Project Report
On
Water & Sanitization

Submitted by

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Abstract

My project is **Water and Sanitization** that deals with the condition of water like how pure it is and what are the factors that affect its quality. I have used dataset of India from *data.gov.in* named as "QUALITY_AFFECTED_HABITATIONS_AS_ON_1_APR_12". In this project I have done the analysis of Quality Factors that affect the Water of various States, Blocks, Panchayat, Villages and Habitats in April, 2012. This analysis will help one to understand the amount of impurities present in the water of various Blocks, Villages, Panchayat and States of India till April 2012.

Table of Contents

List of Figures

Abbreviation

QP: Quality Parameter

BN: Block Name

Introduction

As we all know that cleaning water is essential to protect us from many diseases and to maintain hygiene. So, to clean the water first we have to know about the factors that actually affected the water of that area. I have done the visualization of data of different sectors using Tableau. Tableau is a powerful and fastest growing data visualization tool used in the Business Intelligence Industry. It helps in simplifying raw data in a very easily understandable format.

Visualization:

1) Quality Parameter by States In %

2) Above 1K Quality Parameter by District

3) Top 50 Quality Parameter by Blocks

4) Top 1000 Quality Parameter By Panchayat

5) Quality Parameter of Top 10 Villages With It's Habitats

Dashboard:

1) Dashboard of Quality Parameter by State and District

2) Dashboard for Quality Parameter by Top 50 Blocks and Top 10 Villages

Story:

1) Quality Parameter of Water by Different States, Villages, Blocks and Panchayat

Visualization

Data visualization gives us a clear idea of what the information means by giving it visual context through maps or graphs. This makes the data more natural for the human mind to comprehend and therefore makes it easier to identify trends, patterns, and outliers within large data sets.

Visualization of our project:

1) Quality Parameter by States In %

I have taken State and Quality Parameters (QP) as data and applied filter to it. We have taken QP as "Count" and applied "Percentage of Total" quick table calculation to get more accurate result. I have used chart type as "*Map*"
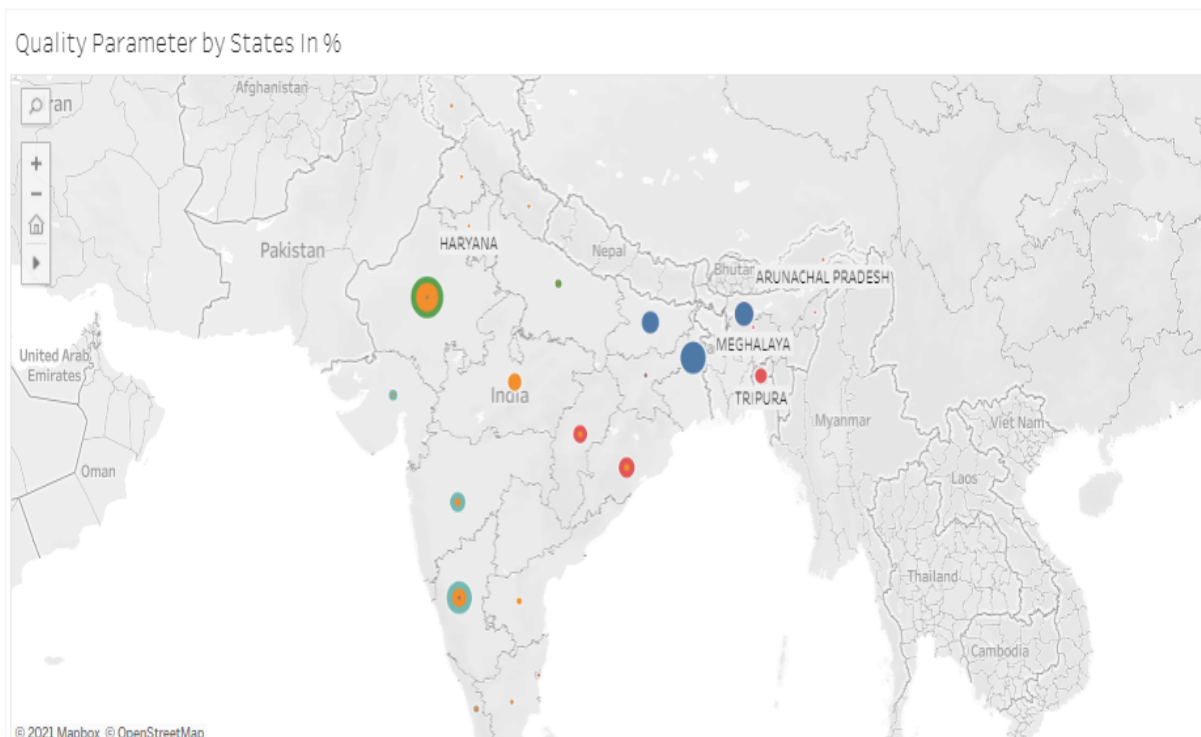

Figure 1: Quality Parameter by States

2) Above 1K Quality Parameter by District

I have taken count of QP in column section and QP, District Name (group) in row section. I have grouped the Districts with their initials because there were a lot of districts which makes the visualization bustling. I applied the filter to show the details of above 1,000 QP to make the proper visualization . I hav used chart type as *"Horizontal Side-by-Side Bar"*
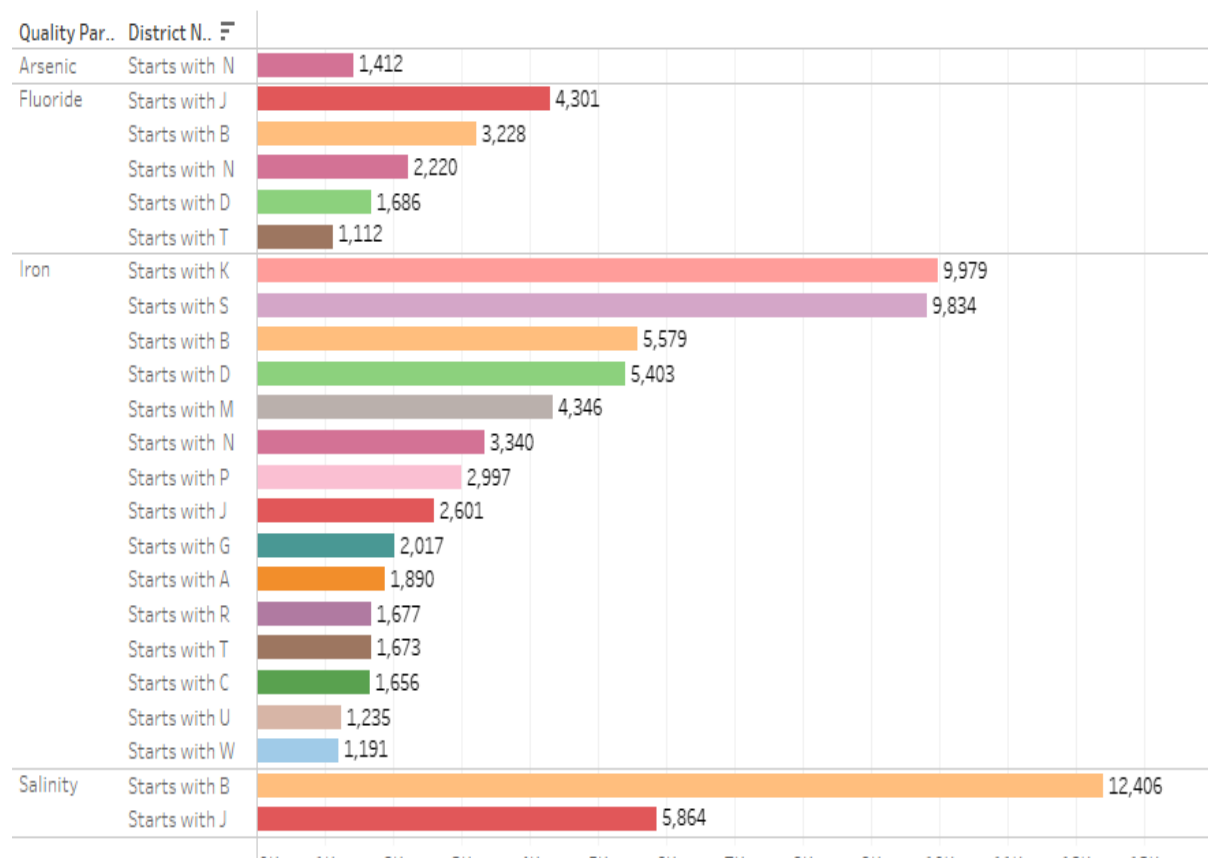

Figure 2: Quality Parameter by District

3) Top 50 Quality Parameter by Blocks

I have taken count of QP in row section and Block Name (BN) in column section. I applied filter on BN to show only top 50 entries. I have used chart type as *"Stacked Bar"*
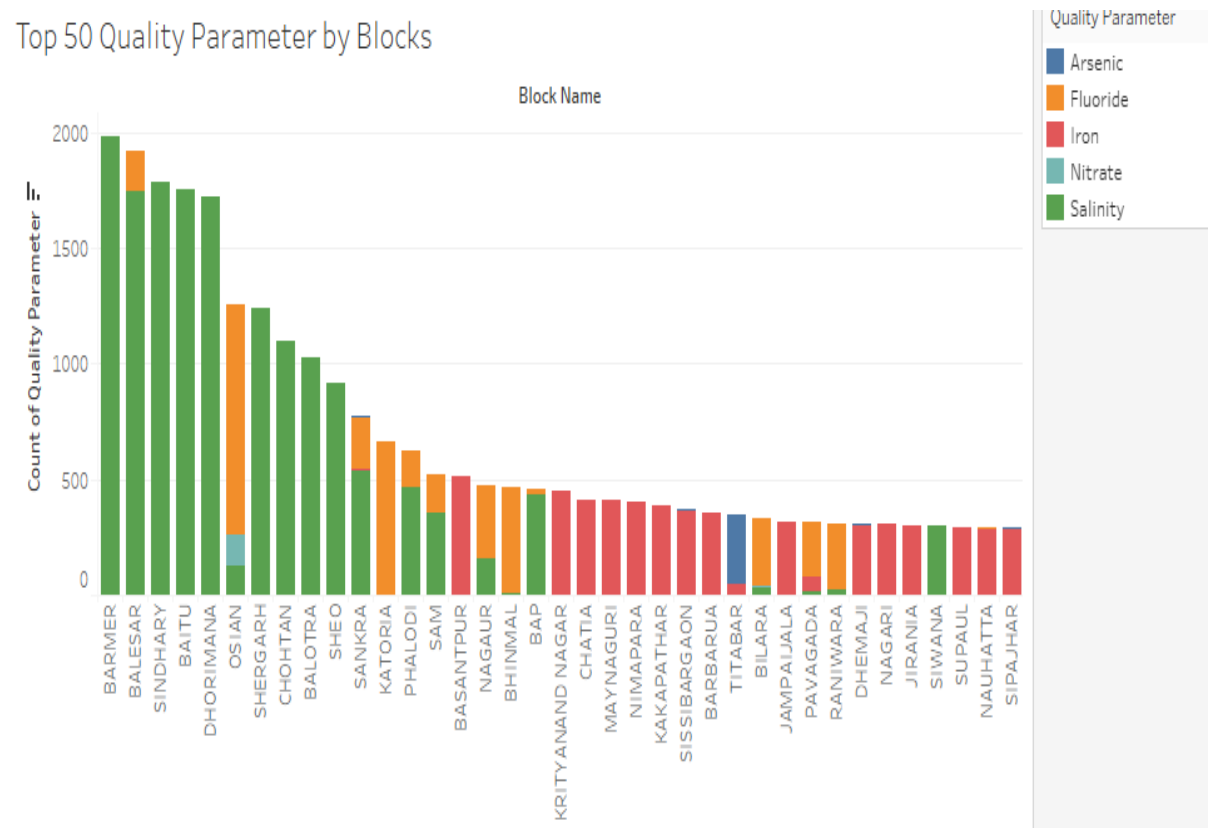

Figure 3: Quality Parameter by Blocks

4) Top 1000 Quality Parameter By Panchayat

Since I have used a circle chart to represent this data of Panchayat so there are no parameter in row and columns. I have taken only top 1,000 Panchayat names by their QP. This chart only shows the name of the Panchayat that has more QP under top 1,000 Panchayat. Here, some Panchayat is having same count of QP. I have used *"Circle chart"*.

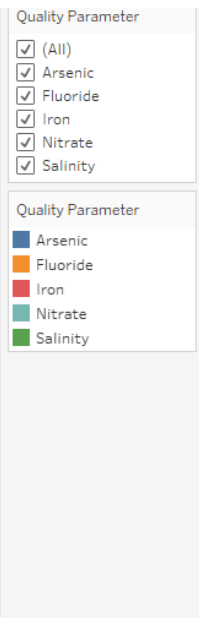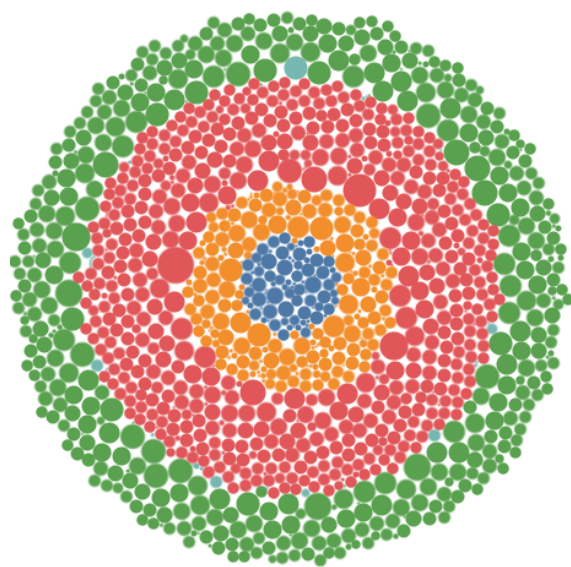Top 1000 Quality Parameter By Panchayat

Quality Parameter
- ☑ (All)
- ☑ Arsenic
- ☑ Fluoride
- ☑ Iron
- ☑ Nitrate
- ☑ Salinity

Quality Parameter
- ■ Arsenic
- ■ Fluoride
- ■ Iron
- ■ Nitrate
- ■ Salinity

Figure 4: Quality Parameter by Panchayat

5) Quality Parameter of Top 10 Villages With It's Habitats

Here, I have taken the Village and its Habitats together to perform the visualization. I have taken top 10 villages to make visualization easy and pleasant. I have used chart type as *"Stacked Bar by mark as Circle"*.
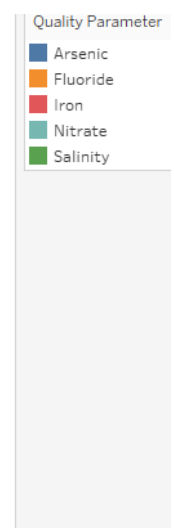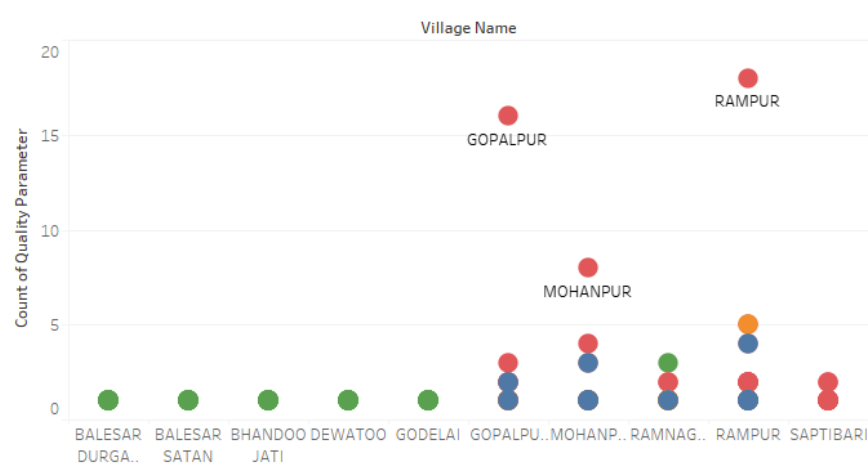

Quality Parameter of Top 10 Villages With It's Habitates

Quality Parameter
- ■ Arsenic
- ■ Fluoride
- ■ Iron
- ■ Nitrate
- ■ Salinity

Figure 5: Quality Parameter by Village with its Habitats

Dashboard

A dashboard is a consolidated display of many worksheets and related information in a single place. It is used to compare and monitor a variety of data simultaneously. The different data views are displayed all at once.

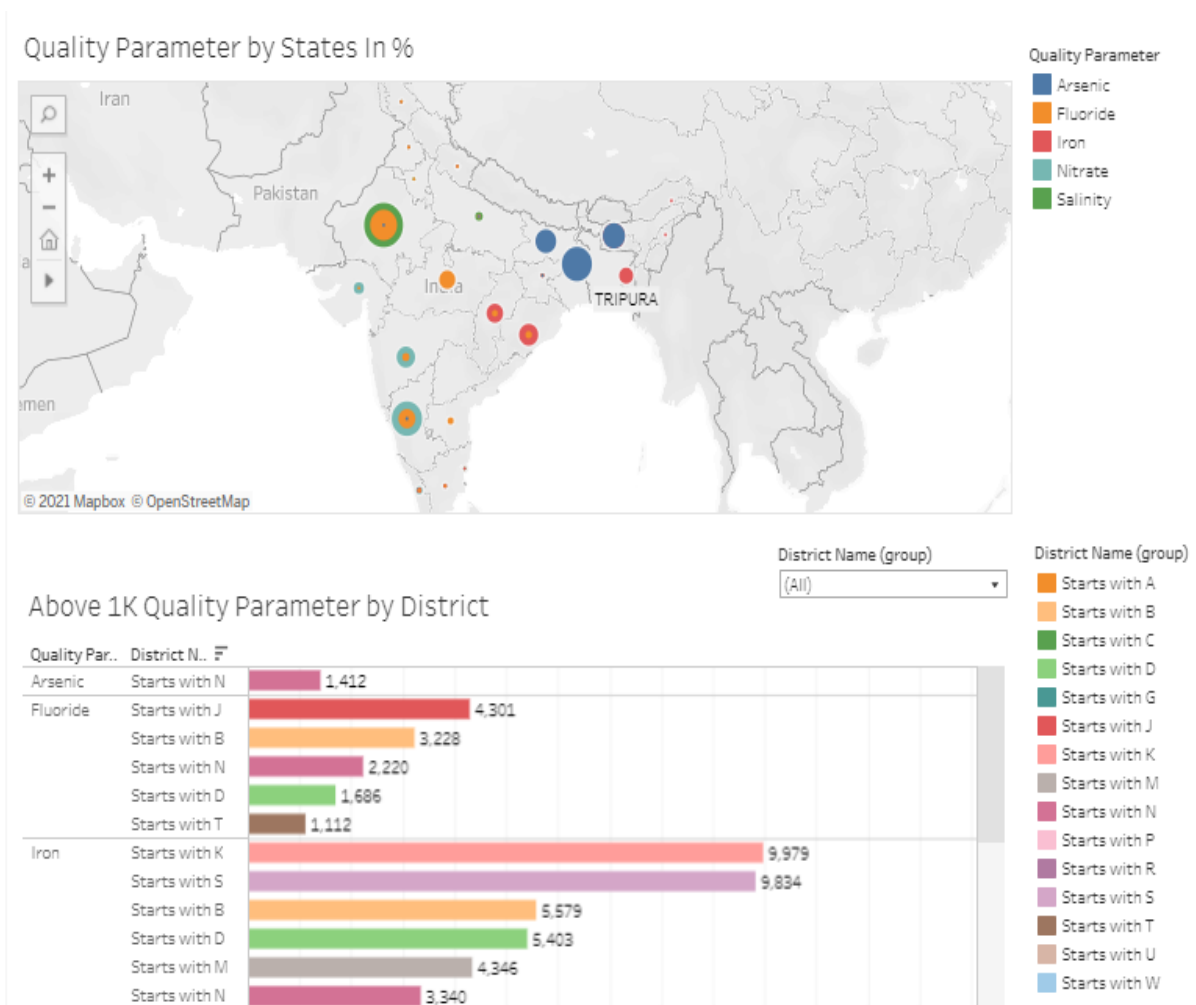**1) Dashboard of Quality Parameter by State and District**

Figure 6: Dashboard 1

In my first dashboard I have taken two worksheets i.e. QP by States and QP by District. If I will apply filter to any one of these chart, it will affect the other chart. Suppose if I want to see the districts of any particular state, we can easily see that by selecting it from QP by states chart.

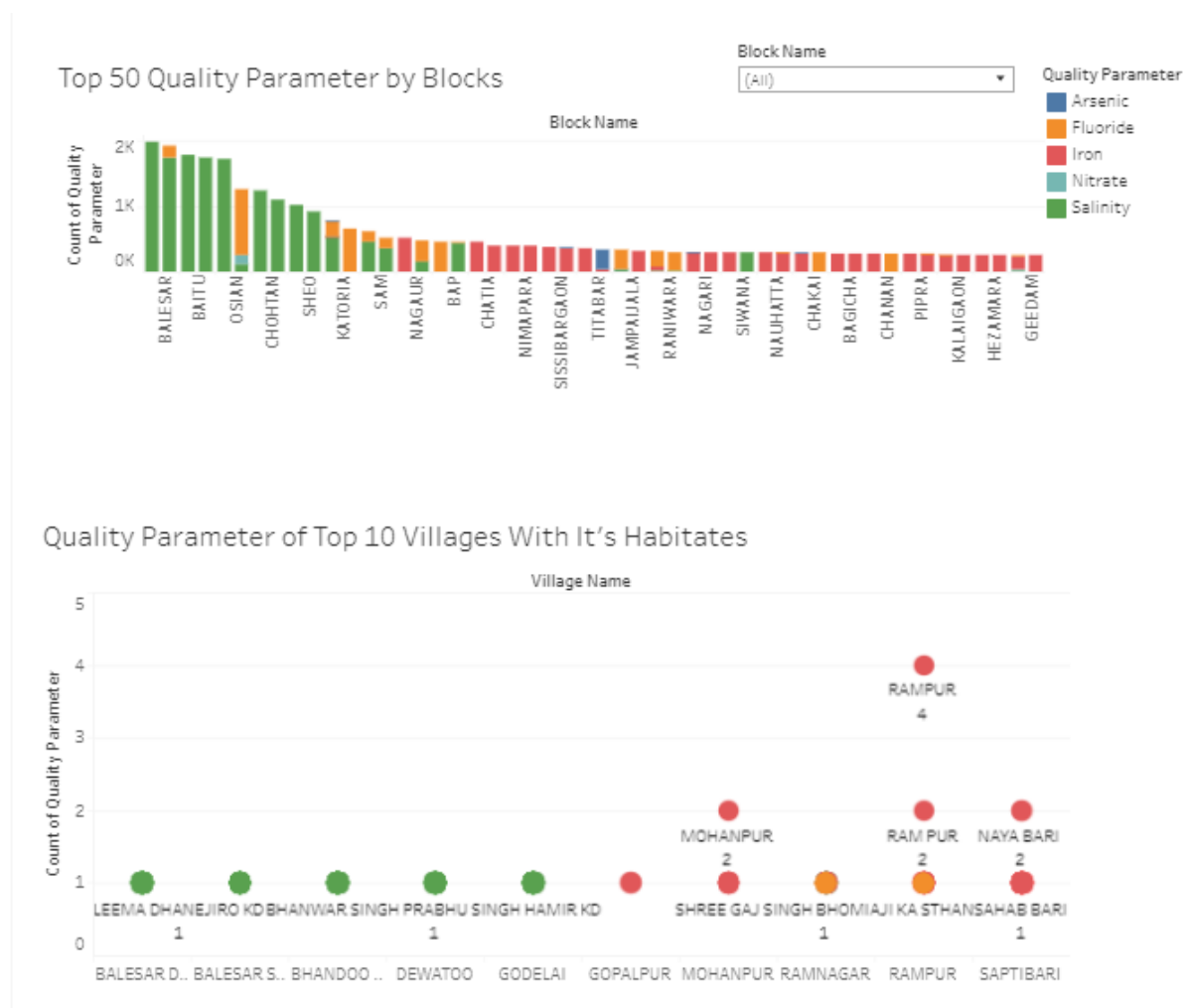**2) Dashboard for Quality Parameter by Top 50 Blocks and Top 10 Villages**

Figure 7: Dashboard 2

I have taken next two sheets as dashbord i.e. QP by Block and QP by Village with its Habitats. If we want to see the BN of a particular village we can easily see that by applying filter on QP by Village chart.

Story

In Tableau, a story is a sequence of visualizations that work together to convey information. We can create stories to tell a data narrative, provide context, demonstrate how decisions relate to outcomes, or to simply make a compelling case. Each individual sheet in a story is called a story point.

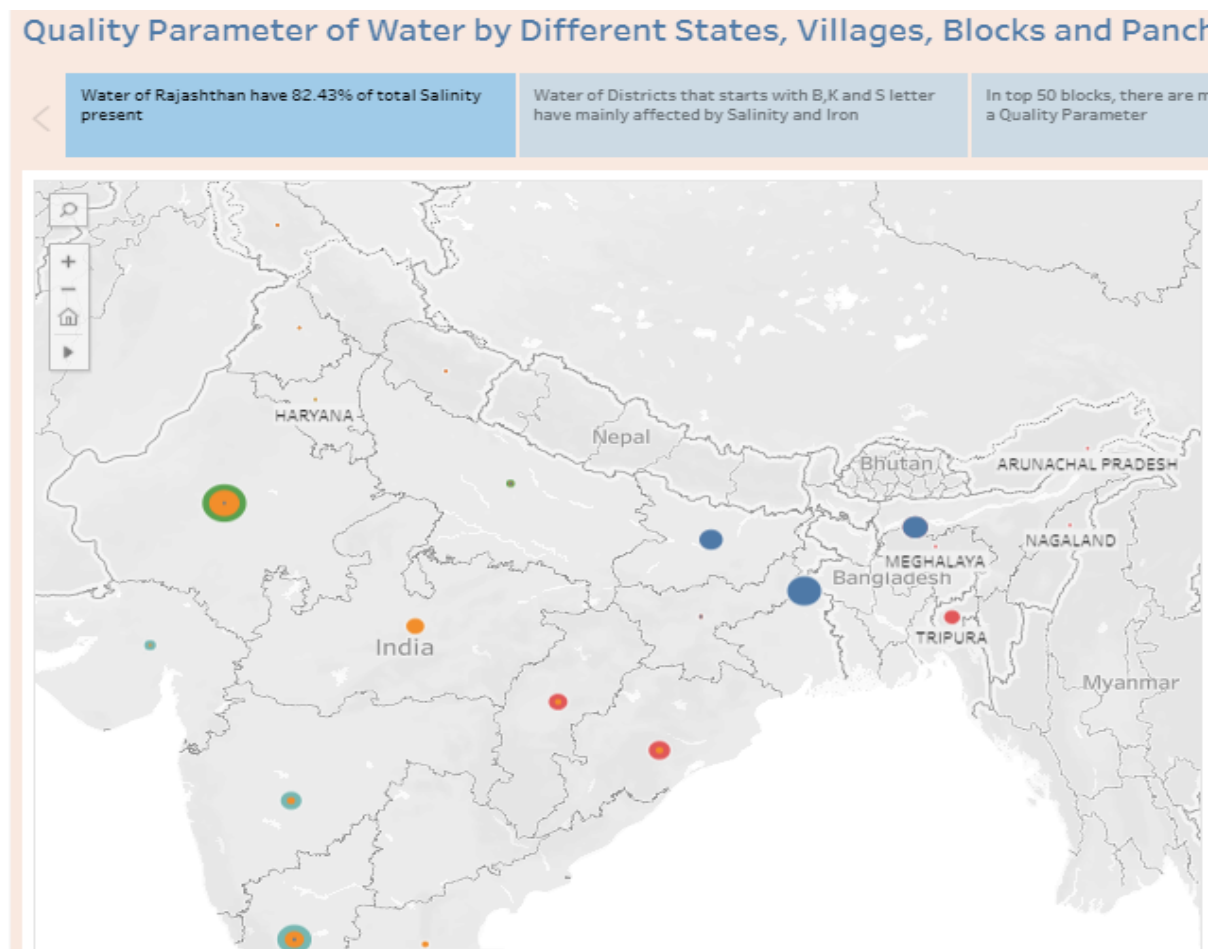**1) Quality Parameter of Water by Different States, Villages, Blocks and Panchayat**

Figure 8: Story 1

Conclusion

From this project we can conclude the following results-

- Water of Rajashthan have 82.43% of total Salinity Present.
- Water of Districts that starts with B,K and S letter are mainly affected by Salinity and Iron.
- In top 50 Block, there are mainly Salinity present as QP.
- The major QP of Panchayat Rampure is Iron.
- In Rampure village with habitat as Rampur only, there are more Iron present as QP.