IPI - Data Explorer	2
IPI - Atlas	
What is the decile Formula?	10
IPI - Deep Dive	11
IPI - Compare	17
IPI - Ranking	23
IPI - Reports	27
IPI - Villages (New)	31
New Reports layout	36

## IPI - Data Explorer

Figma: Harvard Data Explorer Designs

Data explorer is a geostatistical tool covering multiple Health, education and development Indicators across India. The tool aims to give an insight on the effects of governmental policies.

### **Explorer Configuration**

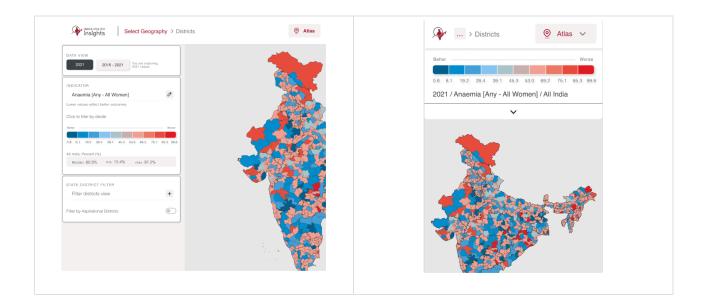
### **Set Geographic Division**

- Users select the type of delimitations by which the map is divided
  - o There are 4 Geographic divisions: Districts, ACs, PCs and Villages
  - The user selects one of the four options when entering the data explorer from the IPI Website. In order to change it, the user must return to the tool's landing page and select another division.
  - When a division is selected, the map will be divided by that type of division for whichever scope is selected.

### **Change Geographic Division**

In order to change the selected Division type, the user must return to the specific page at the web site where they can select a new Division.

This can be achieved by clicking on the top left anchor labeled "Select Geography". (An ellipsis on mobile).



## Independent Scrolling for sidebars

To improve user expirience, All sidebars on the platform will have their own y-scroll.

- IPI Atlas
- IPI Deep Dive
- IPI Compare

- IPI Ranking
- IPI Reports
- IPI Villages (New)
- New Reports layout

### IPI - Atlas

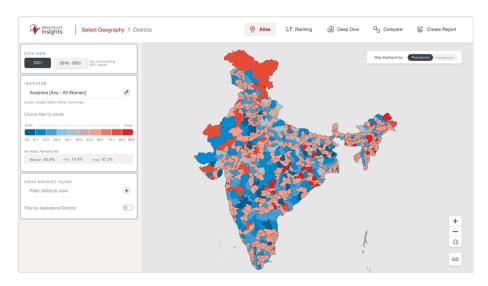
Desktop Design Harvard Data Explorer Designs

Mobile Design Harvard Data Explorer Designs

The Atlas allows users to explore data for one given indicator across multiple divisions.

Only one type of division (District, Assembly constituency, Parliamentary constituency, village) can be explored at a time, this selection is done through the landing page.

## Choropleth Map



The choropleth map shows all divisions within a Geographical area. Each division is colored according to their value for a given Indicator. The range of colors spans from Blue to Red, representing positive or negative values respectively.

1 The type of division is determined when first entering the platform, on the landing page. There are 4 possible divisions: Districts, ACs, PCs and villages.

### Copy Link



## Zoom, Pan and Re-center

The user can increase and decrease zoom by clicking on the plus and minus icons respectively (bottom right)

The user can re-center and reset zoom on the map to its original state by clicking on the magnifying glass icon (bottom right).

### Map legend

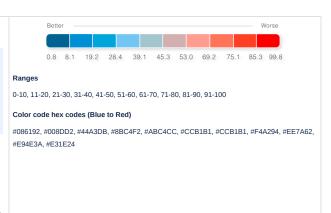
A map legend shows ranges of values divided on ten blocks.

Some indicators are considered positive when values are high and some when are low (High literacy is good, low Stunting is good). Blue and Red represent positive or negative values respectively.

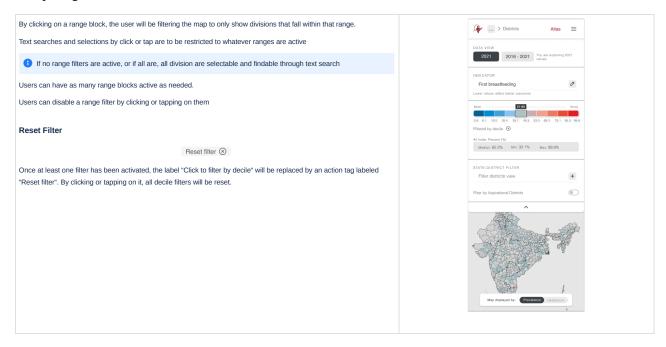
The bars that separate each range will show the medium between the highest value on the lesser rank and the lower value of the highest range.

The left-most bar will show the lowest value recorded, and the right-most bar will show the highest



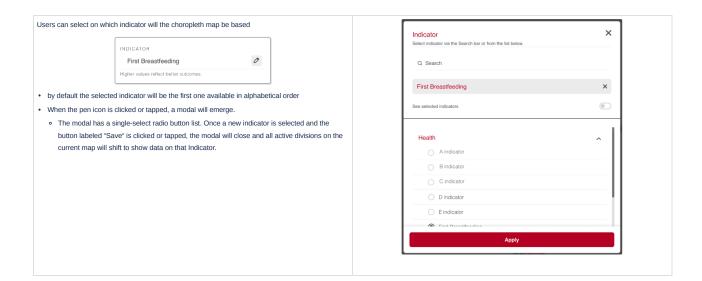


### Filter by range

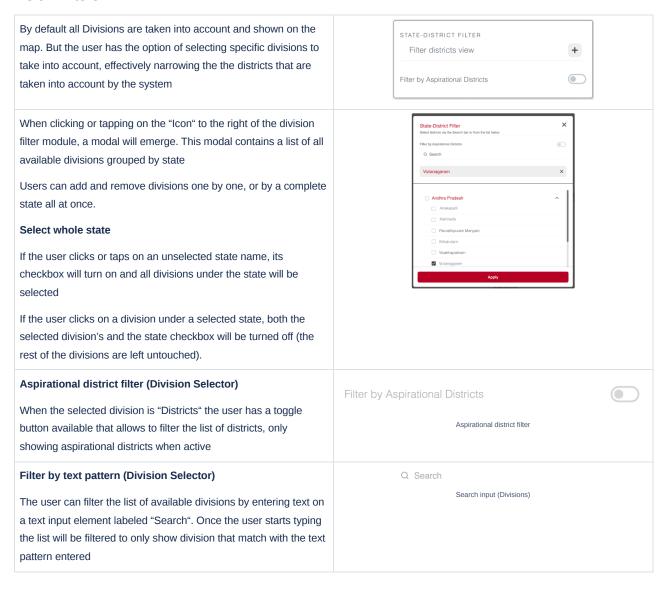


### Indicator

### **Set Indicator**



### **Division Filters**



### **Unit Value**

The user can change the value by which the data regarding the indicators is show. Change between Prevalence (Default) and headcount. This is accomplished by clicking on the top right toggle element labeled "Prevalence/Headcount". Prevalence is the default setting for the toggle.



### Aspirational Districts Filter (Atlas)

If the selected division is "Districts" then a special toggle element labeled "Aspirational Districts" will be present. If active, the map will filter out all non-aspirational districts on the map. This overrides division filters.

Filter by Aspirational Districts

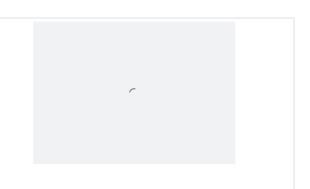
Aspirational District

### Highlight

Users can highlight a specific division by clicking or tapping over the polygon that represents it.

Doing this has two effects.

- 1. The polygon for the division will have its borders highlighted
- A new information bar will appear on the sidebar. The header for this info bar will be the name of the division. The bar will show the prevalence value for the highlighted division on whatever indicator is currently selected.



### Information Bars

There are three information bars

#### All India

This bar shows three values.

- 1. The median for the value of all divisions on the map
- 2. The lowest value for the selected indicator found on a division
- 3. The highest value for the selected indicator found on a division

#### **Selected Districts**

This bar shows three values, and only appears when division filters have been applied.

- 1. The median value for all contemplated divisions
- The lowest value for the selected indicator found among filtered divisions
- 3. The highest value for the selected indicator found among filtered divisions

#### Highlight

This bar shows two values and only appears when a division has been highlighted

- 1. The prevalence value for the selected indicator on the highlighted division
- 2. The headcount for the selected indicator on the highlighted division

All India: Percent (%)

Median: 72.3% Min: 23.0% Max: 98.8%

Selected Districts: Percent (%)

Median: 65.4% Min: 14.2% Max: 87.7%

Prakasam

Prevalence: 35.1% Headcount: 302

## Time Setting (See Change)

By default, the atlas will show the latest available information on indicators for all its divisions.

But it is possible to show the evolution of these values since the last dataset

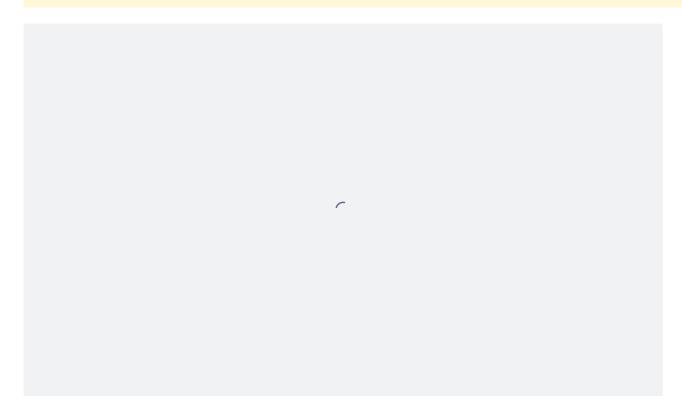
This is achieved by selecting "Change" on the Time Setting Module

Current Mode (2021)	Change Mode (2016-2021)

While on Change Mode the choropleth map will change from a 10 color palette to one of 4.

Instead of showing the decile ranges representing positive or negative values, it will contemplate areas that improved or worsened since the last dataset. This is divided in 4 categories "Highest Improvement". "Improvement", "Worsened" and "Extremely Worsened".

A What constitutes the difference between "Worsened" and "Extremely Worsened" value change will be defined by a fixed milestone to be provided by Harvard. (the same applies for Improvement and Highest Improvement).



#### Filter by evolution range

Normal State	•	Filter Activat	ted (+ hover)	
	^		C	

By default all evolution ranges are taken into account and shown on the Atlas. But the user can filter by one or more evolution ranges by clicking or tapping one of them on the legend bar.

By clicking on a range block, the user will be filtering the map to only show divisions that fall within that range. (More than one range filter can be active at once)

When activated, the evolution range will show the number of division that fall within it.

When hovering on a filter a tooltip will display showing the number of divisions under that range

Format: [Number of divisions] + [Division Type] + [Range Name]

### What is the decile Formula?

Decile is a statistical term that divides the data into ten defined intervals. It basically divides the data points into a data set in 10 equal parts on the number line. This type of data ranking is used in many fields like finance and economics etc. One thing to bear in mind is that data points can be random, so we must first line up those numbers in ascending order on the number line before dividing them into deciles. Once we divide the data, decile ranking can be given:

Like other tools quartile and percentile, decile is also a method that divides data into smaller parts that are easier to measure, analyze and understand.

Decile Rank	
1	10th
2	10th
3	10th
4	10th
5	10th
6	10th
7	70th
8	80th
9	90th

### Formula For Decile:

Let's say that we have a data set with N data points:

$$X - \{X1, X2, X3.....XN\}$$

Formula for Deciles is given by:

$$\triangle$$
 D<sub>i</sub> = (N + 1) \* i / 10

D1 = (N+1) \* 1 / 10

D2 = (N+1) \* 2 / 10

And so on till

D9 = (N+1) \* 9 / 10

From the above formula, we can see D5 = (N+1) \* 5/10 = (N+1)/2 which is the median. So  $5^{th}$  decide represents the median.

## IPI - Deep Dive

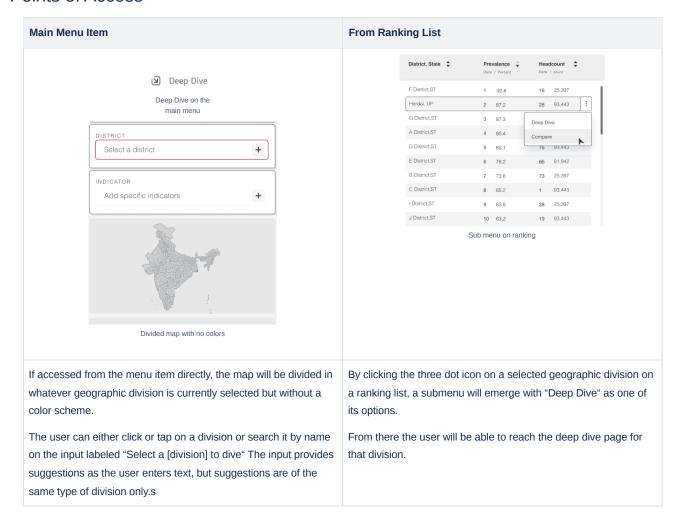
Mobile Designs Harvard Data Explorer Designs

## **General Description**

Deep Dive allows a user to see a complete profile on a given division.

This profile will list all available indicators for a given division, next to state and national averages for comparison.

### Points of Access

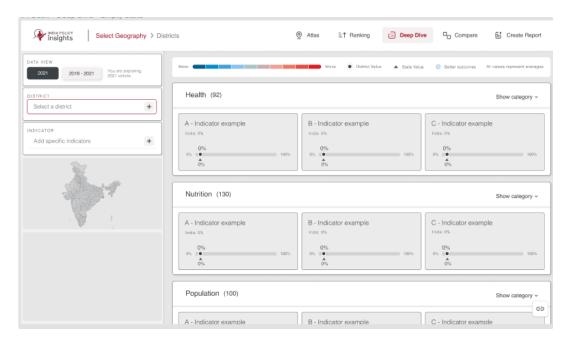


## Deep Dive Page

### Blank State

If Deep dive was accessed from the Main Menu, the user will see its blank state upon arrival. Grayed placeholder cards will be shown with no data, and a gray map of India will be shown in the left sidebar.

An empty select element labeled "[Selected Division]" will be highlighted in red to instruct the user where their attention is needed. Once it is clicked a Division Selection Modal will emerge.



### División Selector

The division selector allows the user to find a specific division for which to display a "Deep Dive" profile.

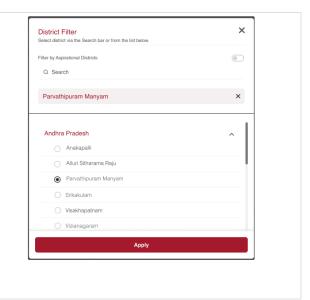
The title of this module is actually composed as follows: [Division Type] + "Filter"

Divisions are listed on a radio button list divided by States.

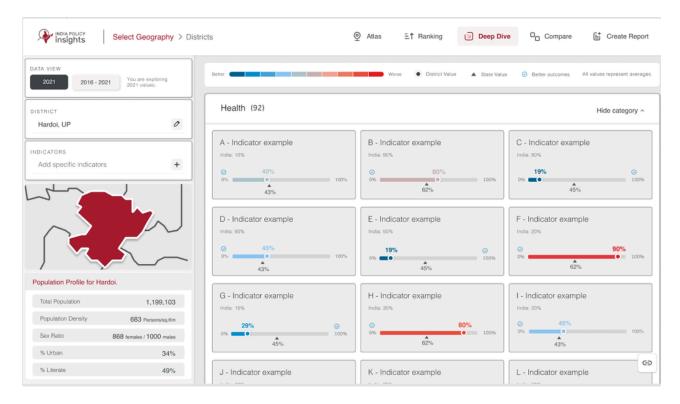
The user can enter text on a text input element labeled "Search". This will cause the list of available divisions to be filtered by the text pattern entered.

If "Districts" is the selected division type, the user might activate an aspirational district filter which will cause the list of districts to only show Aspirational Districts.

Once a division has selected and after the user clicks or taps on "Apply" the Deep dive page will load information on that Division



### **Loaded State**



By default, all indicators for a given division are loaded on its Deep dive page, but most will be hidden (collapsed accordion elements). Each main category will have its first sub-category visible (uncollapsed)

The user can toggle between the state of sections and subsections by clicking or tapping on the elements labeled "Hide subsection"/"Show subsection".

### **Map Thumbnail**

A polygon shape of the geographic shape of the division will be shown together with its neighbours. This is a fixed map, having no zoom or pan functionalities. The division's shape will be centered, having a red background and white borders, while the surrounding divisions will be gray with darker gray background.





### **Demographic Information**

A table labeled "Population Profile for [Division Name]" will show the following demographic information on the division:

- Total Population
- Population Density
- Sex Ratio
- % Urban
- % Literate



### Legend bar

The legend bar holds reference information for the user on how to read the indicator cards



#### **Indicator Cards**

Each card represents an indicator for the Division that is being High Better Indicator example explored. Each card has a percentage bar going from 0% to 100%. It's main value is represented by a hollow dot with a white border. High Worse Indicator example The bar will be colored depending on its value in accordance to the range it falls into and whether a high or low value represents a better or worse outcome. ⚠ We will need the final definition for which indicators are 0-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100 better when high Color code hex codes (Blue to Red) #086192, #008DD2, #44A3DB, #8BC4E2, #ABC4CC, #CCB1B1, #CCB1B1, #E4A294, #EE7A62, The Average for India is shown under the indicator's title. #E94E3A, #E31E24 The Average for the state is represented with an arrow. 1 National and State averages are calculated by averaging the indicator values of all Divisions within it (Whatever division de User selected)

### Select specific indicators

The user might limit the amount of shown indicators by tapping or clicking on the element labeled "Indicators" on the left sidebar. This will cause the Indicator selector module to emerge, listing all indicators on a checkbox list.

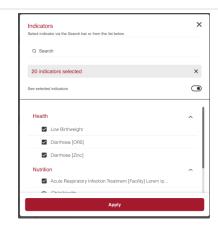
All indicators will be active by default, but the user might click on any number of indicators to hide any given indicator.

#### See selected indicators

The user has a filter labeled "See selected indicators" available. By setting it active, the list of indicators will filter out any unselected indicator.

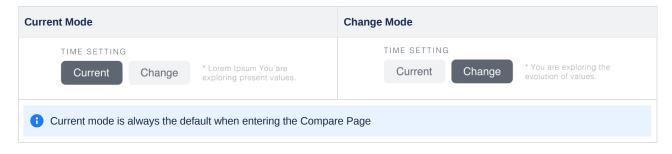
#### Search

The user can enter text on a text input element labeled "Search". This will cause the list of available indicators to be filtered by the text pattern entered, it works within the boundaries of "See selected indicators" if activated.

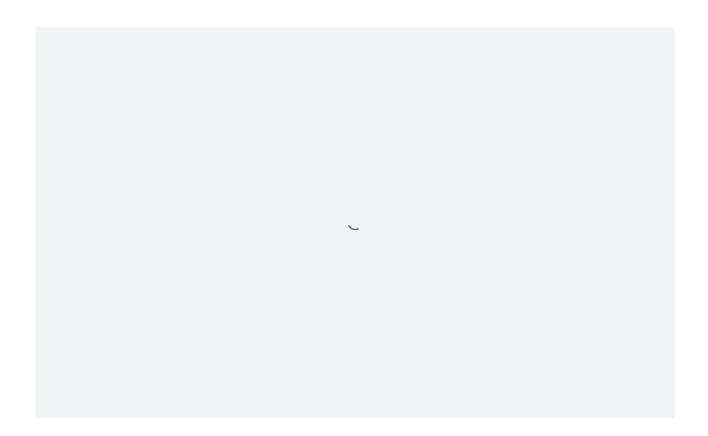


# Time Setting

By default, the Deep Dive page will show the latest available information on indicators for the division that is being explored. But it is possible to show the evolution of these values since the last dataset by changing from "Current" mode to "Change" mode.



## Change State



### **Legend Bar**



"Worsened", Salmon #E87D7F
"Significantly Worsened" Red #DF4649

Other references

The following references are presented next to the legend bar

### **Indicator Cards**

While on change mode, Indicator cards will show the value form the last dataset, the current one and the change between the two.

The two values are marked on the card's bar with two marks and are conjoined by a colored bar with arrowheads to depict the direction of the change.

The variation from datasets is shown on the top right of the card accompanied by an upward on downward arrow, depending on whether the change was an improvement or deterioration respectively. The color of the arrow will follow the same color scheme and logic of the legend bar.

The Better outcome icon in present on the left of the card when lower values are positive and on the right when lower are negative.

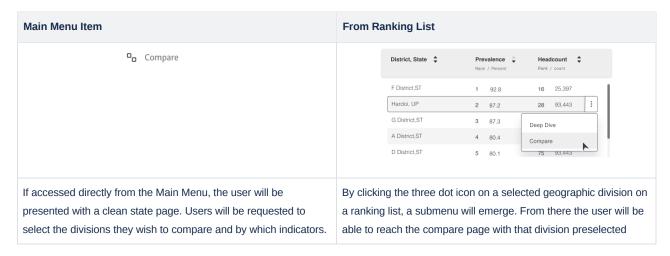
#### **Average Values**

In addition to India's average, change cards show the state average for comparison.

## IPI - Compare

Compare allows for a comparison between up to 4 divisions of the same type for multiple indicators.

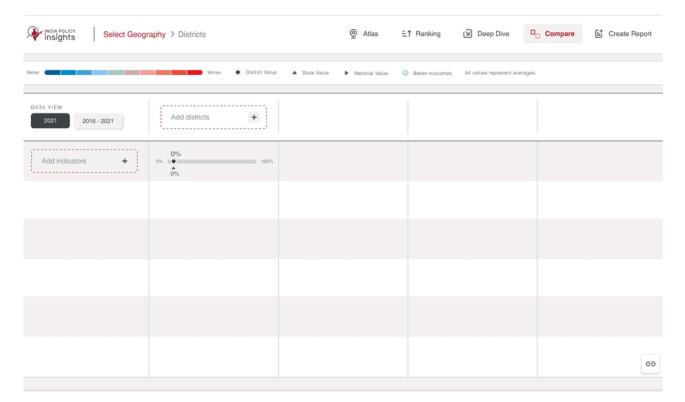
## Points of access



# Blank Compare Matrix

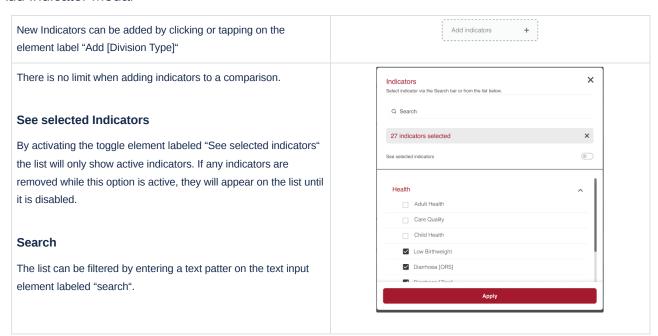
If Deep dive was accessed from the Main Menu, the user will see its blank state upon arrival.

The controls "Add Indicator" and "Add Division" will have their borders colored red to better depict the need for the users intervention.



New divisions can be added by clicking or tapping on the element + Add districts label "Add [Division Type]". The division modal allows the user to select up to 4 divisions to be × District Filter compared. Select districts via the Search bar or from the list below All available divisions are listed on checkbox list. Q Search The modal counts the number of selected divisions and compares it to the allowed total with the following format: [number of selected divisions] + "/4" Andhra Pradesh The user can narrow the search by entering text on the text input Srikakulam. labeled "search". This will cause the list to be filtered by text Parvathipuram Manyam pattern entered. Vizianagaram Visakhapatnam Alluri Sitharama Raju Anakapalli Apply

### Add Indicator Modal



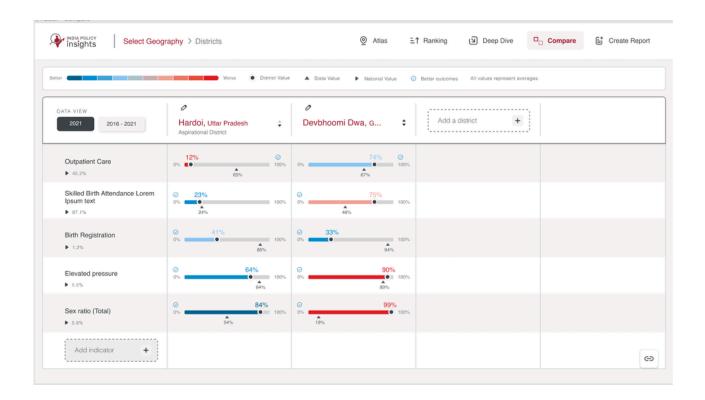
### **Compare Matrix**

The divisions to be compared are shown in columns from left to right, while indicators are displayed on rows.

Divisions will show the state they belong to next to a comma following their name, any excess characters will be wrapped by ellipsis.

When districts are the selected type of division, any aspirational district will bare the label "Aspirational District" under its name.

Indicators will have the national average value displayed under its name.



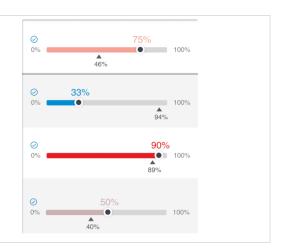
### **Compare Cards**

Each card represents an indicator for the Division that is being explored.

Each card has a percentage bar going from 0% to 100%.

It's main value is represented by a hollow dot with a white border. The bar will be colored depending on its value in accordance to the range it falls into and whether a high or low value represents a better or worse outcome.

the Average for the state is represented with an arrowhead.



### **Division Options**

### Order by

Clicking or tapping on the vertically mirrored arrows next to the divisions name will cause the compare table to sort indicator rows by the indicators value for the division.

Ascending (Default)

Values are listed from lowest to highest. The twin arrow icon will have the top arrow in clear gray and the bottom arrow in dark gray.

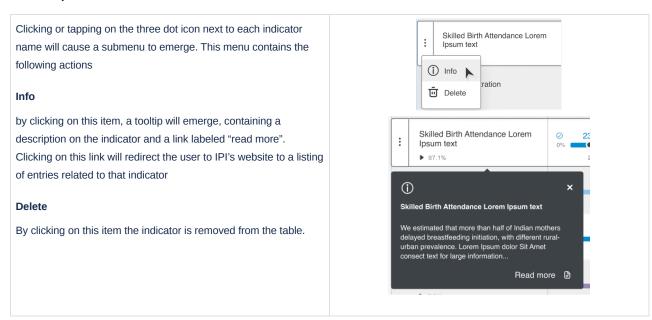
Descending

If the twin arrow icon is clicked or tapped again, the order is shifted to show values from higher to lowest. The twin arrow icon



will have the top arrow in dark gray, and the bottom arrow in clear gray.	
Edit Divisions  Clicking the pencil icon on any of the columns will cause the division selector to appear.	
Remove Division  By clicking or tapping on "X" icon, the division is removed	

### **Indicator Options**

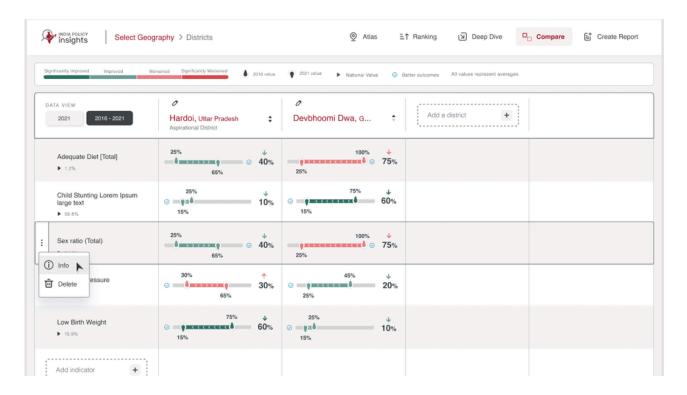


## Time Setting

By default, the Matrix will show the latest available information on indicators for the divisions that are being compared. But it is possible to show the evolution of these values since the last dataset by changing from "2021" (Current) mode to "2016-2021" (Change) mode.



### Compare Change Matrix



### **Legend Bar**



### **Indicator Cards**

While on change mode, Indicator cards will show the value form the last dataset, the current one and the change between the two.

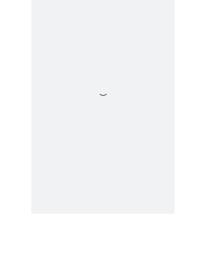
The two values are marked on the card's bar with two marks and are conjoined by a colored bar with arrowheads to depict the direction of the change.

The variation from datasets is shown on the right of the card accompanied by an upward or downward arrow (Depending on the direction of the change).

The color of the arrow will follow the same color scheme and logic of the legend bar, depending on whether the change was an improvement, deterioration or a neutral change.



⚠ We need to define the ranges for these values. What constitutes a "Worsened" or "Extremely Worsened" value change



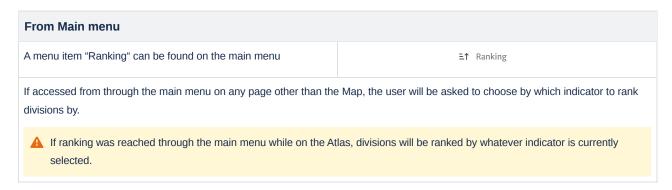
## IPI - Ranking

Ranking shows a list of divisions ranked by their performance on the selected indicator.

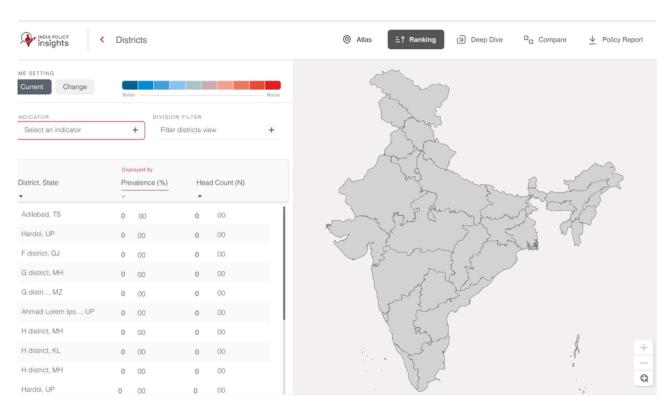


Ex: If Top Performing is selected (it is the default option), divisions will be ranked from the best performing division to the lowest. If the indicator has lower values as positive, divisions with low value for the indicator will appear first. In the same way, If the indicator has high values as positive, division with high values will be listed first.

### Points of Access



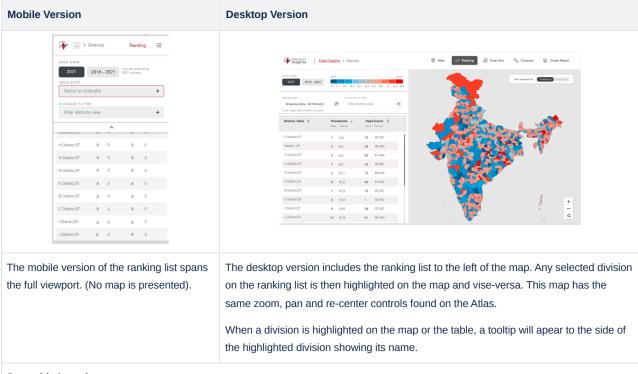
### Blank State



When the user first arrives the user will be presented with a blank map (on desktop) and table.

The table will have divisions ordered by name.

## Ranking List



#### Sort table by column

The ranking table can be ordered by any of its columns by clicking or tapping on its header.

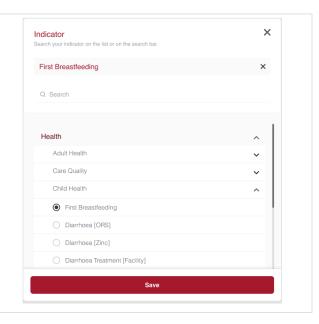
By default, it will be ordered by "prevalence". For lowest to highest when lower values are positive for the indicator and form lowest to higher when lower values are negative for the indicator.

### **Indicator Selection**

The user must select the indicator by with divisions are to be ranked. For this they only need to click on the indicator field. If no indicator is currently selected, this field will show the text "Select an Indicator".

Once the indicator has been selected, the table will be ordered in terms of the values of each division for the selected indicator.

In the desktop version, the map populates with colors, each division having its color determined by the value of the indicator and in respect to the same color code applied the atlas.



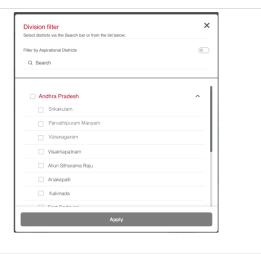
### **Division Filter**

By default all divisions are considered and ranked. However, the user has the option of entering a specific number of divisions or whole states.

When doing this the ranking table and the map (the later only on desktop) will only contemplate the divisions selected by the user (and in the case of whole states, the divisions within those states).

#### Filter by aspirational districts

When Districts are the selected type of division, a "filter by aspirational districts" toggle will be present. When active, the list of divisions will only show aspirational districts.



### Compare and Deep Dive

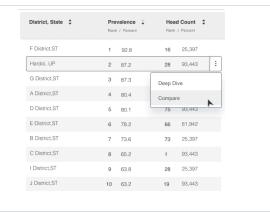
When a division is hovered or tapped, a vertical three dot icon will appear at the end of its row. By clicking or tapping on it a two item menu will appear.

#### **Deep Dive**

By clicking or tapping on "Deep Dive" the user will be redirected to the Deep Dive page for the respective division.

### Compare

By clicking on compare, the user will be redirected to the compare page with the respective division being preloaded on the table.





But it is possible to show the evolution of these values since the last dataset.

This is achieved by selecting "2016 - 2021" on the Time Setting Module (Top left).

The table will the show how much the value for the selected indicator has changed for every division, the value it had on 2016 and its current value.

# IPI - Reports

Reports are documents containing comprehensive looks into available indicators for a geographical division and indicators for the villages within them (unless the selected division is villages)



🕦 The design for reports and the preview and generation UI will be updated. The new format will be provided by Harvard team and the final design will be worked with Onetree.

### Points of access

Frommenu menu	
A menu item "Create Report" can be found on the main menu	ஞ்* Circate Report

### Controls

When accessing Reports from the Main menu, the user will arrive at an empty single-field form.

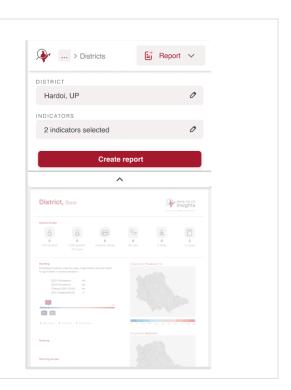
#### **Select Division**

Users can select a single specific division for which a Policy Report will be Downloaded. Reports are pre generated.

### **Create Report**

After clicking or tapping on "Create Report" the Report will generate. A spinner will be displayed within the button while the report is being generated after which it will start downloading.

FileName: [date DD/MM/YY] + [Division Name] + Report

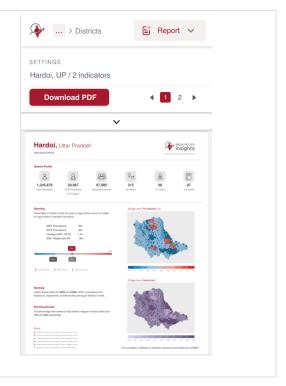


### **Download PDF**

Once the report has been generated, a preview of each page is shown to the user.

The previews are paginated and can be navigated by either clicking/tapping one of the numbers on the paginator or one of the arrows to the side.

By clicking/tapping on the button labeled "Download PDF" the PDF will start downloading.



### Report

One page is generated for each selected indicator.

#### Header

Displays the name of the selected division, and an abbreviation for the State in which the division is located.

If the selected division is an aspirational district the header includes the label "Aspirational District" between the district's name and the state.

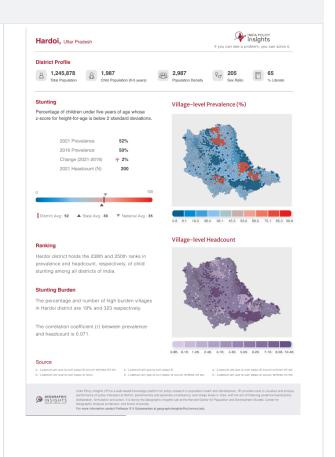
### **Demographic information**

The following demographic information for the division is displayed: Total Population, Population density, Sex Ratio, % Urban, % Literate. Each has an icon for reference.

#### Indicator data

The data for the selected division in relation to the selected indicator:

- Indicator Disclaimer (text)
- Prevalence 2021 (%)
- Prevalence 2016 (%)
- Change 2016-2021 [Arrow representing change trend] (%)
- headcount (Number)



#### Indicator data graph

District Avg (Pipe), State Avg (upward arrow) and National Avg (Downward Arrow) represented on a horizontal bar.

The values are shown next the each icon on the legend reference bellow the bar.

#### **Division intel**

Information on the division.

Comes from ESRI.

#### Indicator intel

information on the indicator regarding the division.

Comes from ESRI.

### Village Map (Prevalence)

A choropleth (blue-red) map showing prevalence values for the villages contained within the selected division in relation to the selected indicator.

A map legend depicting the value ranges and color scheme is included for reference

### Village Map (Prevalence)

A choropleth (purple) map showing headcount values for the villages contained within the selected division in relation to the selected indicator.

A map legend depicting the value ranges and color scheme is included for reference.

### **Correlation Coefficient**

Disclaimer showing the coefficient between prevalence and headcount.

"The correlation coefficient (r) between prevalence and headcount is " + [Coefficient]

### **Sources**

List of sources

### **Footer**

Fixed content

### Village Report

### Header

Displays the name of the selected Village, the district it belongs to, the PC it belongs to and the state it belongs to.

If the district that contains the village is an aspirational district the	
header includes the label "Aspirational District" between the	
district's name and the PC's name.	
Demographic information	
The following demographic information for the division is	
displayed: Total Population, Child Population, Population density,	
Sex Ratio, % Literate	
Indicator data	
mulcator data	
The data for the selected village in relation for each selected	(
indicator is listed on table	
Indicator name, 2021 values	
mulcator name, 2021 values	
Sources	
List of sources	
Footer	
Fixed content	

## IPI - Villages (New)

Figma: Harvard Data Explorer Designs

### **Atlas**

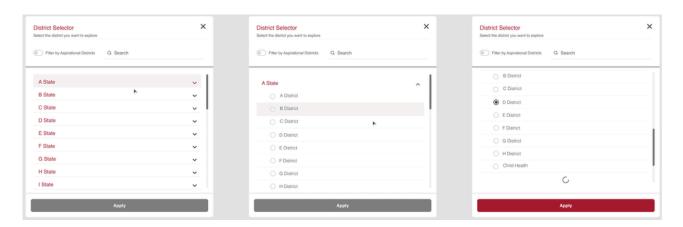
There are a few peculiar aspects when exploring data on villages.

First, when arriving at the atlas from the landing page, the user is asked to select a district.

This is because technological limitations prevent villages to be shown at a country or state level, because of their sheer number, having them displayed in any large area than a district would mean a significant performance drop.

Second, there is a single data set for villages, meaning that all "change" functionalities will not be present. This affects not only the atlas but deep dive and compare as well.

### Select a district



Upon arrival at the Atlas, users are greeted with a modal to select the district in which to show villages. Districts are presented on a list segregated into States. The list is composed of radio buttons so that only one selection can be made.

Once a district has been selected, the user needs to click on "Apply" to have the atlas show the district's map with the villages within.

Users can browse the list and select the desired district directly or filter the list by entering text on a search bar, this will make the list only show villages that match the entered text.

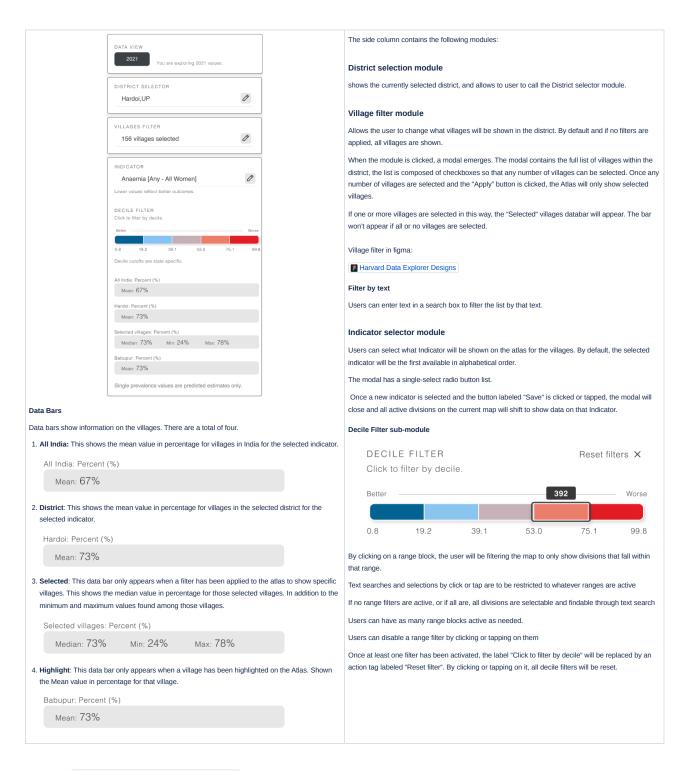
#### Filter by text

Users can enter text in a search box to filter the list by that text.

### Filter by aspirational districts

Users can filter the list to only show aspirational districts by activating a toggle control labeled "Filter by aspirational districts". When the toggle is enabled the list will only show aspirational districts.

### Side column

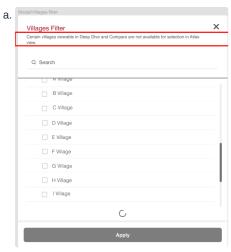


Figma link: Harvard Data Explorer Designs

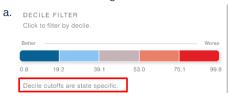
#### **Disclaimers**

There are three disclaimers on the atlas.

On the village filter module: "Certain villages viewable in Deep Dive and Compare are not available for selection in Atlas view."
 Note for Harvard team: based on this disclaimer, the Villages not available for Atlas view will not appear in the Villages Filter list. The not available Villages must be flagged in the data set provided.



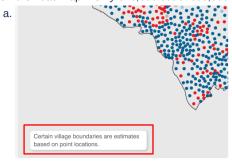
2. On the decile filter: "Single values are estimates and are not exact measures."



3. Bellow the data bars: "Single prevalence values are predicted estimates only."

a.	All India: Percent (%)  Median: 67%
	Hardoi: Percent (%)  Median: 73%
	Single prevalence values are predicted estimates only.

4. On the Atlas map: "Only 520,000 out of 600,000 villages will be available."



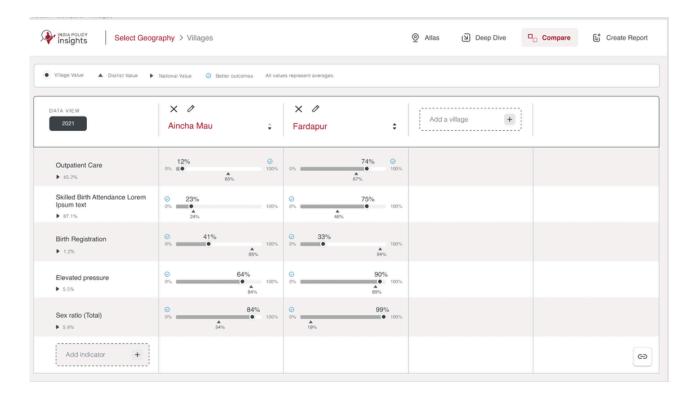
Single prevalence values are predicted estimates only.

Certain villages viewable in Deep Dive and Compare are not available for selection in Atlas view.

# Compare

### No Change Data

The are no multiple data sets for villages, meaning that all change functionalities will not be available.

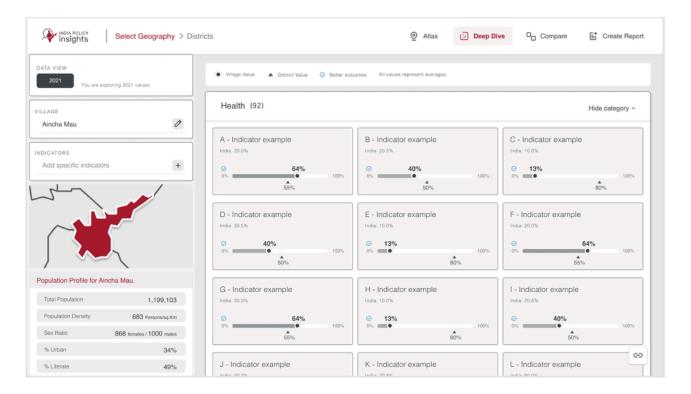


Compare, figma link: Harvard Data Explorer Designs

## Deep Dive

### No Change Data

 $The are no \ multiple \ data \ sets \ for \ villages, \ meaning \ that \ all \ change \ functionalities \ will \ not \ be \ available.$ 



Deep Dive: figma link: 13 Harvard Data Explorer Designs

### Accuracy

Some villages do not have fully accurate geographical representations (map silhouette) and other will not have a silhouette at all.



In the first scenario, the map should have the following disclaimer: "best approximation.", and in the second: "No map available". Accurate maps will not have any disclaimers.

**Note for Harvard team:** the logic to follow will be based on when the map for that village exists or not. When the map exists (shape file found by village-id) then the "best approximation" disclaimer will be shown and by the other hand if no map exists (shape file not found by village-id) then the "No map available" disclaimer will be shown.

# New Reports layout

