# USER'S MANUAL

## Census GIS India

Riddhi Management Services Pvt. Ltd.

http://www.riddhi.org/

## Table of Contents


**1. Introduction ..... 3**

**2. About Census GIS India ..... 4**

**3. Using Census GIS India ..... 5**

**4. Navigation pane and Other facilities ..... 8**

**4.1 Layers ..... 8**

4.1.1 Viewing State Boundaries ..... 9

4.1.2 Viewing District Boundaries ..... 9

**4.2 Search ..... 10**

4.2.1 Searching Locations- States ..... 11

4.2.2 Searching Locations- Districts ..... 12

**4.3 Query ..... 13**

4.3.1 Layer ..... 14

4.3.2 Group ..... 14

4.3.3 Category ..... 15

Census Demographic Data Categories ..... 15

Census Housing Data Categories ..... 16

4.3.4 Indicator ..... 17

Demographic Indicators ..... 17

Housing Indicators ..... 17

**4.4 Simple Query- Examples ..... 19**

4.4.1 How to make queries with 'Demographic' Indicators, such as, State-wise Rural Female Literacy Rate? ..... 19

How to download the generated data? ..... 20

4.4.2 How to prepare a Thematic Map on Percentage of Tribal Population at District level? ..... 21

4.4.3 How to prepare a Thematic Map on District-wise Percentage of Households whose Source of Drinking water is un-treated Tap water? ..... 22

**4.5 Range Query ..... 23**

**4.6 Range Query- Examples ..... 24**

4.6.1 How to make range queries with 'Demographic' Indicators, such as, Rural Gender Gap in Literacy Rate at State-Level ? ..... 24

4.6.2 How to make range queries with 'Housing' Indicators, such as, Rural Gender Gap in Literacy Rate at State-Level ? ..... 26

**4.7 Location wise Data ..... 27**

4.7.1 Viewing State-level Data ..... 27

4.7.2 Viewing State-level Data ..... 28

**4.8 Zooming and Panning Facilities ..... 30**

**5. Time series analysis (CENSUS 2001 & 2011 data) ..... 31**

**5.1 Opening Census 2001 and 2011 Maps ..... 31**

**5.2 Examples- Using Census 2001 and 2011 Maps ..... 32**

5.2.1. How to view the scenario of "Child Sex Ratio" between Census 2001 & 2011 at State-Level? ..... 32

5.2.2 How to view the scenario of "Child Sex Ratio" between Census 2001 & 2011 at District-Level?.....33
5.2.3 How to view range query of "Child Sex Ratio" between Census 2001 & 2011 ? .....33
**6. Individual State Maps.....35**
**6.1 Searching Locations.....36**
**6.2 Simple Query.....37**
**6.3 Range Query.....38**
**6.4 Time series analysis (CENSUS 2001 & 2011 Data).....39**
**6.5 How to view Individual District Map with Revenue Villages? .....40**
**6.6 How to view Individual District Map with Urban areas?.....41**
**7. Contact us.....43**

# 1. Introduction

A **Geographic Information System (GIS)**captures, stores, analyzes, manages and presents data that are linked to various location(s), viz. States, Districts, Sub-Districts, Revenue Villages etc., in a digital map. GIS can be used across multiple industries to understand trends and relationships with respect to a geographic context. This understanding aids management and decision making.

GIS is "Visualization of information geographically"

**Population Census** is the total process of collecting, compiling, analyzing or otherwise disseminating demographic, economic and social data pertaining, to all inhabitants in a country or a well-defined area of a country at a specific time.

The census provides data on the country's population, including its size, distribution, socio-economic, demographic, and other characteristics.

The Indian Census is the most credible source of information on demography. Initiated from 1872, Census 2011 is the 15th National Census of the country.

The census data is utilised by the government, NGOs, researchers, commercial and private organisations etc. for administration, planning, policymaking, as well as management and assessment of numerous programmes. Census data is used by researchers and demographers to assess population growth and trends and develop estimates. The census data is also vital for businesses and sectors to enhance and plan their operations in order to expand into previously untapped markets.

## 2. About Census GIS India

The CensusGISIndia website had been created with the vision of mapping the useful census data to digitalized country, state, district etc. maps of India. The map-based approach to interpreting data helps in understanding trends and visualize better.

Census GIS India website is an interactive thematic presentation of Census Data on Maps

It reflects Population characteristics, Economic Activity, Literacy and Education, Urbanization, Scheduled Castes and Scheduled Tribesand several other indicators. This system allows the user to compare the Census data of 2001 and 2011 on above parameters and track changes and spurs in growth and development. The interactive nature of the website also allows users to set their own indicator values and identify clusters (states/districts/sub-districts/revenue villages) that require further attention with respect to policy planning and developmental interventions.

The Census GIS website has been developed for Planners, Administrators, Policy Makers, Enthusiasts and Researchers at all levels.

# 3.Using Census GIS India

To use the Census GIS India website, the below steps need to be followed-

1. Open the desired internet browser

The Census GIS India website is supported across Google Chrome, Safari, Internet Explorer etc.

2. Type the URL: [www.censusgis.org](http://www.censusgis.org)

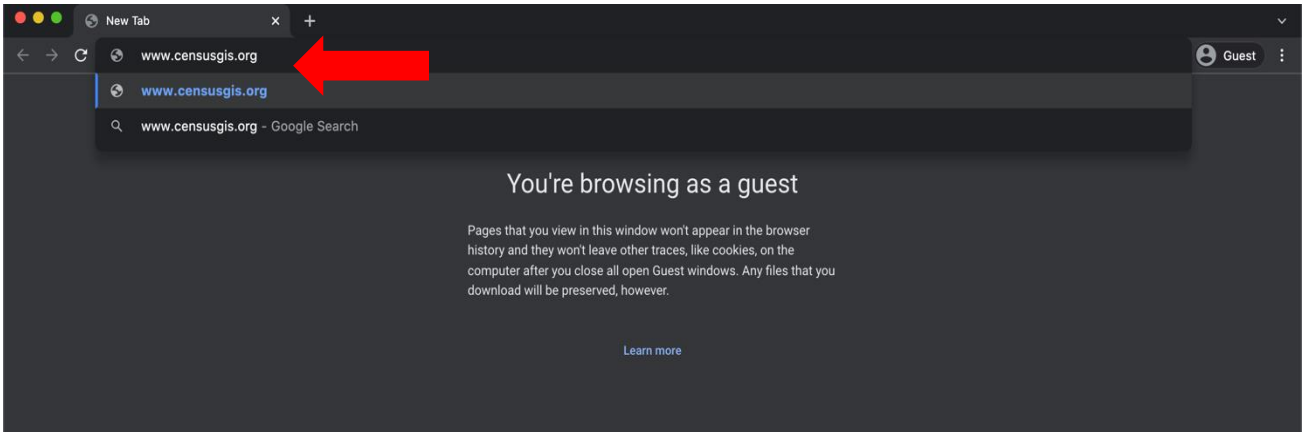



*Figure 1*

3. The following screen will appear

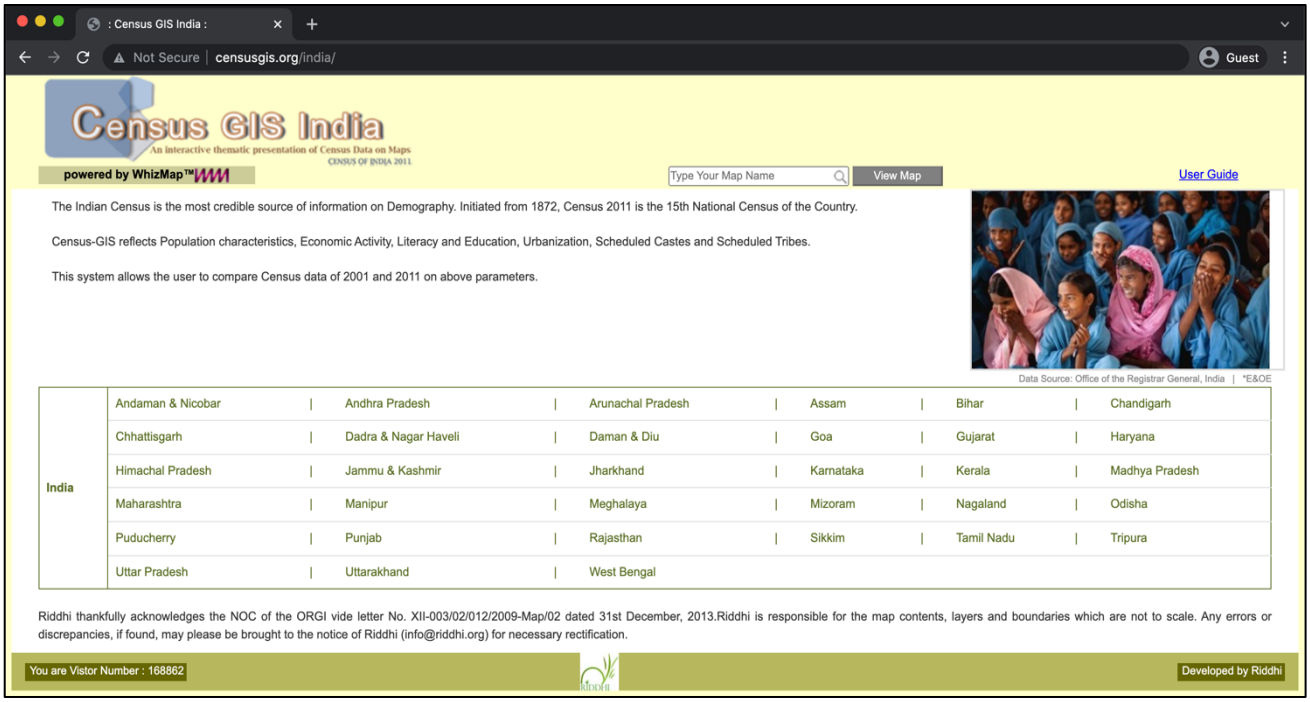



*Figure 2*

4. Click on any name (India or the name of any State/UT) to open the Census GIS portal

Here we are selecting ‘India’

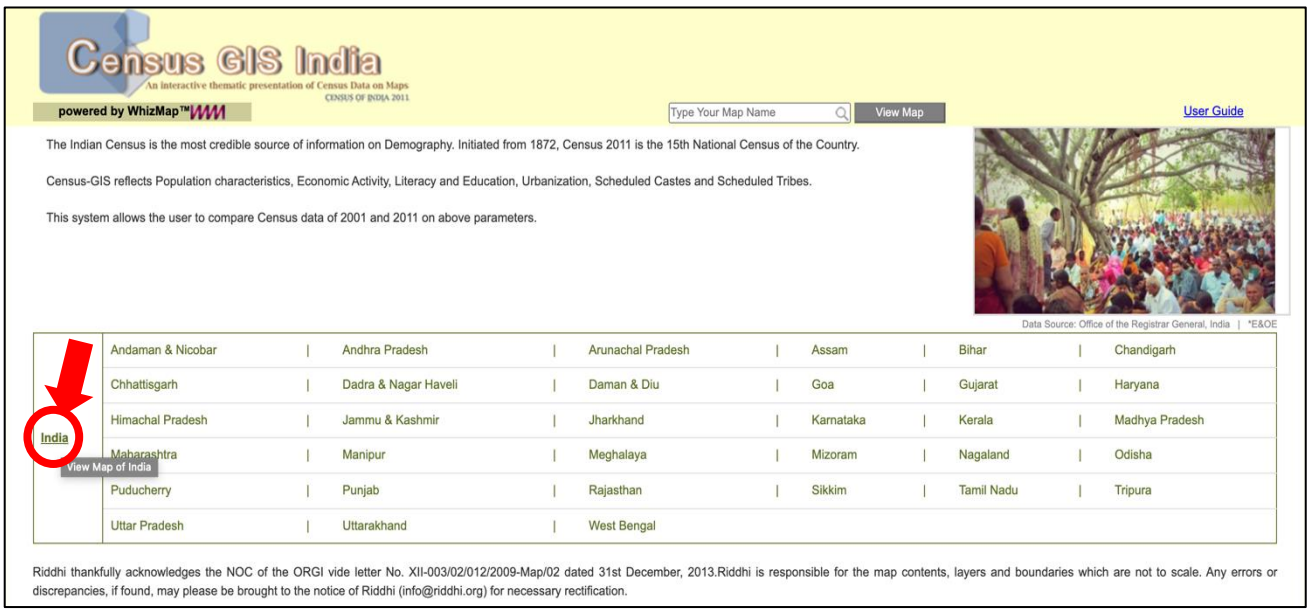



*Figure 3*

5. Two situations might arise, which are discussed below

**Casea)** The browser shows that “Pop-up blocked”.

On selecting ‘India’ the browser shows “Pop-up blocked”

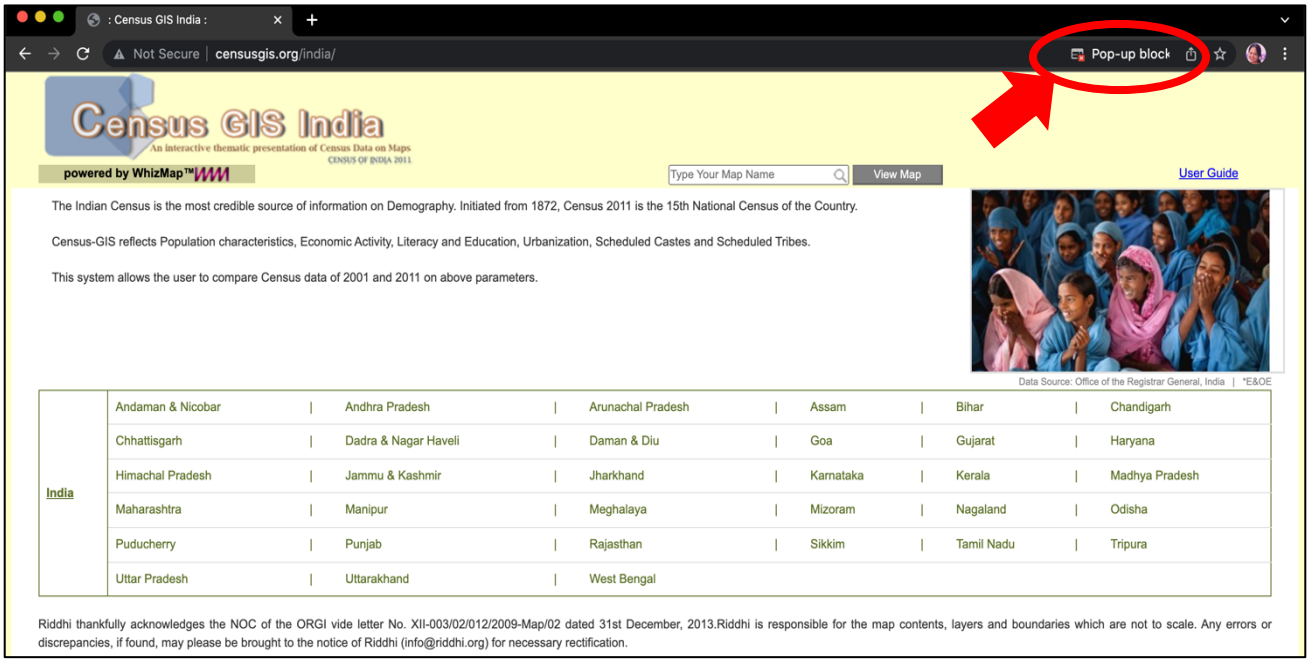



*Figure 4*

Click on “Pop-up blocked” ------> Select “Always allow pop-ups and redirects from http://censusgis.org ------> Click on “Done”

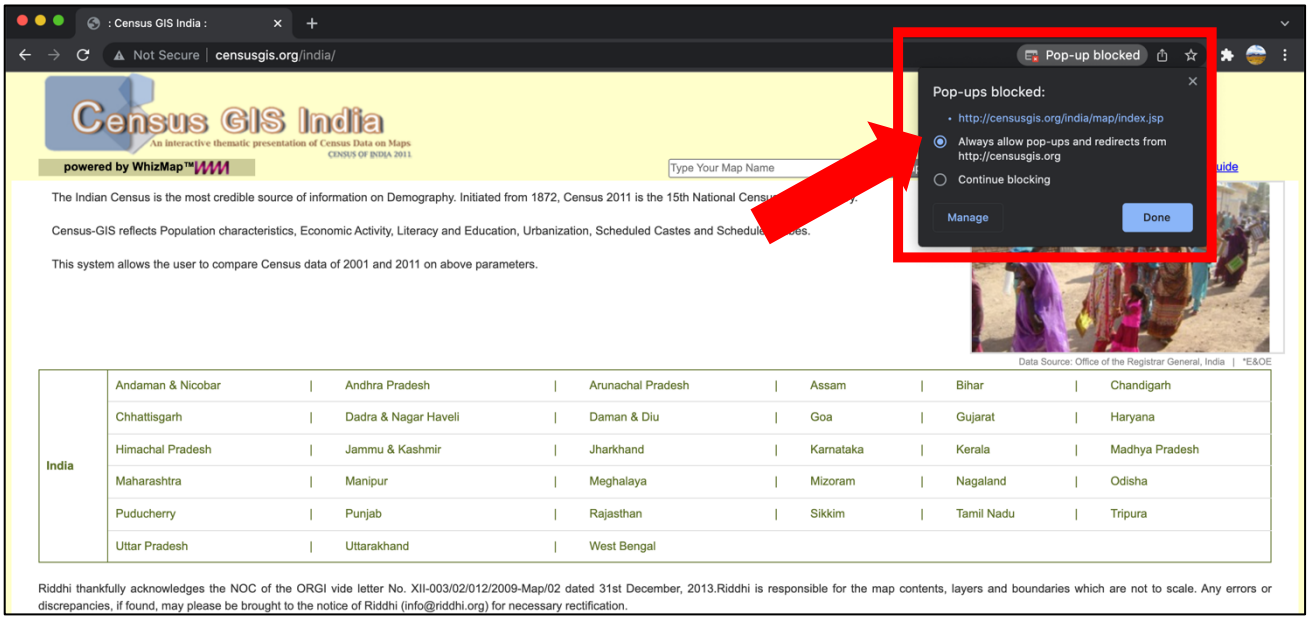



*Figure 5*

Now on clicking India or the name of any State/UT from the list the desired map and navigation bar will open up. (Refer to Case b, Figure 6)

**Case b)** The respective map and navigation bar directly opens up

On selecting ‘India’ the followingwebpage with a map of India shows-up on screen

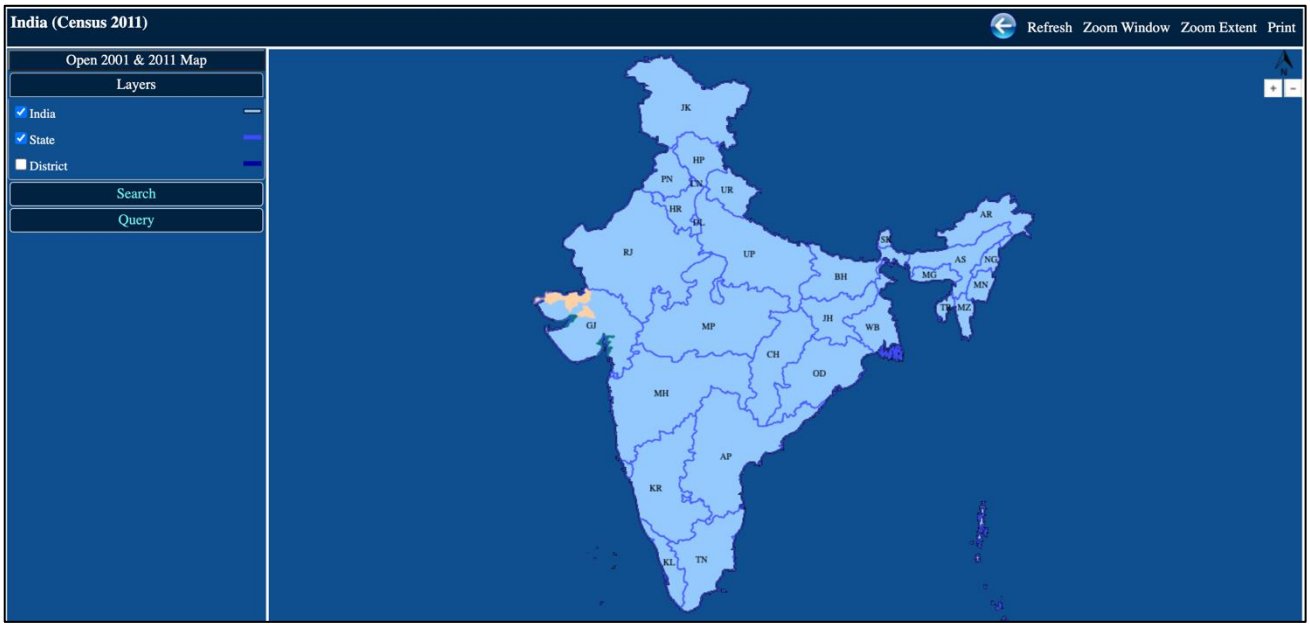



*Figure 6*

# 4. Navigation pane and Other facilities

The "Navigation Pane" aids in customizinguser's preferences for viewing different layers in the map and constructing thematic maps with different Census Demographic indicators etc.

*Figure 7*

The "Navigation Pane" contains the following menu – Layers, Search and Query.

## 4.1 Layers

The "Layers" menu is available on the top-left corner of the window as shown in Figure 8. It represents the various Geographic Data which is visualized on the map of India. "Layers" menu has three options- India, State and District.

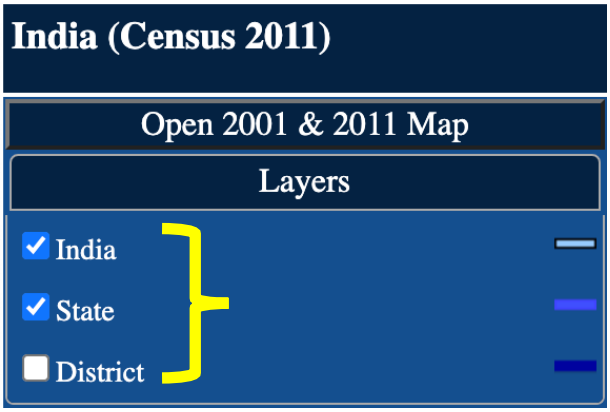



*Figure 8*

### 4.1.1 Viewing State Boundaries

In Figure 8, both the checkboxes of India and State are ticked. Therefore, the map shows the boundaries of not only India but also the different states and union territories (Figure 9).The contents, layers and boundaries of the maps used in the website are not to scale.

On hovering the cursor over a region, the name of the region is shown. This helps in getting familiarized with the map.

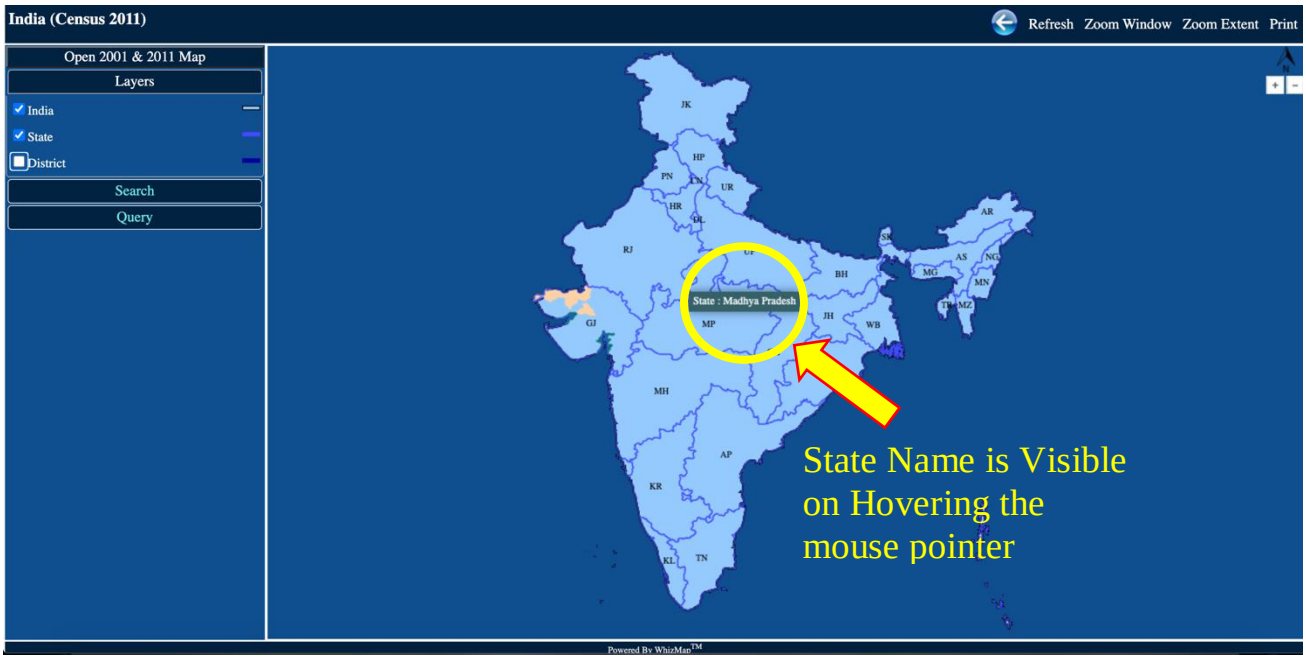



*Figure 9*

### 4.1.2 Viewing District Boundaries

If the user wants to view the District-boundaries then the‘District’ check-box needs to be selected

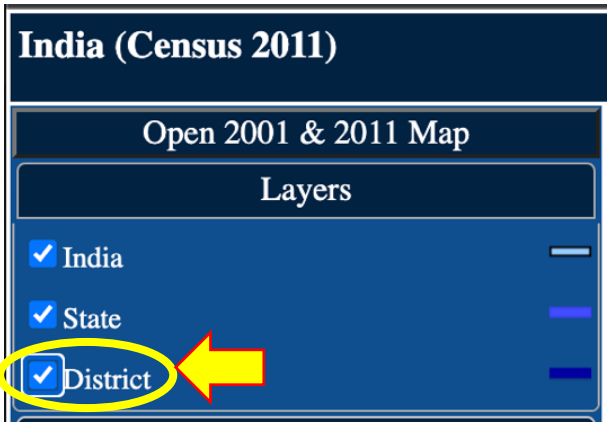



*Figure 10*

On performing the above action, the district boundaries become visible in the map, along with India and the state boundaries (since the checkboxes of "India" and "State" are ticked as well)

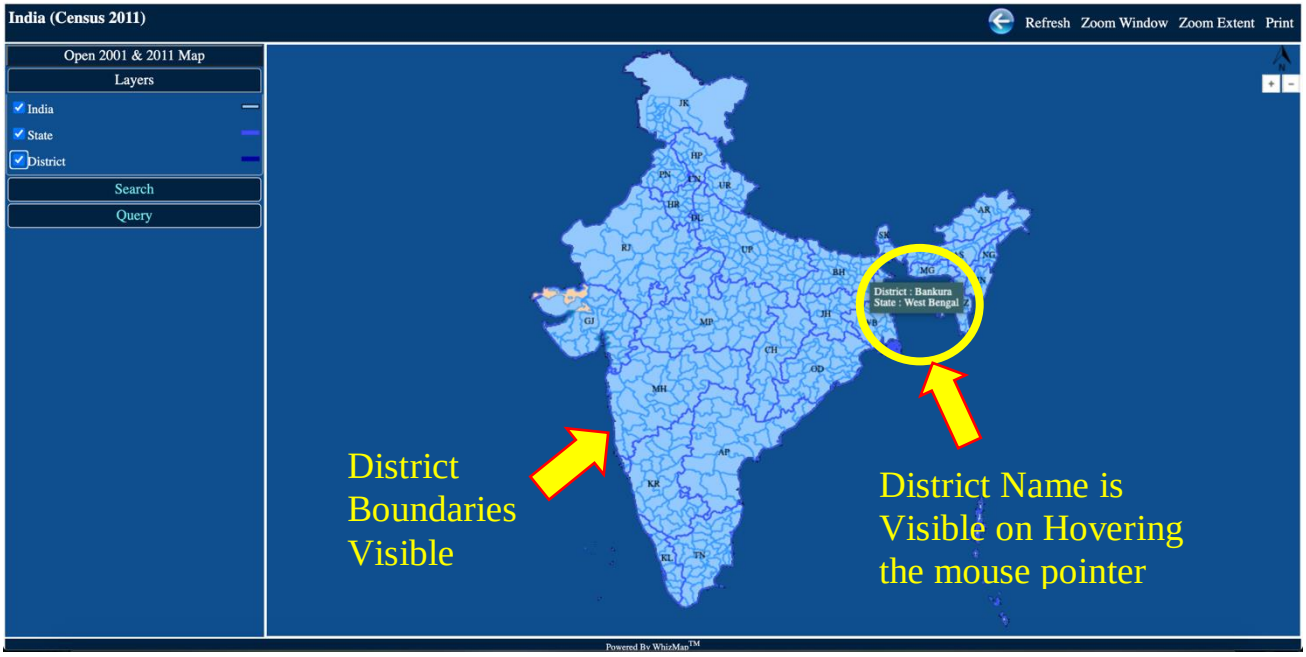



*Figure 11*

## 4.2 Search

The "Search" menu is available below the "Layers" menu. It enables the user to search any location (within India) quickly, without having to hover the mouse pointer over the entire map region.

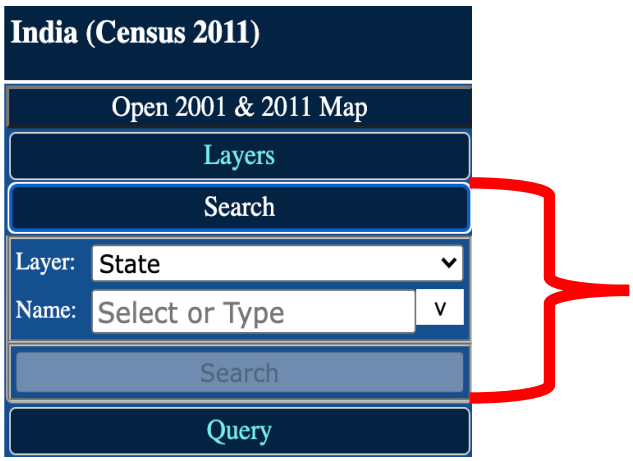



*Figure 12*

The "Search" menu has two options available- Layer and Name. Both of these options have a drop-down menu from which the user can select the desired location.

### 4.2.1 Searching Locations- States

1. In the “Layers” menutick the‘India’ and ‘State’ check-boxes. Then Click on “Search” menu → Layer → Click on the drop-down menu (move your mouse cursor to the scroll icon beside the box, to find the names). The only option available is ‘State’.

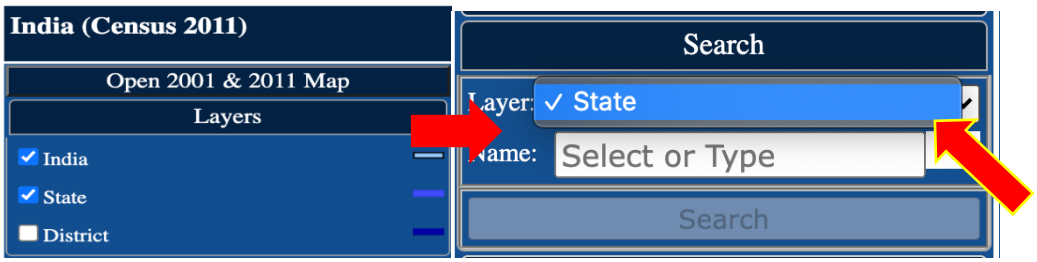



*Figure 13*

2. Select the Name of the State from the drop-down menu and click on “Search” button.

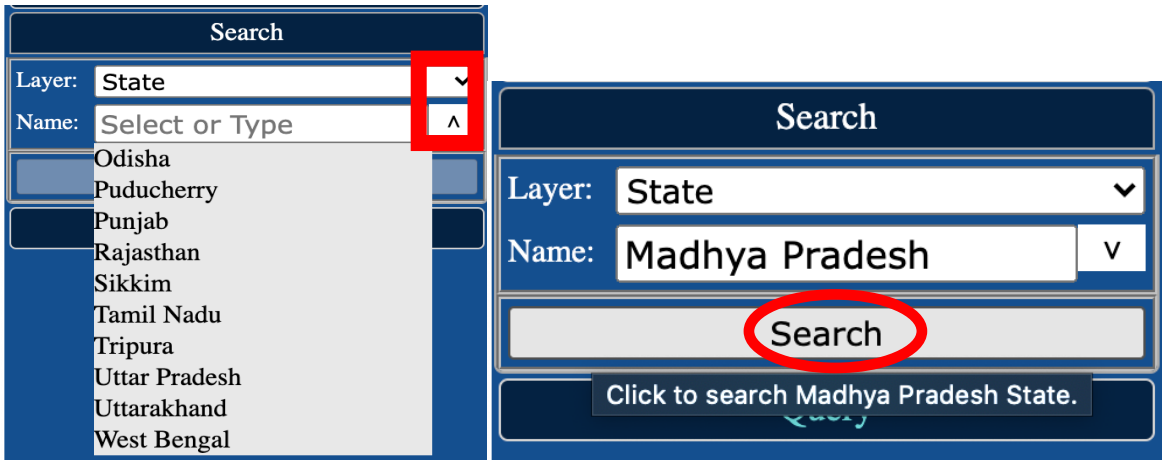



*Figure 14*

3. The searched location will be highlighted in the map in Red Colour

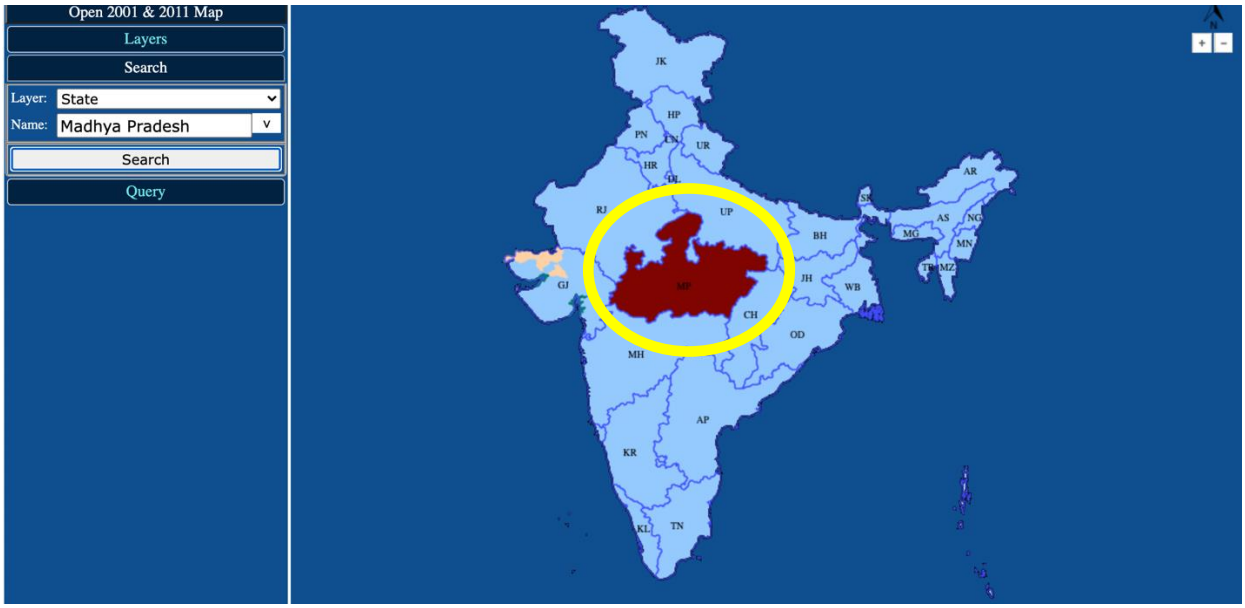



*Figure 15*

### 4.2.2 Searching Locations- Districts

1. In the "Layers" menutick the'India', 'State'and 'District' check-boxes. Then Click on "Search" menu → Layer → Click on the drop-down menu (move your mouse cursor to the scroll icon beside the box, to find the names). The options available are 'State' and 'District'.

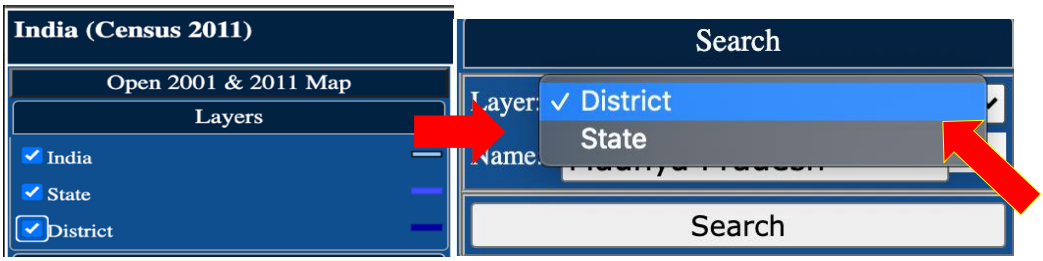



*Figure 16*

2. Select the Name of the District from the drop-down menu and click on "Search" button.

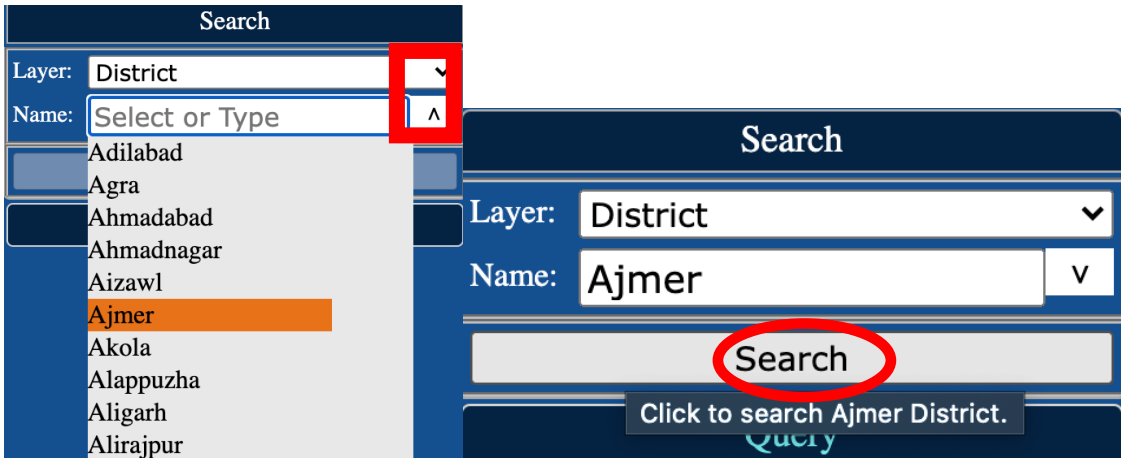



*Figure 17*

3. The searched location will be highlighted in the map in Red Colour

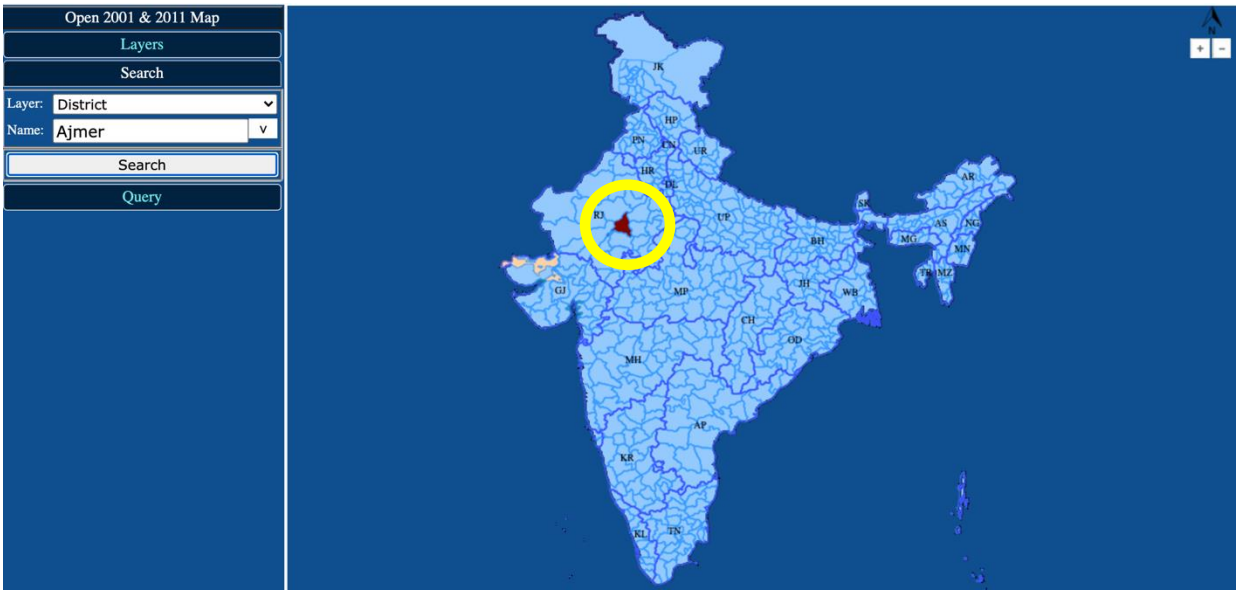



*Figure 18*

## 4.3Query

The "Query" menu is located below the "Search" menu. It can be used to prepare thematic maps with Census demographic indicators. On clicking the "Query" menu the following options were available- 1. Layer, 2. Group, 3. Category, 4. Indicator and 5. Range Query. Figure 19 shows the various sub-menus and operations available via the "Query" menu.

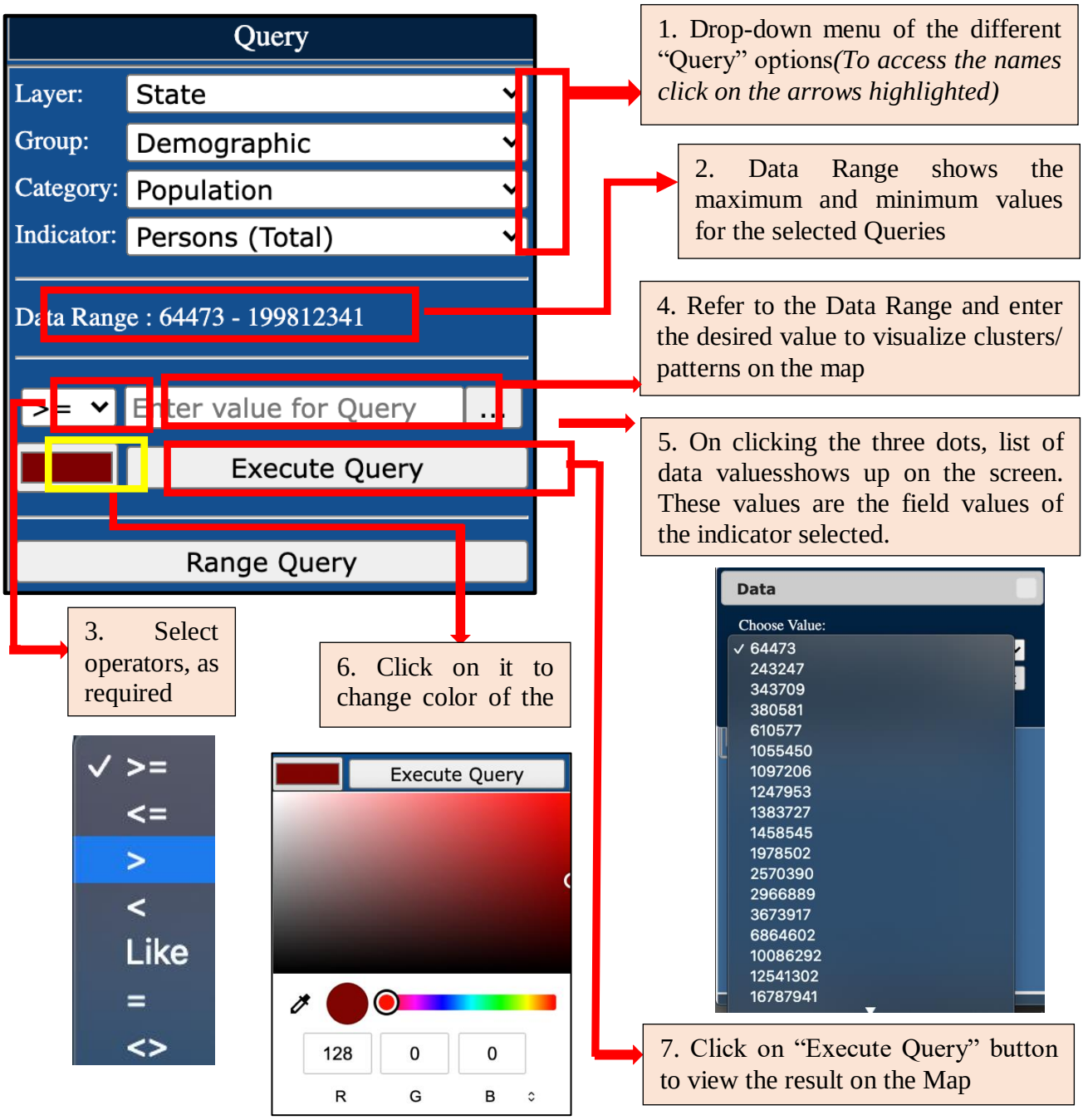



*Figure 19*

### 4.3.1 Layer

Case a: From the "Layers" menu only 'India' and 'State' check-boxes are ticked

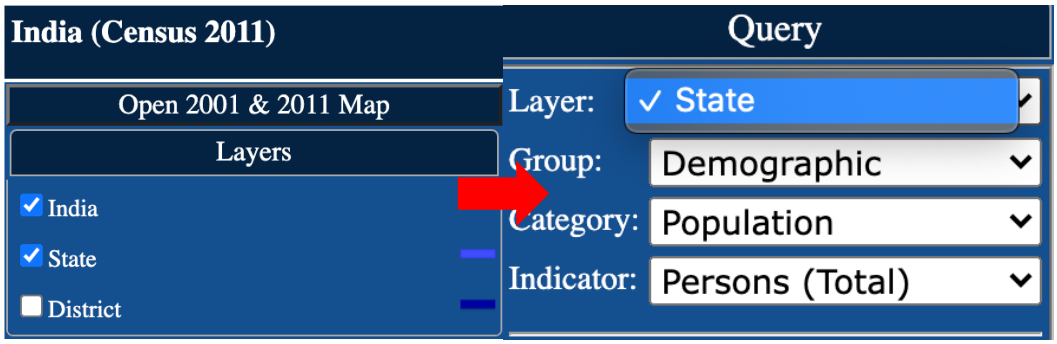



*Figure 20*

From the 'Layer' dropdown the only option available is State. On selecting it, the chosen indicator values will be visualized with respect to the States/UTs.

Case b: From the "Layers" menu 'India', 'State' and 'District' check-boxes are ticked

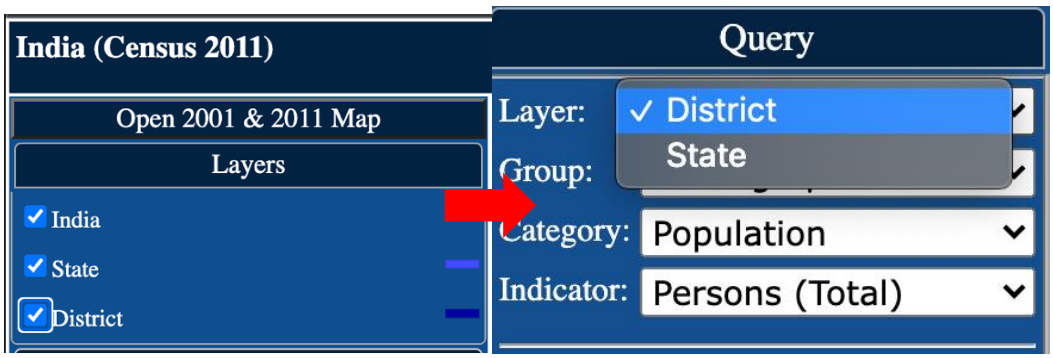



*Figure 21*

From the 'Layer' dropdown the available options are State and District.

### 4.3.2 Group

The 'Group' dropdown menu has two options- 'Demographic' and 'Housing'.

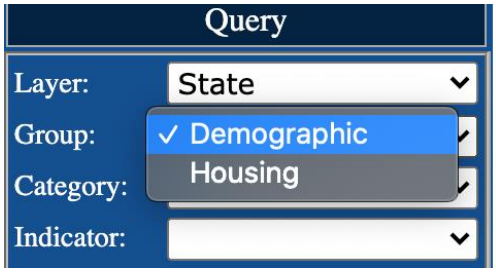



*Figure 22*

The ‘Demographic’ option provides data related to the population such as literacy rate, Scheduled castes, occupational detailsetc. The ‘Housing’ option provides data from the Houselisting and Housing Census data. census data related to characteristics of house, availability of certain amenities etc.

### 4.3.3Category

Case a: If ‘Demographic’ has been selected, then on clicking the ‘Category’ drop-down menu the following list will appear

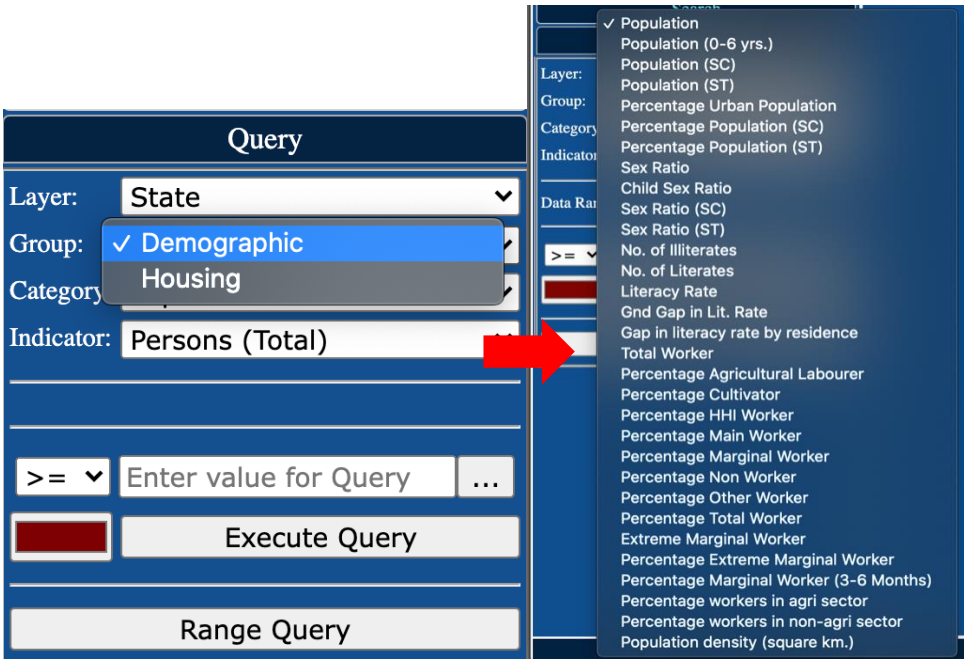



*Figure 23*

Census Demographic Data Categories

| SL. No. | Census Demographic Data Categories | SL. No. | Census Demographic Data Categories |
|---|---|---|---|
| 1 | Population | 17 | Gap in literacy rate by residence |
| 2 | Population (0-6 years) | 18 | Total Workers |
| 3 | Population (SC) | 19 | % Total workers |
| 4 | Population (ST) | 20 | % Main workers |
| 5 | % SC Population | 21 | % Marginal workers |
| 6 | % ST Population | 22 | % Non-workers |
| 7 | Population Density (Per Sq. km.) | 23 | % Cultivators |
| 8 | % Urban Population | 24 | % Agricultural Labourers |
| 9 | Sex Ratio | 25 | % HHI workers |
| 10 | Sex Ratio (0-6 years) | 26 | % Other workers |
| 11 | Sex Ratio (SC) | 27 | % Workers in agri sector |
| 12 | Sex Ratio (ST) | 28 | % Workers in non-agri sector |
| 13 | Number of literates | 29 | Extreme marginal worker |
| 14 | Number of illiterates | 30 | % Extreme Marginal worker |
| 15 | Literacy Rate | 31 | % Marginal workers (3-6 months) |
| 16 | Gender gap in literacy rate | | |

Case b: If 'Housing' has been selected, then on clicking the 'Category' drop-down menu the following list will appear

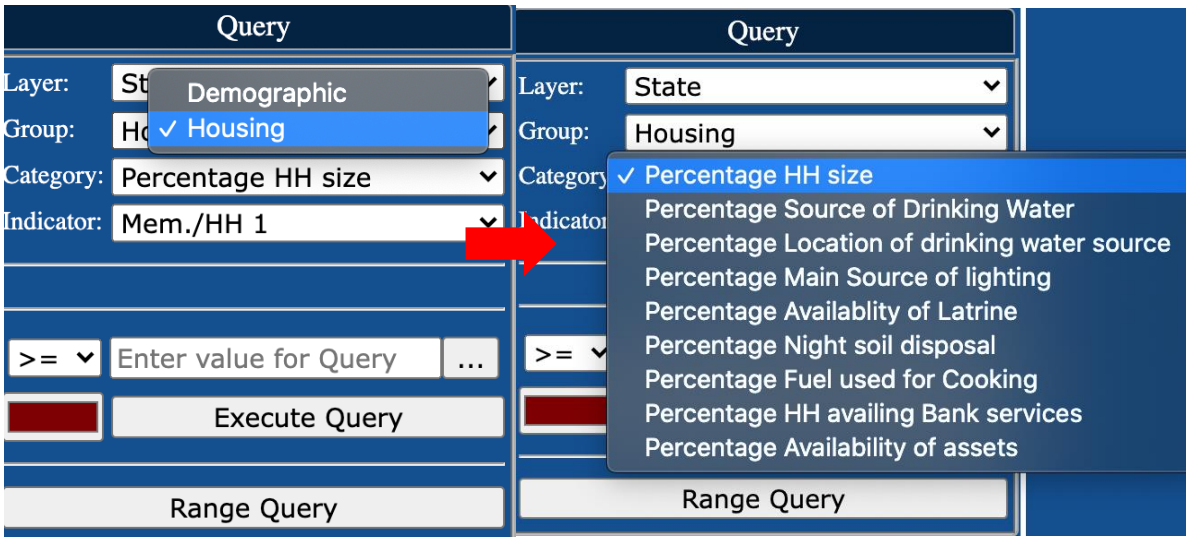


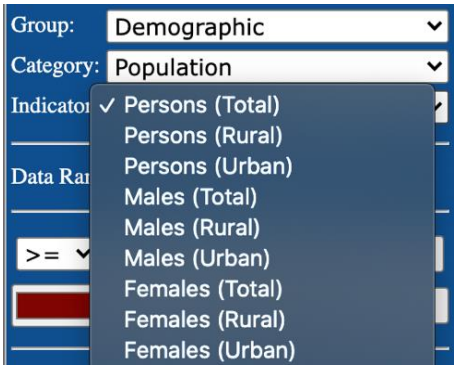

*Figure 24*

## Census Housing Data Categories

| SL. No. | Census Housing Data Categories |
|---|---|
| 1 | % HH size |
| 2 | % Source of Drinking Water |
| 3 | % Location of drinking water source |
| 4 | % Main source of Lighting |
| 5 | % Availability of Latrine |
| 6 | % Night soil disposal |
| 7 | % Fuel used for Cooking |
| 8 | % HH availing Bank Services |
| 9 | % Availability if assets |

### 4.3.4 Indicator

#### Demographic Indicators




The Census Indicators for 'Demographic' categories are available with the following break-up:

1. *Female/Male*
2. *Rural/Urban.*

*Figure 25*

#### Housing Indicators

For the 'Housing' categories, the Indicators differ for each category. For example, '*Percentage Source of Drinking Water*' is selected from 'Category' dropdown menu, then the following Indicators are available as shown in the Figure 26.

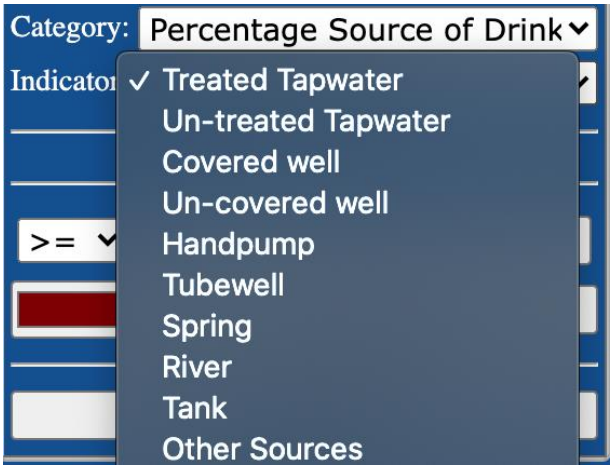



*Figure 26*

The following Table shows the Census 'Housing' Data Categories and Indicators.

| Census 'Housing' Data | | |
|---|---|---|
| SL. No. | Categories (in %) | Indicators |
| 1 | HH size | Mem./HH 1, Mem./HH 2, Mem./HH 3, Mem./HH 4, Mem./HH 5, Mem./HH 6-8, Mem./HH 9+ |
| 2 | Source of Drinking Water | Treated tapwater, Un-treated tapwater, Covered Well, Uncovered Well, Handpump, Tubewell, Spring, River, Tank, Other Sources |
| 3 | Location of Drinking Water Source | Within premises, Near premises, Away |
| 4 | Main Source of Lighting | Electricity, Kerosene, Solar Energy, Other oil, Any other, No lighting |
| 5 | Availability of Latrine | Having Latrine Facility, Not Having Latrine Facility |
| 6 | Night Soil Disposal | Disposed into open drain, Night soil removed by human, Night soil serviced by animal |
| 7 | Fuel Used for Cooking | Fire-wood, crop residue, cowdung cake, coal lignite charcoal, Kerosene, LPG/PNG, Electricity, Biogas, Any other, No Cooking |
| 8 | HH availing Bank Services | HH availing bank services |
| 9 | Availability of Assets | Radio, Television, Computer with Internet, Computer without Internet, Landline, Mobile, Both, Bicycle, 2-wheeler, 4-wheeler, HH with no assets |

## 4.4 Simple Query- Examples

The above section explained what features are available in the "Query" sub-menu and how to use them. This section will explain it with some Examples.

### 4.4.1 How to make queries with 'Demographic' Indicators, such as, State-wise Rural Female Literacy Rate?

1. Select the desired option in "Layers". To get a thematic map of "State-wise Rural Female Literacy Rate" , we need to select 'State' option and then click on the "Query" menu

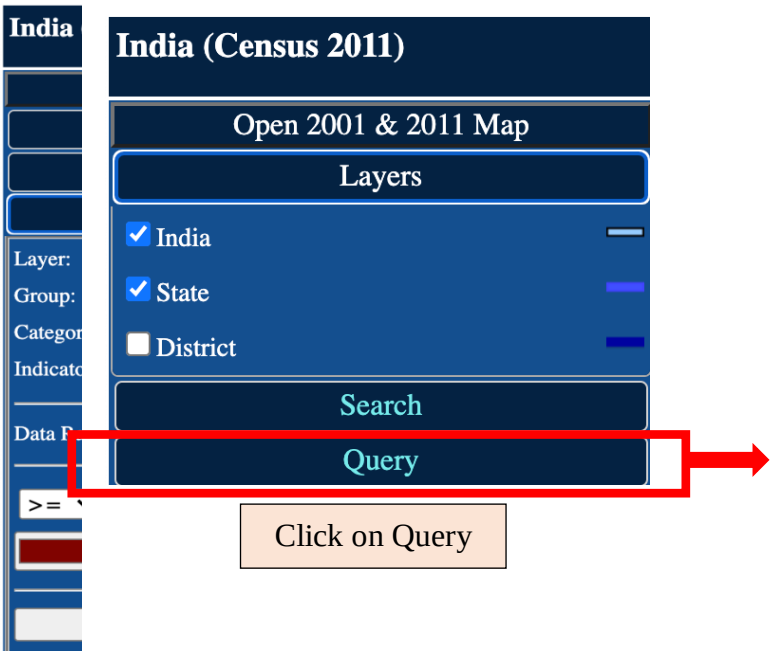



*Figure 27*

2. Select the desired 'Layer', 'Category', 'Indicator', colour, operator, value from the "Query" menu (Check Figure 19 for reference).

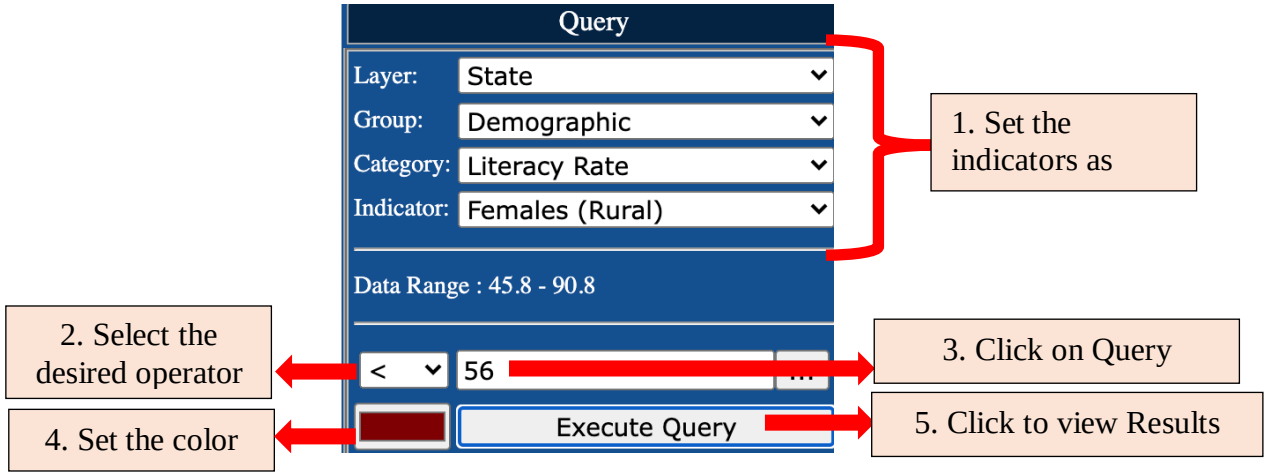
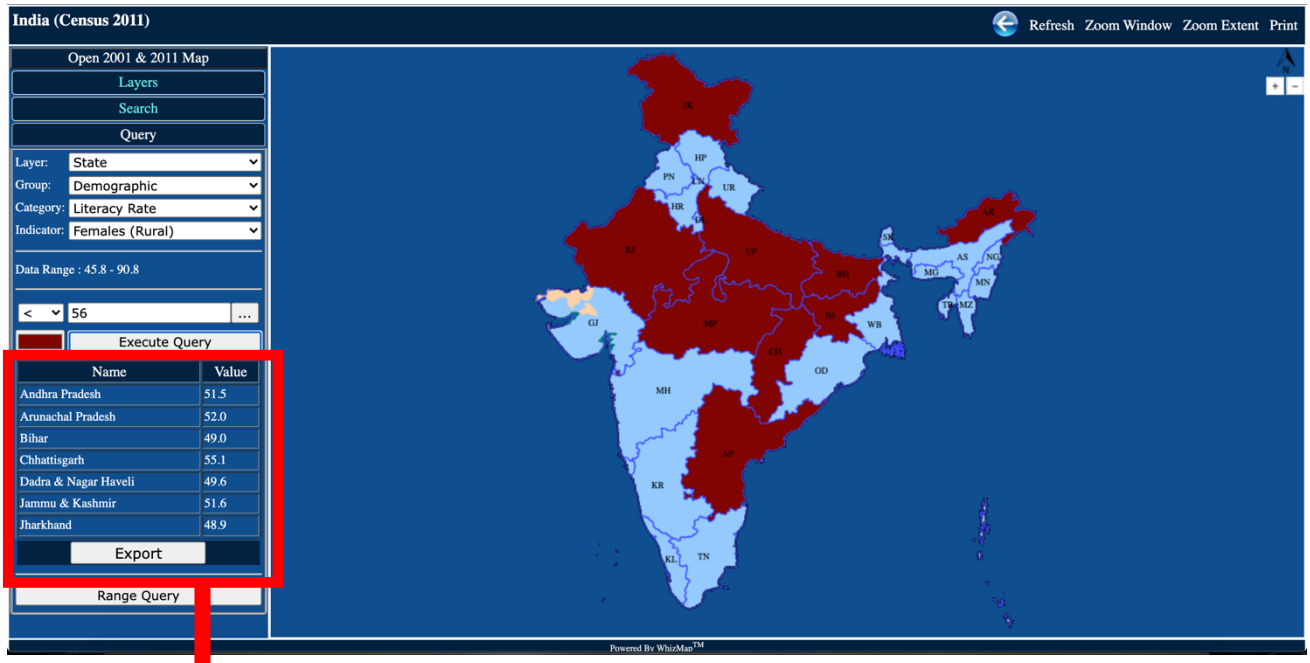



*Figure 28*

3. On clicking ‘Execute Query’ the Thematic map can be viewed as desired.

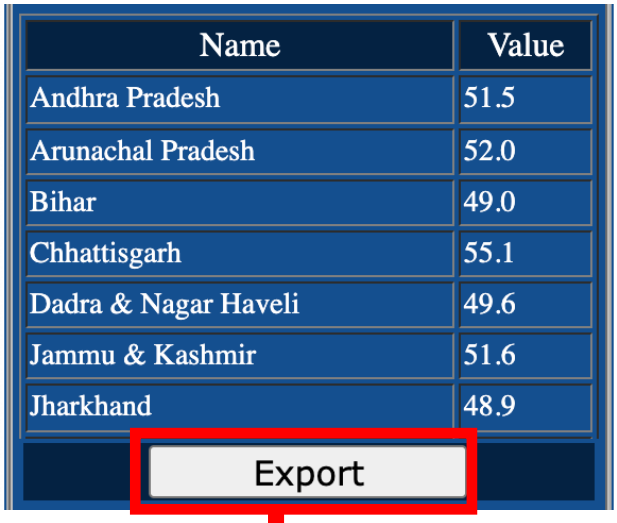
The regions, as per the criterion given by the user, will be highlighted in the map.




On executing query, a report containing names and respective values gets generated as per user-specified criterion.

*Figure 29*

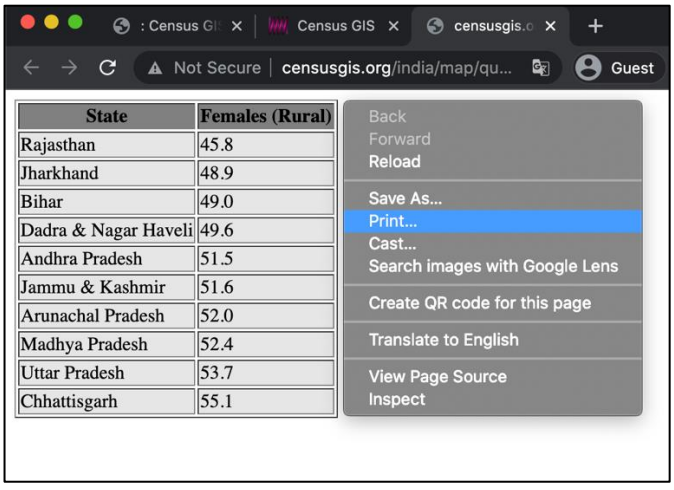
How to download the generated data?



| Name | Value |
|---|---|
| Andhra Pradesh | 51.5 |
| Arunachal Pradesh | 52.0 |
| Bihar | 49.0 |
| Chhattisgarh | 55.1 |
| Dadra & Nagar Haveli | 49.6 |
| Jammu & Kashmir | 51.6 |
| Jharkhand | 48.9 |

Export

Click on export, a new window will open containing the data in table format




| State | Females (Rural) |
|---|---|
| Rajasthan | 45.8 |
| Jharkhand | 48.9 |
| Bihar | 49.0 |
| Dadra & Nagar Haveli | 49.6 |
| Andhra Pradesh | 51.5 |
| Jammu & Kashmir | 51.6 |
| Arunachal Pradesh | 52.0 |
| Madhya Pradesh | 52.4 |
| Uttar Pradesh | 53.7 |
| Chhattisgarh | 55.1 |

Left click on the page and select ‘Print’ to print the

*Figure 30*

### 4.4.2 How to prepare a Thematic Map on Percentage of Tribal Population at District level?

1. Select the desired option in "Layers". To get a thematic map of "Percentage of Tribal Population at District level", we need to select 'District' option and then click on the "Query" menu. Select the desired 'Layer', 'Category', 'Indicator', colour, operator and value.

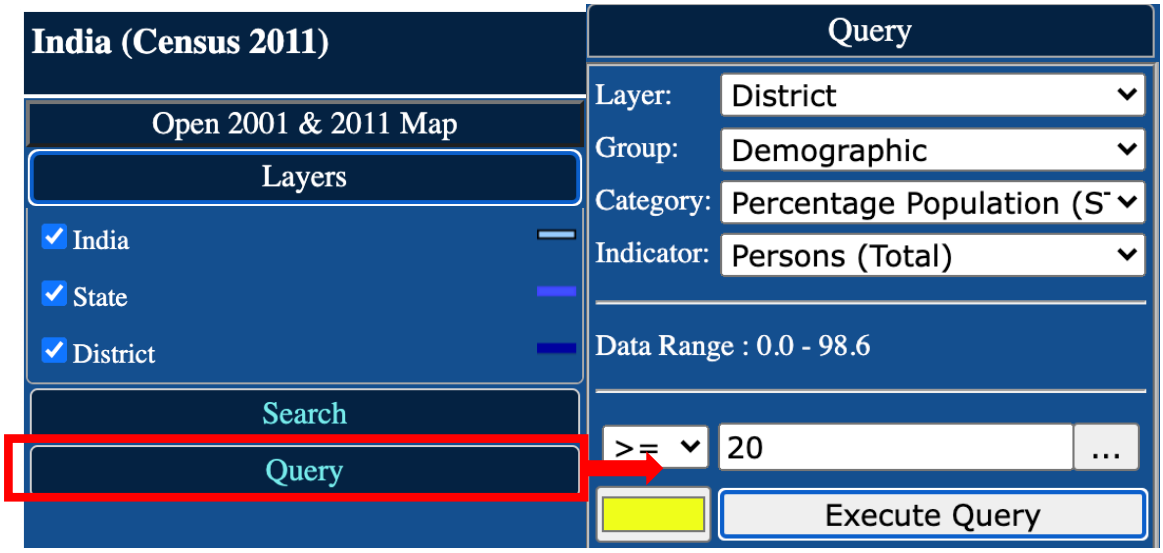



*Figure 31*

2. On clicking 'Execute Query' the Thematic map can be viewed as desired. Download the data by clicking on 'Export' button.

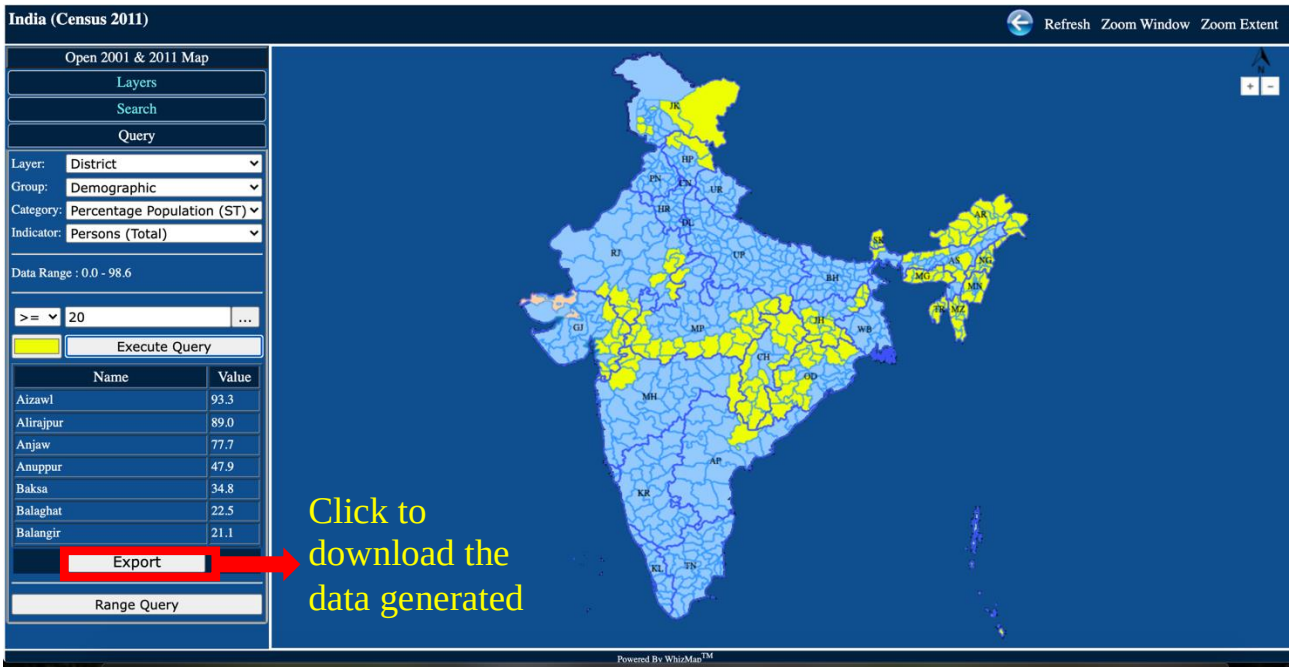



*Figure 32*

### 4.4.3 How to prepare a Thematic Map on District-wise Percentage of Households whose Source of Drinking wateris un-treated Tap water?

1. Select the desired option in "Layers". To get a thematic map of "Percentage of Tribal Population at District level", we need to select 'District' option and then click on the "Query" menu. Select the desired 'Layer', 'Category', 'Indicator', colour, operator and value.

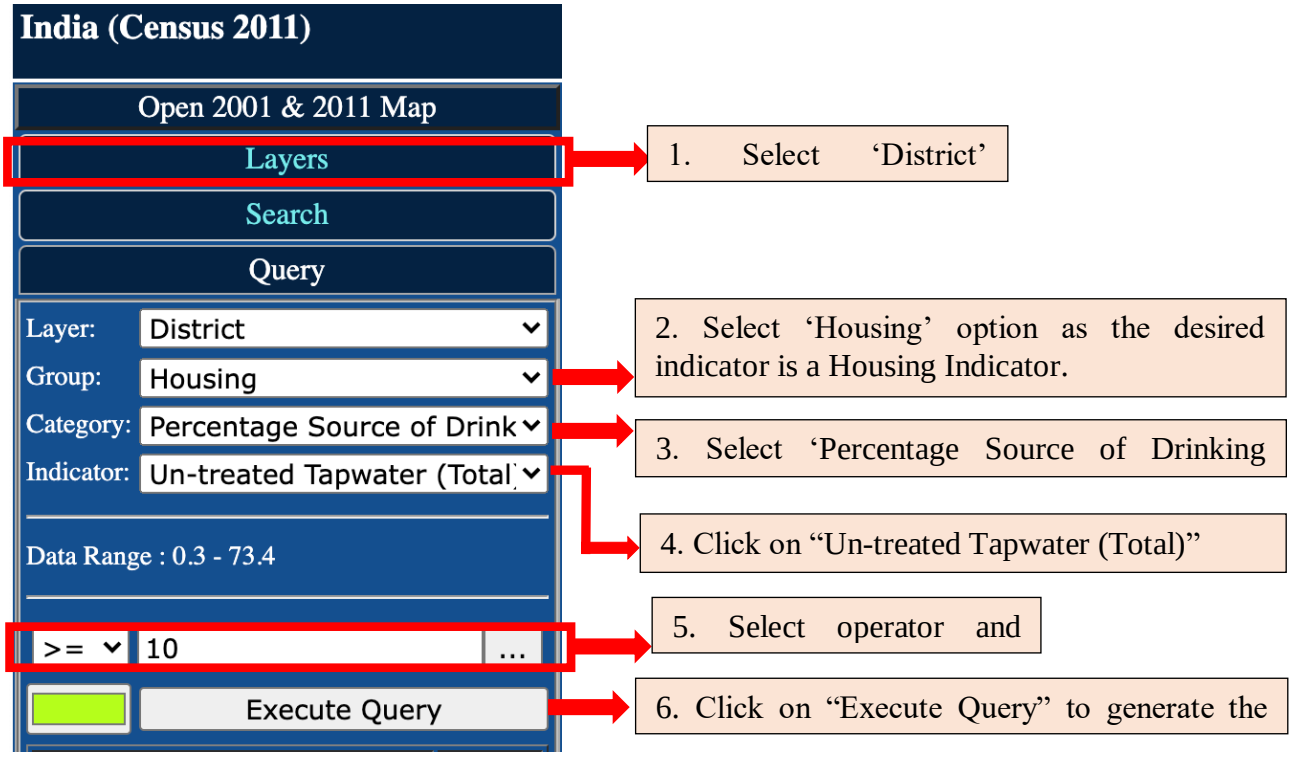



*Figure 33*

2. On clicking 'Execute Query' the Thematic map can be viewed as desired.

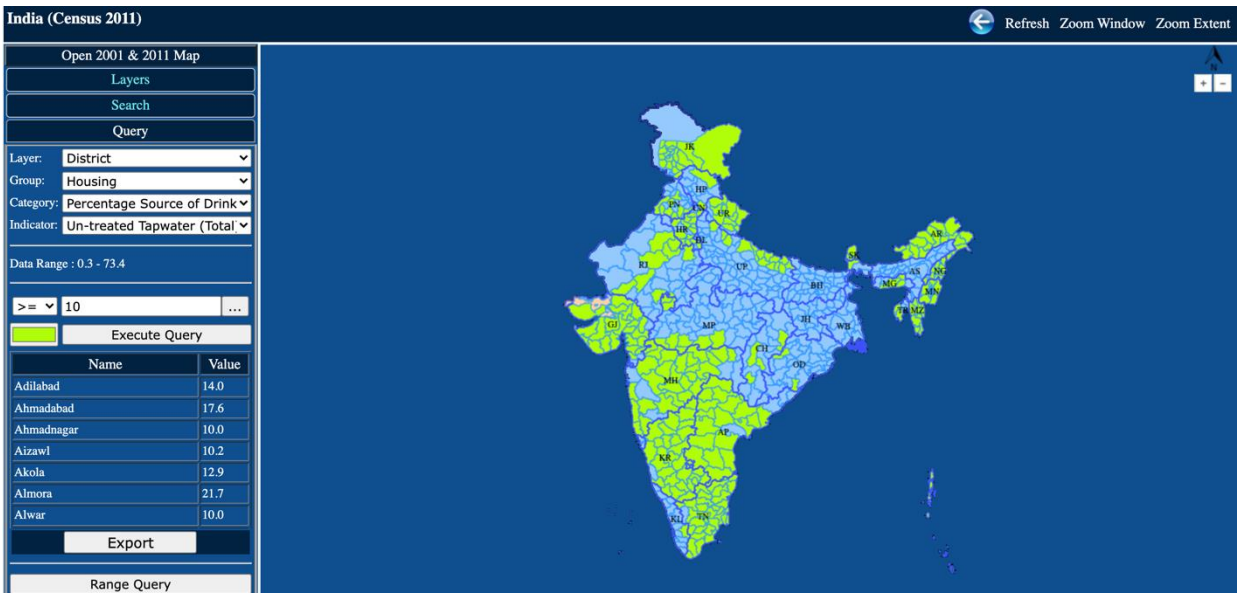



*Figure 34*

## 4.5 Range Query

The 'Range Query' is another important menu to help in better CENSUS data visualization. With the help of range query the user can divide the data sets into 2 to 5 divisions.

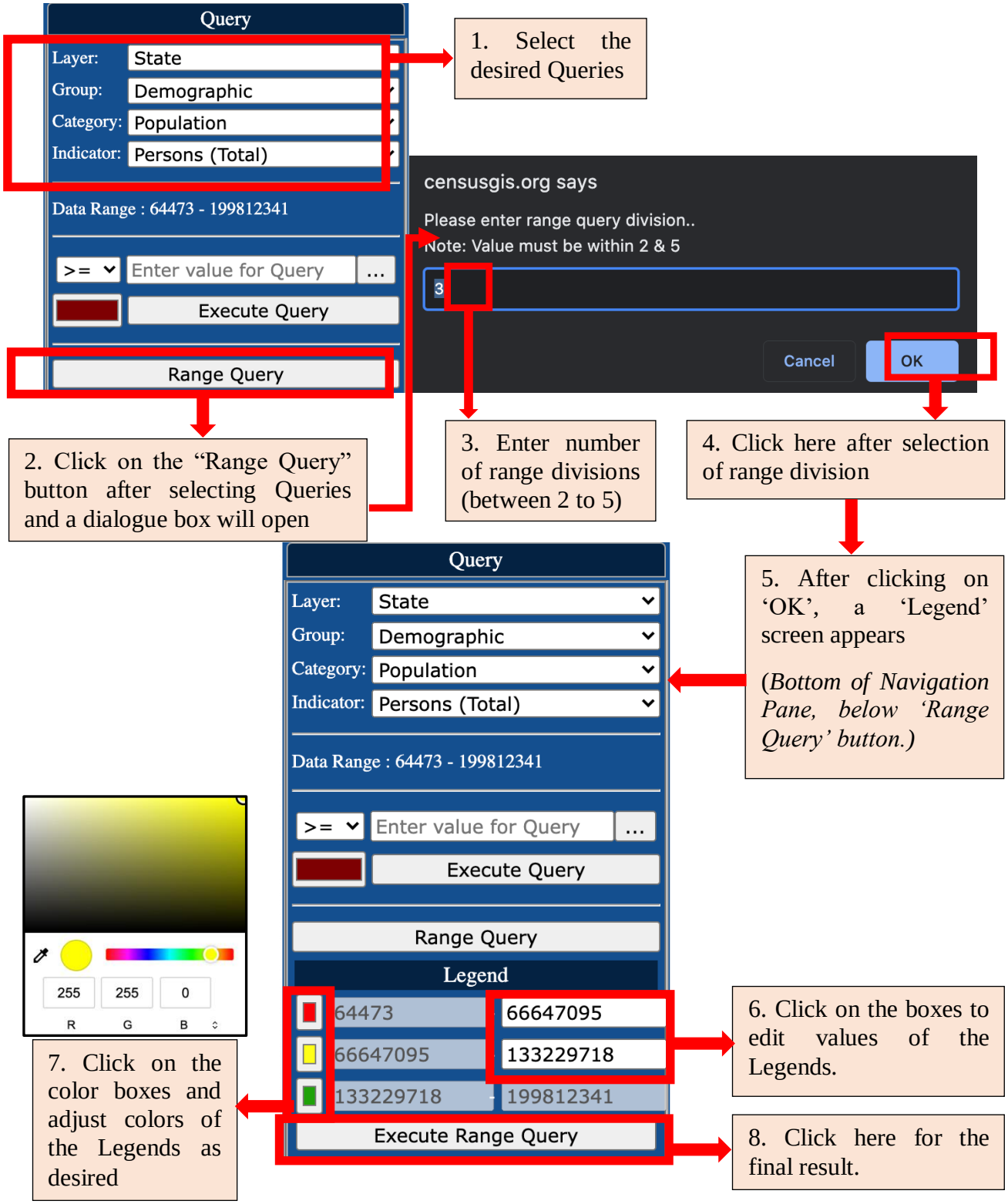



*Figure 35*

After clicking on ‘Execute Range Query’ the following map appears on the screen as desired by User.

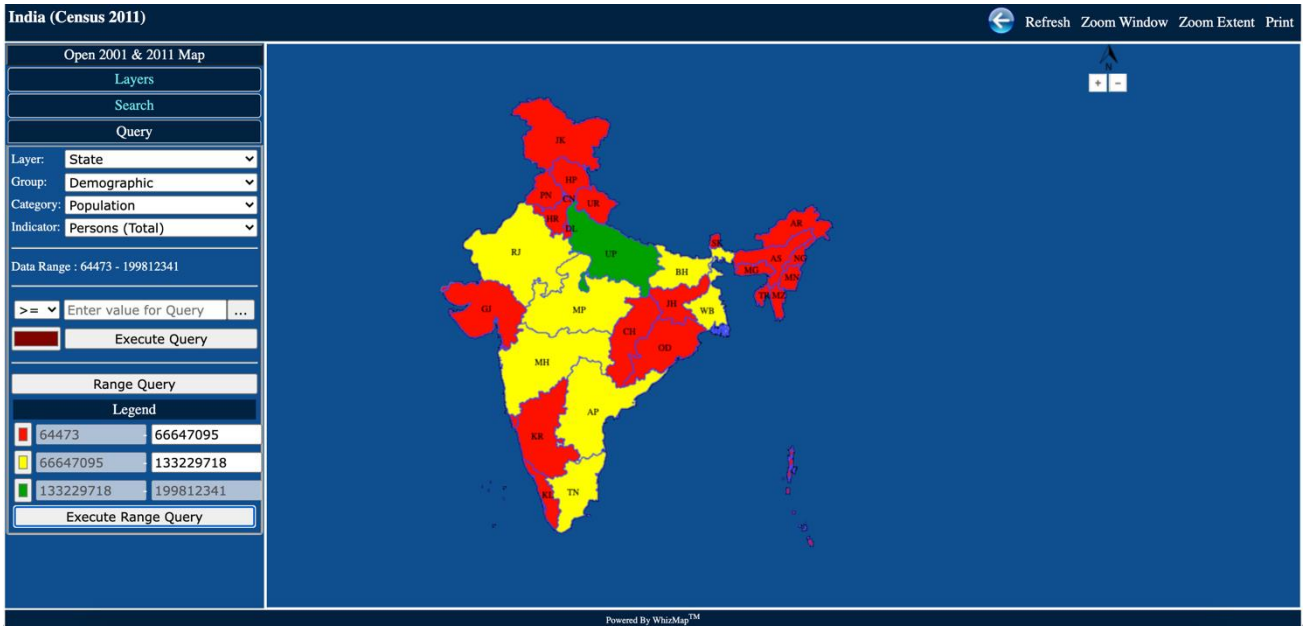



*Figure 36*

## 4.6 Range Query- Examples

The above section explained what features are available in the “Query” sub-menu and how to use them. This section will explain it with some Examples.

### 4.6.1 How to make range queries with ‘Demographic’ Indicators, such as, Rural Gender Gap in Literacy Rate at State-Level ?

1. Select the ‘State’ in “Layers”. Select desired dropdowns from “Query”

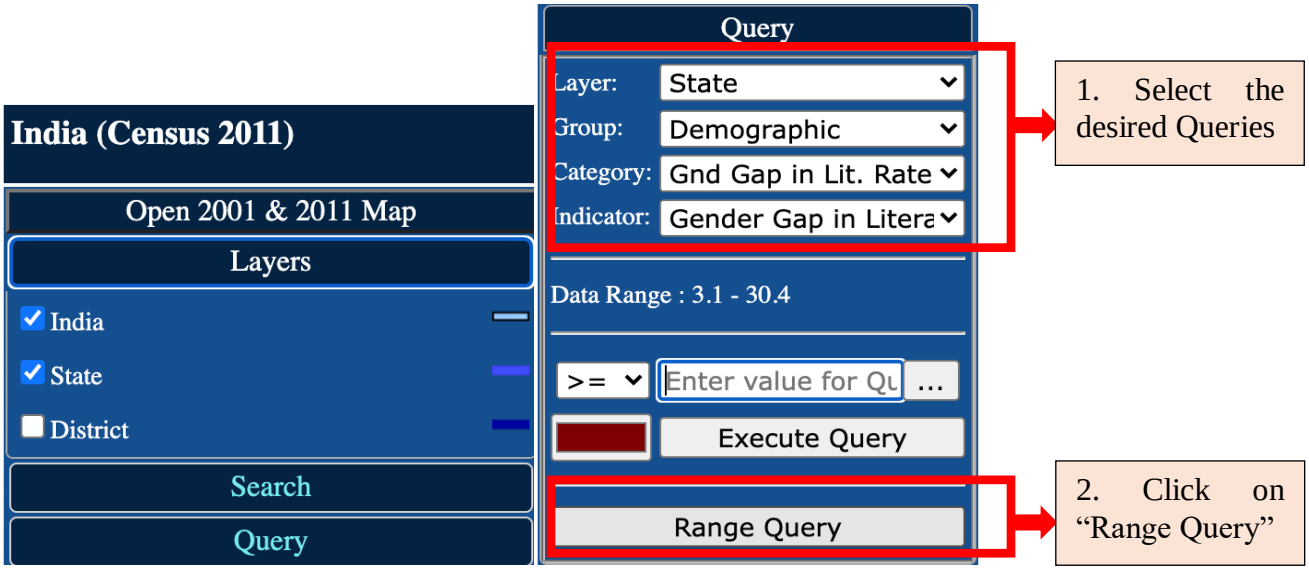



*Figure 37*

2. Click on "Range Query", enter range query division value in the dialog box that opens and click 'Ok'. From the 'Legend', change colours and values of Legend as required.

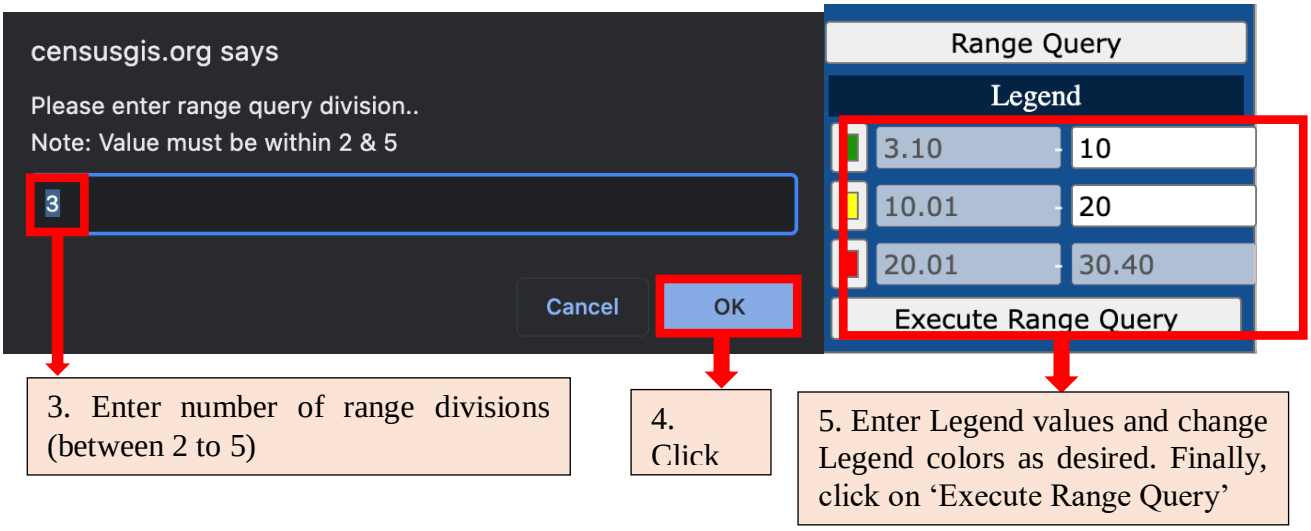



*Figure 38*

3. After clicking on 'Execute Range Query' the following map appears on the screen as desired by User. The map shows the rural gender gap in literacy rate at state-level.

The states where gender gap in literacy rate is less than or equal to 10 percent are marked in Green in the map. On the other hand, states with gender gaps in literacy rate more than 20 percent are marked in Red in the map.

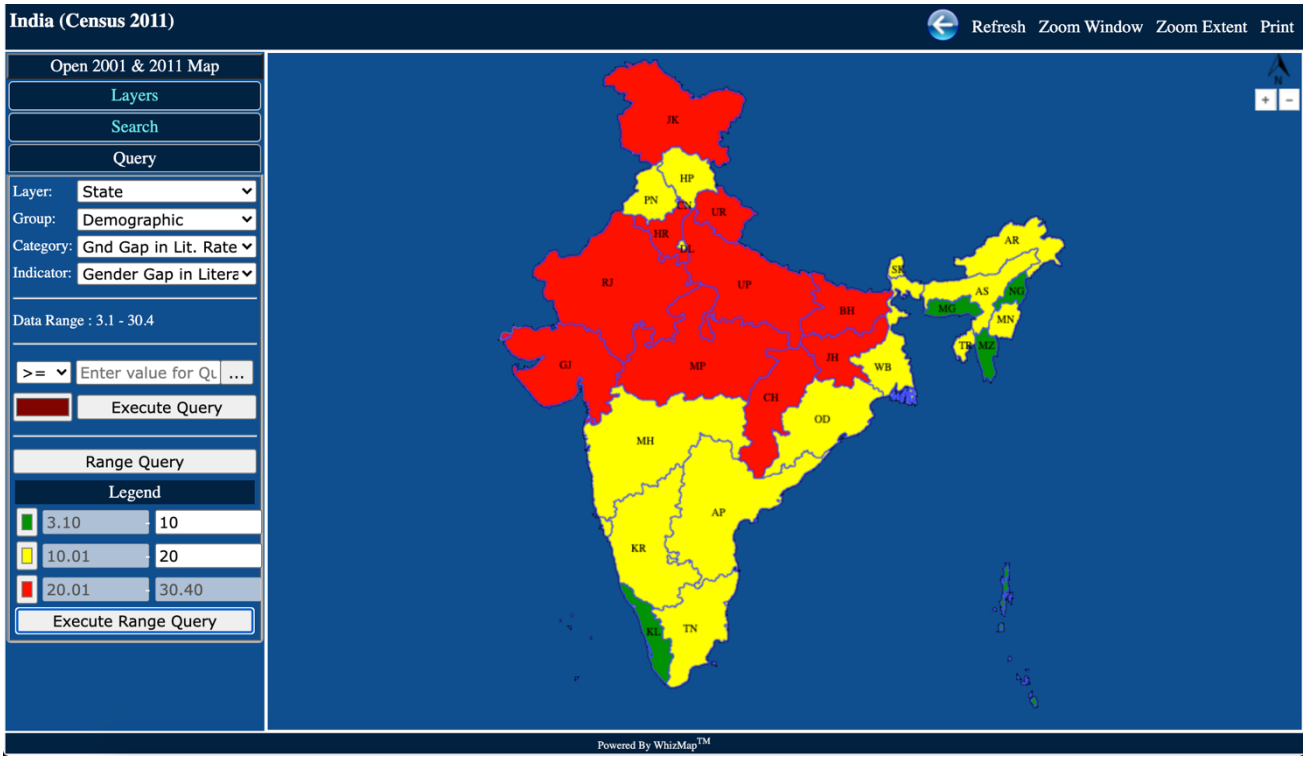



*Figure 39*

### 4.6.2 How to make range queries with 'Housing' Indicators, such as, Rural Gender Gap in Literacy Rate at State-Level ?

1. Select the 'State' in "Layers". Select desired dropdowns from "Query". Click on "Range Query"

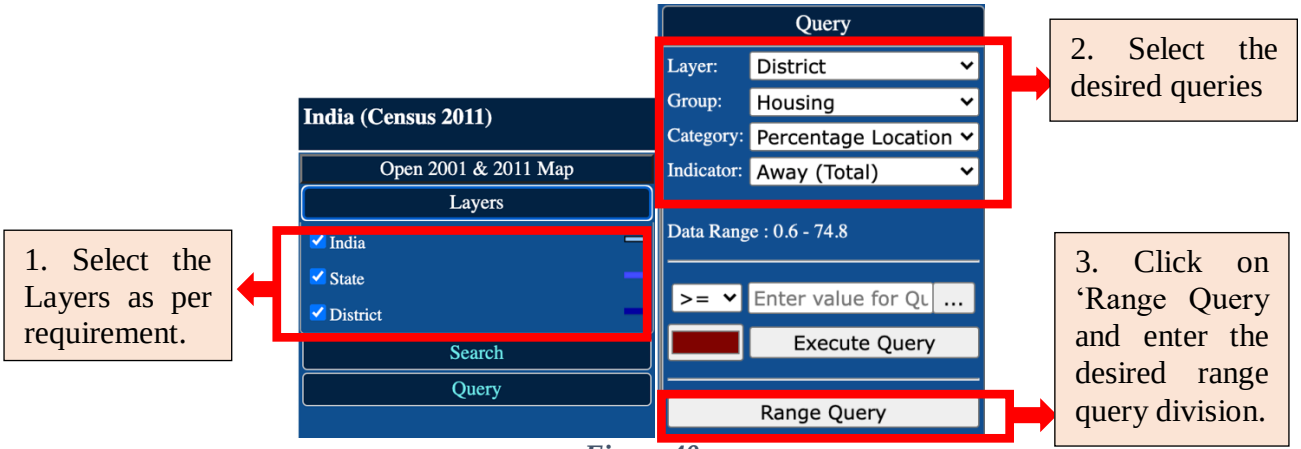



*Figure 40*

2. Enter desired 'Range Query Division'. Click 'OK'. Set 'Legends' as per requirement

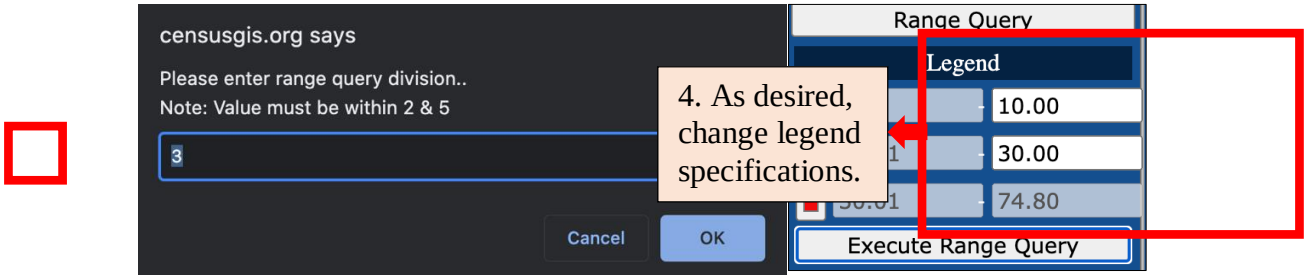



*Figure 41*

3. After clicking on 'Execute Range Query' the following map appears on the screen as desired.

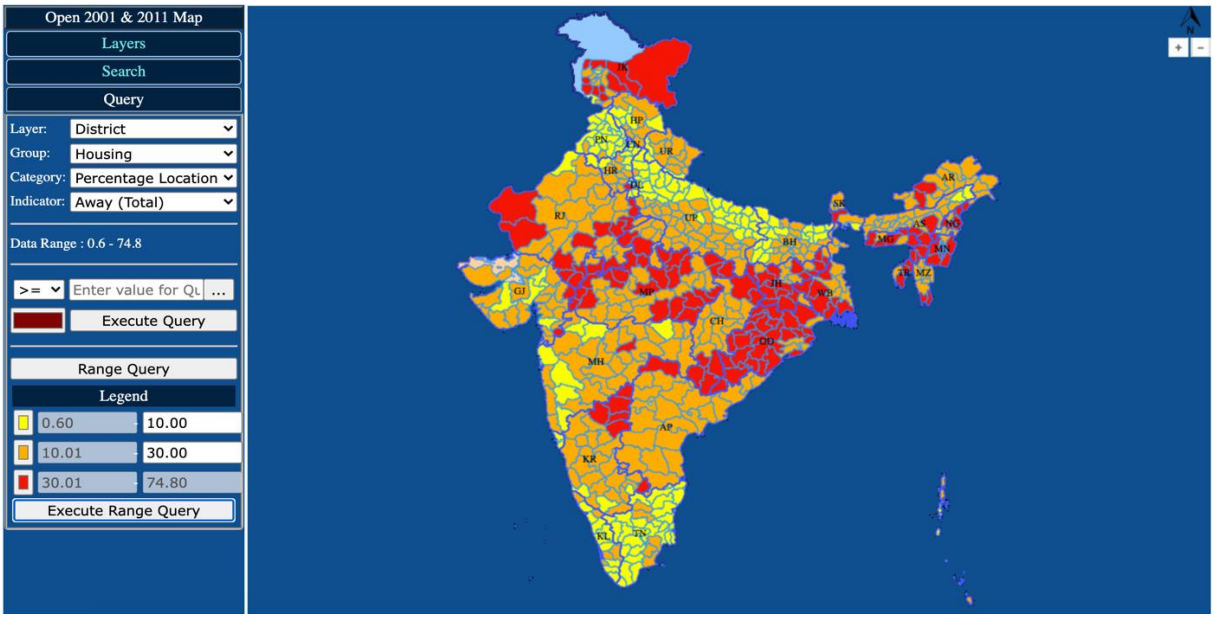



*Figure 42*

## 4.7 Location wise Data

Users can also view Location wise data on the Census GIS India website. Using this function, users will be able to view the value of indicators of selected categories for a specific location.

### 4.7.1Viewing State-level Data

1. After selecting the necessary Queries from the "Query" menu, click on any location on the map

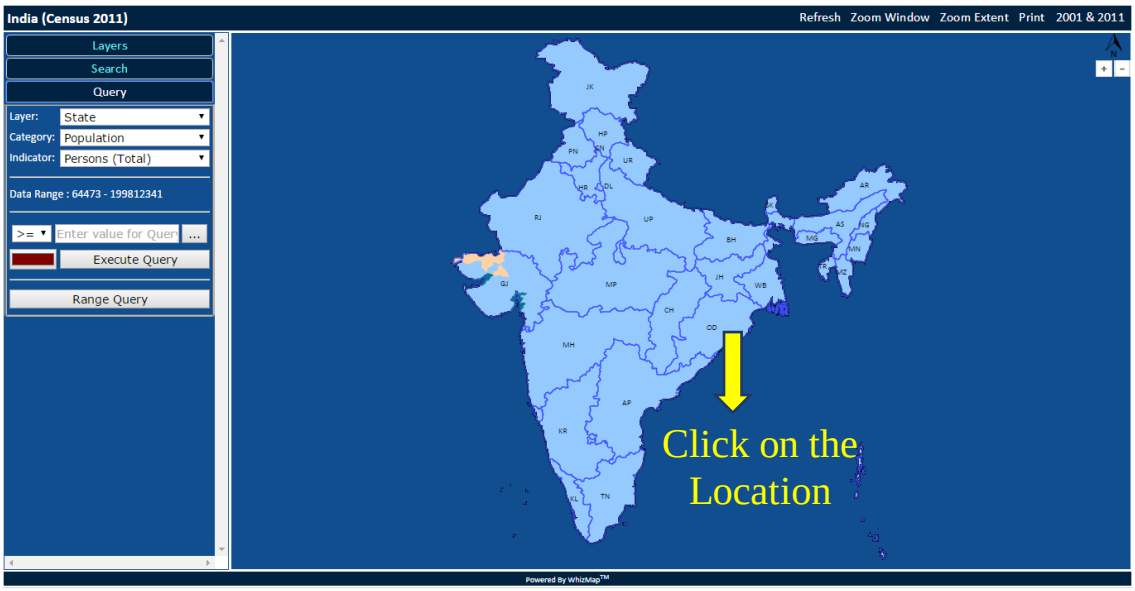



*Figure 43*

2. An information box appears in the Navigation panel, below the Query menu. It shows the value of all indicators under the selected category for the given State.

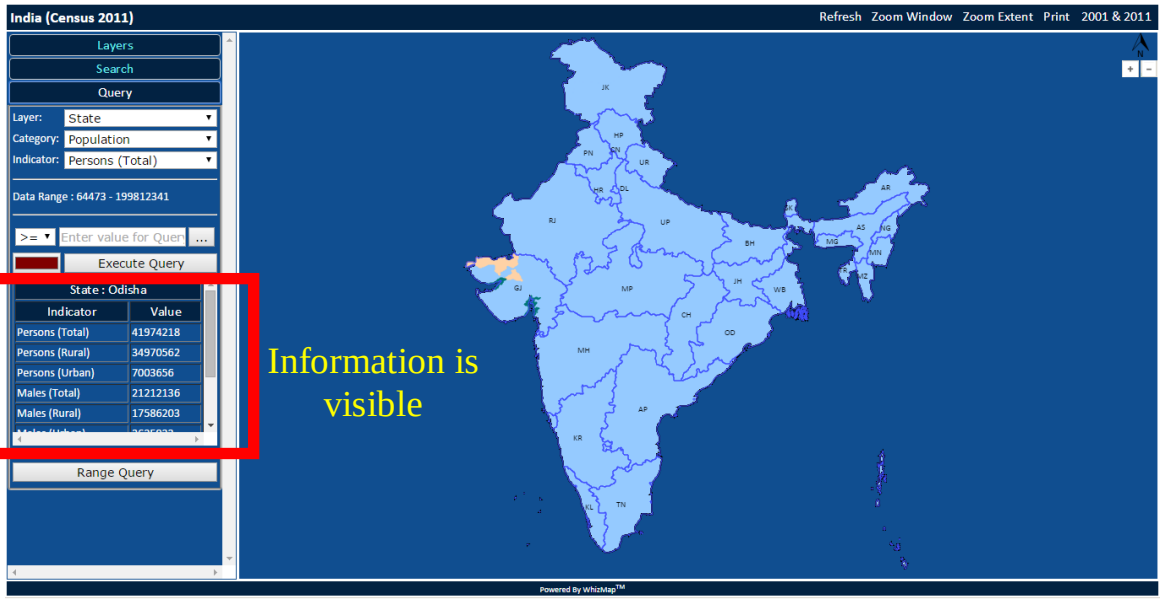



*Figure 44*

## 4.7.2 Viewing State-level Data

1. Select 'District' from "Layers" menu.Then select the necessary Queries from the "Query" menu.

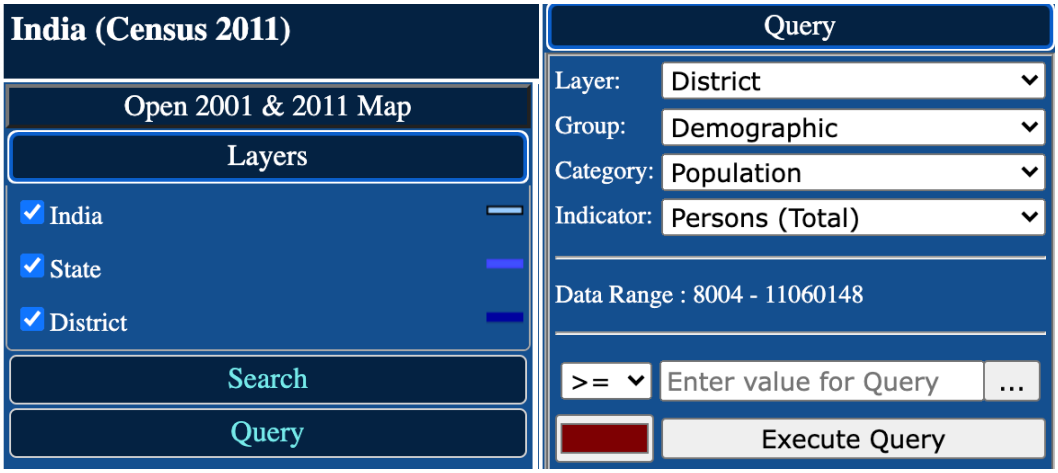
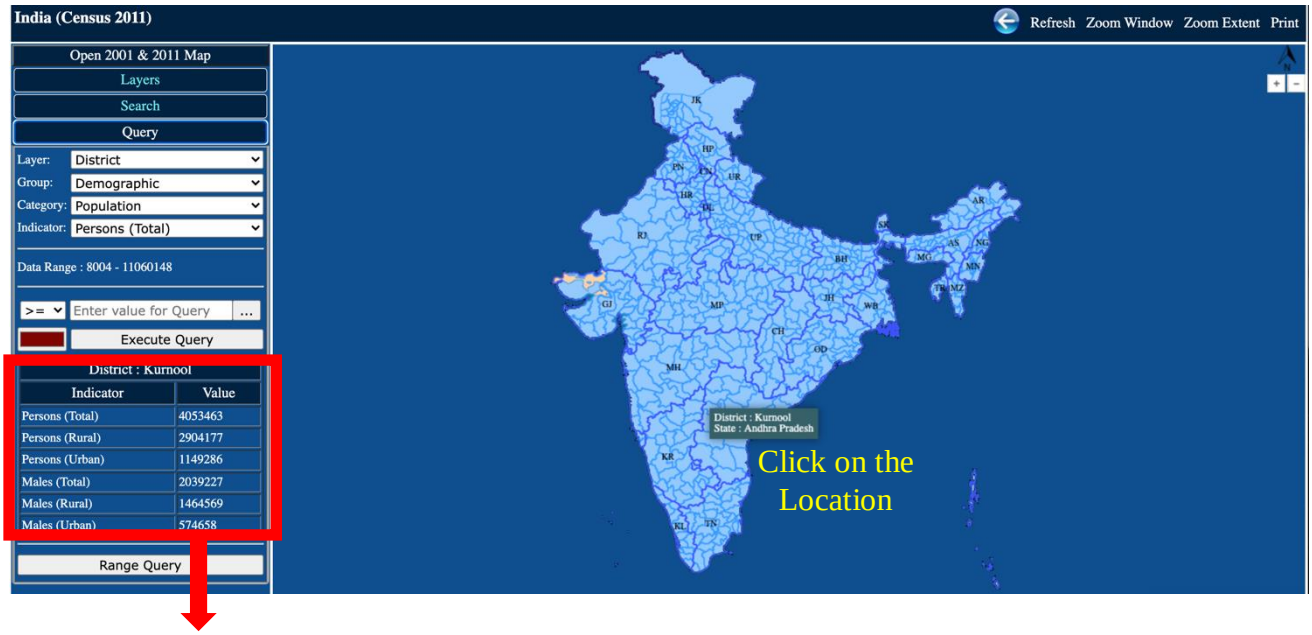
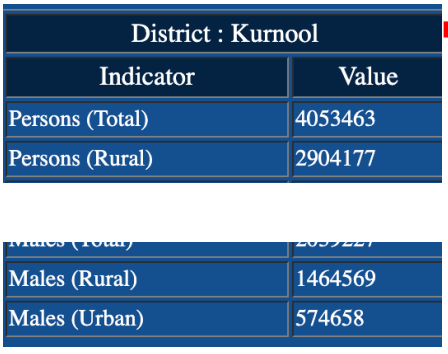



*Figure 45*

2. Click on any location on the map. An information box appears in the Navigation panel, below the Query menu.




This table shows the value of all indicators under the selected category for the given District.
Here, the value of the indicators for the 'District: Kurnool, Andhra Pradesh' are shown for the 'Category: Population'

*Figure 46*

## 4.8Zooming and Panning Facilities

The Zooming and Panning facilities allows the User to resize and move the map so that every part of the map can be viewed, as desired. These buttons are located on the top right hand corner of the screen.

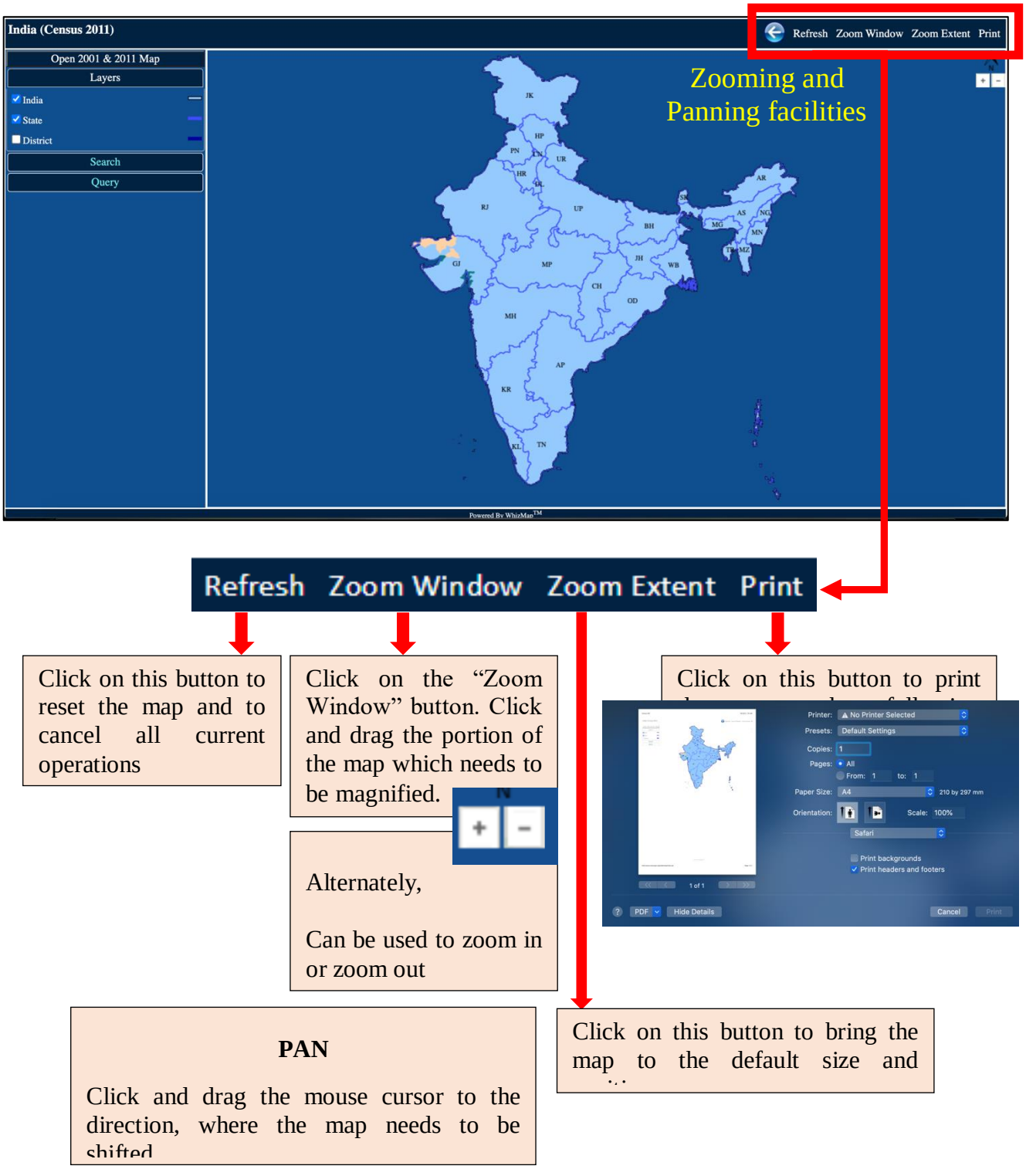



*Figure 47*

# 5. Time series analysis (CENSUS 2001 & 2011 data)

## 5.1 Opening Census 2001 and 2011 Maps

To view the variations over time by comparing CENSUS 2001 and 2011 data, click on the "Open 2001 & 2011 Map" button at the top left corner of the screen. On clicking, two separate maps appear, one for visualization of Census 2001 data another for Census 2011 data.

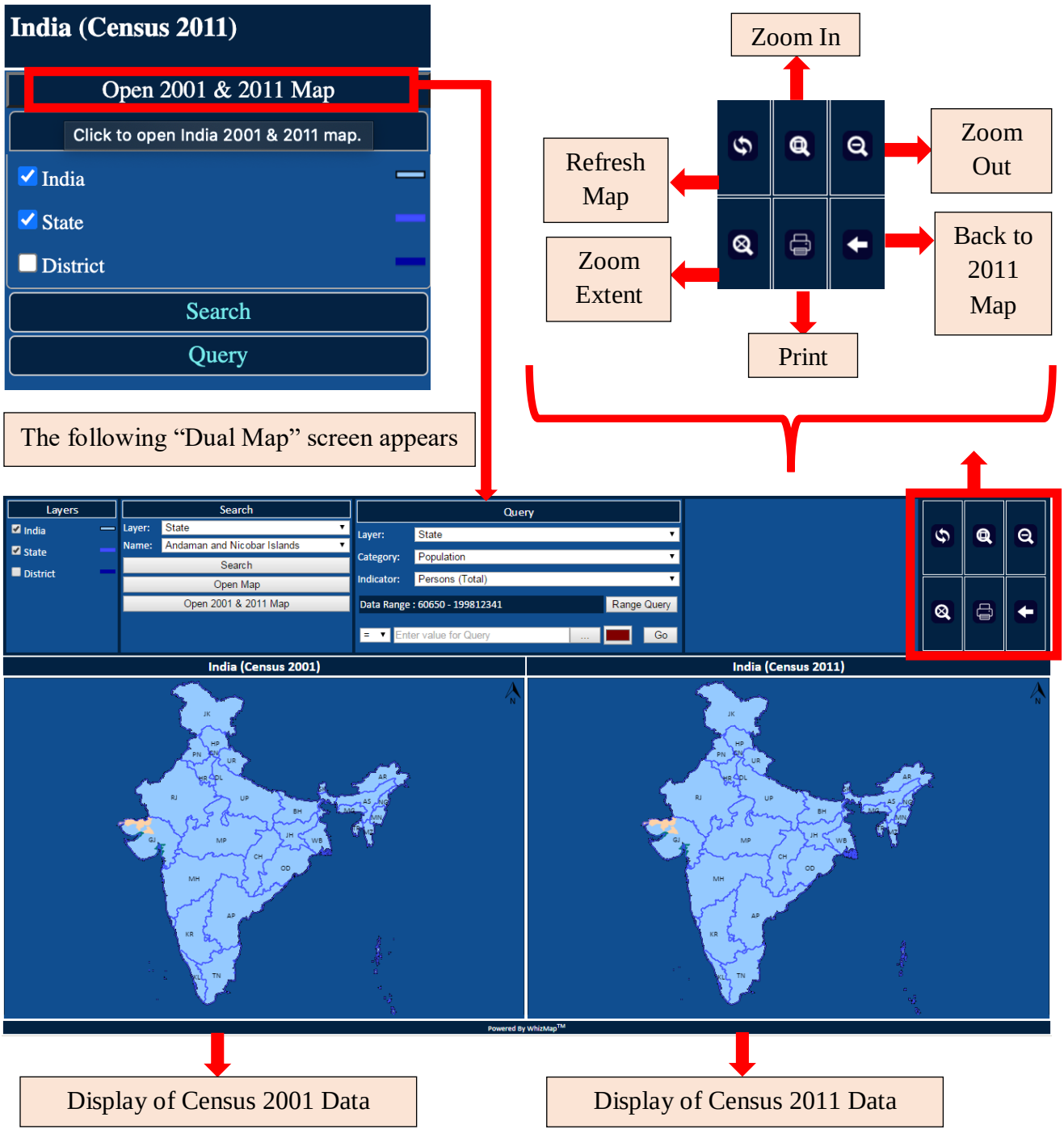


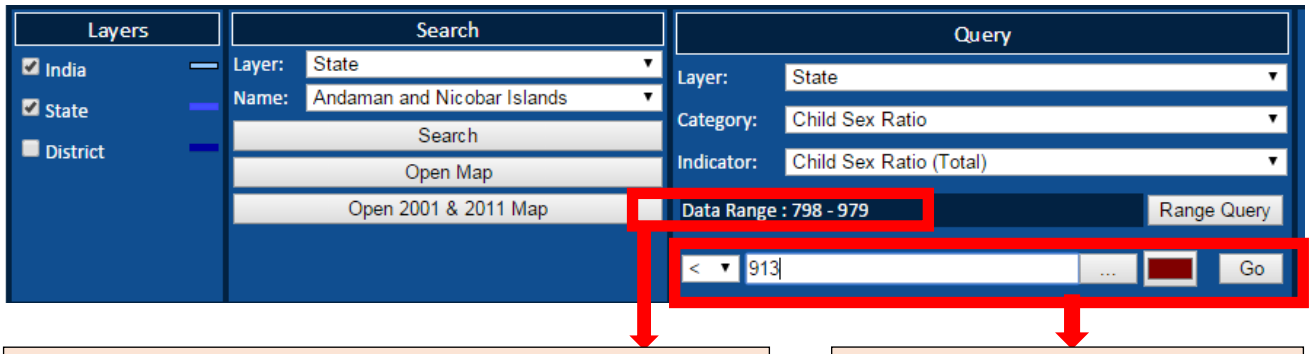

*Figure 48*

## 5.2 Examples- Using Census 2001 and 2011 Maps

The utility of the time series analysis can be understood with the following examples.

### 5.2.1. How to viewthe scenario of "Child Sex Ratio" between Census 2001 & 2011 at State-Level?

1. Open the Census 2001 and 2011 dual map screen by following instructions in Figure 48. Select "Child Sex Ratio" from "Category" and choose the "Child Sex Ratio (Total)" "Indicator" from the drop-down menus.




The minimum and maximum values of the range reflect the smallest and the highest value of that indicator, considering both Census 2001 and 2011 data.

Choose 'operator' and enter the desired 'value'. Then click on "Go" button to execute the query.

*Figure 49*

2. The result can be viewed in Dual Maps

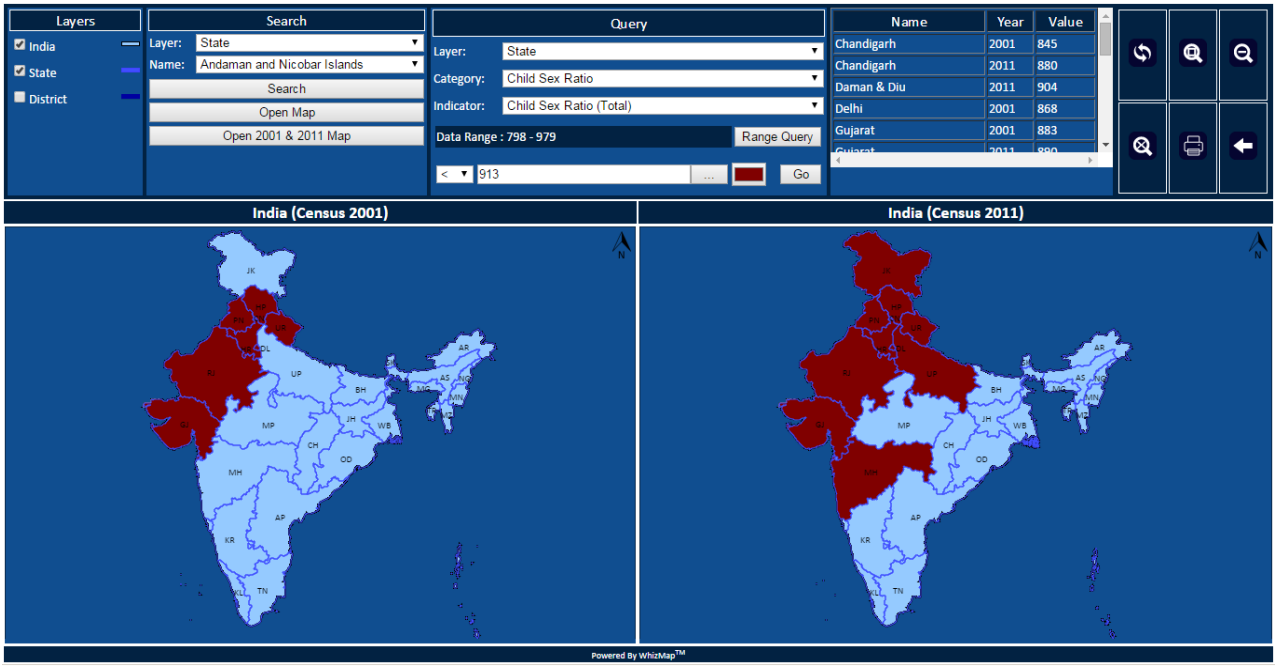



*Figure 50*

### 5.2.2 How to view the scenario of "Child Sex Ratio" between Census 2001 & 2011 at District-Level?

1. Open the Census 2001 and 2011 dual map screen by following instructions in Figure 48. Select 'District' check-box in "Layers" menu. Repeat the process as described in Section 5.2.1.

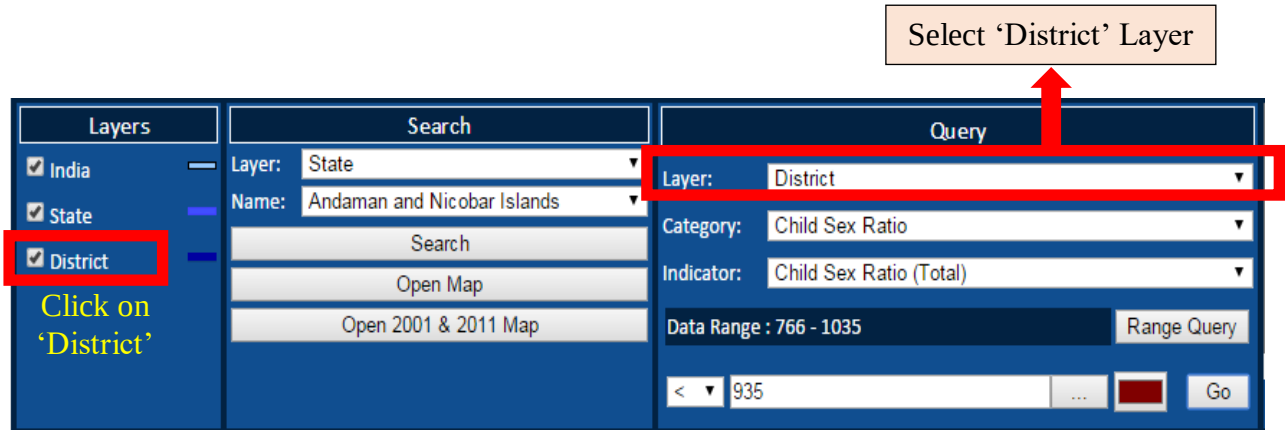



*Figure 51*

2. The result can be viewed in Dual Maps

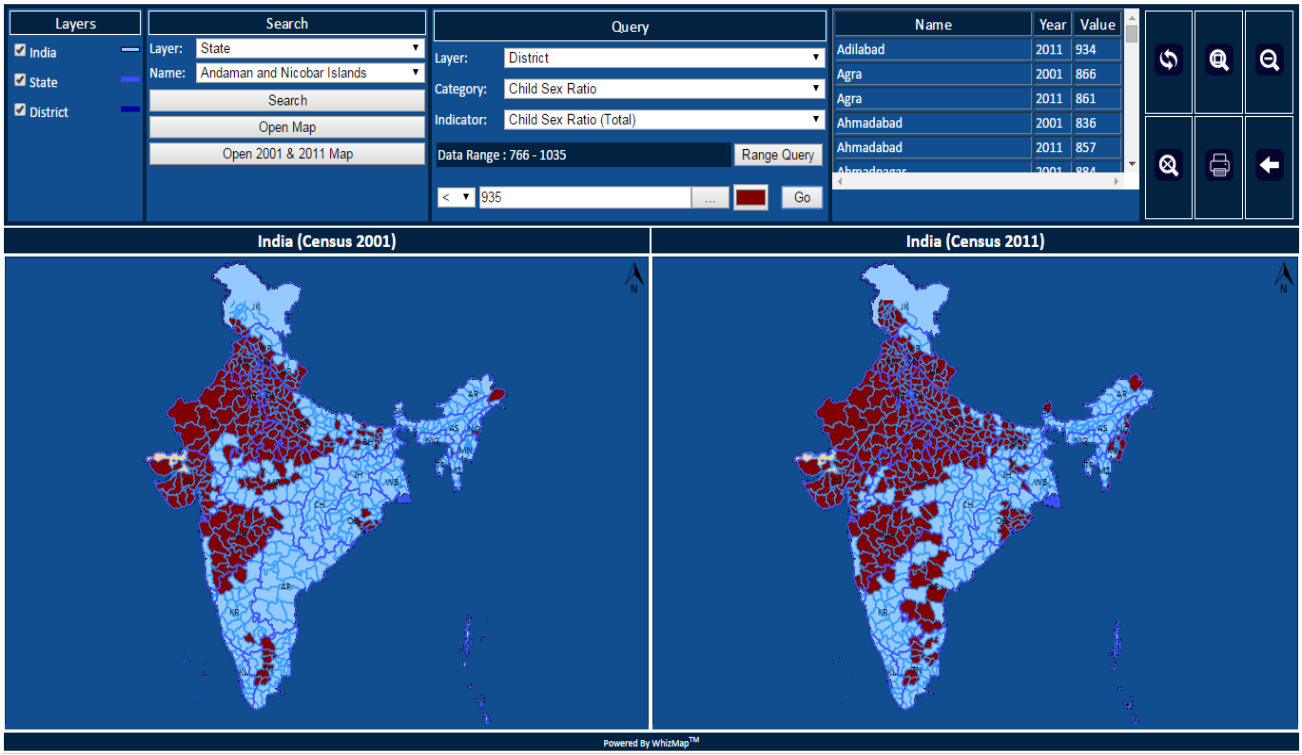



*Figure 52*

### 5.2.3 How to view range query of "Child Sex Ratio" between Census 2001 & 2011 ?

1. Open the Census 2001 and 2011 dual map screen by following instructions in Figure 48. Repeat the process as described in Section 5.2.1. Click on "Range Query" button.

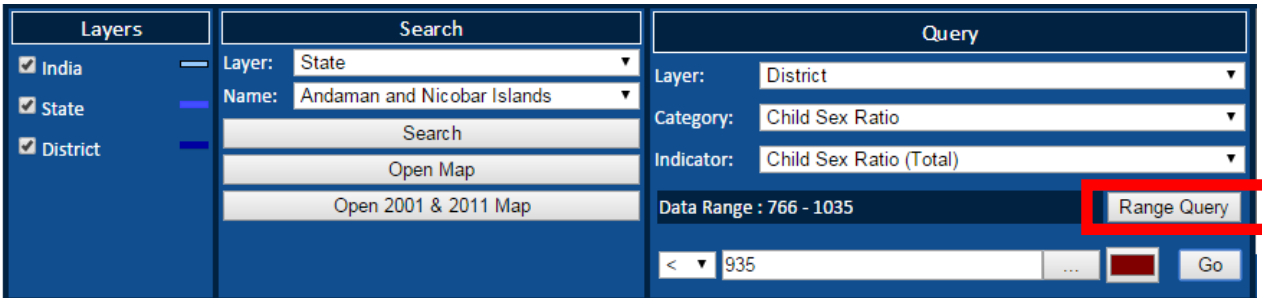



*Figure 53*

2. Enter desired 'Range Query Division'. Click 'OK'. Set 'Legends' as per requirement. Then click on "Execute Range Query" button.

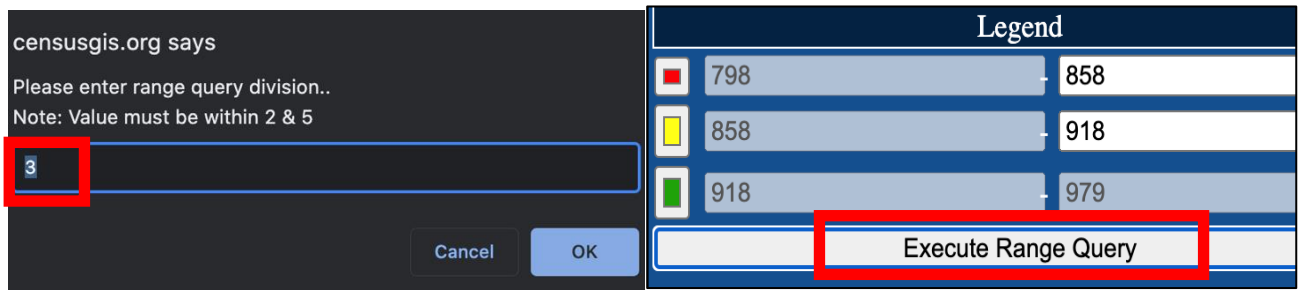



*Figure 54*

3. The result can be viewed in Dual Maps.

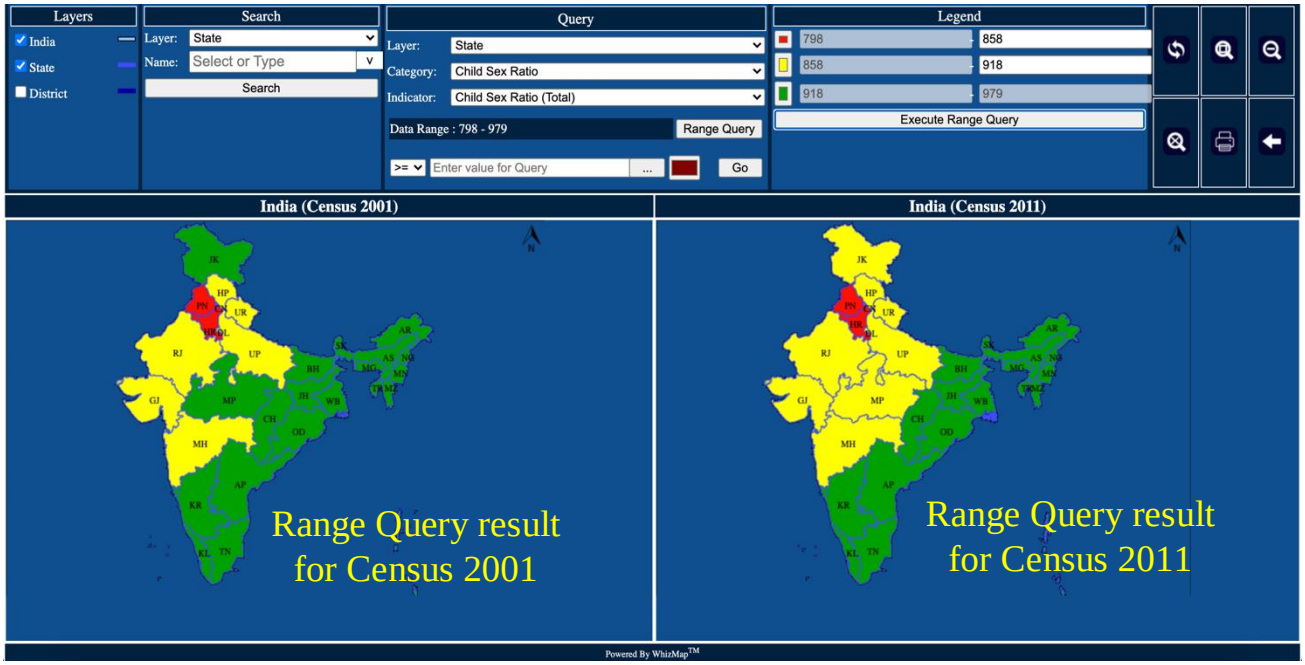



*Figure 55*

# 6. Individual State Maps

1. Open the Census GIS India homepage and click on the name of the desired State/UT.

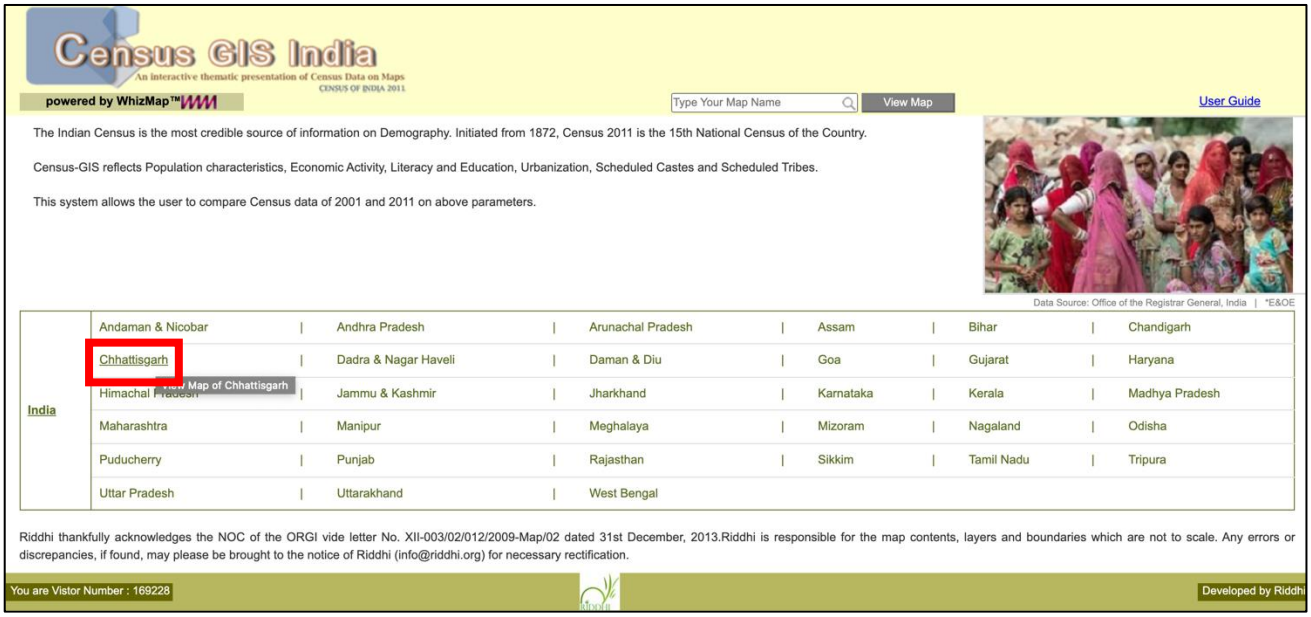



*Figure 56*

2. The selected state map will appear with District boundaries.

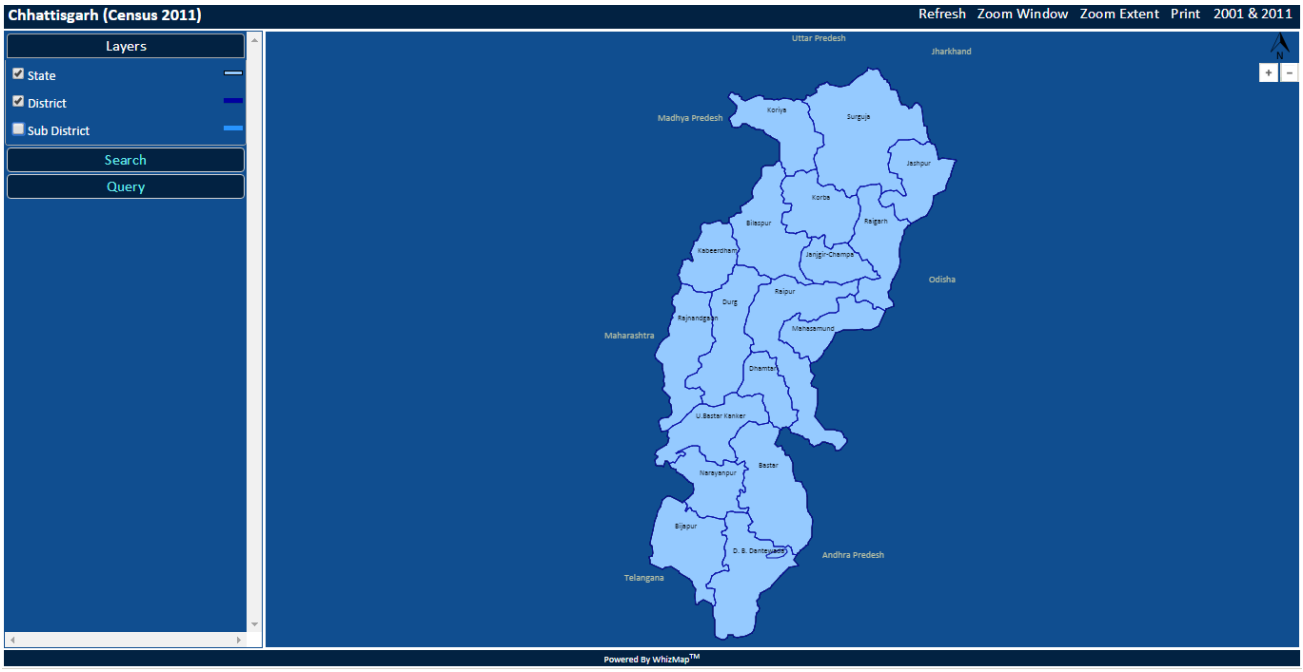



*Figure 57*

3. On clicking the 'Sub-district' checkbox in "Layers" menu, the sub-district boundaries appear on the map.

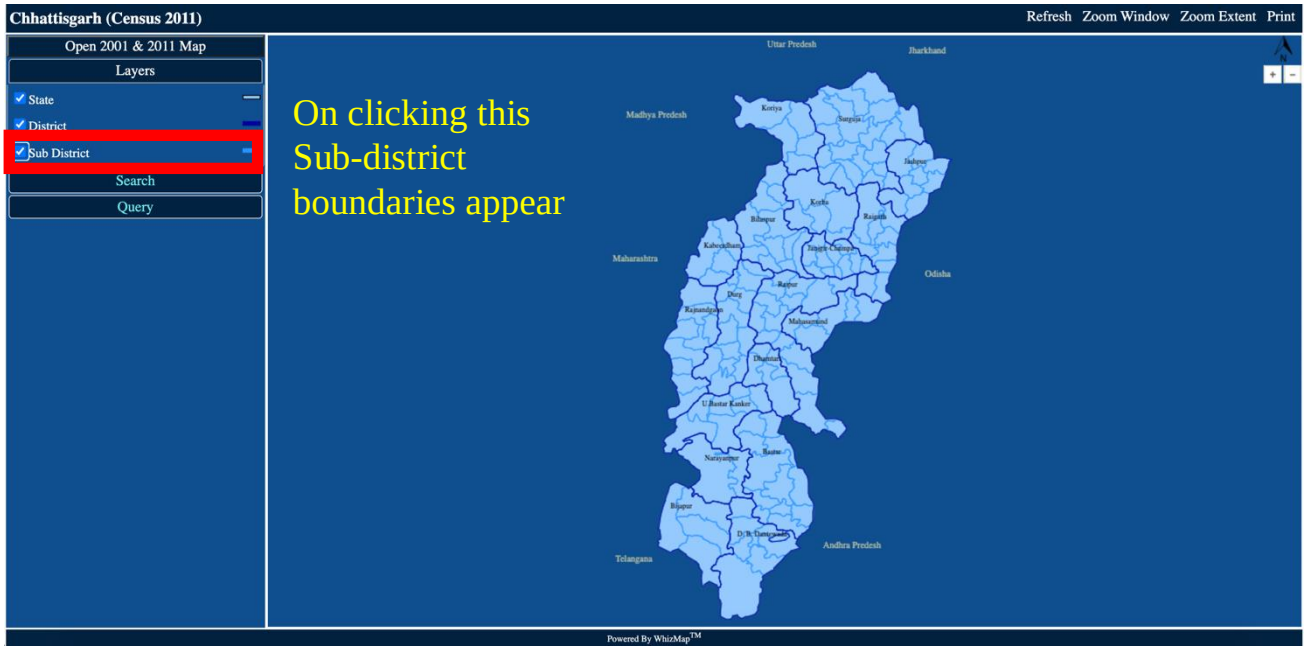



*Figure 58*

## 6.1 Searching Locations

1. Click on "Search" menu → Layer → Click on the drop-down menu (move your mouse cursor to the scroll icon beside the box, to find the names). → Click on 'Search' button

Here we want to search the sub-district- Korba. Hence, we select 'Sub-district' and then the 'Name' Korba from the drop-down list.

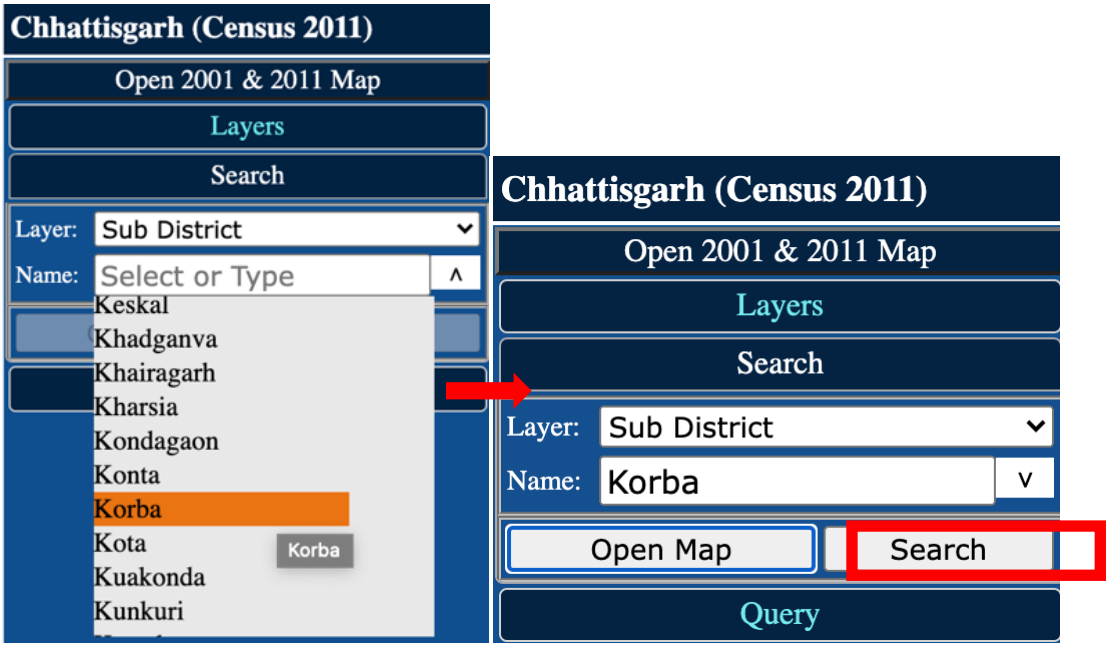



*Figure 59*

3. The searched location will be highlighted in the map in Red Colour

*Figure 60*

## 6.2 Simple Query

Select the desired option from "Layers" menu → Click on the "Query" menu → Select the desired 'Layer', 'Category', 'Indicator', colour, operator and value→ Click on 'Execute Query' (Refer to Section 4.4 for elaborate instructions)

Asample query on 'Districts in Chhattisgarh with Population of STs more than 50 percent

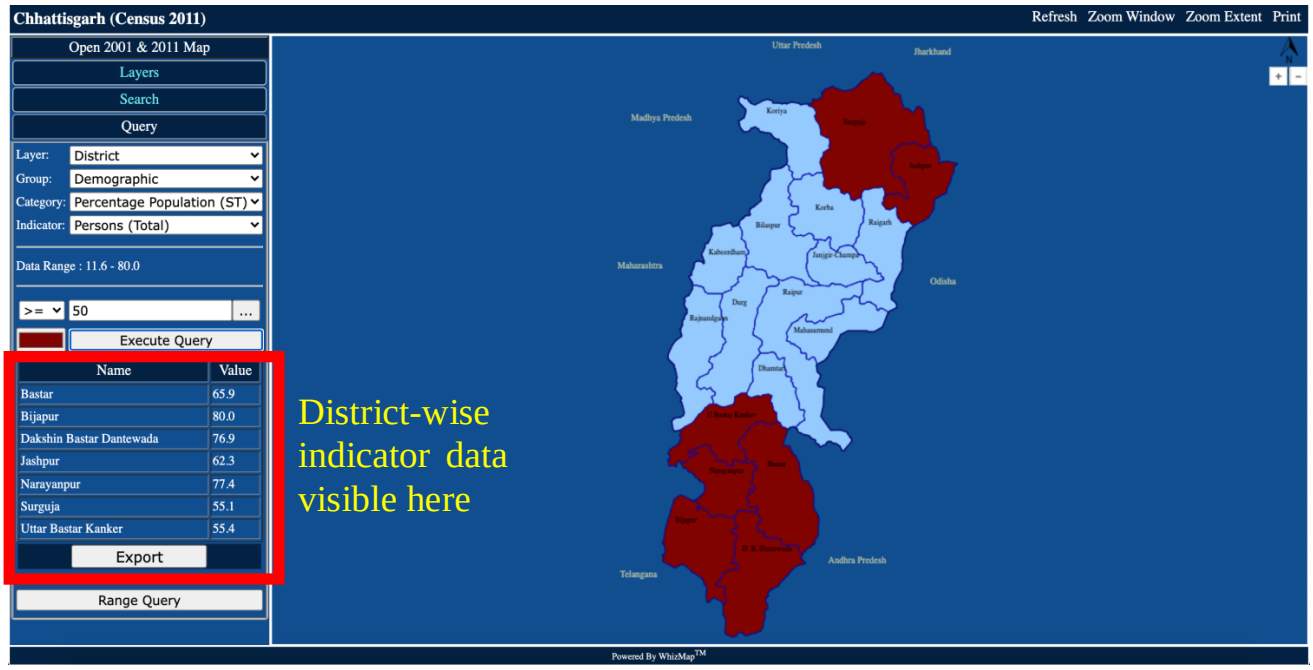



*Figure 61*

A sample query on ‘Sub-Districts in Chhattisgarh with Population of STs more than 50 percent

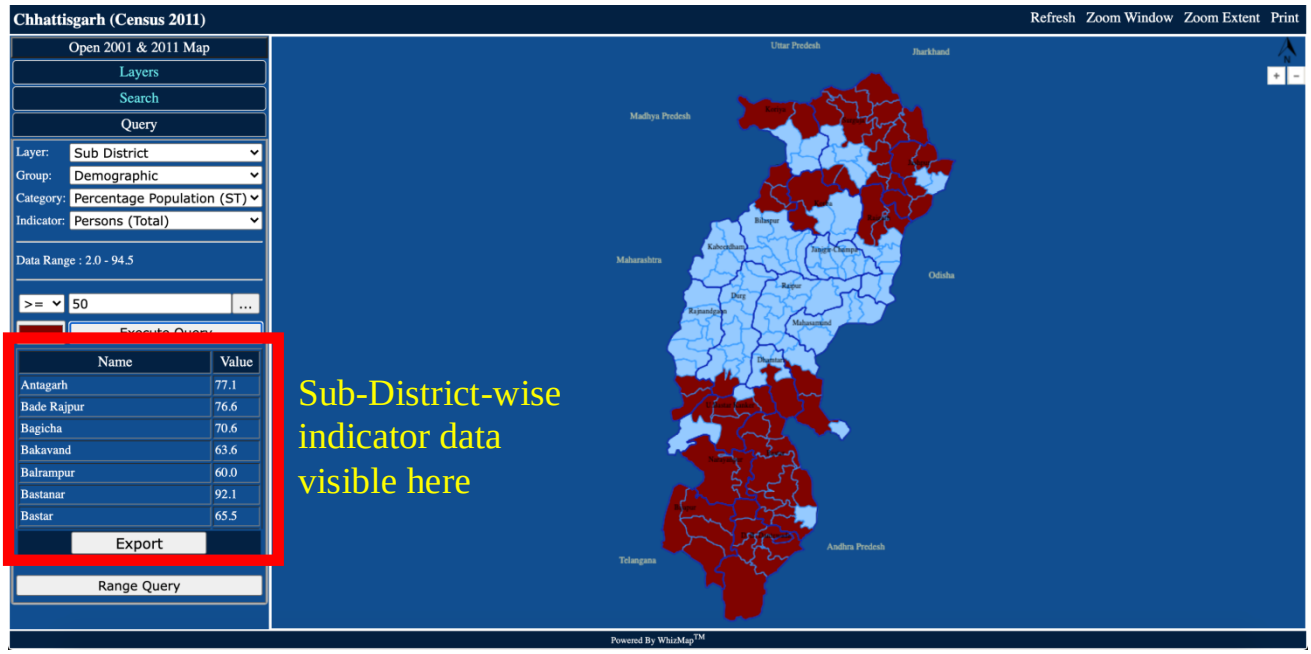



*Figure 62*

## 6.3 Range Query

After selecting Layer and Query → Click on “Range Query”→ Enter range query division → Click ‘Ok’ → Click on “Execute Query” (Refer to Section 4.6 for elaborate instructions)

A Range query on ‘Percentage Population of STs’ in Chhattisgarh at sub-district level

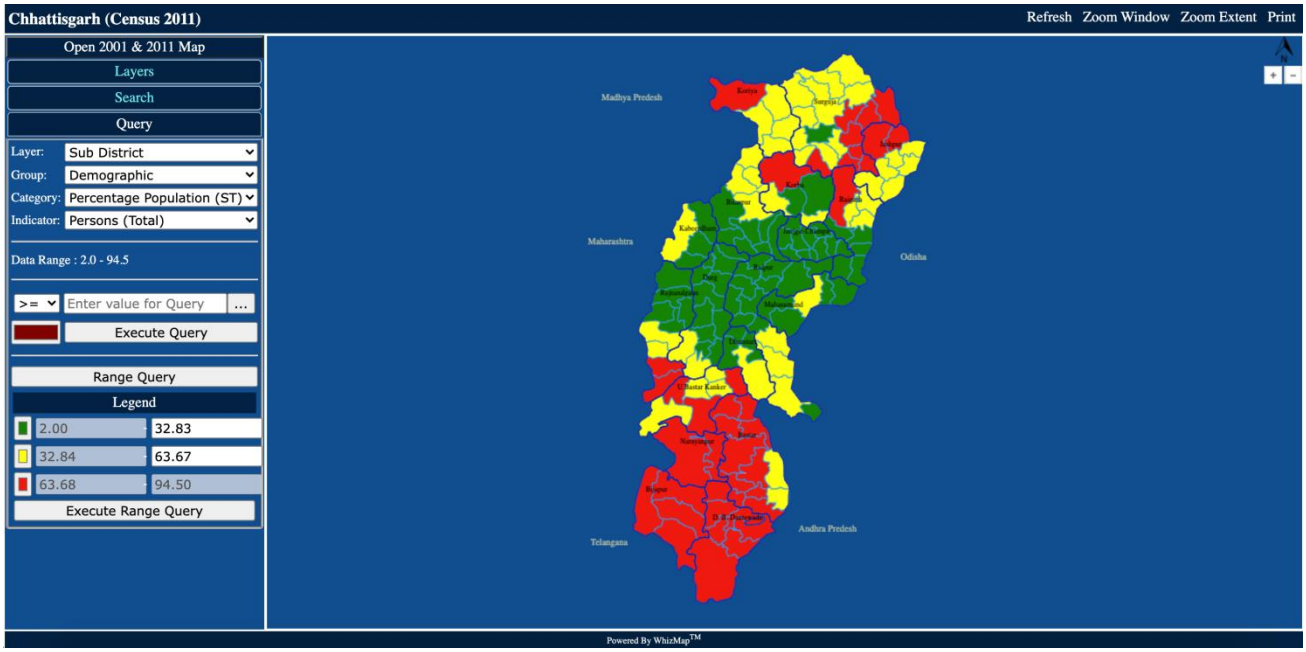



*Figure 63*

## 6.4 Time series analysis (CENSUS 2001 & 2011 Data)

Click on "Open 2001 & 2011 Map" → Select from "Layers" menu → Specify the query → Click 'Go'. (Refer to Chapter 5 for elaborate instructions)

Time-series analysis on the simple query 'Sub-districts in Chhattisgarh with a Literacy Rate over 50 percent.

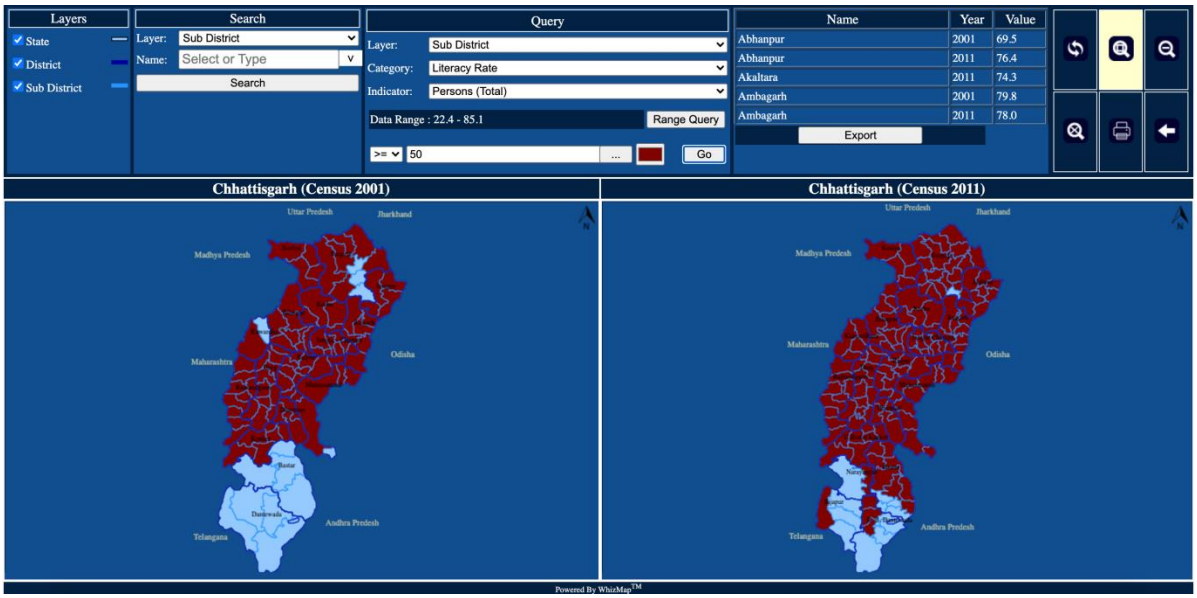



*Figure 64*

Time-series analysis on the simple query 'Sub-districts in Chhattisgarh with a Literacy Rate over 50 percent.

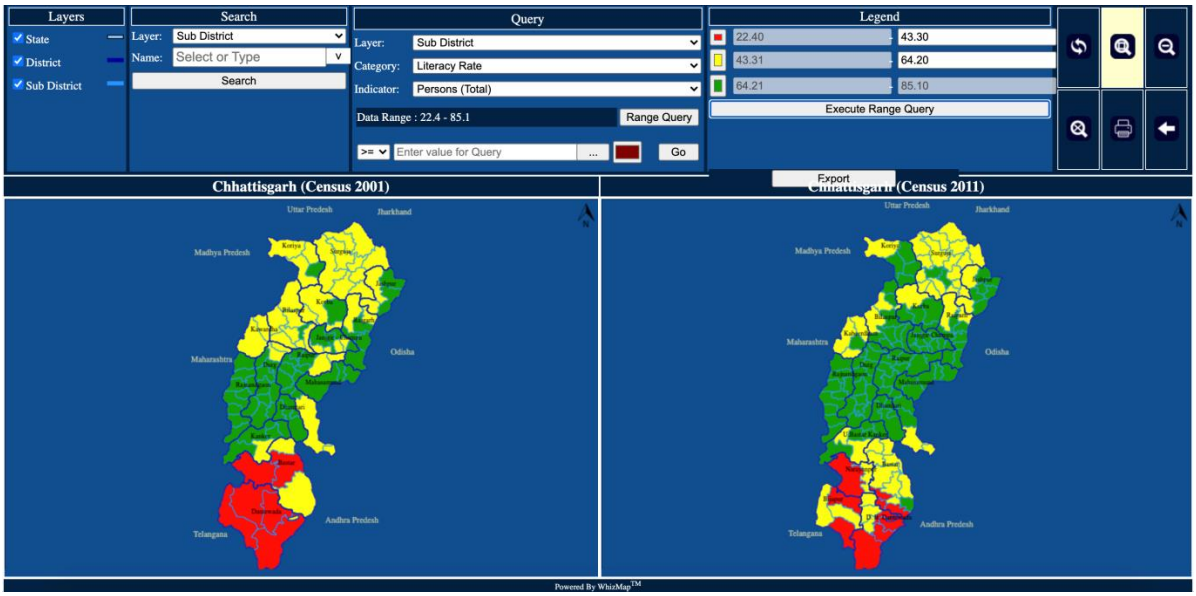



*Figure 65*

## 6.5How to view Individual District Map with Revenue Villages?

1. From the individual State Map window, open a district map through 'Search' menu, select the District Name from the drop down menu and then click on 'Open Map' button:

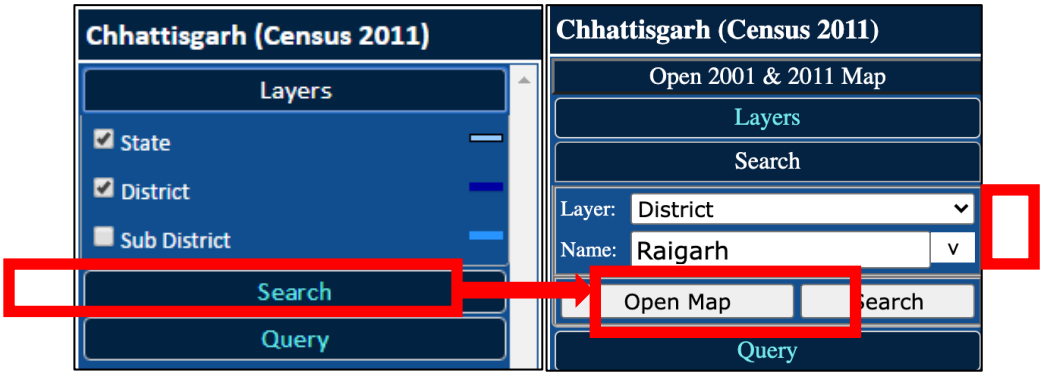



*Figure 66*

2. The selected District map will appear.

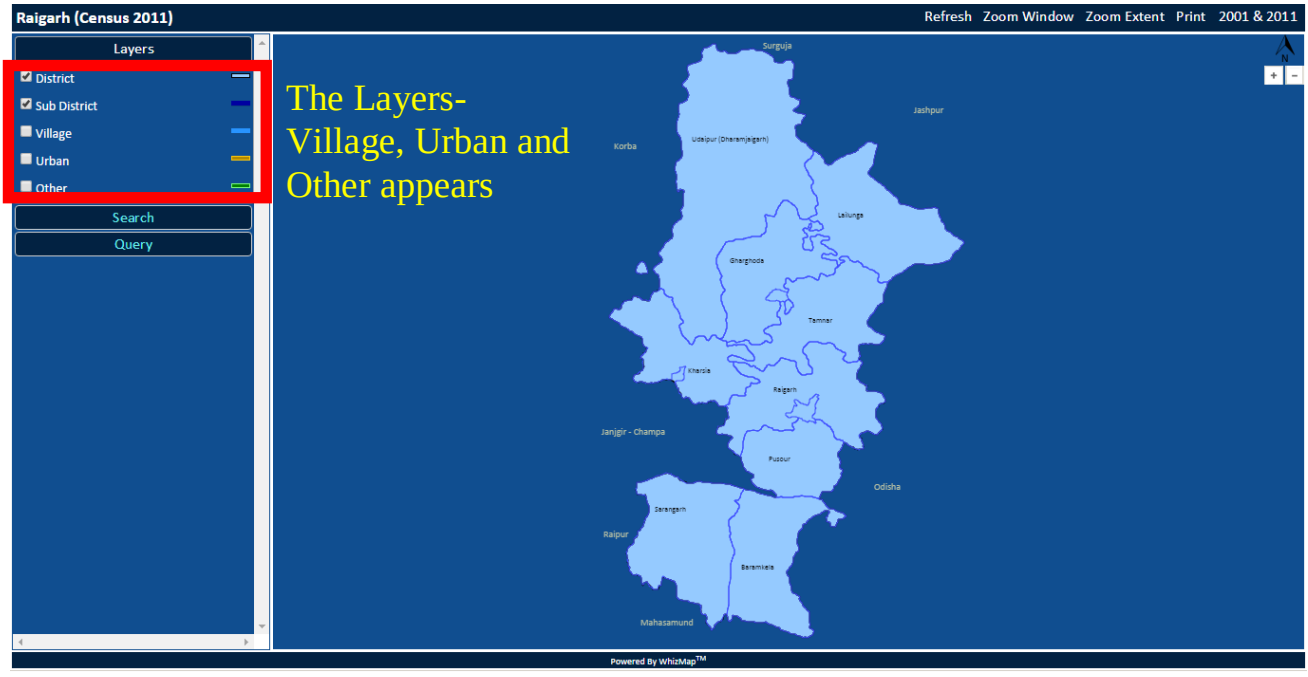



*Figure 67*

3. Select the 'Village' check-box to analyse Census data at revenue village level.Click on the "Query" menu. Select the desired 'Layer', 'Category', 'Indicator', colour, operator and value. Then click on "Execute Query". District Map highlighting the selected indicator will open up.

In Figure 60, the District Map highlights the Revenue Villages with 'Population (0-6 yrs)' more than 200.

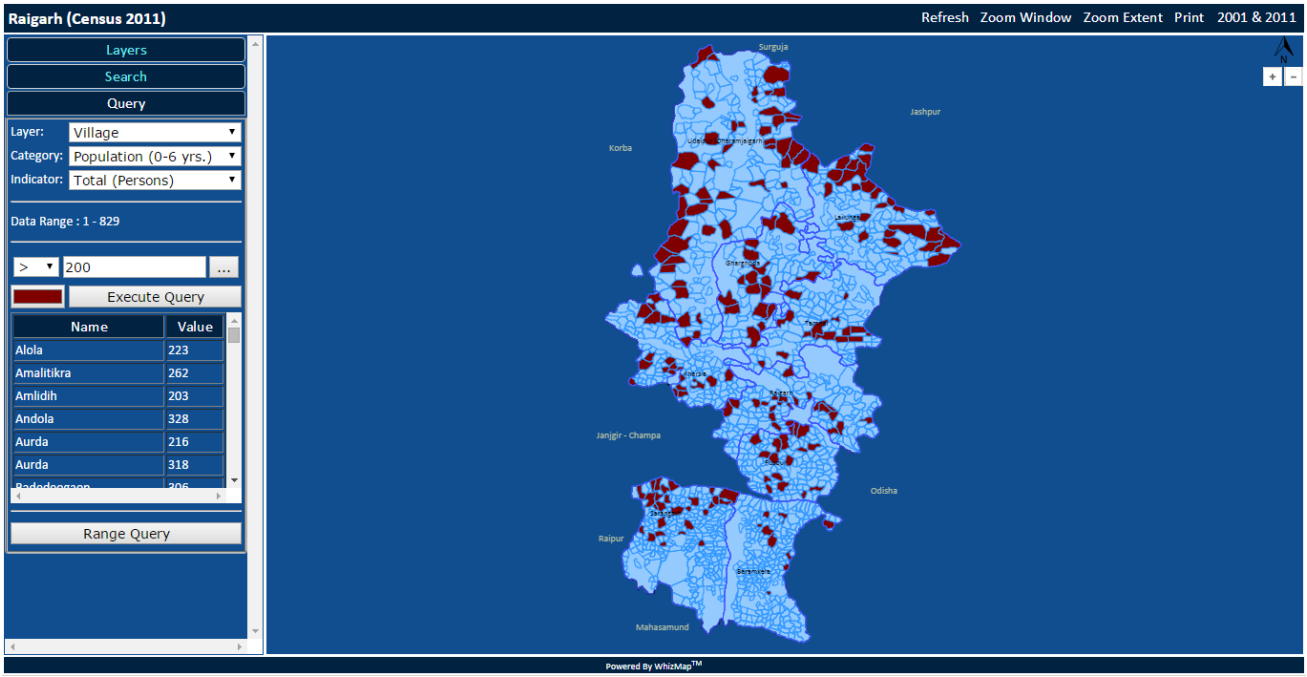



*Figure 68*

## 6.6How to view Individual District Map with Urban areas?

1. From the individual State Map window, open a district map through 'Search' menu, select the District Name from the drop down menu and then click on 'Open Map' button:

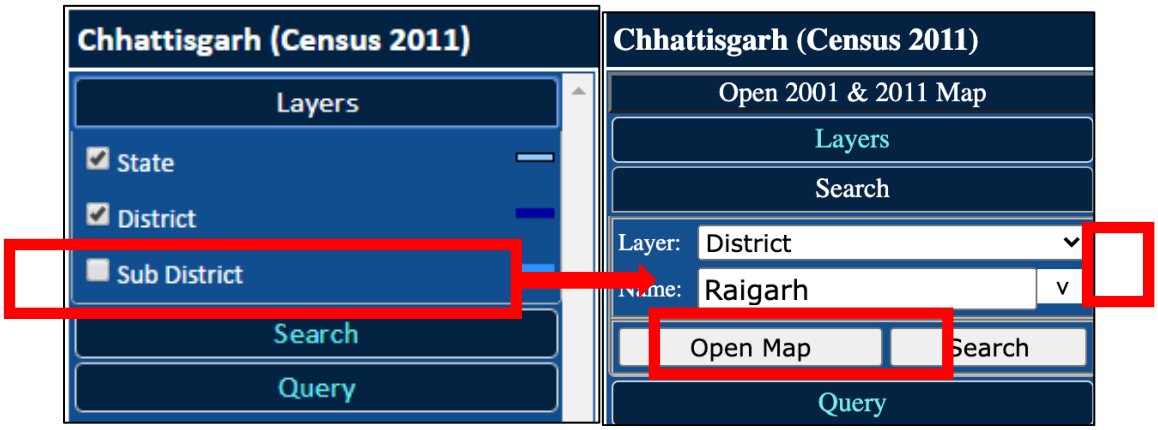



*Figure 69*

2. The selected District map will appear. On clicking 'Urban' check-box in the "Layers" menu, the Urban areas will appear on the map. Click on the "Query" menu. Select the desired 'Layer'- Urban, 'Category', 'Indicator', colour, operator and value. Then click on "Execute Query".

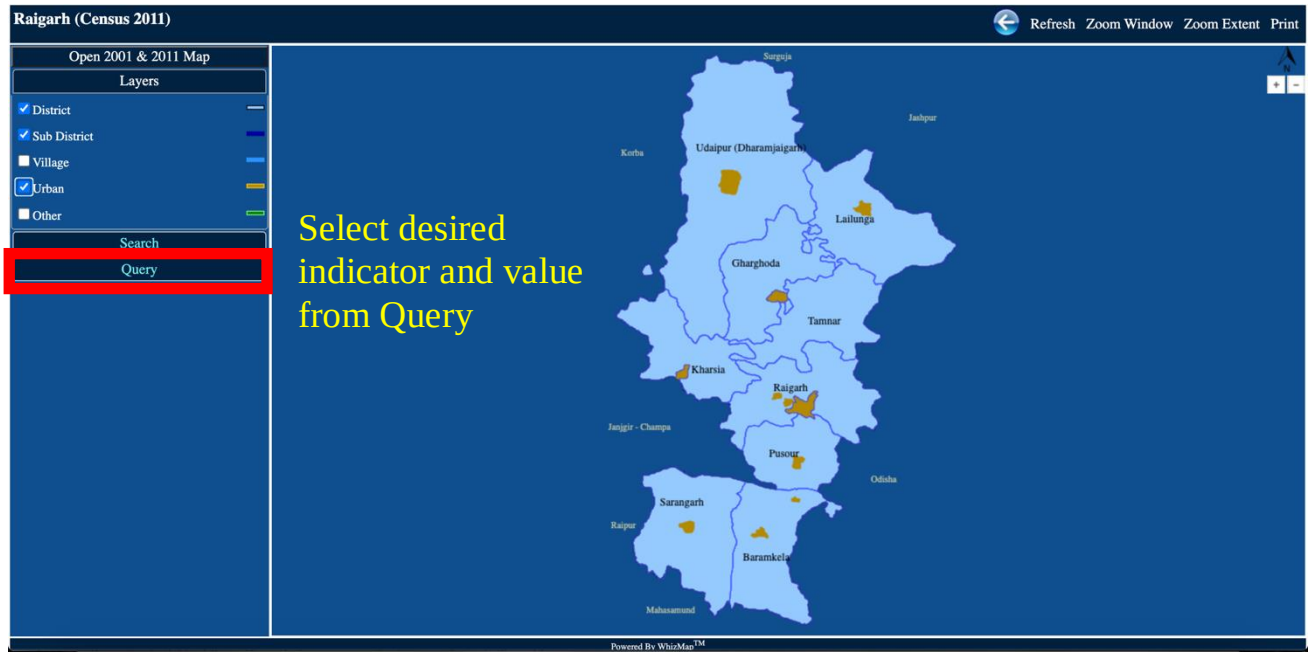



*Figure 70*

3. District Map highlighting the selected indicator will open up.

In Figure 63, the District Map highlights the Urban areas with 'Population (0-6 yrs)' more than 10000.

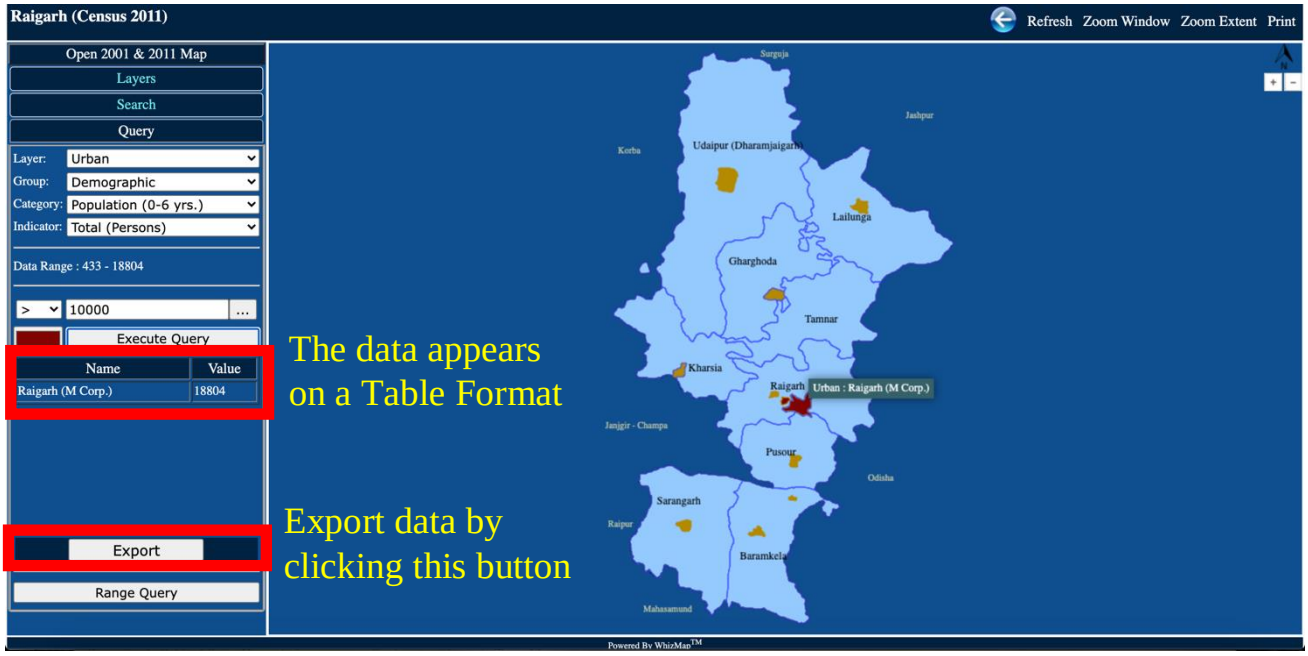



*Figure 71*

## 7. Contact us

Please feel free to contact us for further assistance.

**Helpline support from Kolkata**

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