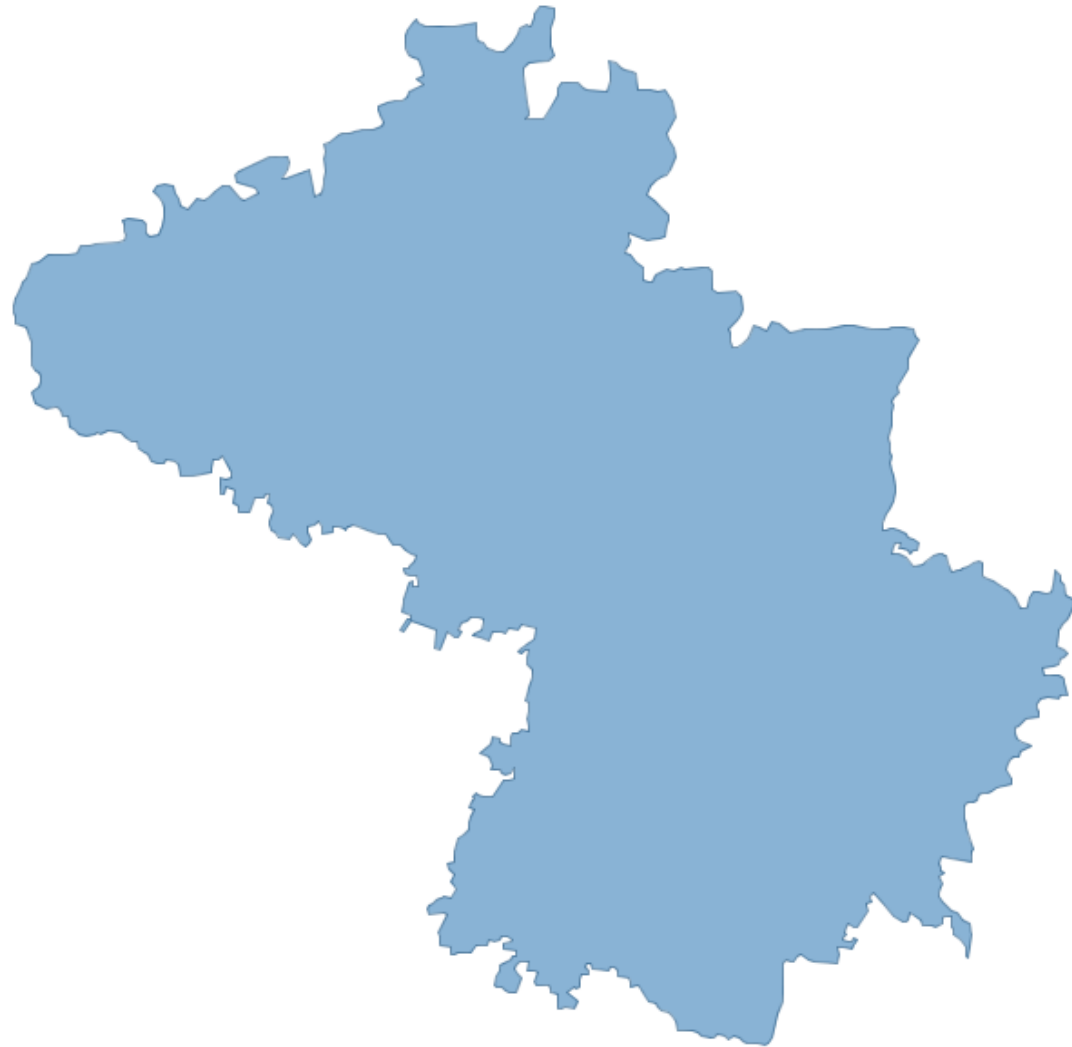
- Attribute Query or Spatial Query or Simple Query



Attribute Query




Extract Kolar using Attribute Query



Spatial Query

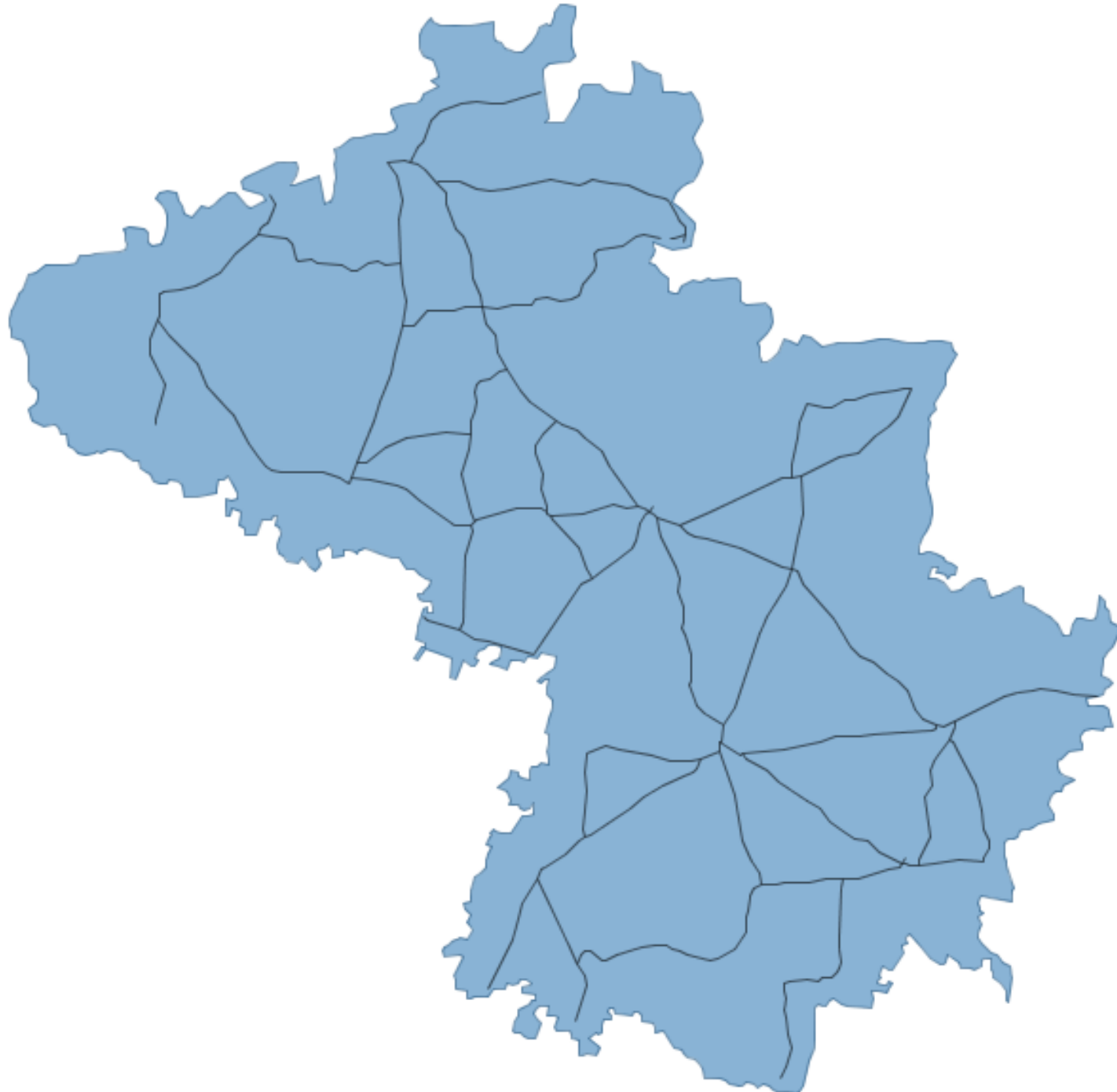
- Mathematical operation with respect to various vector data sources
- Extraction of roads in Kolar District

 Spatial Query

Finds the source

 Spatial Query

Finds the source for a given spatial relation feature in the mask Source.* FROM Source Source <Relation>



Simple Query

Query Builder

Query manager

Open


Save as...

Filter On Attribute Type

String C

Numeric

Geometric

Layer:  kar-taluka

Attribute: NAME_2 (STRING)

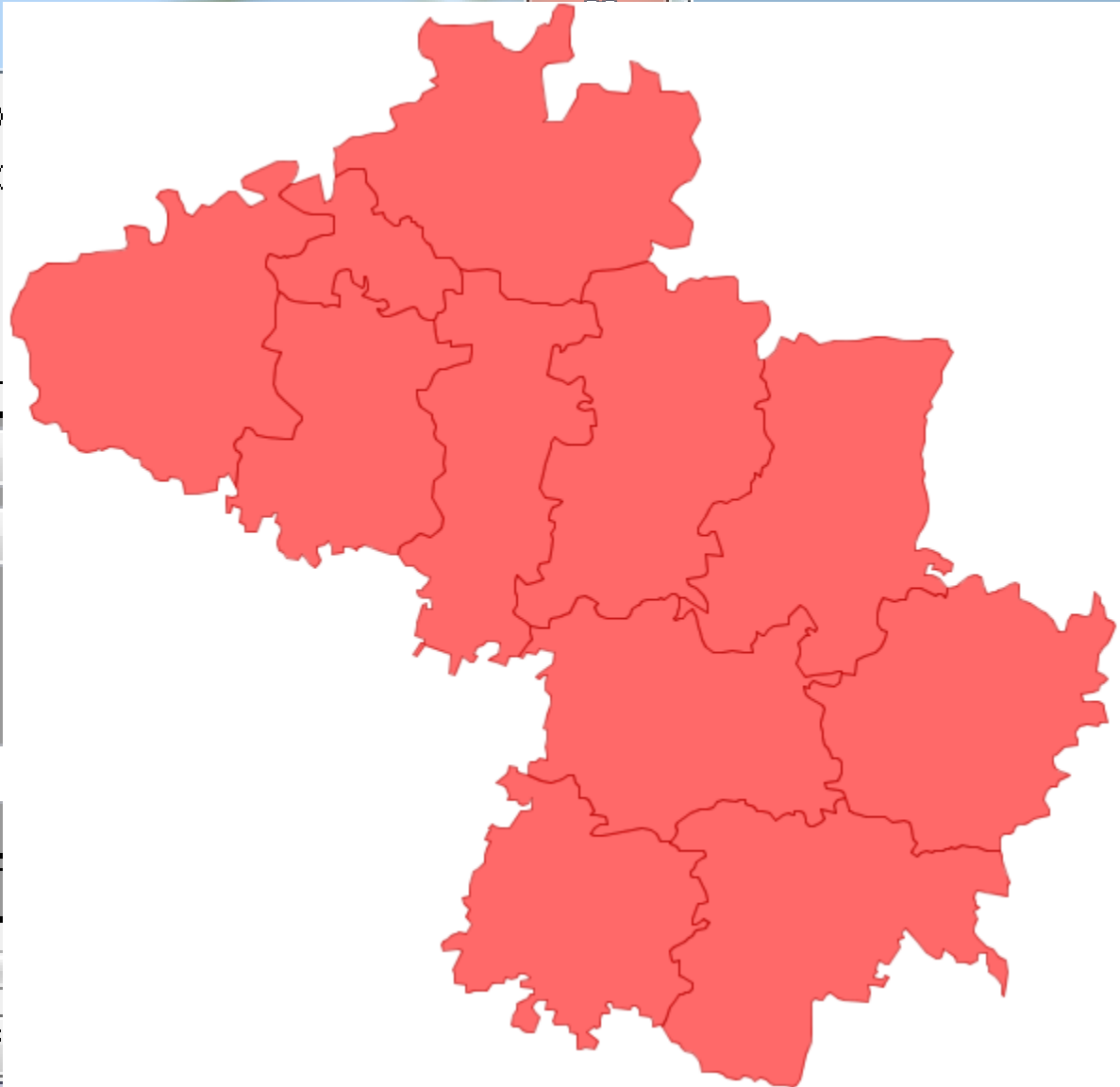
Function:

Operator: equals

Value: Kolar

Select from "kar-taluka" features where NAME_2 = Kolar

Valid Ref





Doubts if any ??

Summarize

TASK

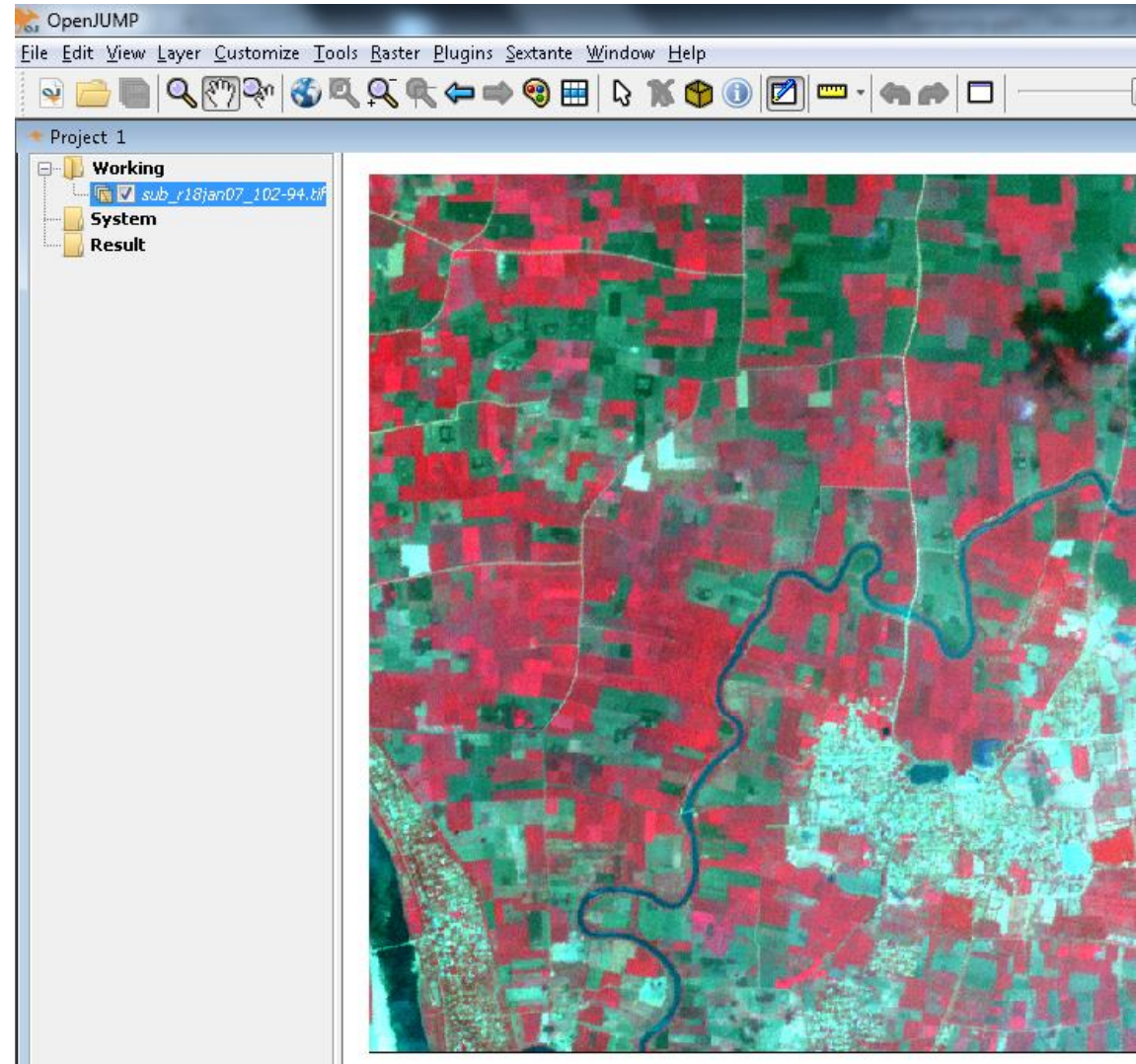
- Extract Taluks, roads and cities in kolar district
- Generate thematic map output showing Taluks, roads, cities and city names

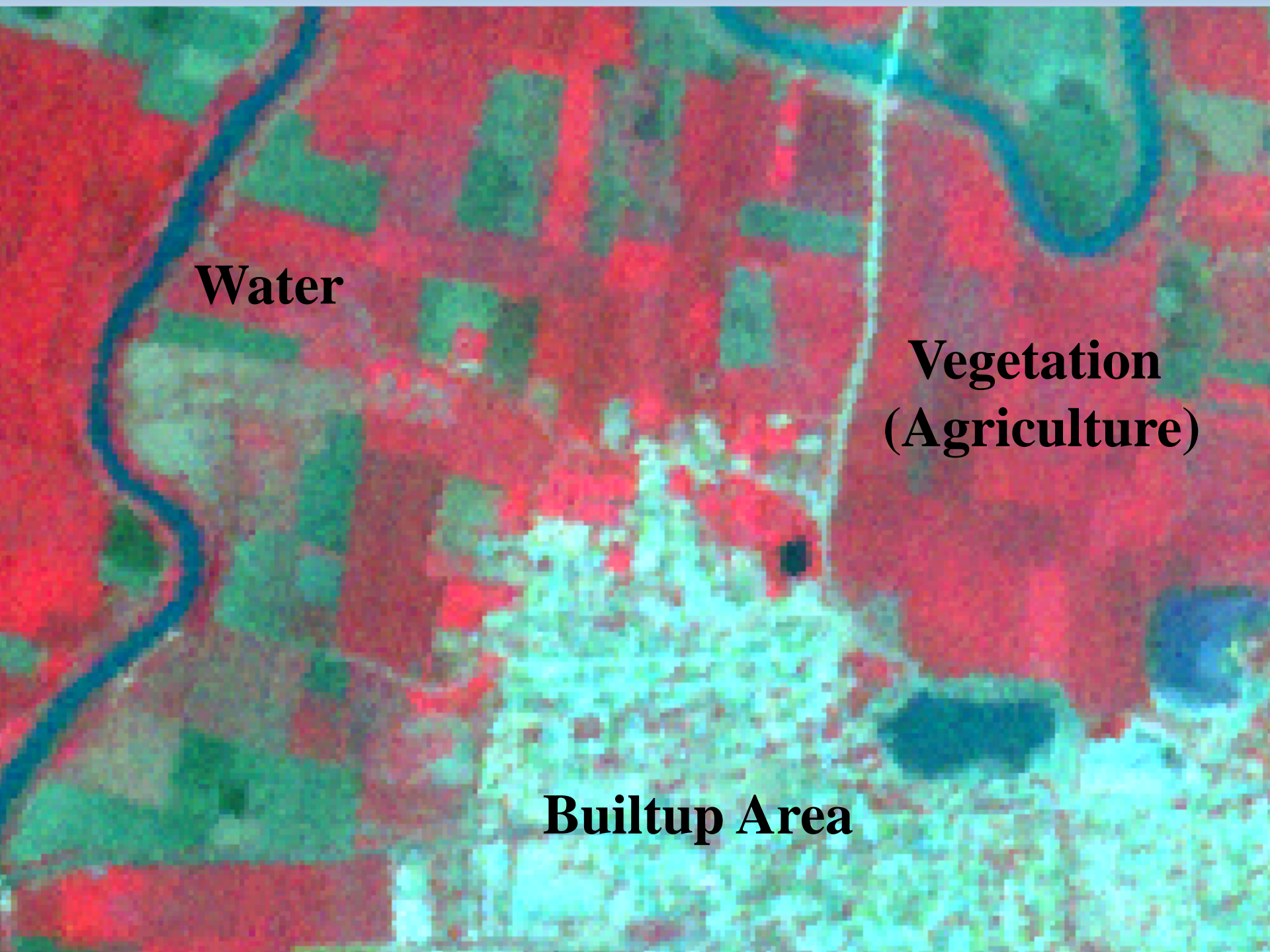




CREATING SHAPEFILE

Open a Raster dataset





Water

**Vegetation
(Agriculture)**

Builtup Area

- New
- Open...
- Open Fi...
- Open Pr...
- Open Re...
- SQL Run Dat...
- Add Im...
- Save Da...
- Save lay...
- Save Pro...
- Save Pro...
- Save Vie...
- Copy Vi...
- Printer
- Exit



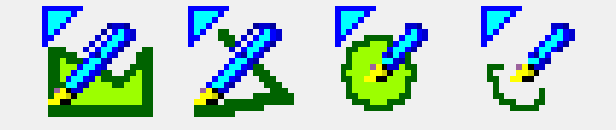
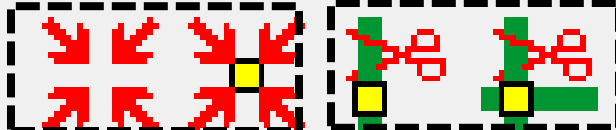
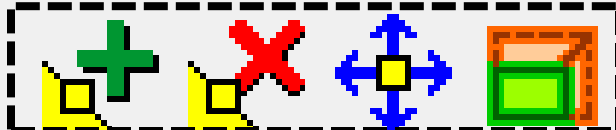
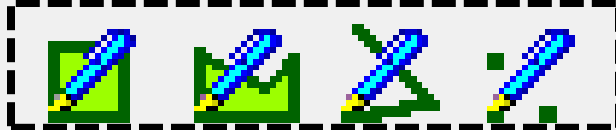
Project 1

- Working
 - New
 - sub_r18jan07_102-94.tif
- System
- Result

Editing

Options...

Editing



Selection tool

Draw

Snap Vertex

Move, Rotate

**Auto Complete
Polygon**

Move

Edit vertex

Split line, Node line

Create Circle

**Create Polygon
from closed area**

Selection Style		Dataset	
View / Edit	 Snap Vertices Tools		
Skins	Measurement	Constraints	Snap / Grid

Snapping

Tolerance: pixels

- Snap to vertices.
- Snap to vertices and lines.
- Snap to grid

Grid Display

- Show grid. Size: model units
- Show grid as dots.
- Show grid as lines.

While digitising

- **Shift + Alt** to pan
- **Alt + Left click** mouse to Zoom in
- **Alt + Right click** mouse to Zoom out
- **Alt + Scroll mouse wheel** to zoom in or zoom out
- **Double click (Left Mouse Button)** to end digitization of a feature
- Set snap distance in order to avoid topological errors

ADD
Delete

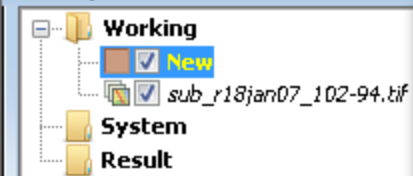
*Edit Schema: New

Field Name	Data Type
GEOMETRY	Geometry

Apply changes Revert Changes Force invalid conversions to null.



*Project 1

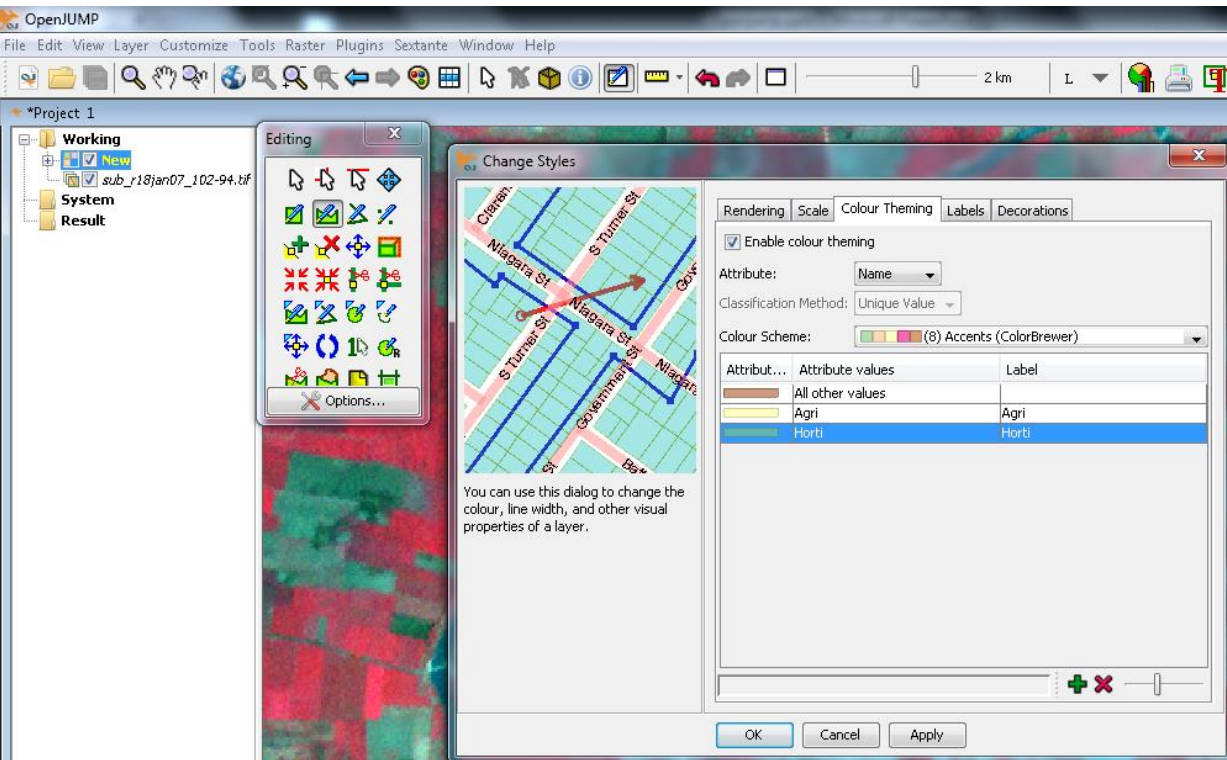


Adding attribute information

The screenshot shows a window titled "Attributes: Project 1:New" with a toolbar containing navigation and tool icons. Below the toolbar, a section labeled "New (1 Feature)" contains a table with the following data:

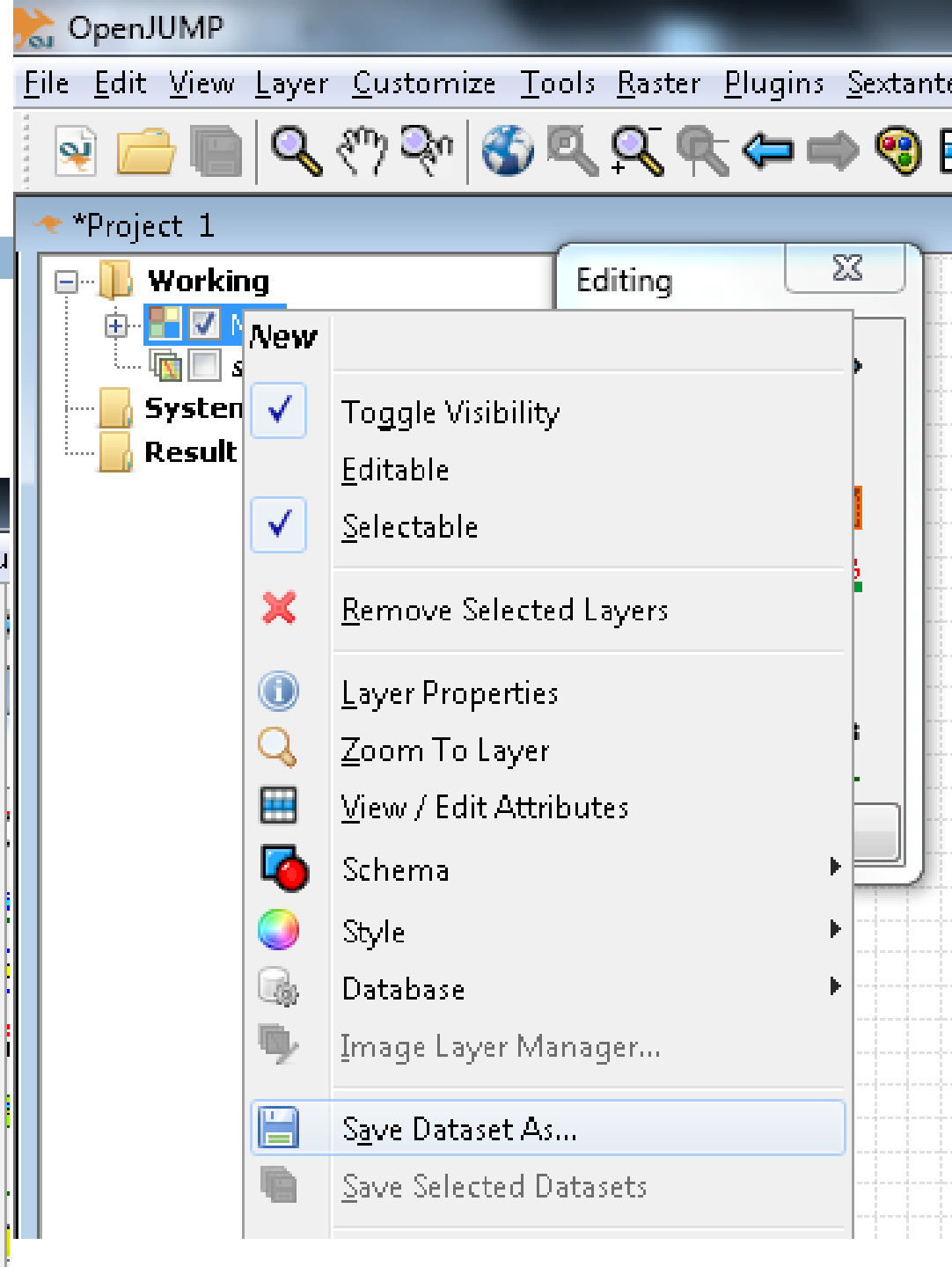
...	FID	Name	Area	Perimeter
	3175	Agri		

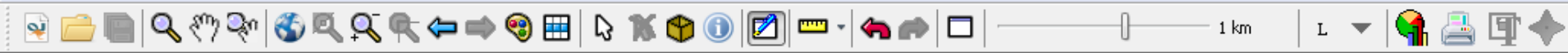
Assign Themes/Colours



Save

- Save workspace
- Save Results





Project 1

- Working
 - New
 - sub_r18jan07_102-94.tif
- System
- Result

Editing

Options...

Save Project

Save in: New Folder

Recent Items

Desktop

My Documents

Computer

Network

File name: trial

Files of type: JUMP Project Files (*.jmp; *.jcs)

Save

Cancel

OK

- FME GML
- WKT
- ESRI Shapefile
- PostGIS Table
- csv
- dxfl

Save selected file

Project 1

- Working
 - New
 - sub_r18jan07_102-94.tif
- System
- Result

Editing

Options...

Save Project

Save in: New Folder

Recent Items

Desktop

My Documents

Computer

Network

File name: trial

Files of type: JUMP Project Files (*.jmp; *.jcs)

Save

Cancel

Save selected file

Layers without datasource management

There are 1 newly created layers without datasource
(hover the label to see the list)

- Do not save those layers on the Hard Drive
- Save them as JML files
- Save them as shapefiles

OK Cancel



Doubts if any ??

Summarize

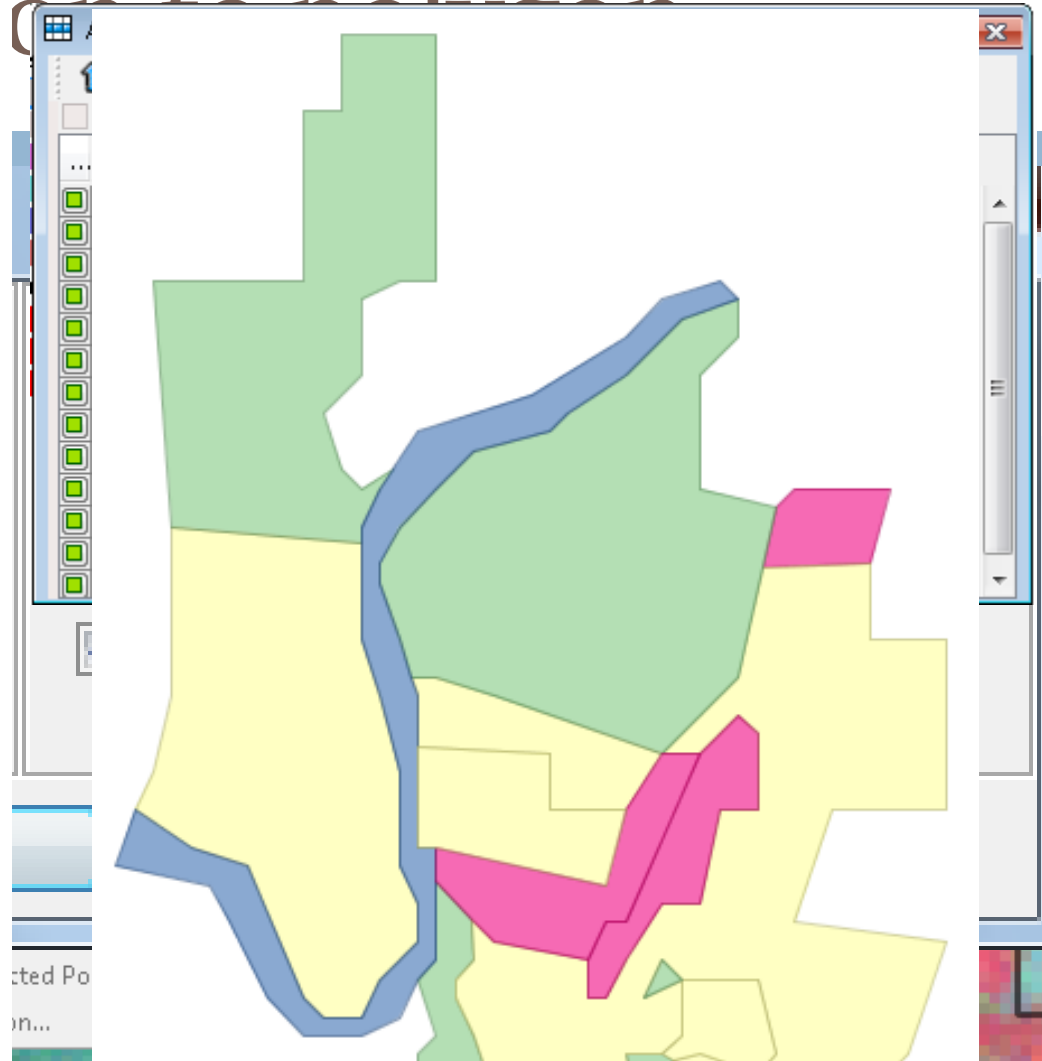
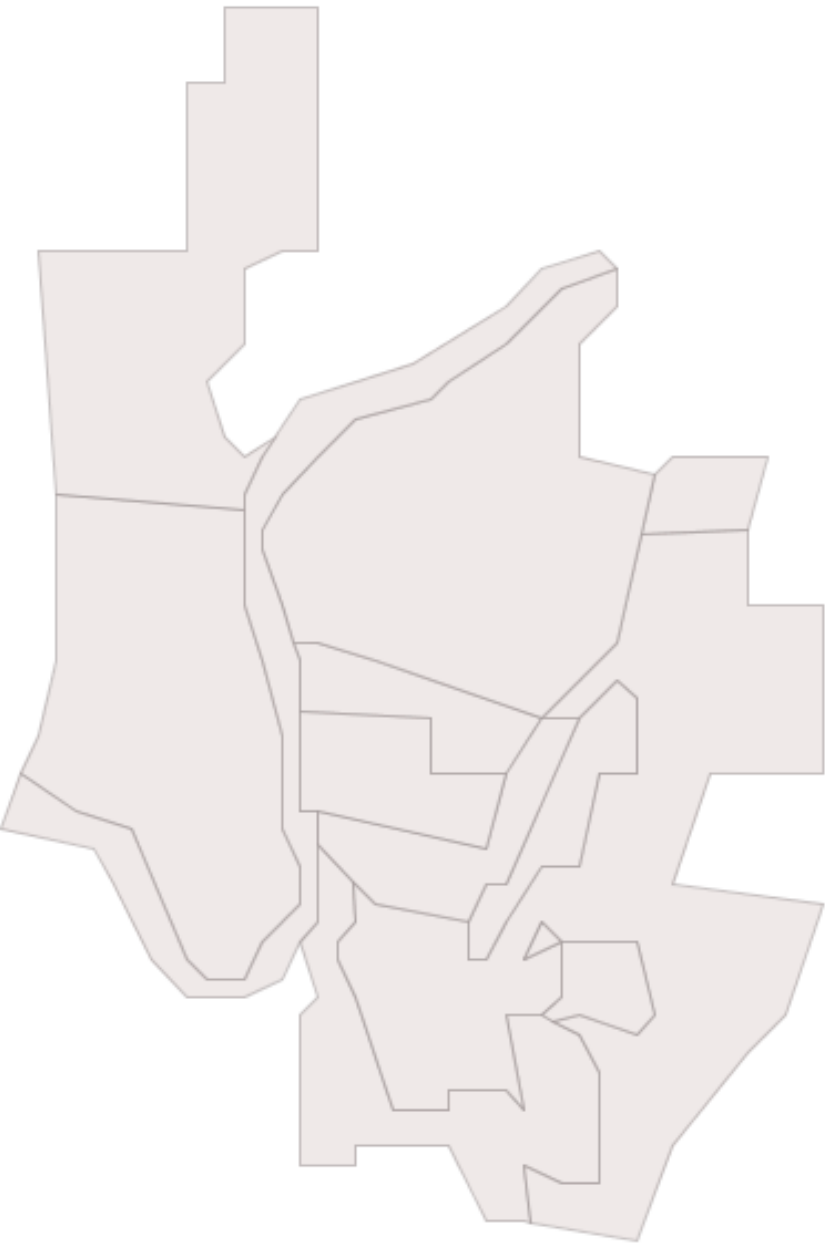
TASK

- Digitise Road using Line feature
- Digitise a set of features using line feature



SPATIAL ANALYSIS

Contouring

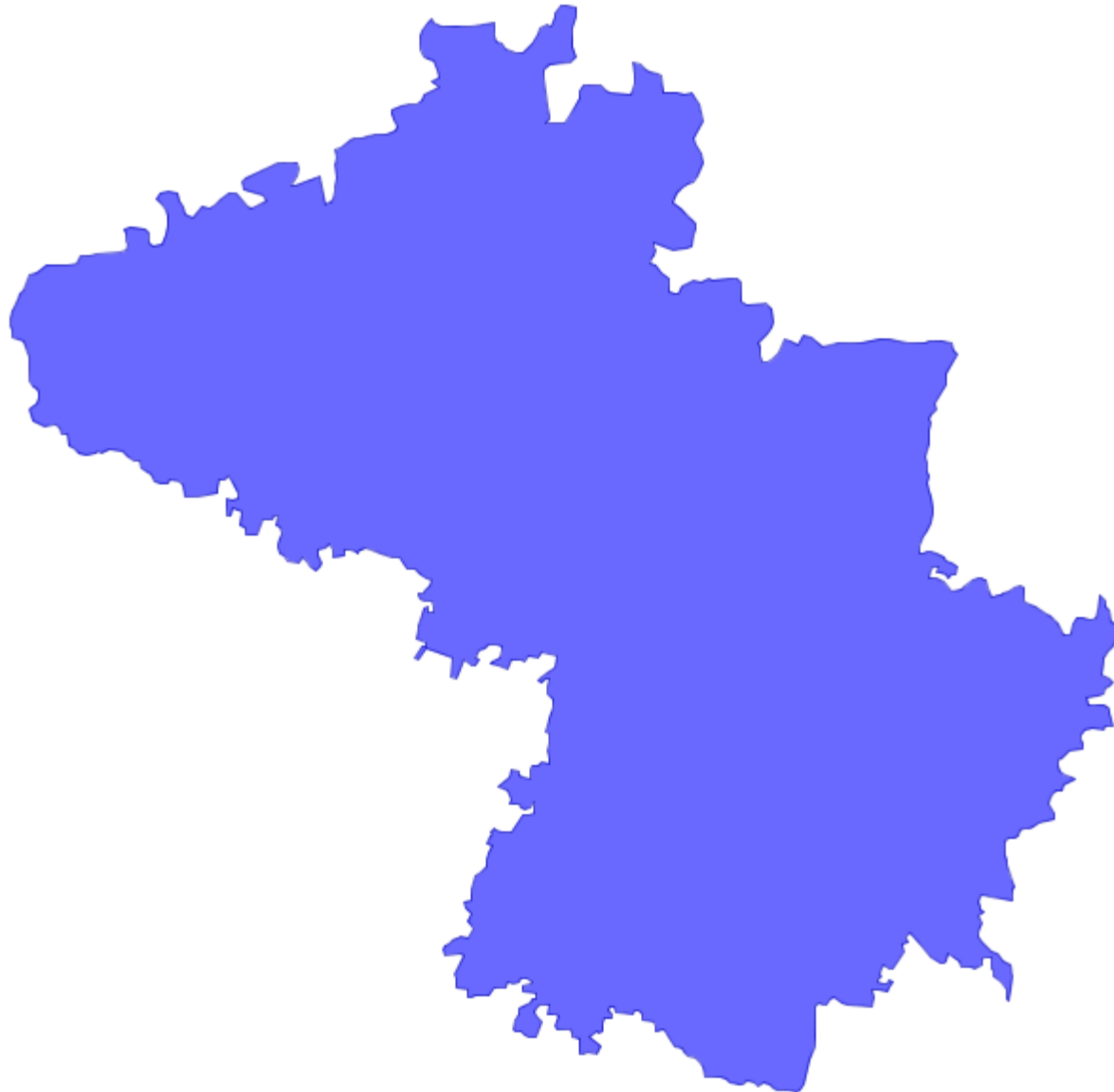


Spatial Analysis

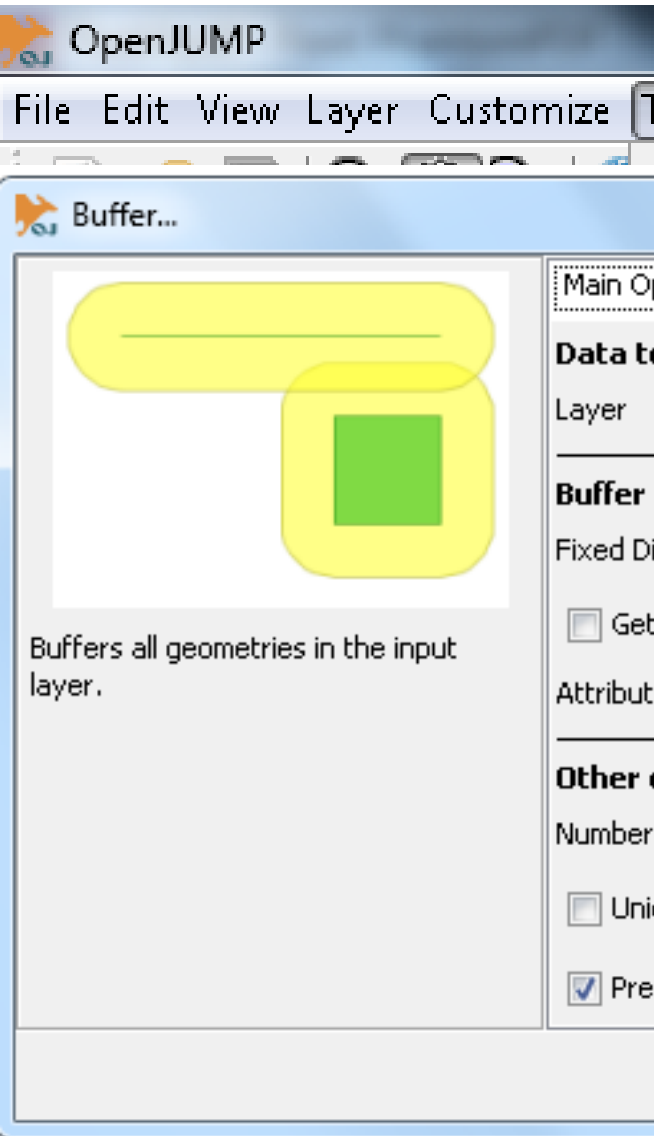
□ Union/

Union/Dissolve/

Dissolve layer
kar-taluka_NAME_2_
using attribute ID_0,
result in a new layer.



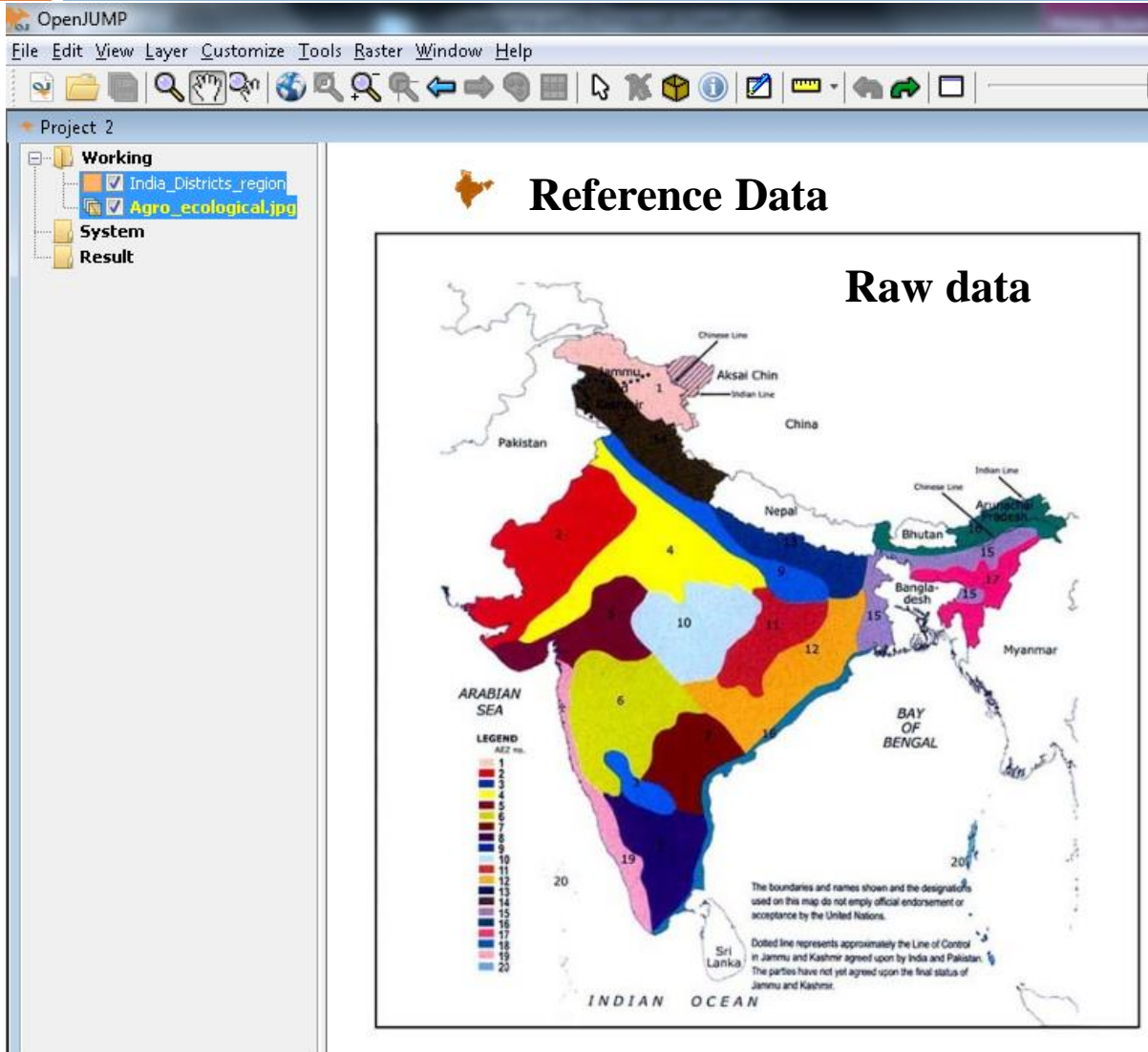
Buffer



TASK

- Open rf boundary (Reserve Forest) of Karnataka
- Extract RF boundary under Uttarakannada, Dakshina Kannada
- Calculate the total area under Reserve forest

Warping/Georeferencing



 Reference Data

Raw data

Requires reference data and raw data

Open Raster,
digitise, create
vector layer.

Use the digitised
vector layer as the
raw data



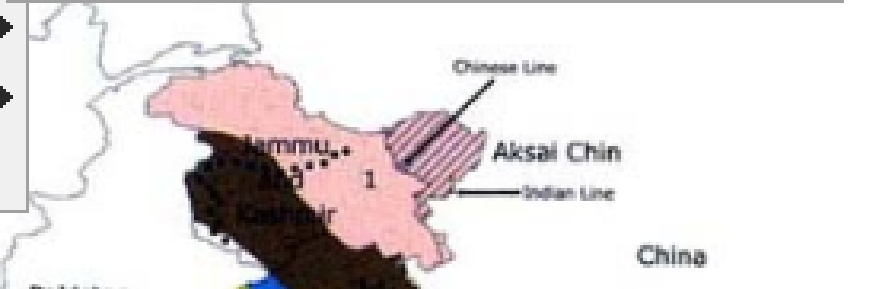
Project 2

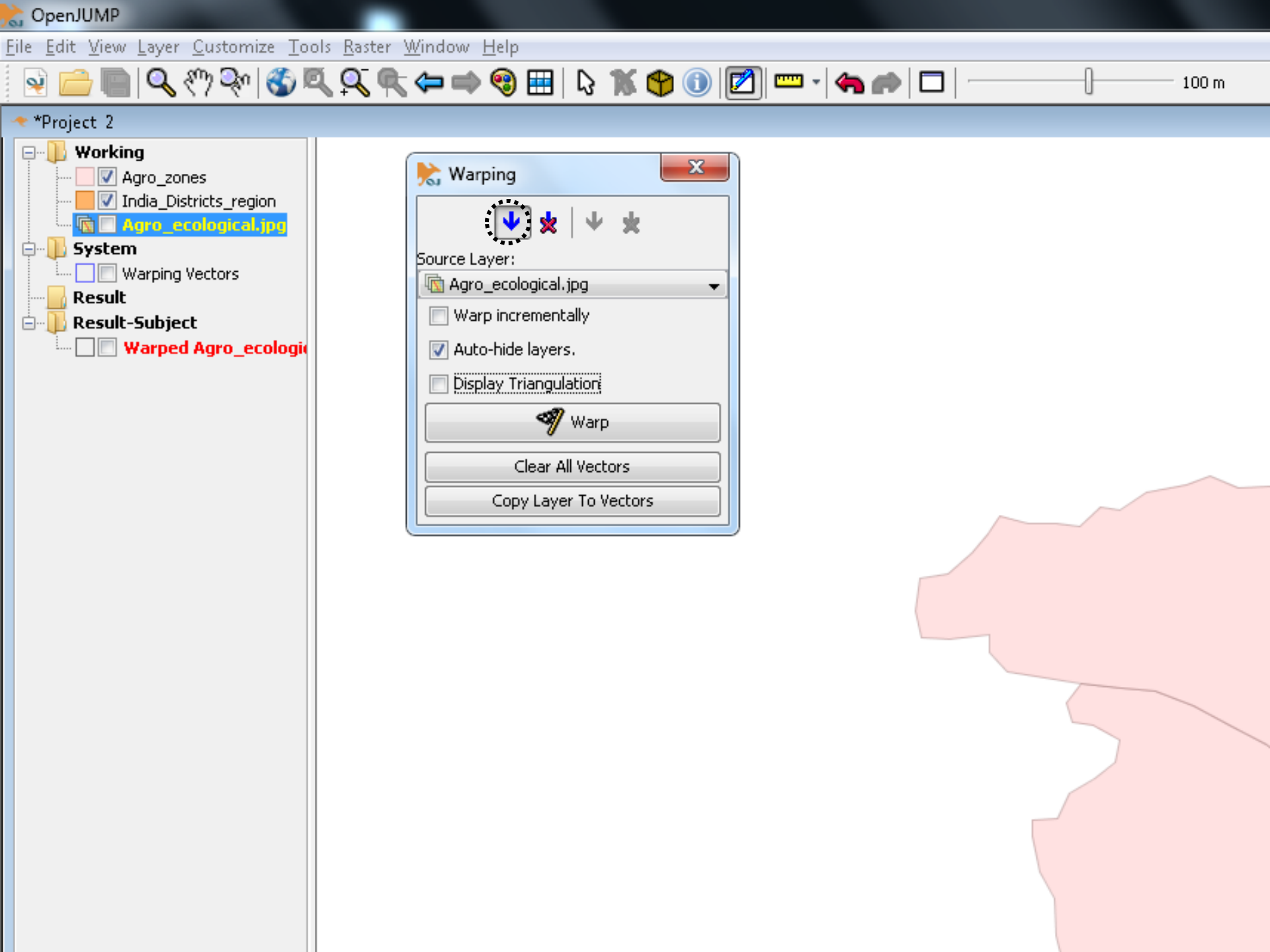
- Working
 - India_Districts_region
 - Agro_ecological.jpg
- System
- Result

- Queries
- Analysis
- Statistics
- Generate
- Warp
- QA
- Edit Geometry
- Edit Attributes
- Generalization
- Measure In Feet



- Warping...
- Affine Transform (from warping vectors)
- Affine Transform (from parameters)...





- *Project 2
 - Working
 - Agro_zones
 - India_Districts_region
 - Agro_ecological.jpg
 - System
 - Warping Vectors
 - Result
 - Result-Subject
 - Warped Agro_ecologi

Warping

Source Layer:
Agro_ecological.jpg

Warp incrementally

Auto-hide layers.

Display Triangulation

Warp

Clear All Vectors

Copy Layer To Vectors



Project 2

- Working
 - Agro_zones
 - India_Districts_region
- System
 - Warping Vectors
- Result
- Result-Subject

Warping

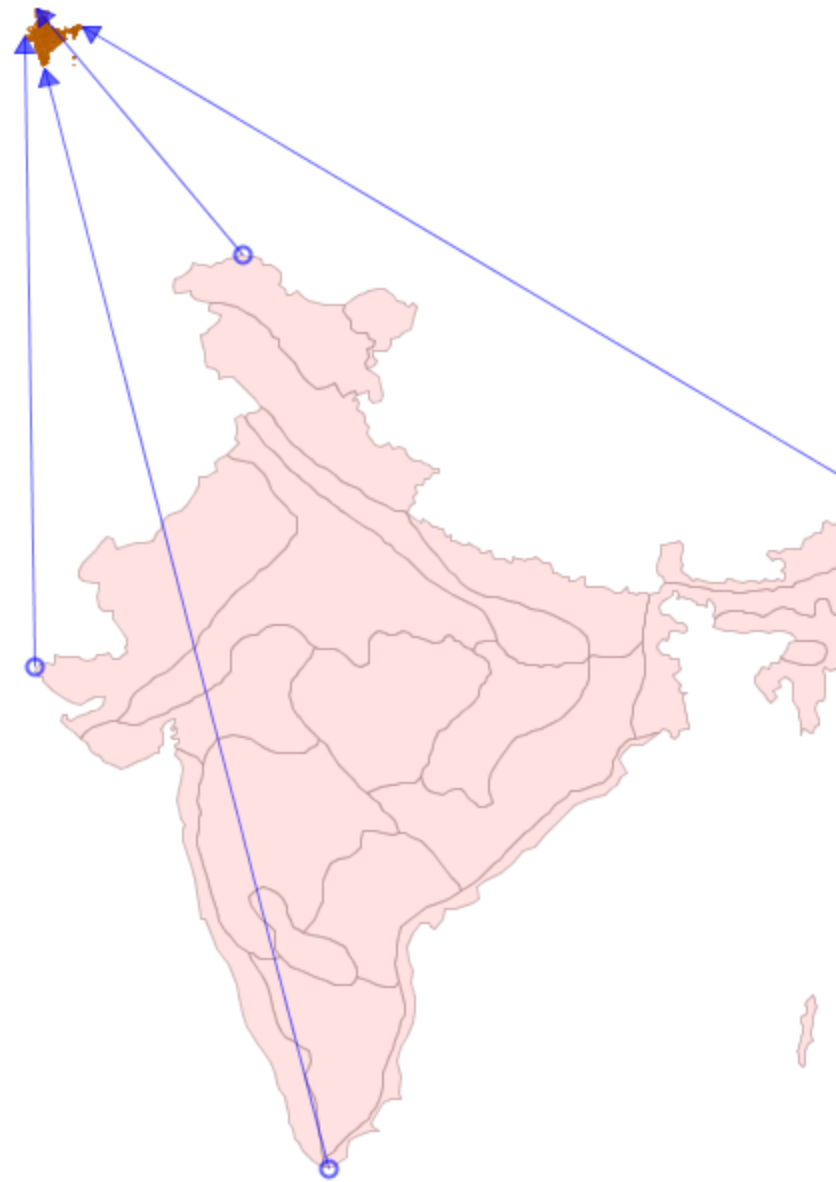
Source Layer: Agro_zones

- Warp incrementally
- Auto-hide layers.
- Display Triangulation

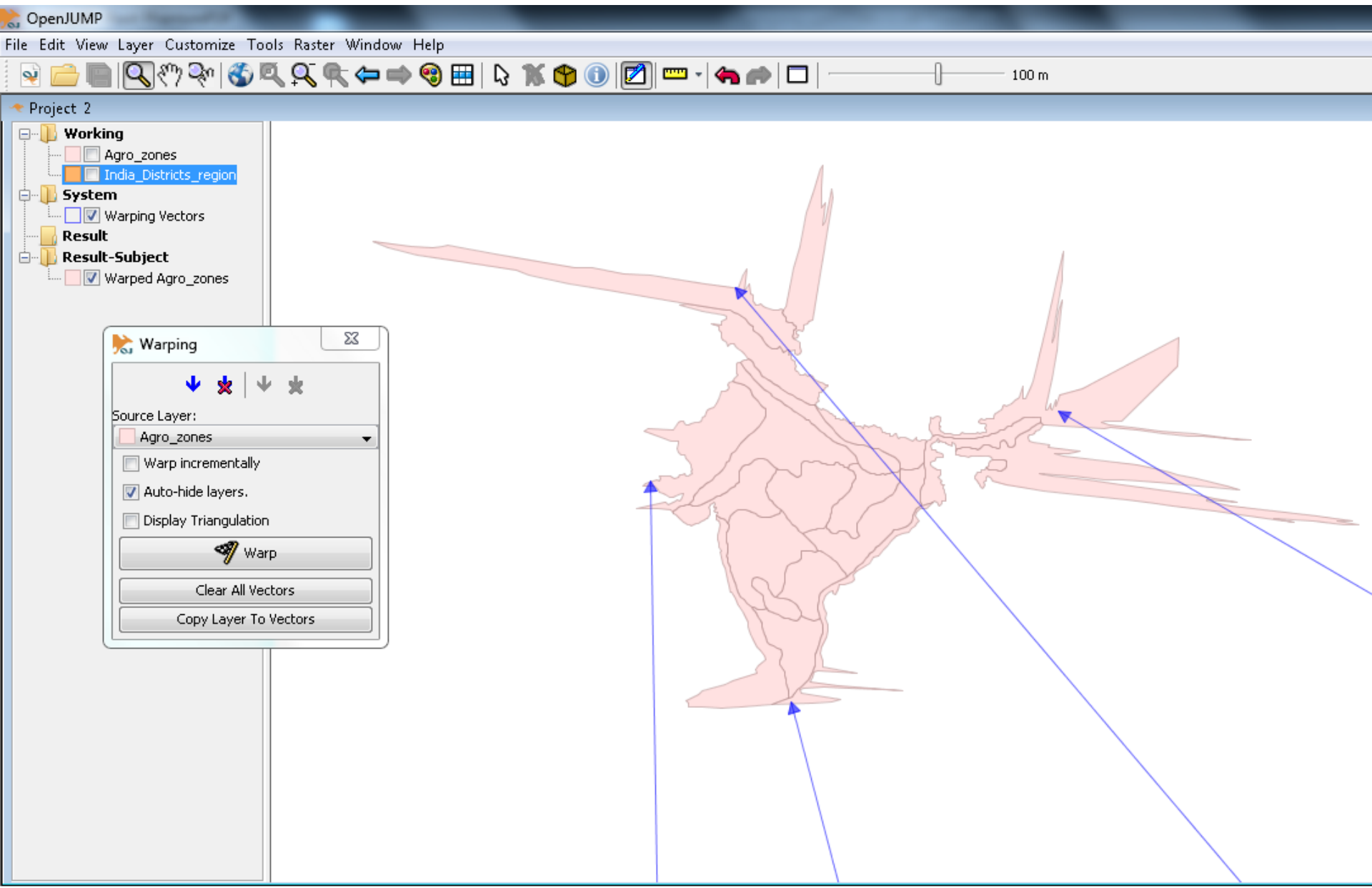
Warp

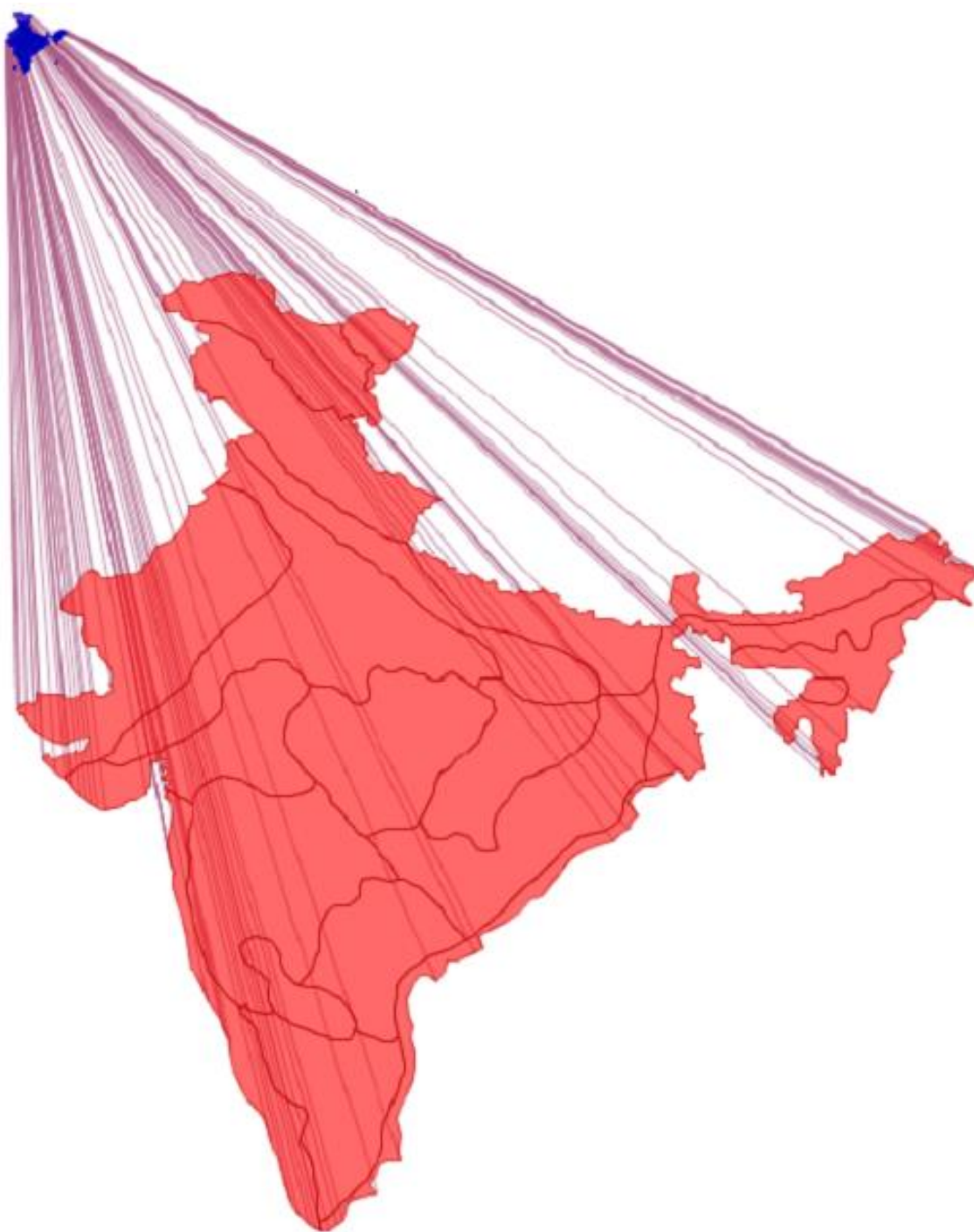
Clear All Vectors

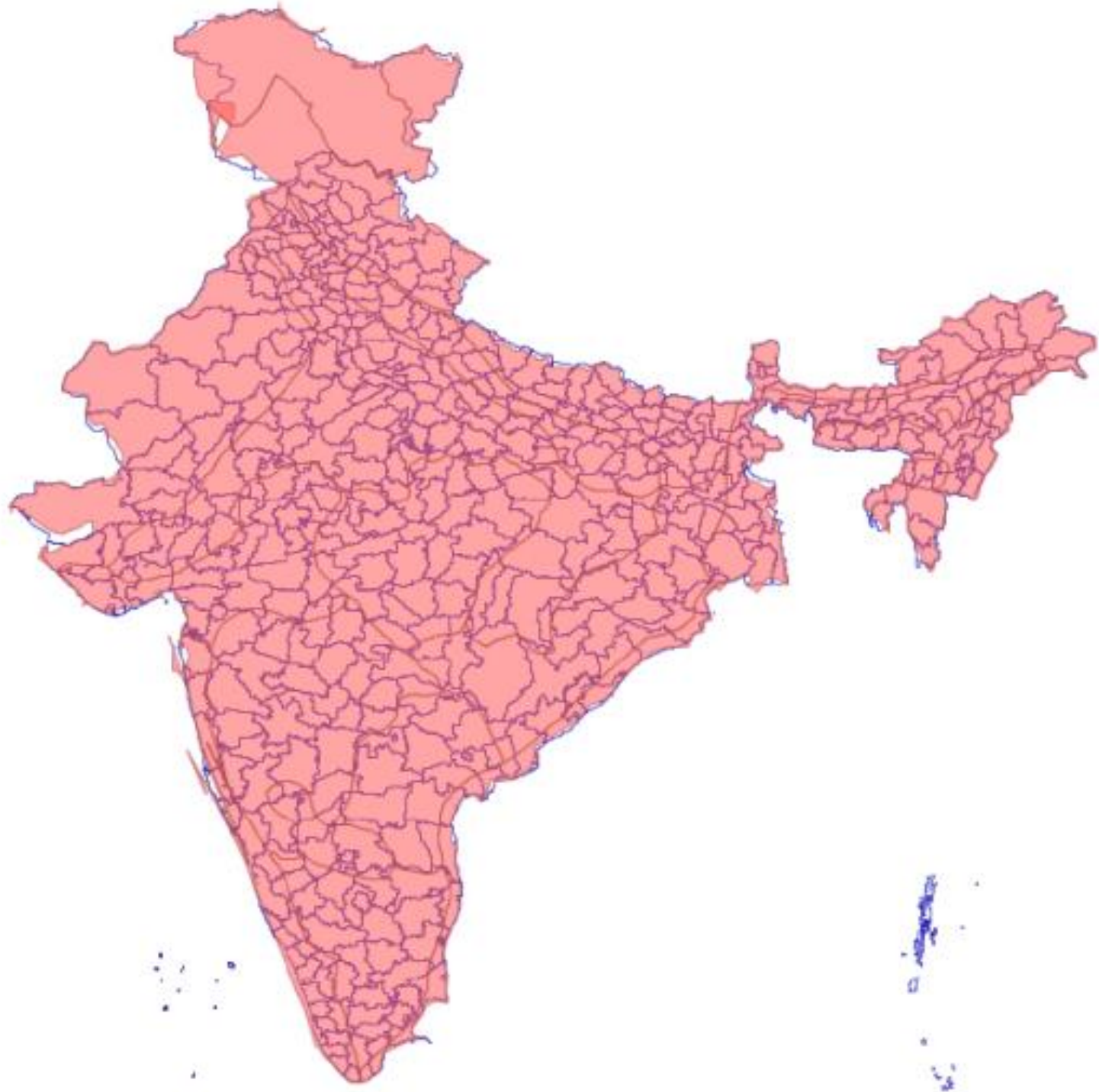
Copy Layer To Vectors



Large number of points needs to be considered during warping and to avoid distortions







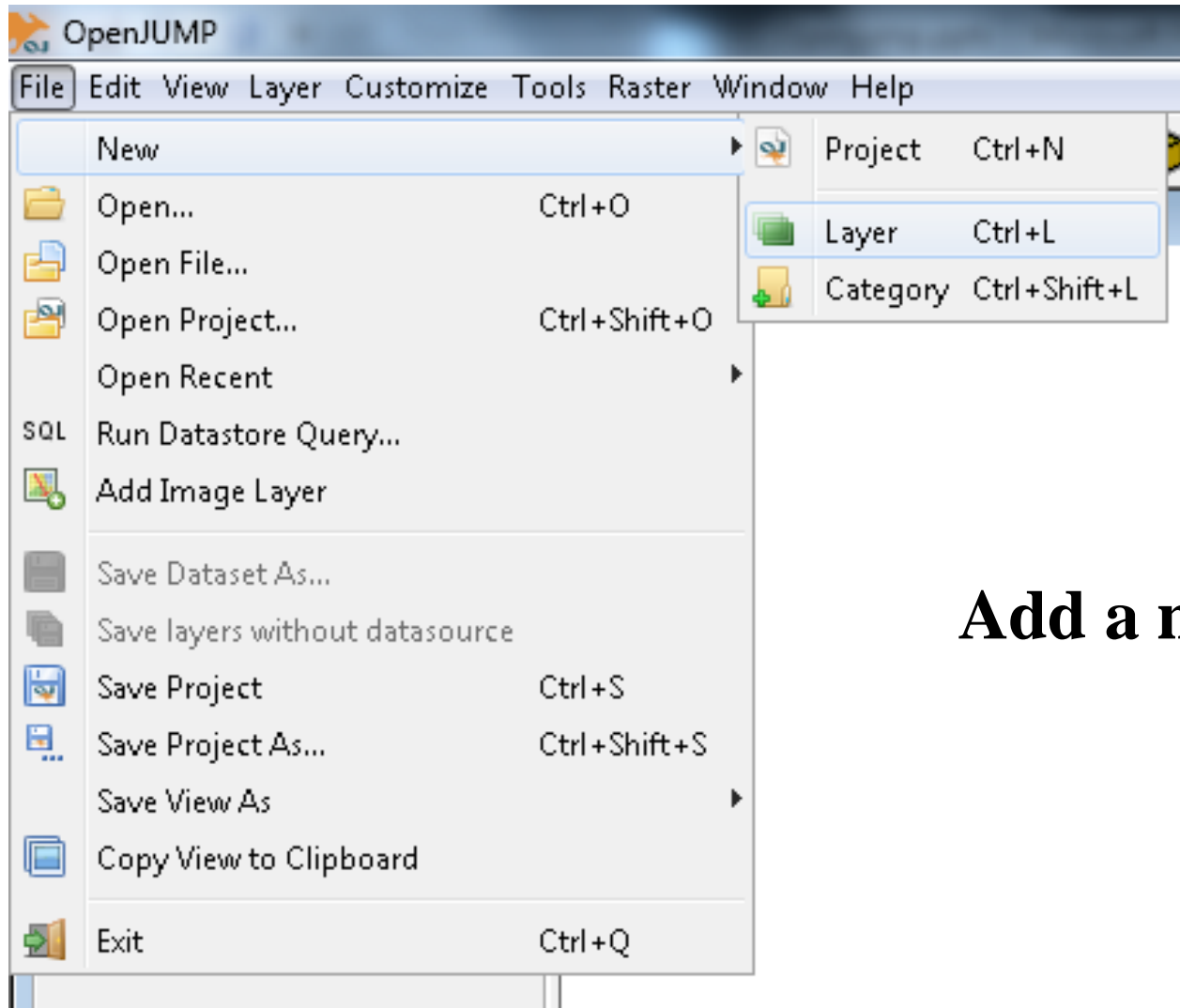
Task

- Georeference Kolar district image.

Digitise the boundary

Warp

Importing data from spreadsheets, GPS to GIS



Add a new layer

Create or use existing excel spread sheet using the GPS data (field information)

Feature		X	Y	
Point	(	Longitude	Latitude)
Point	(	Degree	Degree)
Point	(	Meters	Meters)

Point	(	74.159	14.842)
Point	(	74.2	14.53)
Point	(	74.36	14.26)
Point	(	74.38	14.97)
Point	(	74.49	14.78)

- Undo Ctrl+Z
- Redo Ctrl+Y
- Cut Selected Items Ctrl+X
- Copy Selected Items Ctrl+C
- Paste Items Ctrl+V
- Delete Selected Items Delete
- Selection**
- Invert Selection Ctrl+I
- Clear Selection Ctrl+D
- Add New Features...**
- View / Edit Selected Feature Geometry
- Replicate Selected Features...
- Extract**
- Clip Map to Fence...

Add Features To New

Enter Well-Known Text for one or more geometries.

Format Compress OK Cancel

Enter Well-Known Text for on:

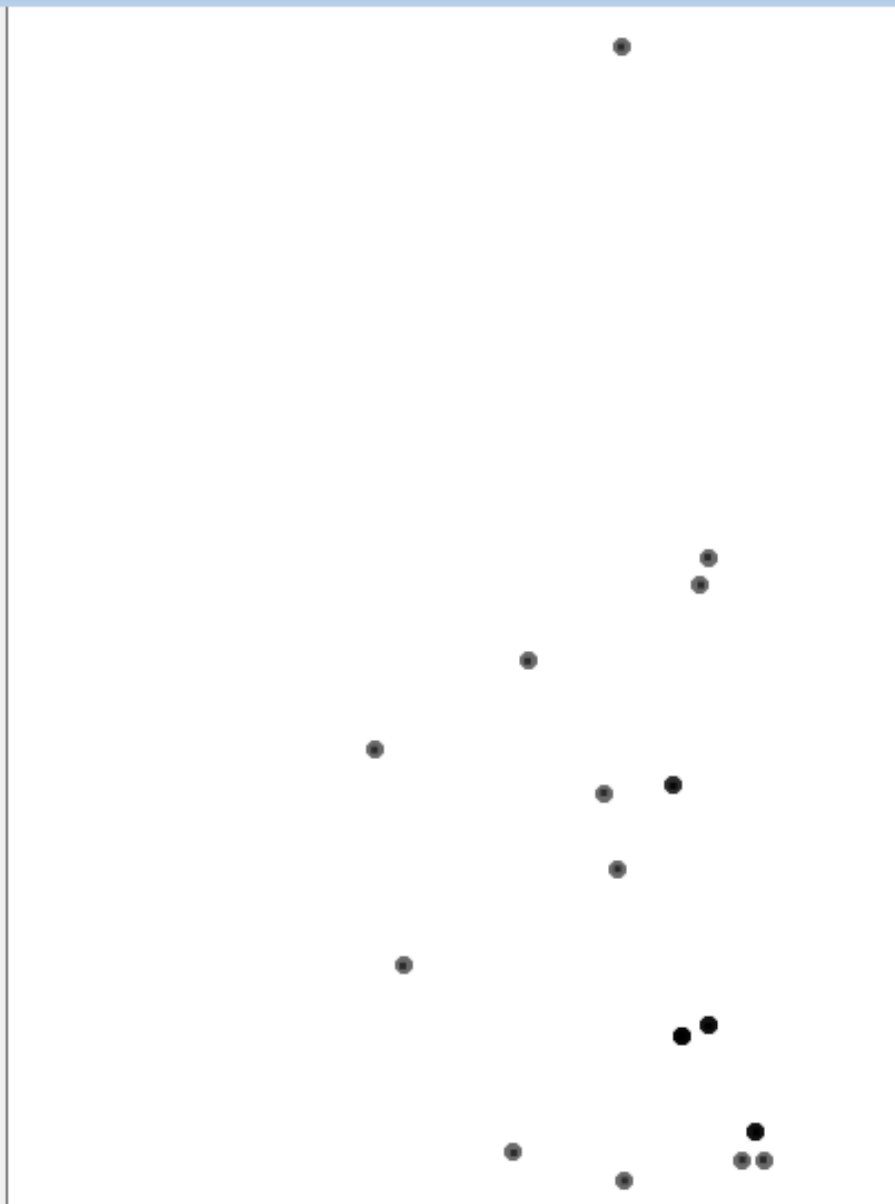
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Format Compress



*Project 3

- Working
 - New
- System





**THANK
YOU**



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