

**India
Observatory**

Data Platform User Manual



DATA PLATFORM

Data platform is the backbone of the India Observatory initiative. It houses social, economic and ecological datasets with meta-data catalogue. It provides contextual insights and enables spatial and temporal analysis for better diagnosis of developmental trends. Further, it helps various stakeholders in taking informed decisions by presenting the data in a user-friendly manner through infographics, visualizations and tools.

Key Features

- Data sets pooled from various secondary sources available from 1990's onwards and for some states from 1960's onwards.
- Easy exploration of social, economic and ecological data prompting the user to analyse through an interdisciplinary lens.
- Compare Maps to create two maps on the same screen in split-screen mode for easy comparison
- Comparative Visualisation between parameters in the same map
- Export map to download maps in PDF format.
- Location At A Glance and GDP profile provides a quick summary on the socio-economic and ecological parameters
- Examine change through temporal datasets
- Trend analysis to visualize temporal trends in tabular or graphical format.
- Analytics feature to choose parameters, view them in tabular format, perform statistical operations like mean, median, mode etc. on them and visualize them in the form of bar graphs, pie charts etc.
- Multilingual to maximize reach

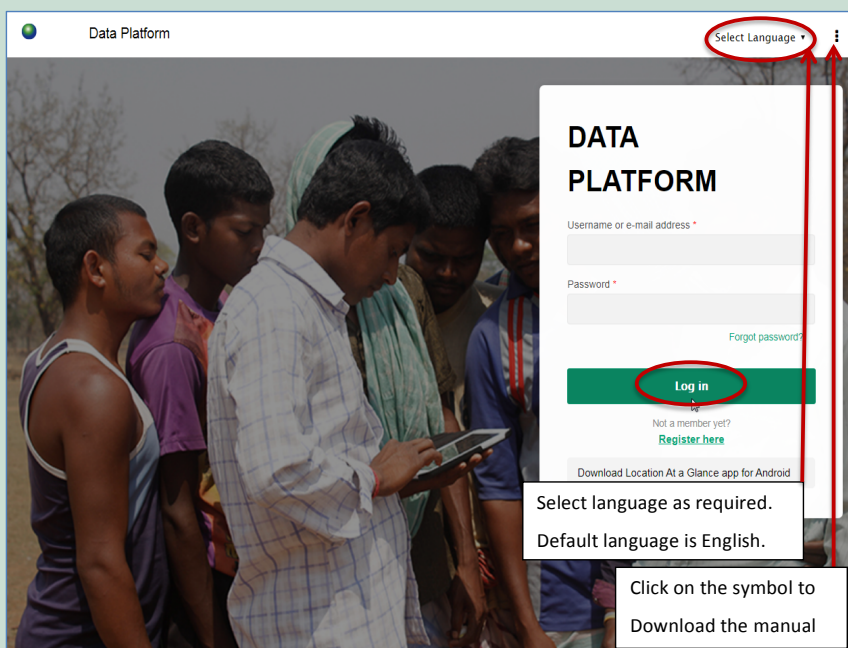
1.0 Getting Started

1.1 System Requirements

Use Google Chrome Version 70 or above for best performance.

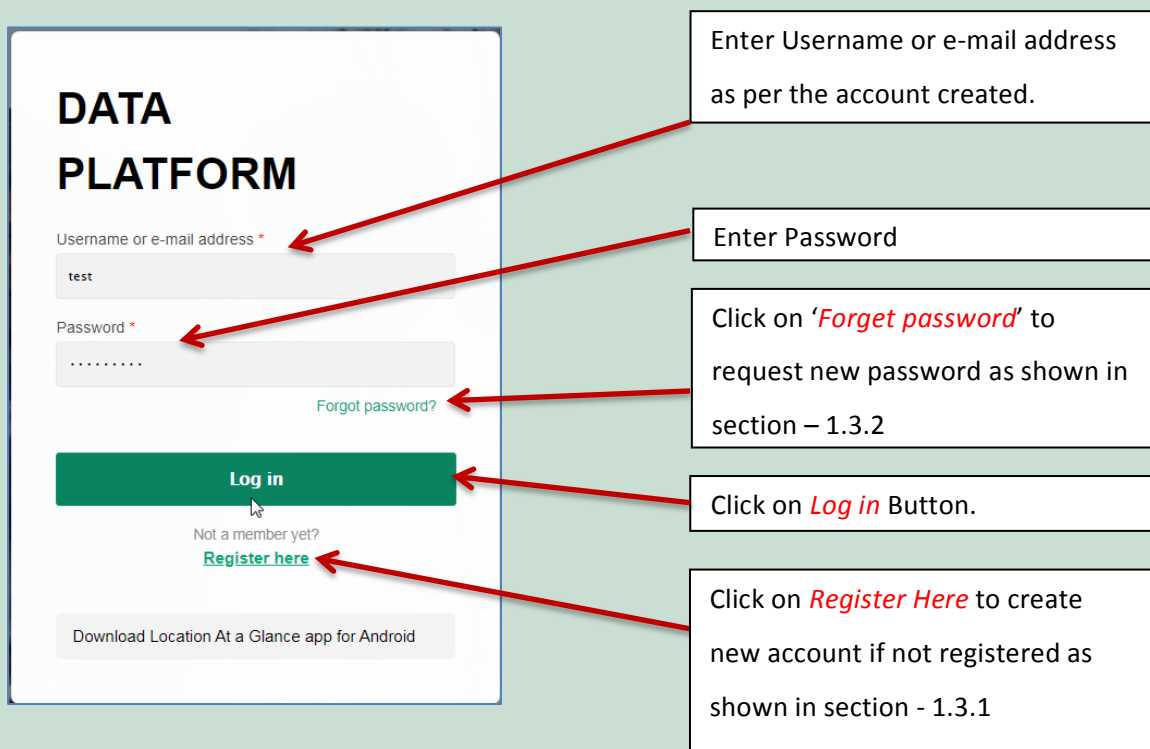
1.2 Home Page

Open Google Chrome and enter Data Platform URL (<https://dp.observatory.org.in/content/explore>) in the Address bar. The home Page will be displayed as shown in the picture below. It will also display Login and Language selection option.



1.3 Login

- How to login ?



The screenshot shows the login interface for the DATA PLATFORM. It includes a title, input fields for username and password, a 'Log in' button, a 'Forgot password?' link, a 'Register here' link, and a footer for downloading an app. Red arrows point from callout boxes to these elements.

DATA PLATFORM

Username or e-mail address *
test

Password *
.....

[Forgot password?](#)

Log in

Not a member yet?
[Register here](#)

Download Location At a Glance app for Android

Enter Username or e-mail address as per the account created.

Enter Password

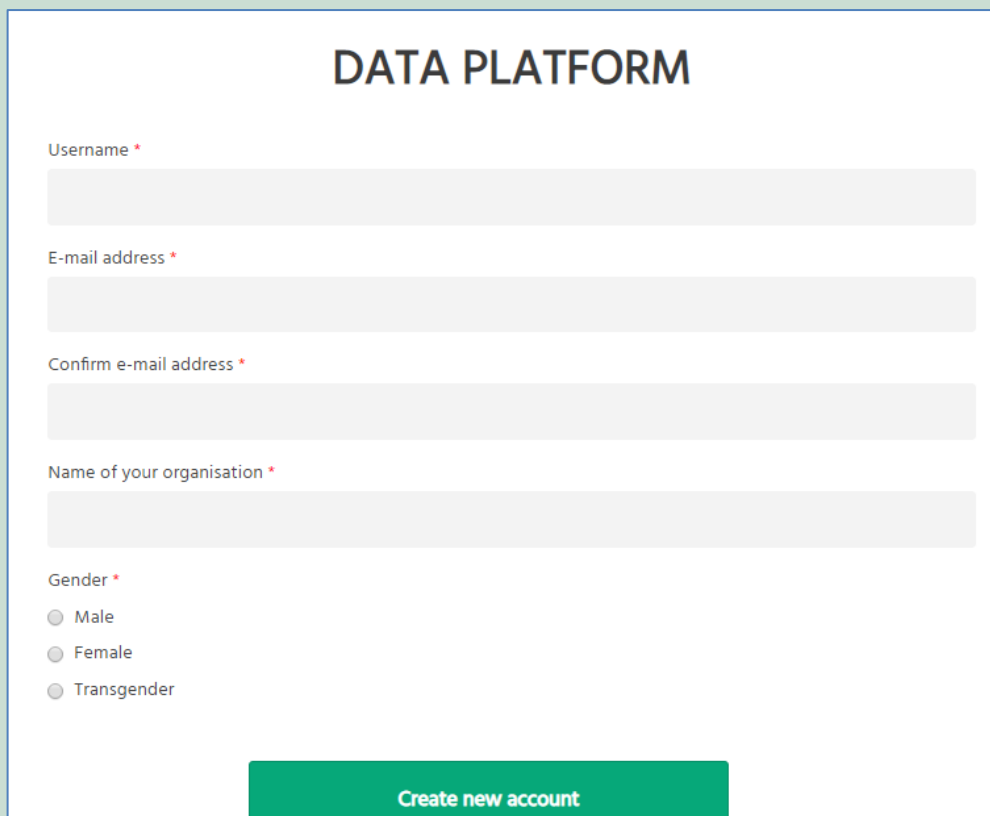
Click on '*Forgot password*' to request new password as shown in section – 1.3.2

Click on *Log in* Button.

Click on *Register Here* to create new account if not registered as shown in section - 1.3.1

1.3.1 Create new Account

Enter the required information to create a new account. Mandatory input fields are marked with '*' .



The screenshot shows the registration form for the DATA PLATFORM. It includes a title, several input fields for personal and organizational information, radio buttons for gender selection, and a 'Create new account' button.

DATA PLATFORM

Username *

E-mail address *

Confirm e-mail address *

Name of your organisation *

Gender *

Male

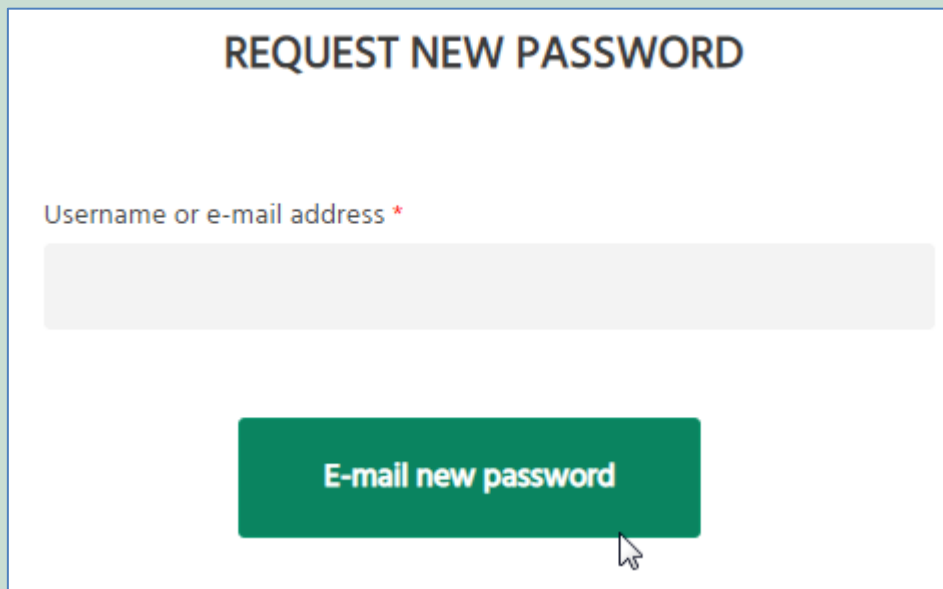
Female

Transgender

Create new account

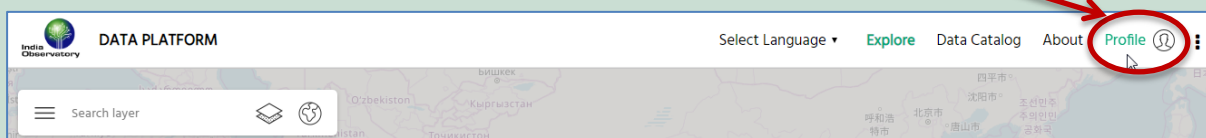
1.3.2 Forget Password

Enter Username or e-mail address to request for new password.

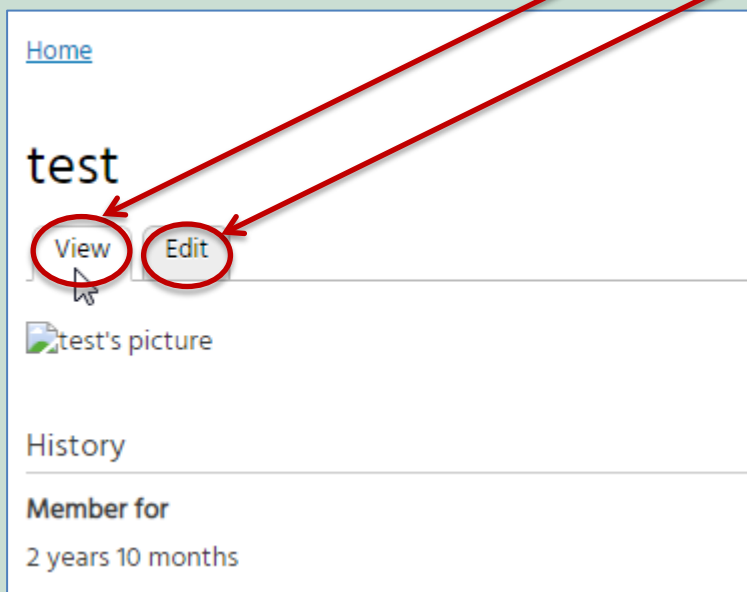


1.3.3 Profile

Access the details of your account by clicking on 'Profile' in the upper right corner as shown in the image below.



The following page will be displayed showing 'View' and 'Edit' option.



1.3.2 Edit User Account

The following page will be displayed when 'Edit' option is selected.

The screenshot shows the 'Edit User Account' page for a user named 'test'. The page includes several sections:

- Account Information:** Fields for 'Current password', 'E-mail address' (currently 'testdataplatform@gmail.com'), 'Password', and 'Confirm password'. A note states: "A valid e-mail address. All e-mails from the system will be sent to this address. The e-mail address is not made public and will only be used if you wish to receive a new password or wish to receive certain news or notifications by e-mail."
- Profile Picture:** A section labeled 'Picture' with an 'Upload picture' button and a 'Choose File' button. A note says: "Your virtual face or picture. Pictures larger than 1024x1024 pixels will be scaled down."
- Locale settings:** A dropdown menu for 'Time zone' currently set to 'Asia/Kolkata: Friday, 12 April, 2019 - 10:50 +0530'. A note says: "Select the desired local time and time zone. Dates and times throughout this site will be displayed using this time zone."
- Organization and Gender:** A 'Name of your organisation' field, radio buttons for 'Gender' (Male, Female, Transgender), and a 'Save' button.

Callouts with red arrows point to specific elements:

- Box: "User can change password by entering Current password and then New Password. Email address can also be changed, if needed." (Points to password and email fields)
- Box: "Profile picture can be uploaded." (Points to the 'Picture' section)
- Box: "Select applicable Time zone." (Points to the 'Time zone' dropdown)
- Box: "Click on 'Save' Button to apply changes." (Points to the 'Save' button)

2.0 Using Data Platform

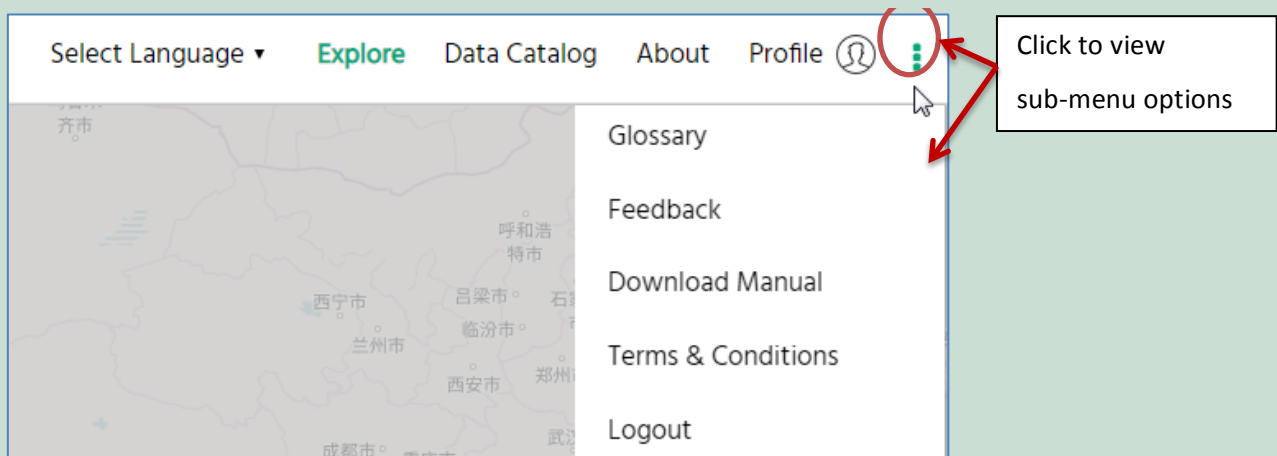
After successful User login, Home Page will be displayed wherein India Map is highlighted along with the Tool Bar and Menu Options, as shown in the image below.

The screenshot shows the 'DATA PLATFORM' Home Page. The main content is a map of India. The page includes a top navigation bar with 'Select Language', 'Explore', 'Data Catalog', 'About', 'Profile', and a user icon. A search bar is located on the left side of the map.

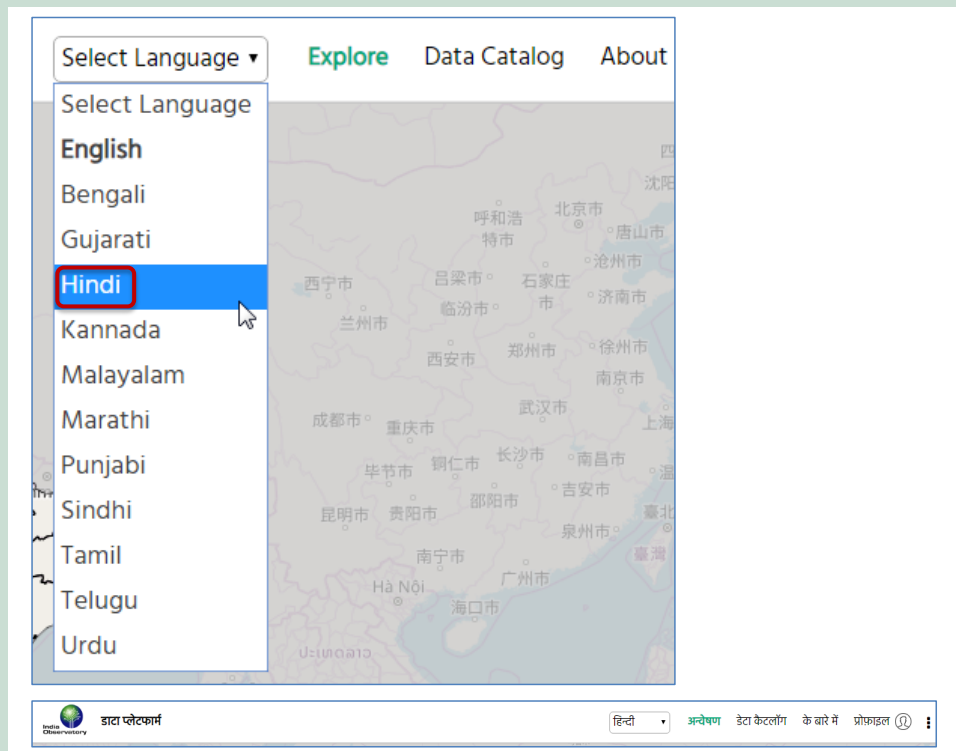
Callouts with red arrows point to various UI elements:

- Box: "Menu Options" (Points to the top navigation bar)
- Box: "Tool Bar" (Points to the search bar and map controls)
- Box: "Zoom and Pan tool" (Points to the map's zoom and pan controls)
- Box: "Swipe control" (Points to the map's swipe control)
- Box: "Measurement Tools" (Points to the map's measurement tools)
- Box: "Legend Bar" (Points to the map's legend bar)
- Box: "Scale bar" (Points to the scale bar at the bottom left)
- Box: "Longitude and Latitude of cursor position" (Points to the coordinates '105.13525, 6.16247' at the bottom right)

2.1 Menu Options



The functionalities of the above menu options are described below.



2.1.1 Select Language

The multilingual feature in the data platform allows the user to select the preferred regional language as shown in the image below:

2.1.2 Explore

This menu option helps user to navigate to the map and map related features. Following are sub-menus of 'Explore' menu option:

2.1.2.1 Map

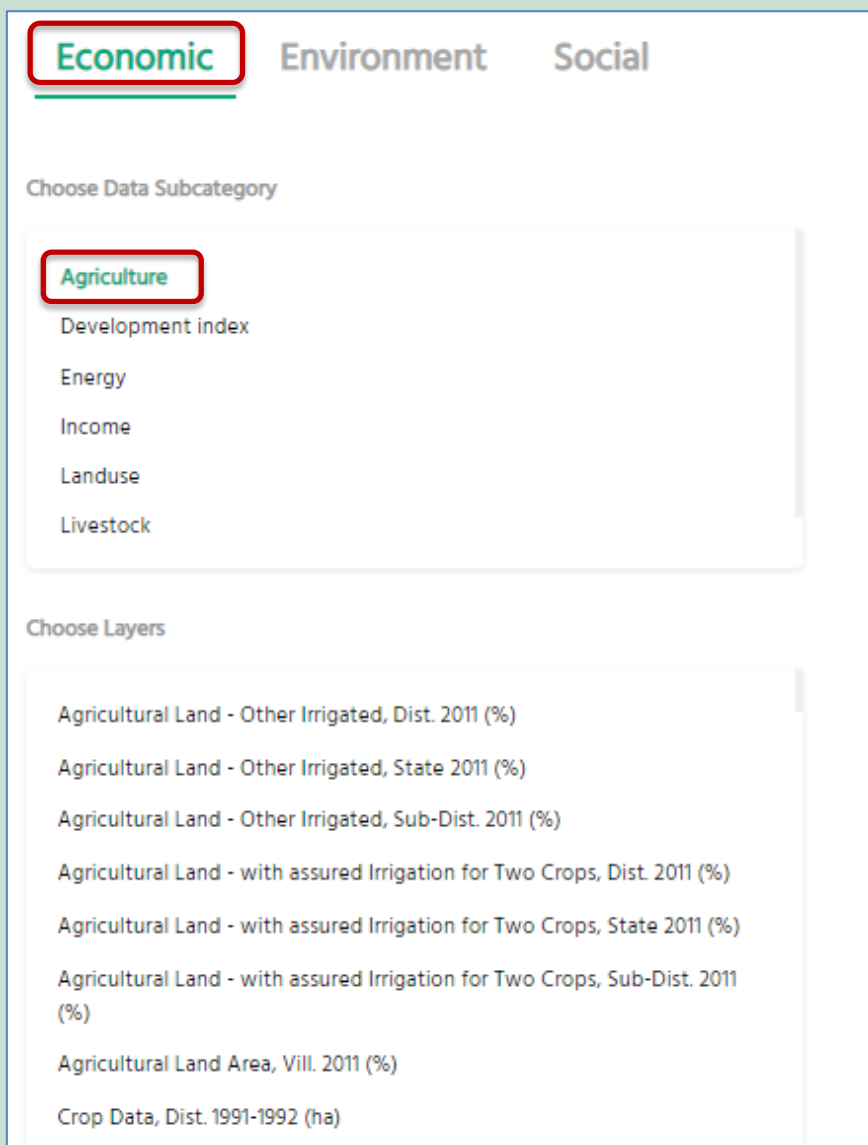
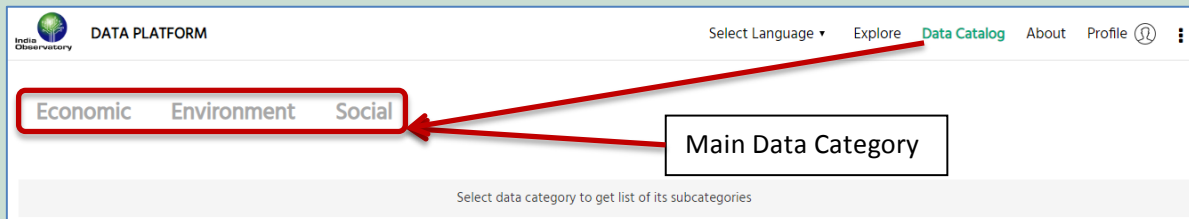
This option helps the user navigate to the Map on the home page. For example: If the user is on the 'About' page and then needs to navigate back to the homepage, he/she can do so by clicking on the map option in the explore menu.

2.1.2.2 Map Comparison

This option is similar to the 'Compare Layers' option. The user can navigate to the map comparison window by clicking on this option. Refer Section – 2.2.5.

2.1.3 Data Catalog

The user can view metadata of all data layers using the data catalog option. Following example shows Metadata of the 'All Marine Richness (per sq km) layer from the biodiversity subcategory under the environment category.



2.1.4 About

The 'About' menu option gives a brief introduction on Data Platform, India Observatory and the Foundation for Ecological Security.

2.1.5 Glossary

The Glossary defines terms used within the Data Platform portal to help the user understand and use the platform efficiently. The following image shows an overview of Glossary.

Glossary All 0-9 A B C D E F G H I J K L M N O P Q R S T U V W

Agro-Ecoregion:
The production environment of an agro-ecoregion (or agro-ecosystem) in terms of agro-climate, resource endowments and socio-economic conditions is homogenous, and majority of the farmers have similar production constraints and research needs. (http://www.ncap.res.in/upload_files/PME_notes/pme6.htm Accessed on 25th June 2015). Agro-ecoregions helps in identifying types of pressure exerted by agricultural practices on protected areas and surrounding landscapes and accordingly will inform management planning and actions.

Aquifers:
Aquifers are underground layers of rock that are saturated with water that can be brought to the surface through natural springs or by pumping. Information about aquifers is crucial to identify areas from which water can be accessed.

References:

- Asner, C. P., Scurlock J. M., & Hicke J. (2003). Global synthesis of leaf area index observations: implications for ecological and remote sensing studies. *Global Ecology and Biogeography*, 12(3):191-205.
- Band, L.E., Mackay D.S., Creed I.F. (1996). Ecosystem Processes at the Watershed Sale: Sensitivity to Potential Climate Change. *Limnol. Oceanogr.* 41(5):928-938.
- Belward, A. S., Estes J. E., Kline K. D. (1999). The IGBP-DIS Global 1-km LandCover Data Set DISCover: A Project Overview. *Photogrammetric Engineering and Remote Sensing*, 65:1013-1020
- Bonan, G. B., Levis S., Sitch S., Vertenstein M., Oleson K. W. (2003). A dynamic global vegetation model for use with climate models: concepts and description of simulated vegetation dynamics. *Glob Change Biol* 9(11):1543-1566.
- Bonan, G. B., Oleson K. W., Vertenstein M., Levis S., Zeng X. B., & Dai Y. (2002). The land surface climatology of the community land model coupled to the NCAR community land model. *Journal of Climate*, 15:3123-3149.
- Bréda, N. J. (2003). Ground-based measurements of leaf area index: a review of methods, instruments and current controversies. *Journal of experimental botany*, 54(392):2403-2417.
- Currie, D.J. (1991). Energy and Large-Scale Patterns of Animal- and Plant-Species Richness, *The American Naturalist* 137(1):27-49.
- Fisher, J. B., Whittaker R. J., & Malhi Y. (2011). ET come home: potential evapotranspiration in geographical ecology. *Global Ecology and Biogeography*, 20(1):1-18.
- Foley, J. A., Prentice I. C., Ramankutty N., Levis S., Pollard D., Sitch S., Haxeltine A. (1996). An integrated biosphere model of land surface processes, terrestrial carbon balance, and vegetation dynamics. *Global Biogeochem Cycles* 10(4):603-628.
- Friedl, M. A., McIver D. K., Hodges J. C. F., Zhang X. Y., Muchoney D., Strahler A. H., Woodcock C. E., Gopal S., Schneider A., Cooper A., Baccini A., Gao F., Schaaf C. (2002). Global land cover mapping from MODIS: algorithms and early results. *Remote Sensing of Environment*, 83:287-302.
- Friedl, M. A., Sulla-Menashe D., Tan B., Schneider A., Ramankutty N., Sibley A., Huang X. (2010). MODIS Collection 5 global land cover: Algorithm refinements and characterization of new datasets. *Remote Sensing of Environment*, 114: 168-182.

2.1.6 Feedback

The feedback option allows the users to send their comments and queries. All the fields marked with the “*” symbol are mandatory.

Feedback

Leave your Comments/Query * Denotes Required Field

Name: *

Age:

Email: *

Address:

Message:

Type the text:

* indicates mandatory field

After entering all the necessary fields and Captcha, Click on 'Submit Form'

2.1.7 Download Manual

The download manual option enables the user to download the Data Platform Manual.

2.1.8 Terms & Conditions

This option displays the Terms & Conditions of the Data platform.

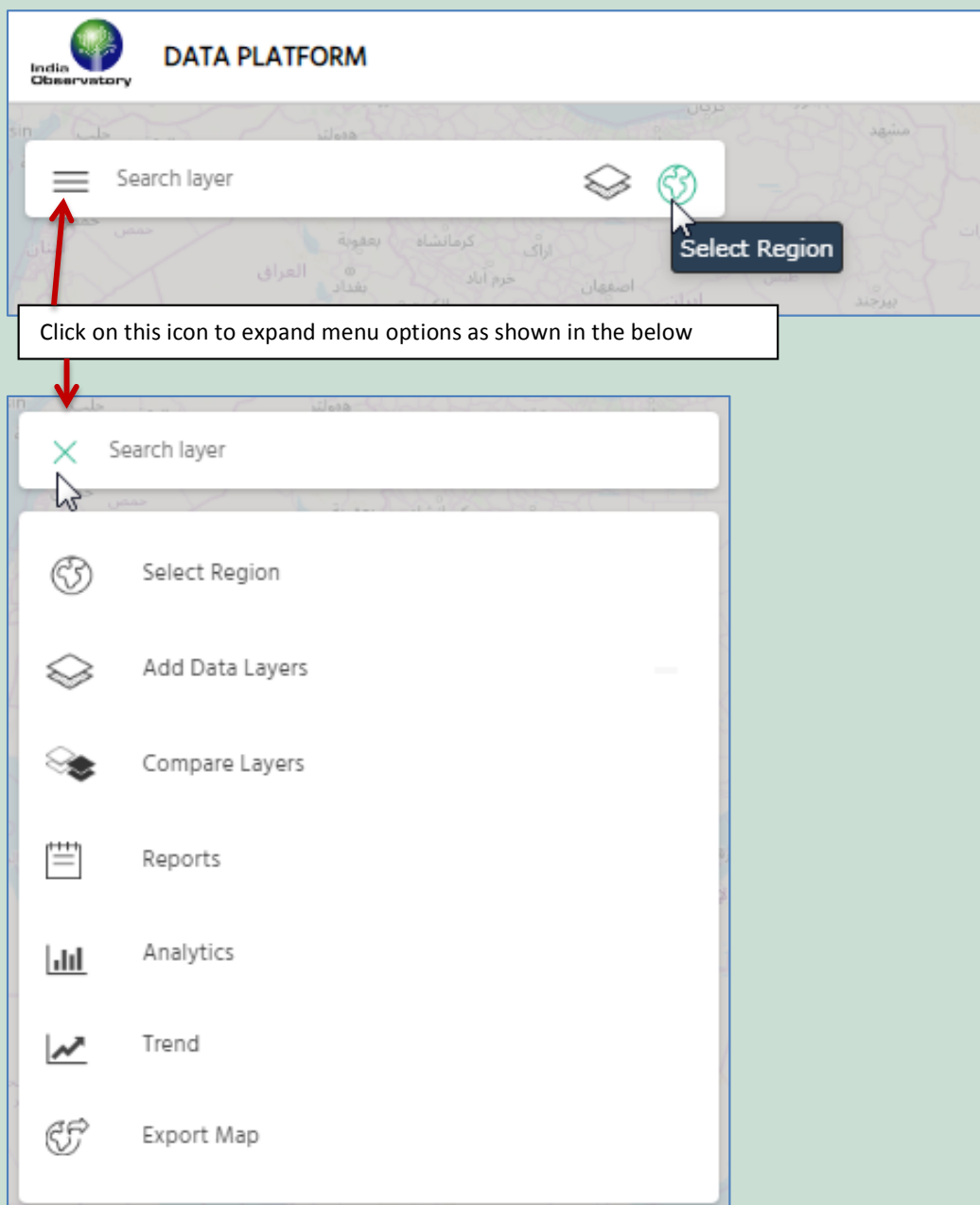
Terms & Conditions

Disclaimer

Data, Analysis, Charts, Graphs & Maps in Data Platform frequently employ data from third parties. Foundation for Ecological Security cannot grant permissions to the original third party data used in these tables, analysis, charts and maps. In these cases, please contact the third party organizations directly for the necessary permissions.

2.2 Tool Bar Menu Options

Hovering over the icons will display the name of the option. For example: 'Select Region'.



2.2.1 Select Region

Through this option, data can be explored for a particular region. It can be explored State wise, District wise, Block wise, Panchayat wise or Village wise as per the requirement. Accordingly the User needs to select 'State, District, Block and Panchayat OR Village.' The following image shows an example of User defined Region to explore map of a Panchayat.

State
Rajasthan

District
Bhilwara

Block
Mandalgarh

Panchayat
Mandalgarh (m)

OR

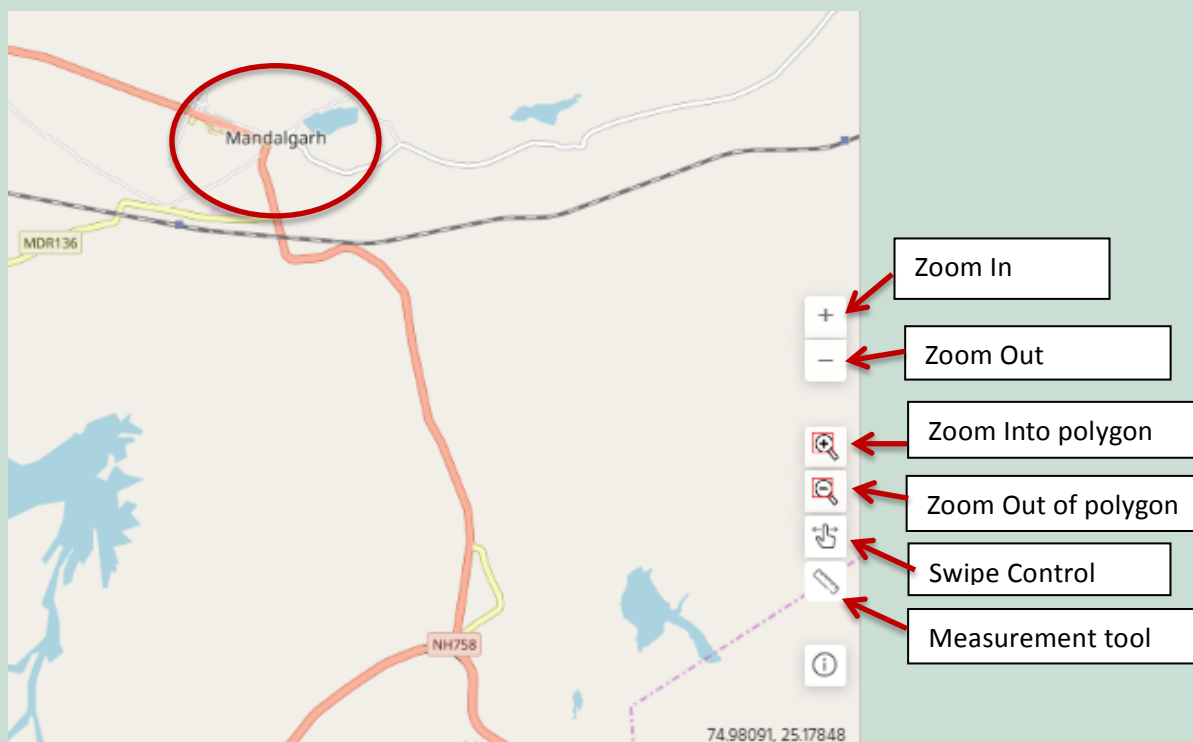
Village
select village

Apply






Specify either Panchayat OR Village.

Click 'Apply' button to display selected Region.

Following image shows Mandalgarh (m) Panchayat map.

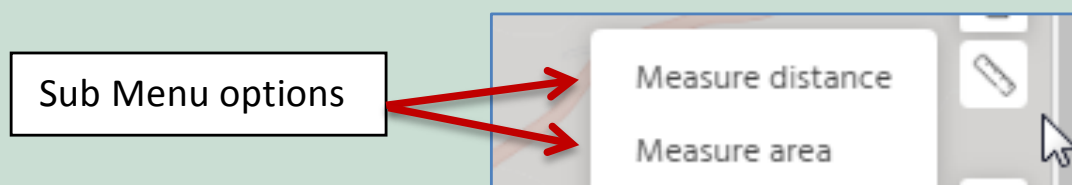


2.2.2 Usage of Zoom functions while Exploring Map

- Zoom In** -  Click on this button to zoom into the map.
- Zoom Out** -  Click on this button to zoom out of the map.
- Zoombox In** -  Click on this button for a rectangle polygon based Zoom in.
- Zoombox Out** -  Click on this button for a rectangle Polygon based Zoom out.
- Swipe Control** -  Add two layers. Use the swipe control button to compare the two layers.

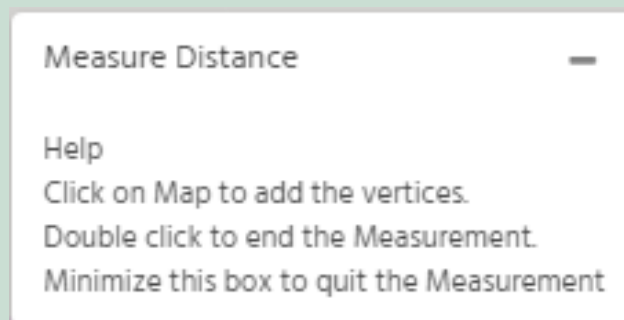
2.2.3 Measurement Tools

Click on this tool to view sub menu options.

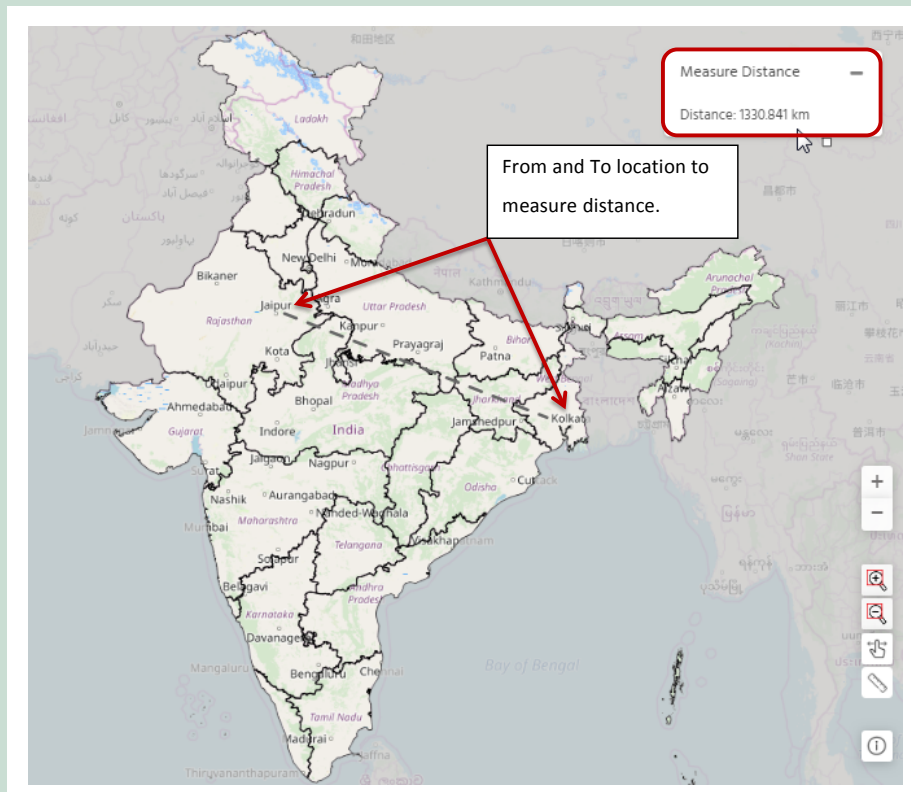


2.2.3.1 Measure distance

This option helps user measure the distance by adding vertices indicating From and To locations. It reveals the distance between the vertices indicated by the user.

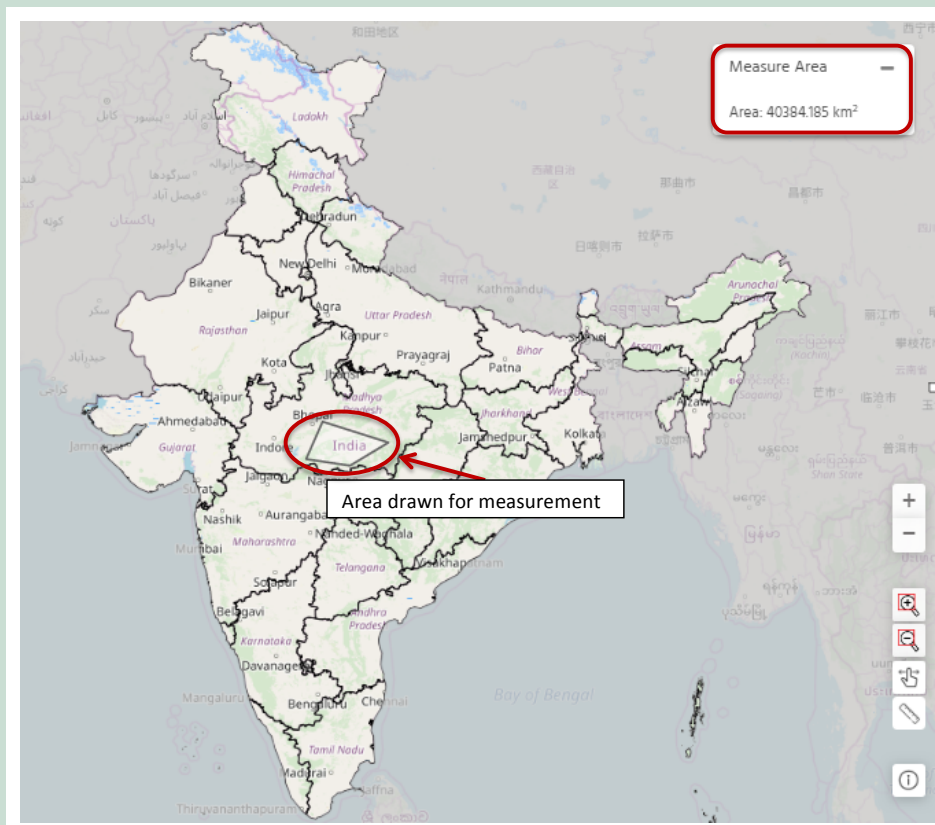


The following example shows the distance between Jaipur and Kolkata.



2.2.3.2 Measure Area

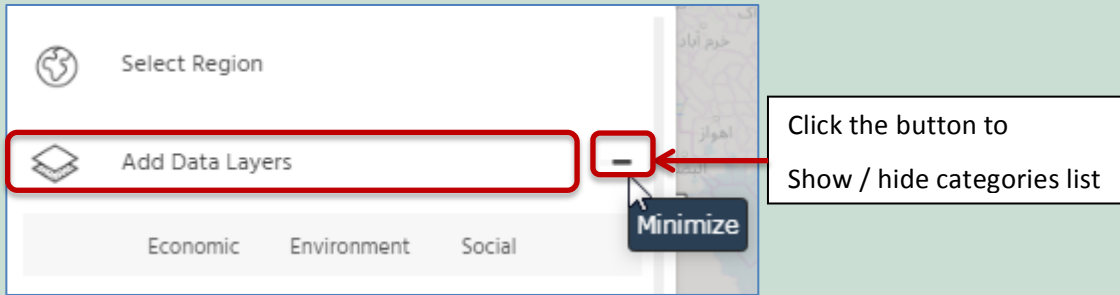
This feature allows the user to define an area by drawing and measuring its area. The following example shows the area and its measurement.



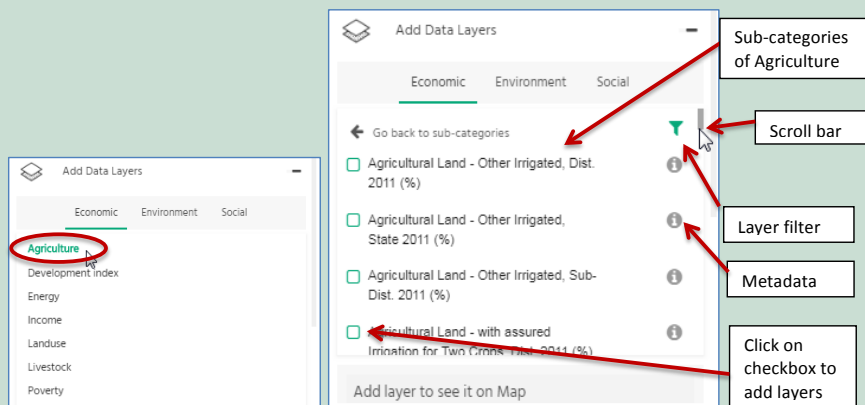
2.2.4 Add Data Layers




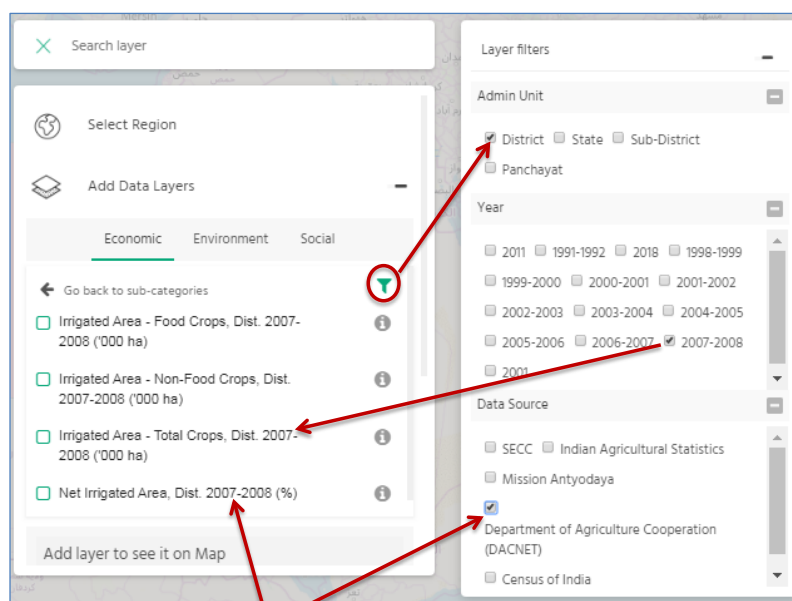
Data layers can be added to the map using this tool. They are broadly categorized into three categories—'Economic', 'Environment' and 'Social' as shown in the below image.



Click on 'Economic' or 'Environment' or 'Social' category. Select the sub-category and finally the layer from the layer list, as shown in the image below.



Click on  to filter the data layers according to preference. This will help minimize the list for easy and fast access to the available data.



Data layers displayed as per the filters selected. i.e. for district level, for the year 2007-2008 and Data source - DACNET

Add data layer(s)

Categories list

Economic Environment Social

← Go back to sub-categories

Gross Irrigated Area, Dist. 2007-2008 (ha)

Irrigated Area - Food Crops, Dist. 2007-2008 (000 ha)

Irrigated Area - Non-Food Crops, Dist. 2007-2008 (000 ha)

Irrigated Area - Total Gross, Dist. 2007-2008 (000 ha)

Add layer to see it on Map

Layer filters

Admin Unit

District State Sub-District

Village Gram Panchayat

Year

2000-2001 2001-2002

2002-2003 2003-2004

2004-2005 2005-2006

2006-2007 2007-2008

2018 2001 2013-2014


Data Source

SECC Census of India

Indian Agricultural Statistics

Department of Agriculture Cooperation (DACNET)

Mission Antyodaya

Click on  to view Metadata of the selected data layer.

Economic Environment Social

Choose Data Subcategory

Agriculture

Development Index

Energy

Income

Landuse

Livestock

Choose Layers

Agricultural Land - Other Irrigated, Dist. 2011 (%)

Agricultural Land - Other Irrigated, State 2011 (%)

Agricultural Land - Other Irrigated, Sub-Dist. 2011 (%)

Agricultural Land - with assured Irrigation for Two Crops, Dist. 2011 (%)

Agricultural Land - with assured Irrigation for Two Crops, State 2011 (%)

Agricultural Land - with assured Irrigation for Two Crops, Sub-Dist. 2011 (%)

Data Identification Information

Name of the Dataset Irrigated Area - Food Crops, Dist. 2007-2008 (000 ha)

Theme Economic

Keywords Irrigated Area, Food Crops, District, DACNET, 2007-2008

Purpose of Creating Data To generate digital database of the dataset

Access Constraints As per FES Data Dissemination Policy

Use Constraints As per FES Data Dissemination Policy

Data Type Vector

Contact Information

Contact Person Chief Data Officer

Organization Foundation for Ecological Security

Mailing Address Coordination Office, Jahangirpura

City/Locality Country Anand, Gujarat

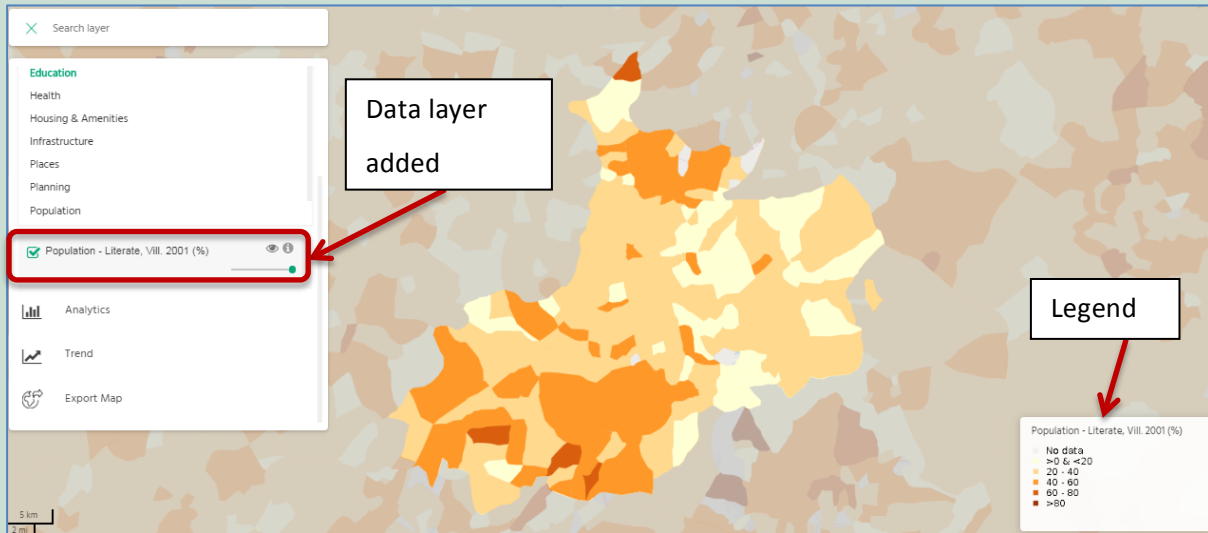
Country India

Contact Email

Coverage

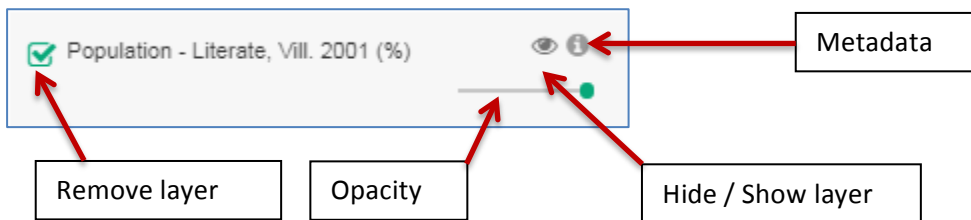
Scroll bar to view whole meta- data




Select Data layer and then click on - Add Layer icon as shown below.



The above example shows Data layer ‘Population Literate, Vill. 2001(%)’ for Mandalgarh block of Rajasthan State, Bhilwara District. The legend on the bottom right corner shows the literacy percentage against the color code displayed in map.

User can overlay multiple data layers and change the opacity level to compare them. Once the data layer is added, following functionalities are available to the user:

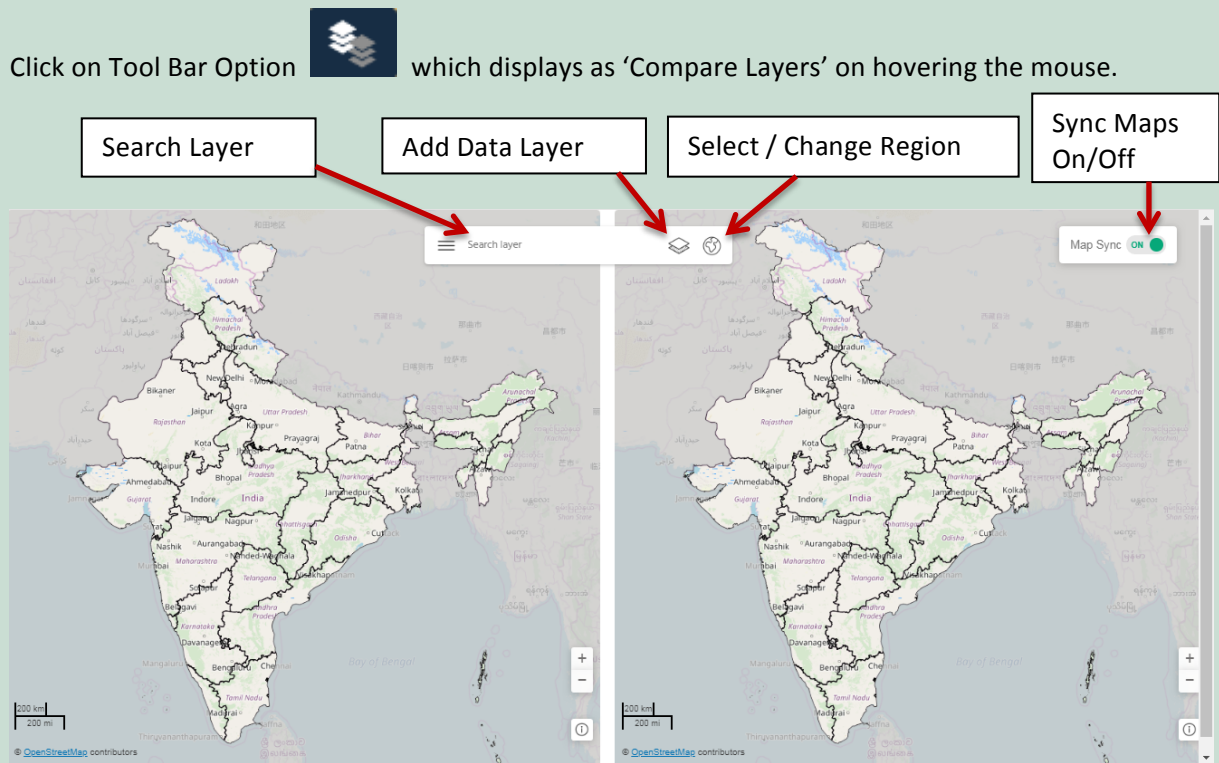


- Opacity : Opacity of layers can be increased or decreased with the help of slide bar.
- Metadata : Metadata  can be viewed using this option.
- Hide / Show layer : Data layers can be displayed  or Hidden  using this option.
- Remove layer : Uncheck the box to remove a layer.

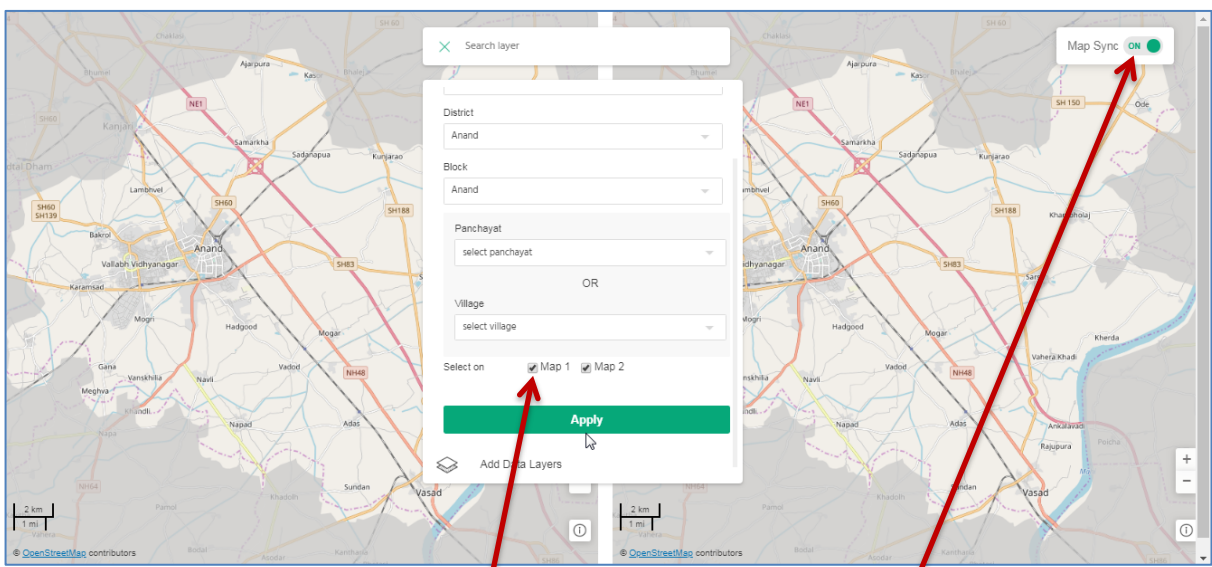
2.2.5 Compare Layers

This feature allows the creation of two maps of the same location or different location. It allows the user to compare two parameters, two regions or two time-periods.

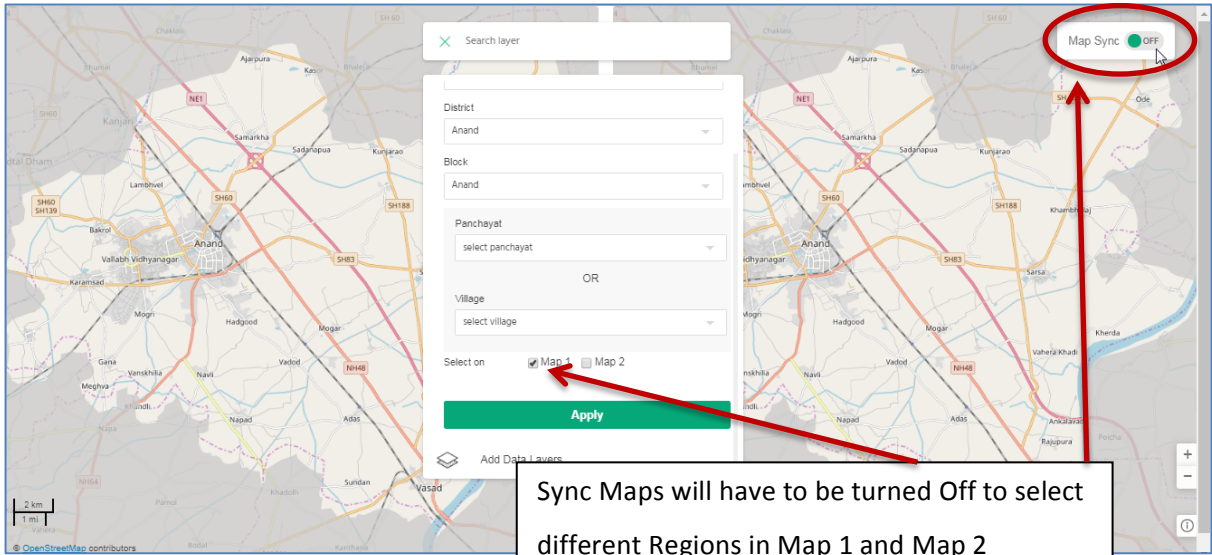
For example: A comparative study of literacy in year 2001 and 2011 of a block or change in vegetation index over the years



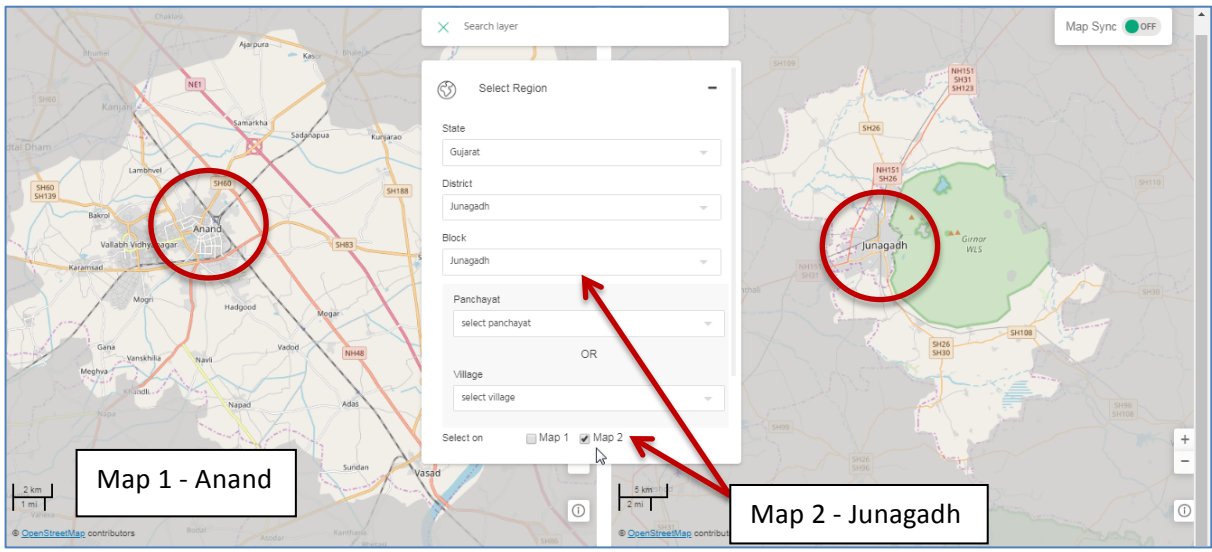
- Left hand side map is referred to as 'Map 1' & right-hand side map is referred to as 'Map 2'.
- Sync Maps - On / Off** : If the user wants to select different regions in both the maps, then the Sync Maps option needs to be turned Off. If the user wants to select the same regions for both the maps, then the sync maps option needs to be turned on. This function helps user to apply the same changes (e.g. zooming levels, map movement etc.) in both the maps if Sync map is On. If Sync map is off, then the user can apply different changes to both the maps.
- Select Region for Map 1 and Map 2:



Sync Maps will have to be turned On to select the same Region in Map 1 and Map 2



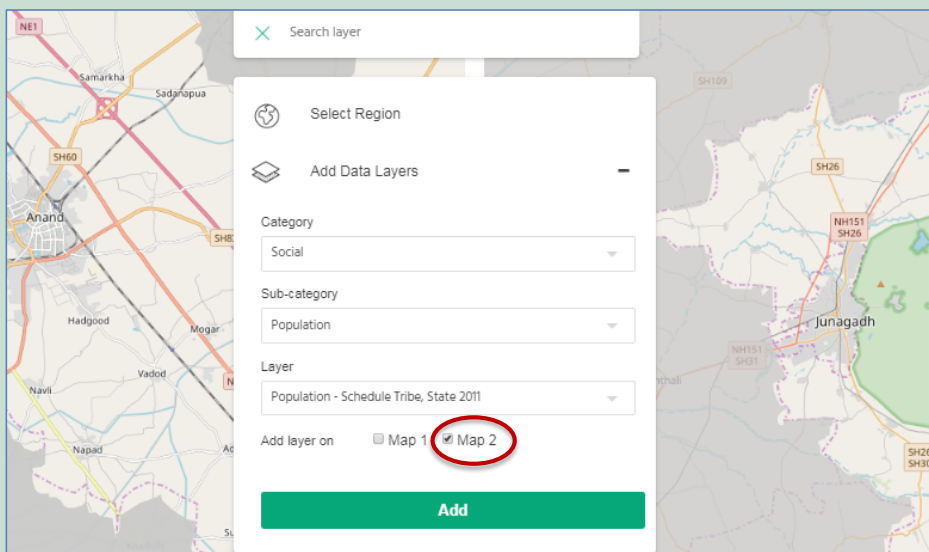
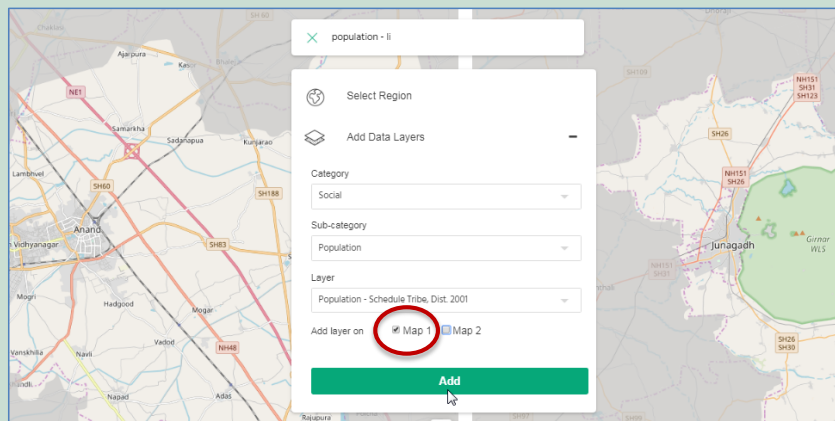
Sync Maps will have to be turned Off to select different Regions in Map 1 and Map 2



Map 1 - Anand

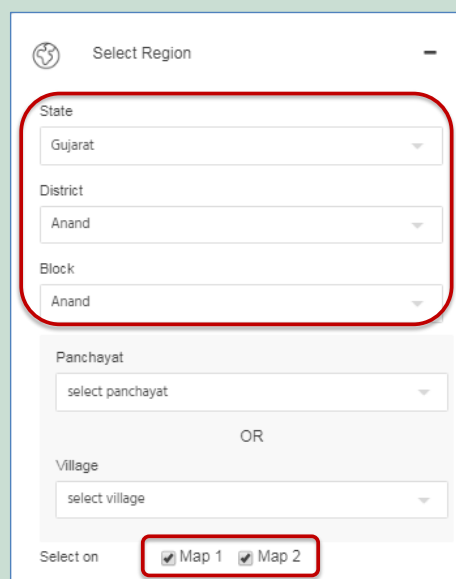
Map 2 - Junagadh

Similarly, the user can add same or different data Layers in Map 1 and Map 2. There is no need to use Sync Map function while selecting Data layers. Even if Sync Map is On, you can select different data layers for Map 1 and Map 2.



Following is an example showing the comparison of Literacy rate during the year 2001 and 2011 in Anand Block, Gujarat State.

Select Region for both the maps i.e. – Map 1 and Map 2 as shown below:
Click on 'Apply' button to load the region in both the maps.



Add data layer in both the Maps as shown below. In this example, Literacy rate of 2001 (village level) is added for Map 1.

Literacy percentage of 2011 (village level) is added for Map 2.

Add Data Layers

Category: Social

Sub-category: Education

Layer: Population - Literate, Vill. 2001

Add layer on: Map 1 Map 2

Add

Add Data Layers

Category: Social

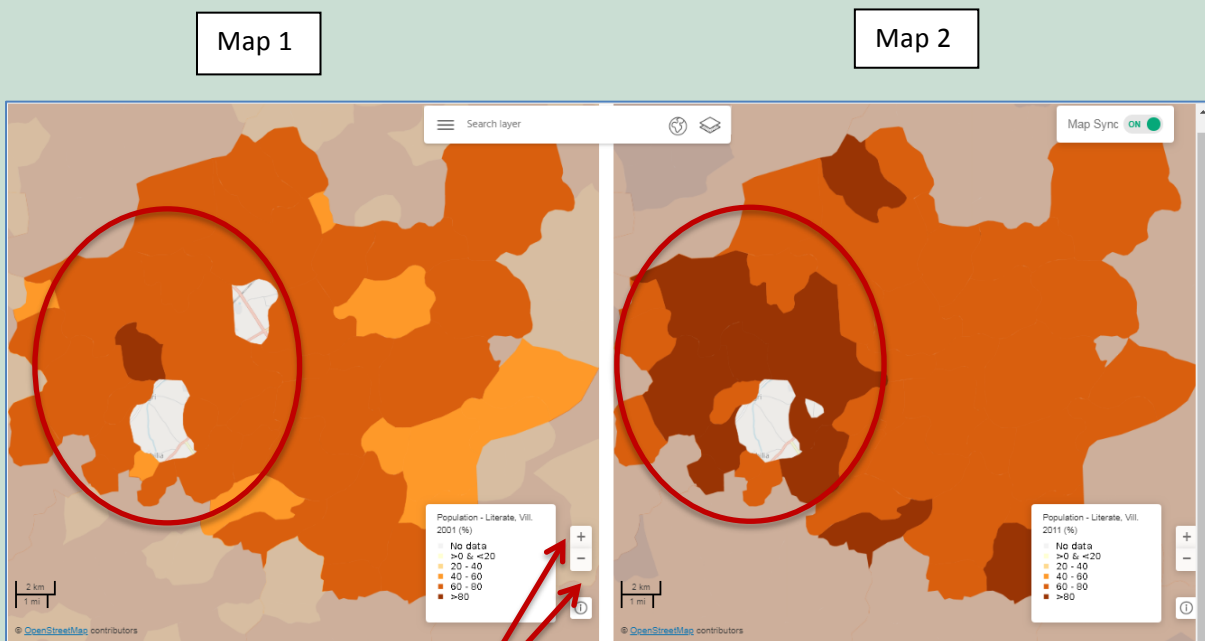
Sub-category: Education

Layer: Population - Literate, Vill. 2011

Add layer on: Map 1 Map 2

Add

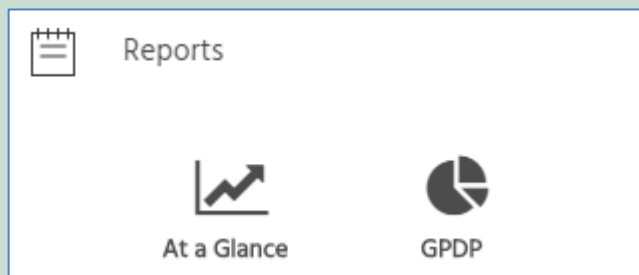
Comparison of Literacy percentage is clearly visible in the following image:



The user can zoom In or zoom out of the maps.

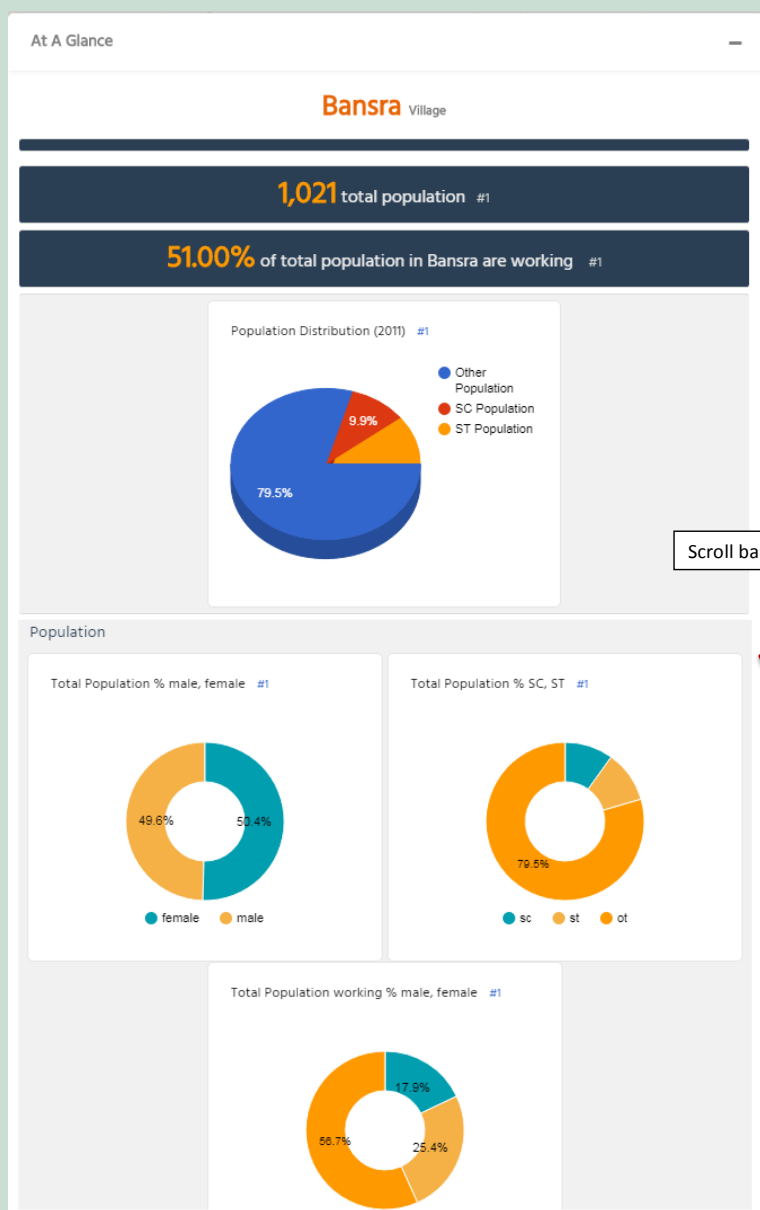
2.2.6 Reports

User can access infographic reports through this tool. In order to do that the user needs to Select Region and then view Reports. Reports will be displayed in a new window as shown in the following image:



Currently there are two reports namely – 1] At a Glance and 2] GDP

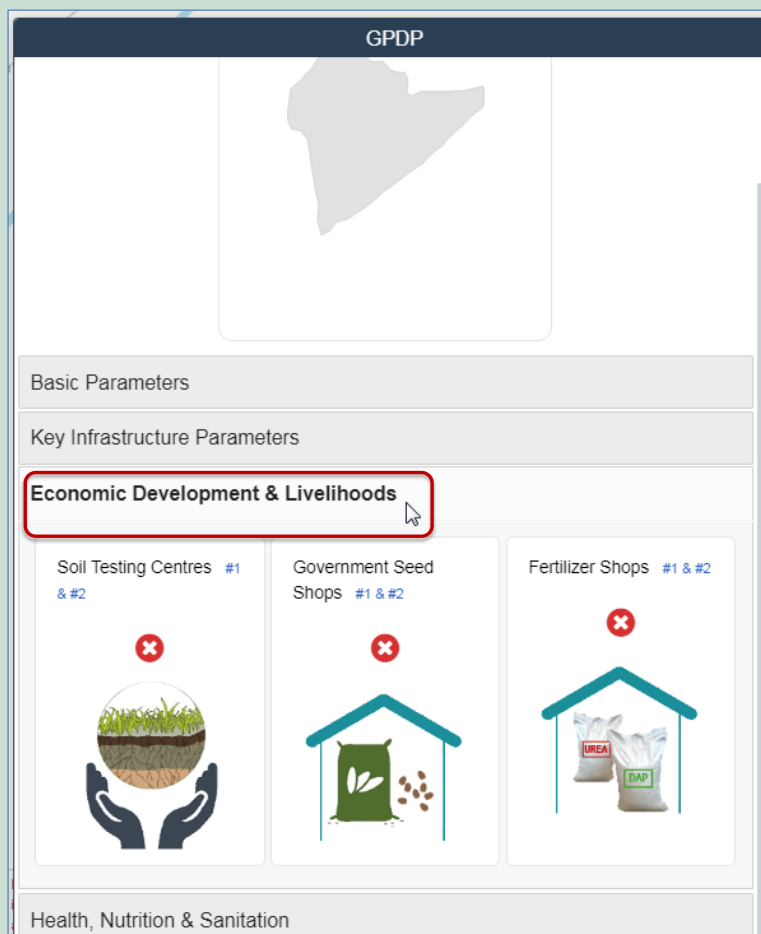
At a Glance - Provides a quick summary on the socio-economic and ecological parameters of any chosen state/district/block in India in an easy to understand info-graphic format. The following example shows the 'At A Glance' Report of Bansra Village.



- **GPDP Report** – The Gram Panchayat Development Planning (GPDP) Profile of a village can be generated using this option. The following example shows GPDP profile of Bansra village. User can click on each category to view the visualizations.



The following example shows the expanded versions of 'Economic Development & Livelihoods' option.

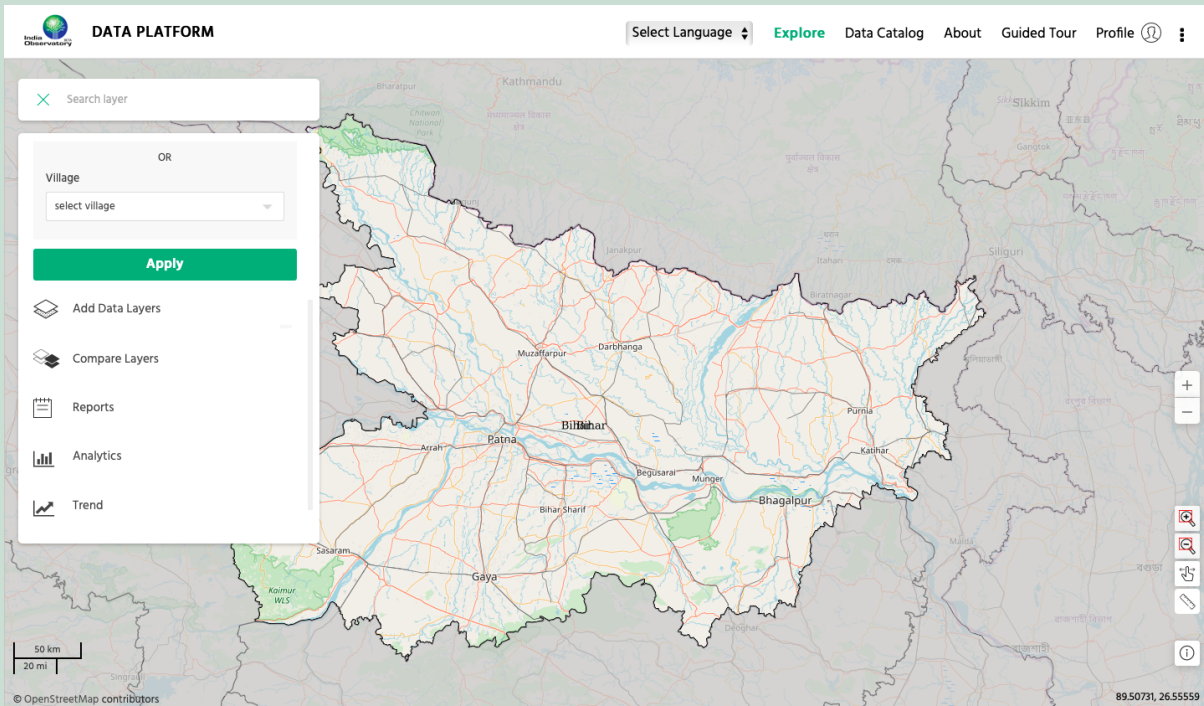


2.2.7 Analytics

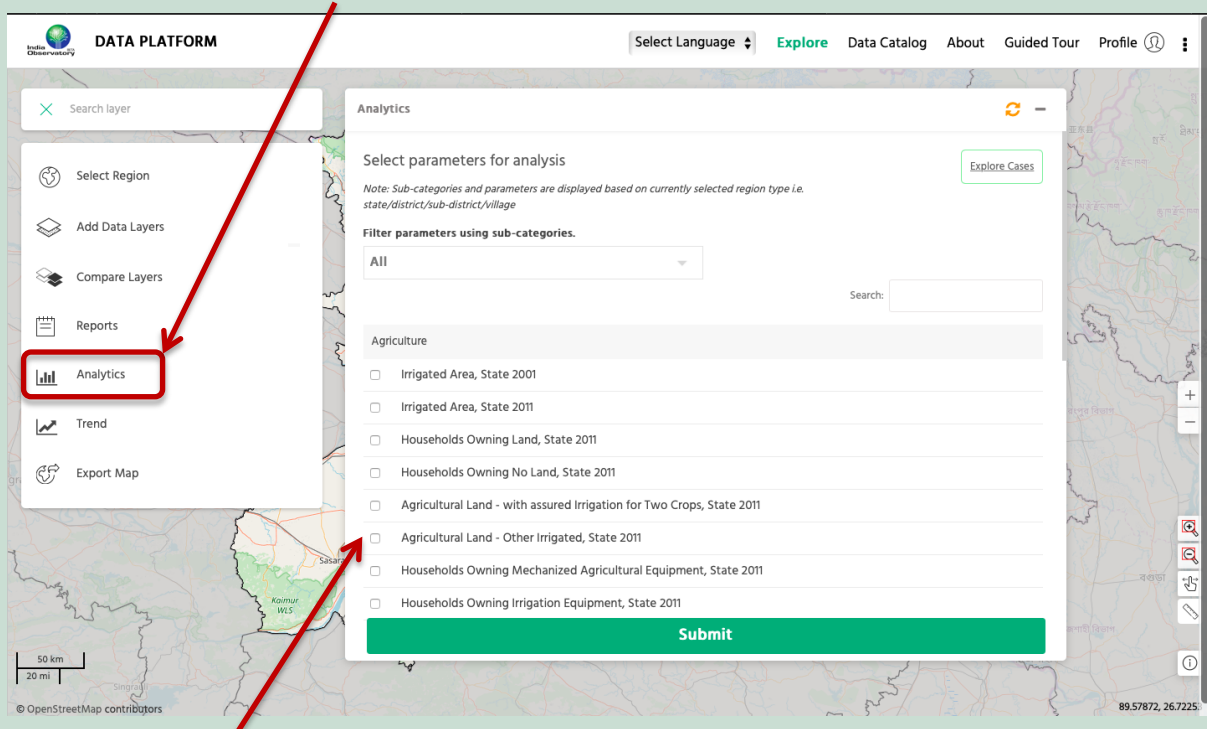
The analytics feature provides the option to choose parameters, view them in tabular format, perform statistical operations like mean, median, mode etc. on them and visualize them in the form of bar graphs, pie charts etc.

To run the analytics of his/her choice, the user needs to start by selecting the region by clicking on Refer to section 2.2.1 to see the process of selecting a region.

In the example below, Bihar has been selected as the region.



Click on analytics to view the analytics window as shown below.



Start by selecting parameters for analysis, by checking the boxes, as per preference. A maximum of ten parameters can be selected at one point of time.

Parameters can also be filtered by choosing a sub-category from the drop-down menu or using the search bar.

The screenshot shows the 'Analytics' interface. At the top, there's a 'Select parameters for analysis' section with a note: 'Note: Sub-categories and parameters are displayed based on currently selected region type, i.e. state/district/sub-district/village'. Below this is a filter section titled 'Filter parameters using sub-categories.' with a dropdown menu currently set to 'Education'. To the right of the dropdown is a search bar. A green button labeled 'Explore Cases' is located in the top right corner. At the bottom of the filter section is a green 'Submit' button. A list of education levels is displayed below the filter, each with an unchecked checkbox: Education Level - Illiterate, State 2011; Education Level - Below Primary, State 2011; Education Level - Primary, State 2011; Education Level - Middle, State 2011; Education Level - Secondary, State 2011; Education Level - Higher Secondary, State 2011; Education Level - Graduate or Higher, State 2011; Education Level - Other, State 2011. Two red arrows point to the 'Education' dropdown and the search bar.

Before running the analytics the user can also view examples of how he/she can use the analytics feature, by clicking on explore cases.

The screenshot shows the 'Explore Cases' page. At the top, there's a green button labeled 'Explore Cases'. Below this is a paragraph of text: 'The data platform offers visualizations of secondary data in the form of maps as well as infographics. It consists of a repository of 1600+ data layers compiled from diverse sources, making it easier to access data that is usually scattered across various platforms. In order to help you take informed decisions, the platform also offers you the option to undertake analysis of your choice by allowing you to visualize raw data in the form of tables, bar graphs, pie charts, maps etc. and also perform a wide range of statistical operations such as mean, median, mode, standard deviation etc., for the geographical location and administrative level of your interest.' Below this is another paragraph: 'The data platform can be used by a wide variety of audience, ranging from Panchayat functionaries, Block and District level administrators to NGO's, Journalists, Researchers and Academicians.' Below the text is a row of four buttons: 'CASE 1' (highlighted in green), 'CASE 2', 'CASE 3', and 'CASE 4'. Below the buttons is a section titled 'IF YOU'RE LOOKING TO ASSEMBLE SOME BACKGROUND INFORMATION FOR A STORY THAT YOU'RE DOING, THE DATA PLATFORM PROVIDES YOU AN EASY WAY TO DO IT.' Below this is a section titled 'UPPER PRIMARY EDUCATION IN MADHYA PRADESH REPORT CARD'. Below the title is a paragraph of text: 'Through a basic reading of literature on education in India, you arrived at the understanding that Upper primary education encompasses the middle 'stage' or middle school. It lasts for three years from grades 6th to 8th (ages approximately 11 to 14).1 With the increased emphasis on universalization of primary education, the pressure on upper primary education which encompasses middle school has increased.2 This makes it essential understand how education at the upper primary level is faring. You pick Madhya Pradesh as your area of interest.'

After choosing the parameters, the user needs to click on submit to view the options of analytics that are present on the platform. In the example below, the layer education level-illiterate, state 2011 has been chosen.

Analytics 🔄

Select parameters for analysis Explore Cases

Note: Sub-categories and parameters are displayed based on currently selected region type i.e. state/district/sub-district/village

Filter parameters using sub-categories.

Education

Search:

Education

- Education Level - Illiterate, State 2011
- Education Level - Below Primary, State 2011
- Education Level - Primary, State 2011
- Education Level - Middle, State 2011
- Education Level - Secondary, State 2011
- Education Level - Higher Secondary, State 2011
- Education Level - Graduate or Higher, State 2011
- Education Level - Other, State 2011

Submit

On clicking submit, the data table for the layer selected gets displayed.

Analytics 🔄

Mean	Median	Mode	Min	Max	Range	Variance	Standard Deviation
------	--------	------	-----	-----	-------	----------	--------------------

Generate graphs

Show 10 entries Search:

Education Level - Illiterate, State 2011
Source: SECC

state	district	Total Population	Total HH	Total Illiterates	Percentage Illiterates
BIHAR	Araria	2960510	595834	1593468	53.82
BIHAR	Arwal	716021	116644	272414	38.05
BIHAR	Aurangabad	2391102	366898	737324	30.84
BIHAR	Banka	2027955	384455	859673	42.39
BIHAR	Begusarai	2518273	491437	1087521	43.19
BIHAR	Bhagalpur	2601741	468355	1022165	39.29
BIHAR	Bhojpur	2737006	419641	891328	32.57
BIHAR	Buxar	1654596	238210	433909	26.22
BIHAR	Darbhanga	3860158	817164	2098180	54.35
BIHAR	Gaya	4132134	659015	1849136	44.75

Showing 1 to 10 of 38 entries Previous 1 2 3 4 Next

2.2.7.1 Generating Graphs

By clicking on generate graph, the user has the option to visualize the data in the form of a bar-graph, line graph, pie chart or a scatter plot.

Mean	Median	Mode	Min	Max	Range	Variance	Standard Deviation
Generate graphs							
Select layer for parameter 1				Select			
Select parameter 1				Select			
Add second param							
Select label for X-axis				Select			
Select graph type				Select			

In the following example, Education level-illiterate state 2011 has been visualized in the form of a bar graph.

The image shows two screenshots of the 'Analytics' interface. The top screenshot shows the 'Generate graphs' button highlighted, and the dropdown menu for 'Select layer for parameter 1' is open, with 'Education Level - Illiterate, State 2011' selected. The bottom screenshot shows the 'Add second param' button highlighted, and the dropdown menu for 'Select parameter 1' is open, with 'state' selected. A red arrow points from a text box 'Select layer and parameters to be visualized' to the dropdown menus in both screenshots.

Mean	Median	Mode	Min	Max	Range	Variance	Standard Deviation
Generate graphs							
Select layer for parameter 1				Select			
Select parameter 1				Select			
Add second param							
Select label for X-axis				Select			
Select graph type				Select			

Select layer and parameters to be visualized

Mean	Median	Mode	Min	Max	Range	Variance	Standard Deviation
Generate graphs							
Select layer for parameter 1				Education Level - Illiterate, State 2011			
Select parameter 1				state			
Add second param							
Select label for X-axis				Select			
Select graph type				Select			

Analytics

Mean Median Mode Min Max Range Variance Standard Deviation

Generate graphs

Select layer for parameter 1: Education Level - Illiterate, State 2011

Select parameter 1: Percentage Illiterates

Add second param

Select label for X-axis

Select graph type

Show 10 entries

- ✓ Select
- state
- district
- Total Population
- Total HH
- Total Illiterates
- Percentage Illiterates

Select the label for x axis and the graph type

Analytics

Mean Median Mode Min Max Range Variance Standard Deviation

Generate graphs

Select layer for parameter 1: Education Level - Illiterate, State 2011

Select parameter 1: Percentage Illiterates

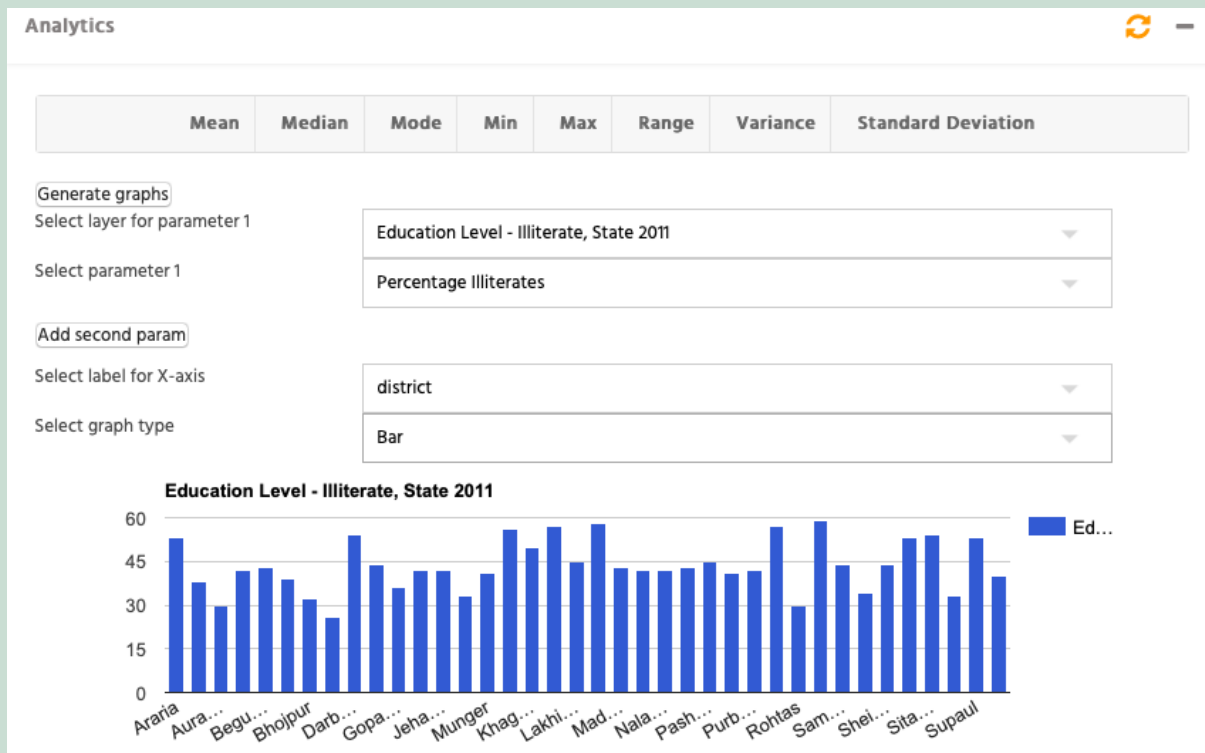
Add second param

Select label for X-axis: district

Select graph type

- ✓ Select
- Bar
- Line

After selecting the graph type, the graph will automatically get generated.



In order to generate a graph with two parameters, the user needs select two parameters and add a second parameter. To generate the graph, the process described above needs to be followed.

Irrigated Area, State 2001
 Irrigated Area, State 2011

Generate graphs

Select layer for parameter 1 Select ▼

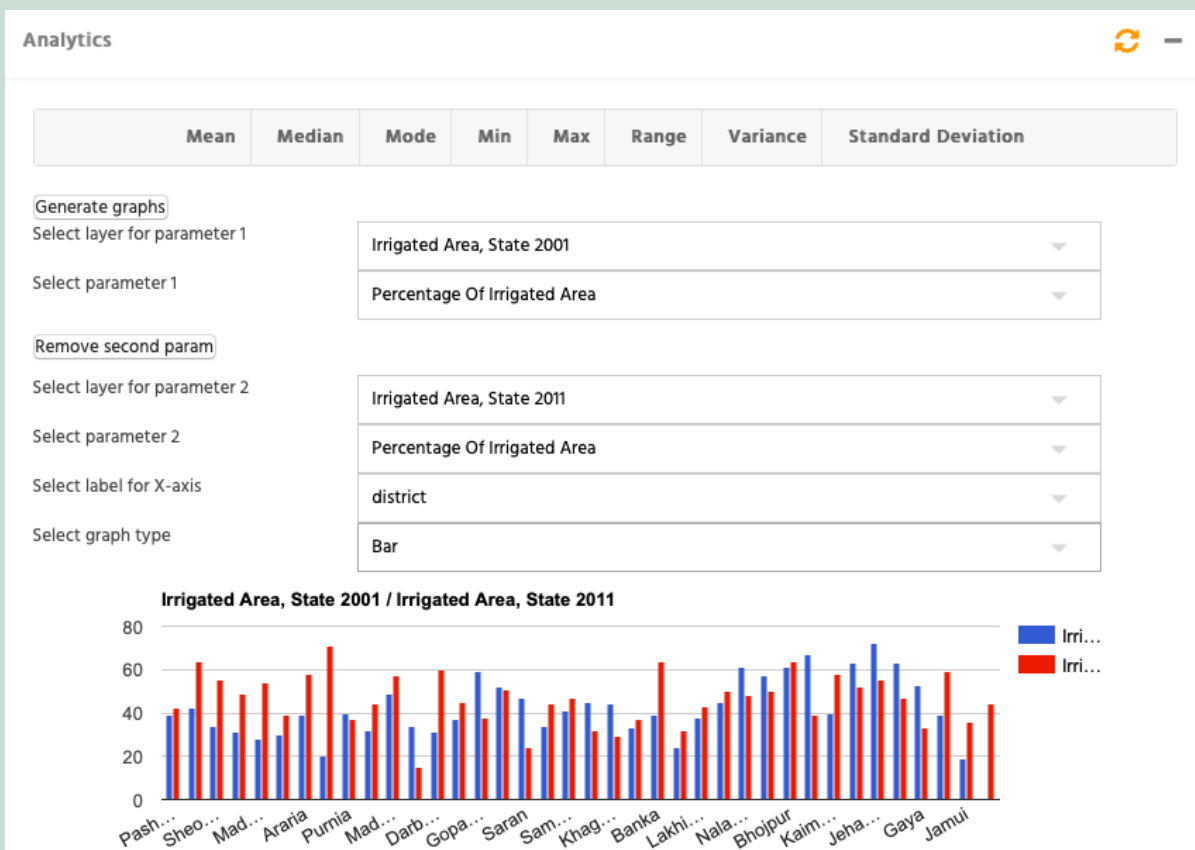
Select parameter 1 Select ▼

Add second param

Select label for X-axis district ▼

Select graph type Select ▼

A multiple bar graph will be generated. Following is an example of the same.



2.2.7.2 Statistical analysis

Start by selecting parameters to analyse.

Analytics

Select parameters for analysis

Note: Sub-categories and parameters are displayed based on currently selected region type i.e. state/district/sub-district/village

Filter parameters using sub-categories.

All

Search:

Agriculture

- Irrigated Area, State 2001
- Irrigated Area, State 2011
- Households Owning Land, State 2011
- Households Owning No Land, State 2011
- Agricultural Land - with assured Irrigation for Two Crops, State 2011
- Agricultural Land - Other Irrigated, State 2011
- Households Owning Mechanized Agricultural Equipment, State 2011
- Households Owning Irrigation Equipment, State 2011

Submit

Click on submit to view the option available for statistical analysis.

On clicking submit, the data table of the selected parameters will get displayed.

Analytics

Mean Median Mode Min Max Range Variance Standard Deviation

Generate graphs

Show 10 entries

Search:

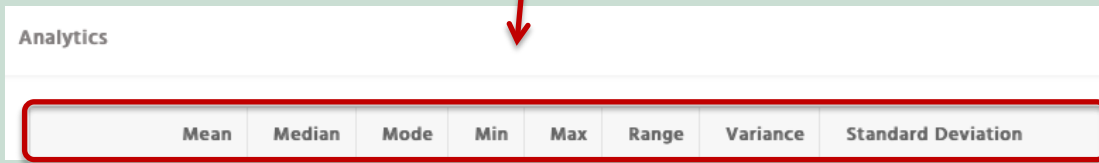
Irrigated Area, State 2001
Source: Census of India

state	district	Irrigated Area	Total Geographic Area	Percentage Of Irrigated Area
Bihar	Pashchim Champaran	170083.35	435474	39
Bihar	Purba Champaran	165163.57	390178	42
Bihar	Sheohar	14777.4	43362	34
Bihar	Sitamarhi	66407.85	214771	31
Bihar	Madhubani	97642.81	346122	28
Bihar	Supaul	73009.43	239625	30
Bihar	Araria	105808.24	273839	39
Bihar	Kishanganj	37534.75	186865	20
Bihar	Purnia	125295.96	312183	40
Bihar	Katihar	95516.33	296879	32

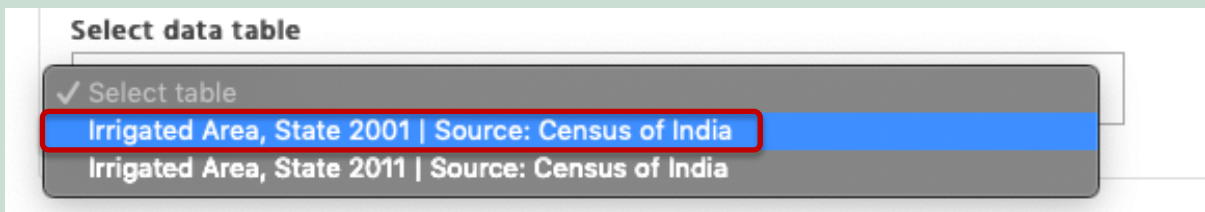
Showing 1 to 10 of 37 entries

Previous 1 2 3 4 Next

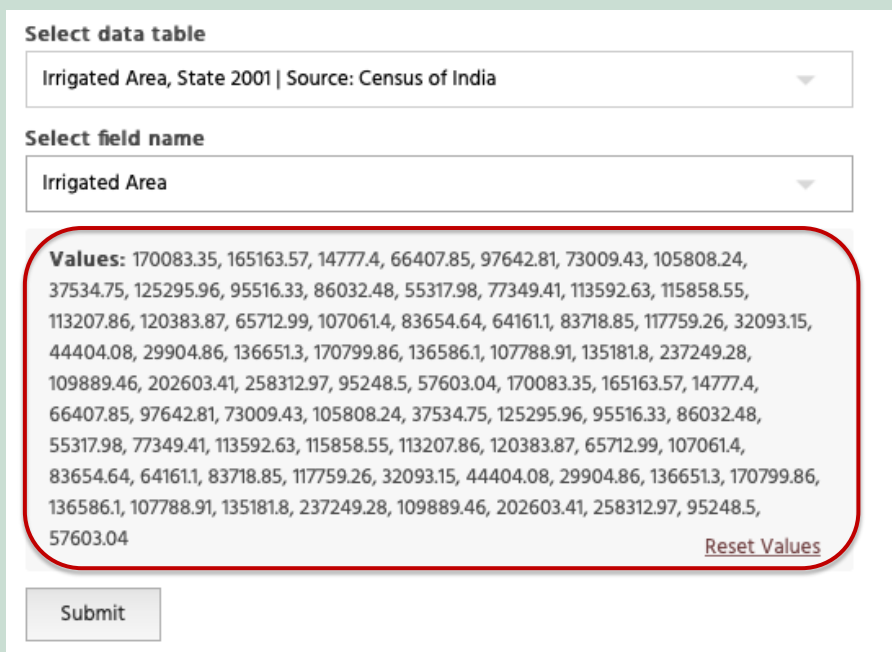
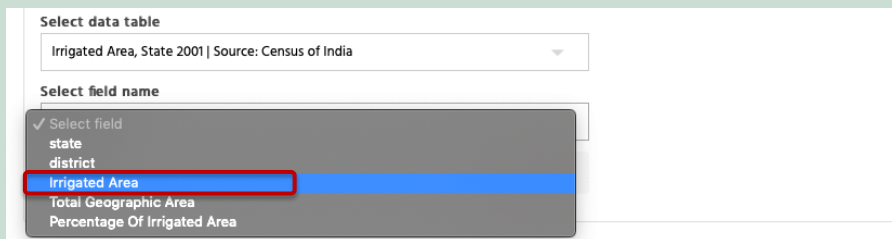
The user can then choose the statistical operation that he/she wants to undertake.



After selecting the statistical operation to be undertaken, the user needs to select the data table from the list of data tables generated for the parameters he/she selected in the first step, as shown below. The example below illustrates the calculation of mean of irrigated area state 2001 and irrigated area state 2011.



After selecting the table, the user needs to select the field from that table, to be taken into consideration while calculating the mean.



To add the values from the data table of the other parameters selected, select the other data table and field as shown below.

Select data table

Irrigated Area, State 2001 | Source: Census of India
 Irrigated Area, State 2011 | Source: Census of India

Select field name

Irrigated Area

Values: 170083.35, 165163.57, 14777.4, 66407.85, 97642.81, 73009.43, 105808.24, 37534.75, 125295.96, 95516.33, 86032.48, 55317.98, 77349.41, 113592.63, 115858.55, 113207.86, 120383.87, 65712.99, 107061.4, 83654.64, 64161.1, 83718.85, 117759.26, 32093.15, 44404.08, 29904.86, 136651.3, 170799.86, 136586.1, 107788.91, 135181.8, 237249.28, 109889.46, 202603.41, 258312.97, 95248.5, 57603.04, 170083.35, 165163.57, 14777.4, 66407.85, 97642.81, 73009.43, 105808.24, 37534.75, 125295.96, 95516.33, 86032.48, 55317.98, 77349.41, 113592.63, 115858.55, 113207.86, 120383.87, 65712.99, 107061.4, 83654.64, 64161.1, 83718.85, 117759.26, 32093.15, 44404.08, 29904.86, 136651.3, 170799.86, 136586.1, 107788.91, 135181.8, 237249.28, 109889.46, 202603.41, 258312.97, 95248.5, 57603.04

[Reset Values](#)

Submit

Select data table

Irrigated Area, State 2011 | Source: Census of India

Select field name

Select field
 state
 district
 Irrigated Area
 Total Geographic Area
 Percentage Of Irrigated Area

109889.46, 202603.41, 258312.97, 95248.5, 57603.04, 170083.35, 165163.57, 14777.4, 66407.85, 97642.81, 73009.43, 105808.24, 37534.75, 125295.96, 95516.33, 86032.48, 55317.98, 77349.41, 113592.63, 115858.55, 113207.86, 120383.87, 65712.99, 107061.4, 83654.64, 64161.1, 83718.85, 117759.26, 32093.15, 44404.08, 29904.86, 136651.3, 170799.86, 136586.1, 107788.91, 135181.8, 237249.28, 109889.46, 202603.41, 258312.97, 95248.5, 57603.04

[Reset Values](#)

Submit

Select data table

Irrigated Area, State 2011 | Source: Census of India

Select field name

Irrigated Area

Values: 170083.35, 165163.57, 14777.4, 66407.85, 97642.81, 73009.43, 105808.24, 37534.75, 125295.96, 95516.33, 86032.48, 55317.98, 77349.41, 113592.63, 115858.55, 113207.86, 120383.87, 65712.99, 107061.4, 44404.08, 29904.86, 136651.3, 170799.86, 136586.1, 107788.91, 135181.8, 237249.28, 109889.46, 202603.41, 258312.97, 95248.5, 57603.04, 115735.680000, 38783.0100000, 177832.420000, 147178.720000, 95119.7500000, 98532.7100000, 131327.440000, 113747.720000, 90424.4500000, 214494.040000, 111447.450000, 45815.4400000, 54072.8200000, 148608.090000, 113484.780000, 75798.4500000, 45164.1400000, 51303.4900000, 82284.7500000, 11783.590000, 39639.9800000, 113115.270000, 144811.360000, 78530.3400000, 184894.450000, 146799.760000, 186269.230000, 154198.490000, 240995.890000, 63989.0900000, 149784.940000, 133214.860000, 35500.2200000, 20269.5300000, 70828.4700000, 129768.500000, 87429.7600000, 85919.6700000

[Reset Values](#)

Submit

After adding all the values click on submit to generate the analysed value (mean in the case of this example)

Select data table

Irrigated Area, State 2011 | Source: Census of India

Select field name

Irrigated Area

Values: 170083.35, 165163.57, 14777.4, 66407.85, 97642.81, 73009.43, 105808.24, 37534.75, 125295.96, 95516.33, 86032.48, 55317.98, 77349.41, 113592.63, 115858.55, 113207.86, 120383.87, 65712.99, 107061.4, 83654.64, 64161.1, 83718.85, 117759.26, 32093.15, 44404.08, 29904.86, 136651.3, 170799.86, 136586.1, 107788.91, 135181.8, 237249.28, 109889.46, 202603.41, 258312.97, 95248.5, 57603.04, 170083.35, 165163.57, 14777.4, 66407.85, 97642.81, 73009.43, 105808.24, 37534.75, 125295.96, 95516.33, 86032.48, 55317.98, 77349.41, 113592.63, 115858.55, 113207.86, 120383.87, 65712.99, 107061.4, 83654.64, 64161.1, 83718.85, 117759.26, 32093.15, 44404.08, 29904.86, 136651.3, 170799.86, 136586.1, 107788.91, 135181.8, 237249.28, 109889.46, 202603.41, 258312.97, 95248.5, 57603.04, 115735.680000, 38783.0100000, 177832.420000, 147178.720000, 95119.7500000, 98532.7100000, 131327.440000, 113747.720000, 90424.4500000, 214494.040000, 111447.450000, 45815.4400000, 54072.8200000, 148608.090000, 113484.780000, 75798.4500000, 45164.1400000, 51303.4900000, 82284.7500000, 111783.590000, 39639.9800000, 113115.270000, 144811.360000, 78530.3400000, 184894.450000, 146799.760000, 186269.230000, 154198.490000, 240995.890000, 63989.0900000, 149784.940000, 133214.860000, 35500.2200000, 20269.5300000, 70828.4700000, 129768.500000, 87429.7600000, 85919.6700000

[Reset Values](#)

Submit

Mean: 106675.30

On clicking submit, the mean will be generated as shown above.

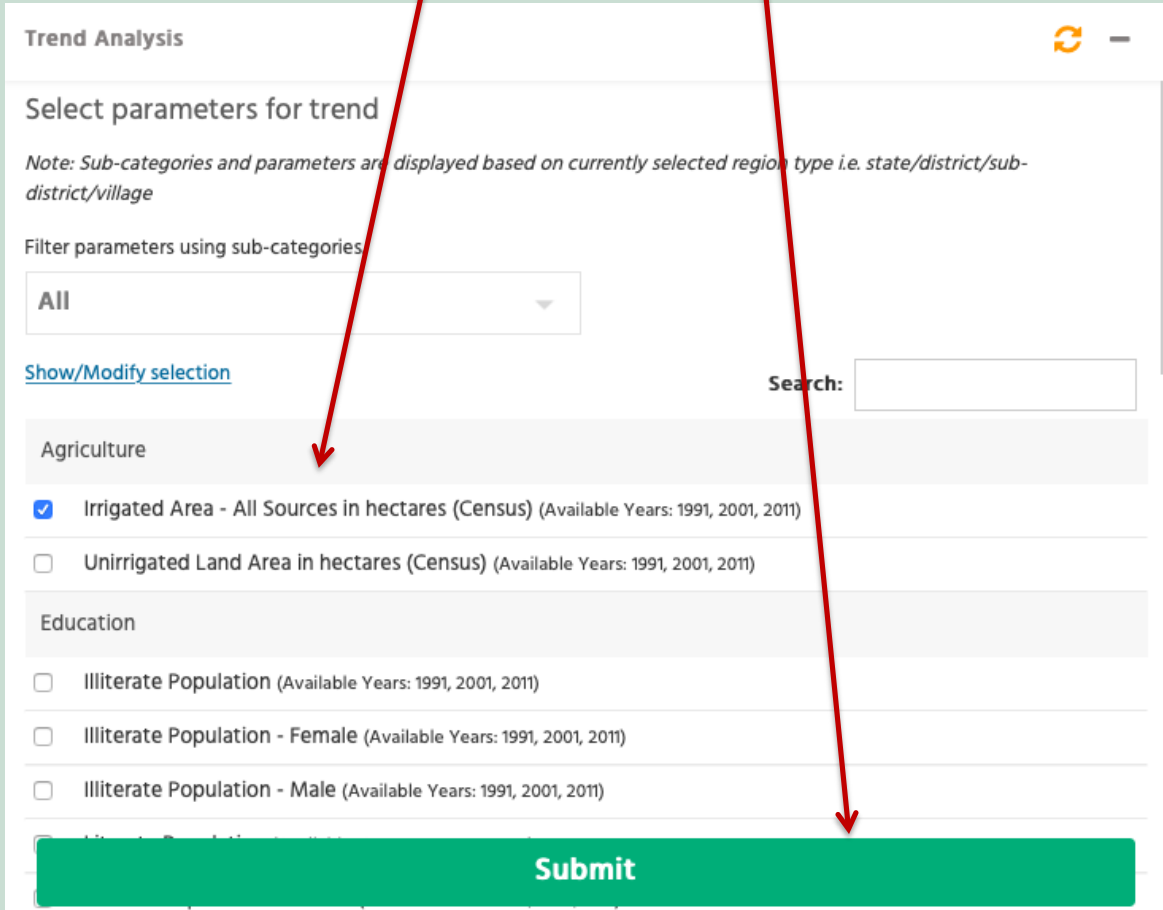
Following the same steps, the user can generate median, mode, minimum value, maximum value, range and standard deviation.



The user can calculate mean median, mode, minimum value, maximum value, range and standard deviation for a maximum of ten parameters. In order to do that, the user will have to select the data tables multiple times to add all the values that he/she needs to analyse.

2.2.8 Trend

The trend analysis feature allows the user to visualize temporal trends in tabular or graphical format.

Start by selecting parameters to be visualized and click on submit.




Trend Analysis  

Select parameters for trend

Note: Sub-categories and parameters are displayed based on currently selected region type i.e. state/district/sub-district/village

Filter parameters using sub-categories

All 

[Show/Modify selection](#) Search:

Agriculture

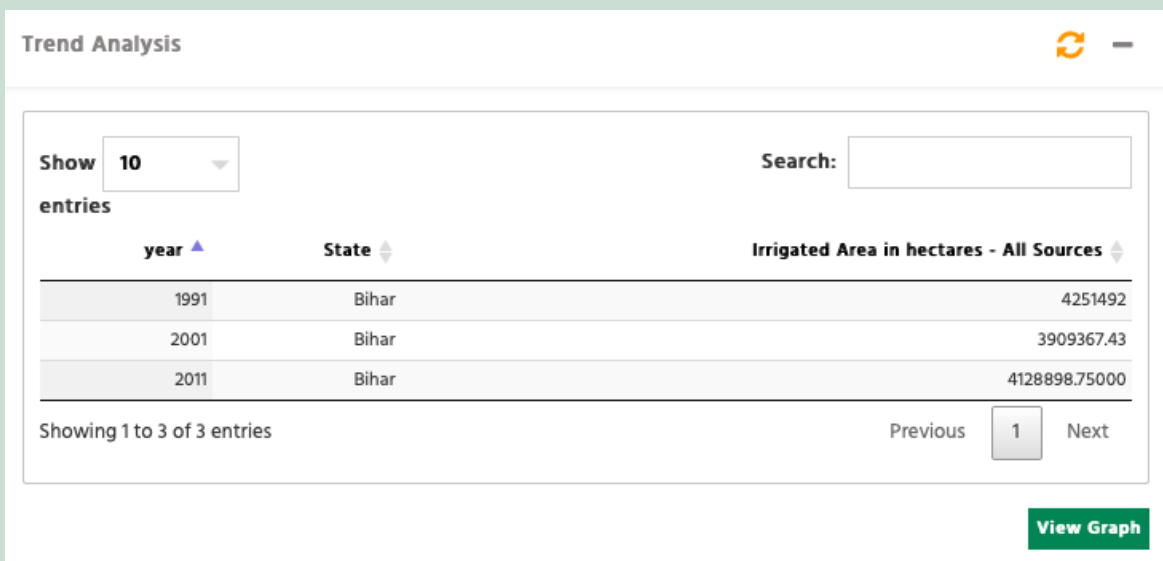
- Irrigated Area - All Sources in hectares (Census) (Available Years: 1991, 2001, 2011)
- Unirrigated Land Area in hectares (Census) (Available Years: 1991, 2001, 2011)



Education


- Illiterate Population (Available Years: 1991, 2001, 2011)
- Illiterate Population - Female (Available Years: 1991, 2001, 2011)
- Illiterate Population - Male (Available Years: 1991, 2001, 2011)

Submit

On clicking submit, the data table for the parameter or parameters selected gets displayed.



Trend Analysis  

Show **10**  entries

Search:

year ▲	State ⇅	Irrigated Area in hectares - All Sources ⇅
1991	Bihar	4251492
2001	Bihar	3909367.43
2011	Bihar	4128898.75000

Showing 1 to 3 of 3 entries

Previous Next

View Graph

Trend Analysis Graph

Show/Hide Filters

Select Graph Type: **Column Bar**

Select Parameters

Irrigated Area in hectares - All Sources

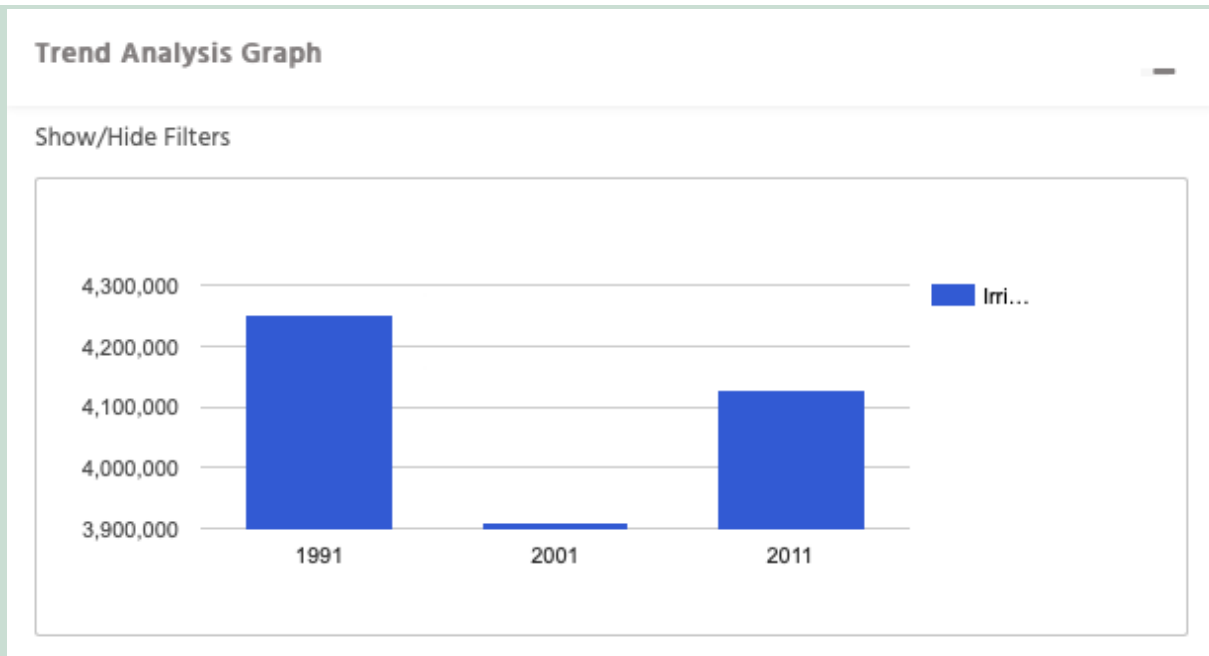
Select Years

1991 2001 2011

Continue >

Click on continue after selecting the graph type, parameters and years.

After clicking on continue, the graph will automatically get generated.



Similarly, a multiple bar graph or line graph can be generated by selecting more than one parameters.

Trend Analysis Graph

Show/Hide Filters

Select Graph Type: **Column Bar**

Select Parameters

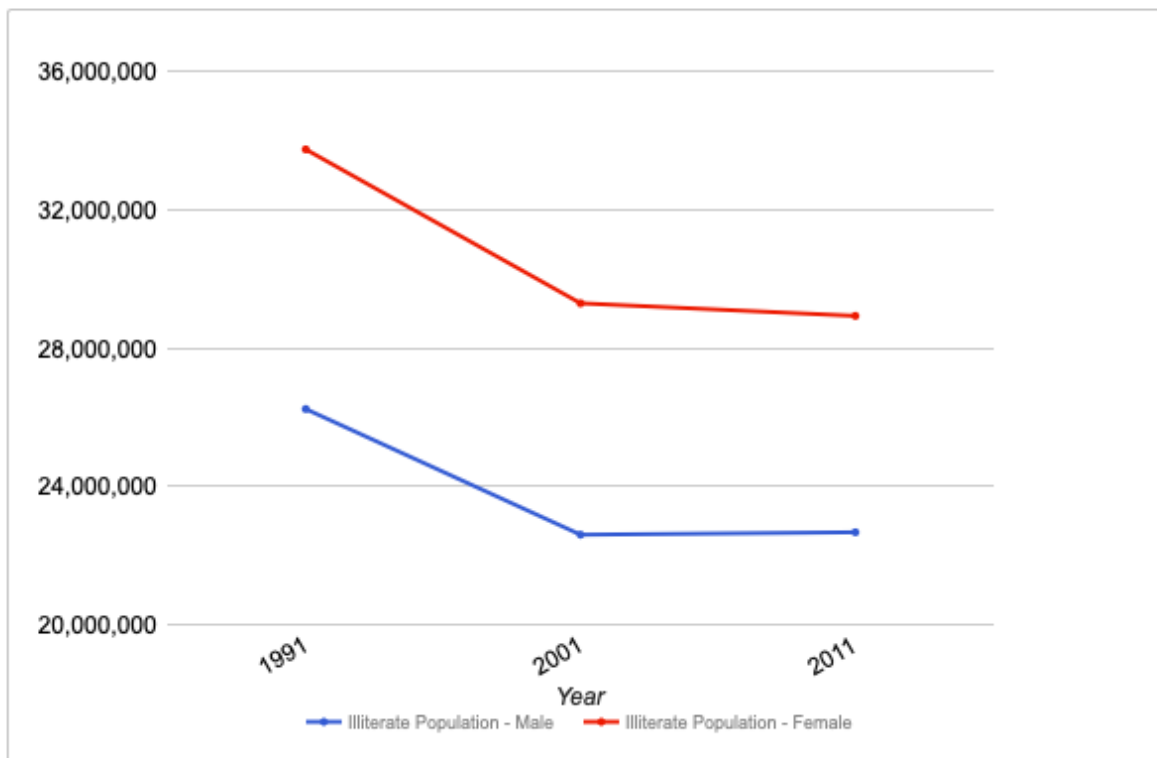
Illiterate Population - Male Illiterate Population Illiterate Population - Female

Select Years

1991 2001 2011

Trend Analysis Graph

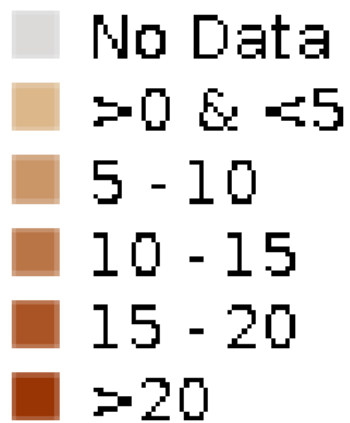
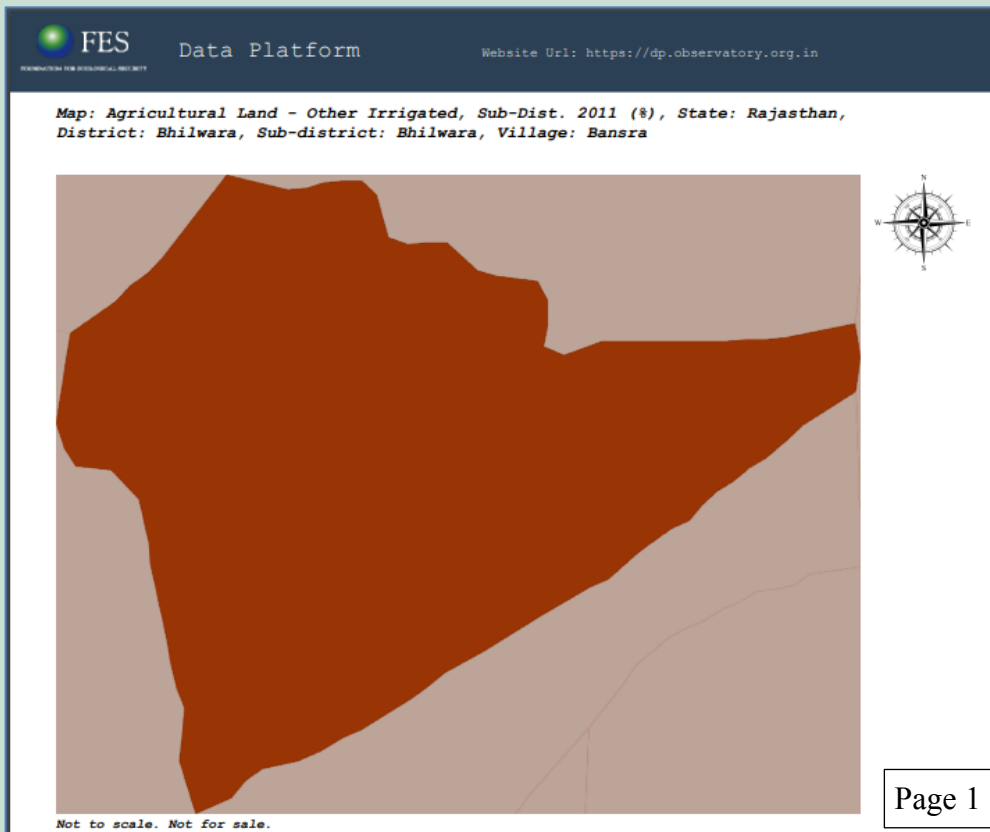
Show/Hide Filters



Source: Census of India

2.2.9 Export Map

Export Map will generate PDF file of the selected region as shown below.



Page 2



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