Clean Water & Sanitation

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* Introduction

Water is the natural resource that is most threatened by climate change, and more than half of the world does not have access to safe sanitation services.
Clean Water sanitation is the major issues faced by many countries. An analysis of the impurities present in the water in different regions across the country tells us about the magnitude of the issue and just hoe many habitations are affected by the problem.

Let's talk about this siutaion in INDIA. A large amount of water which looks “clean” but is ridden with harmful impurities such as arsenic or is overly saline and thus rendered undrinkable by health standards. This problem is particularly more intense in rural India where people cannot afford to purify water at such a large scale or install high end water purifiers in their homes. The totally shows the impact on their health, We have to take concern on this situation.
WATER is most essential for every human being.An analysis of this data in an area wise manner would allow the government to determine and take proper actions for making the drinking water safer for the community.
In this project we are going to see how Gov. take many steps in this situation. In which ways water is being used in different states, which water is safe for drinking with the minreals in it.

* How we use Techchnology

Technology can make a significant impact on the availability of water and its consumption. We can much easier visualize and handle it using technology.
In this project i am going to use **IBM** different services to complete this project like: IBM Congo, different services of IBM cloud which includes IBM Stdio, Watson Assistant.

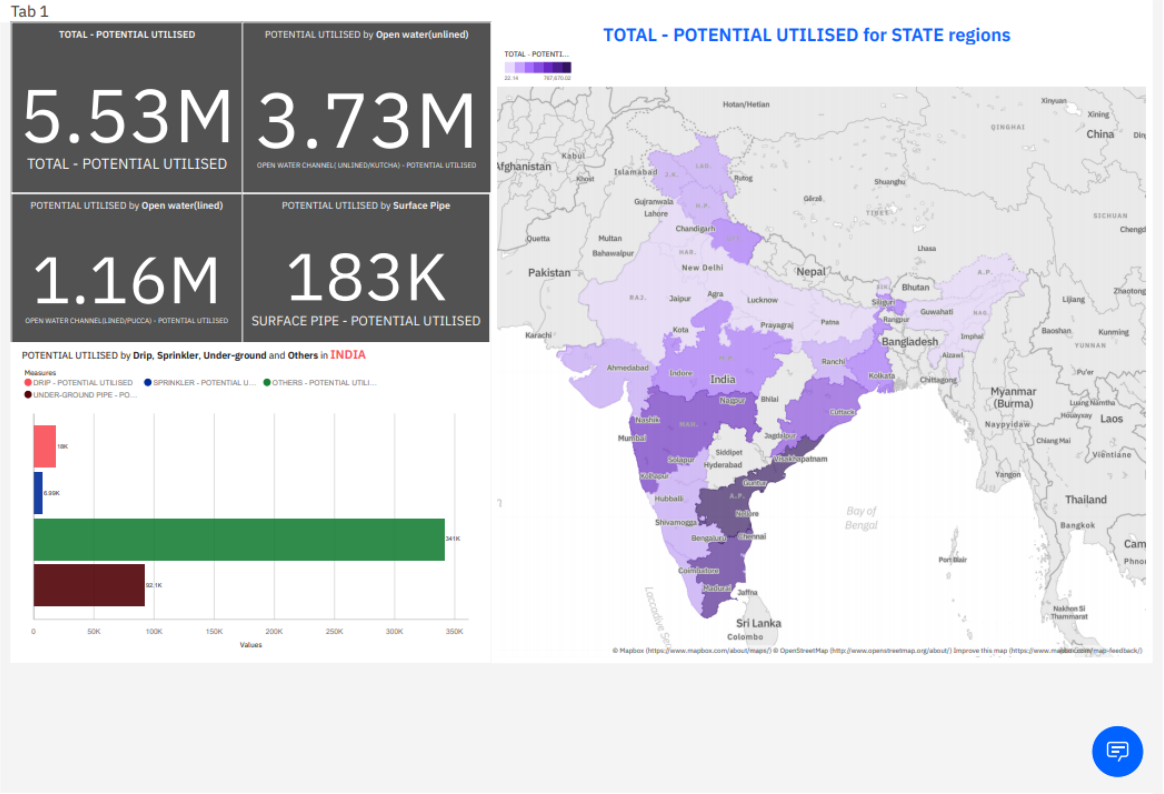
* The architecture

In this project:

- The user accesses a Dashboard how different states comsume water.
- The dashboard also shows how Gov. plans their projects and their funds for these projects.
- A chat bot is here to help to the user to check hweter he is drinking safe water or not.
- A machine learning module uses the data sources as a corpus to build a recommendation model and hosts that model.

* Dashboard

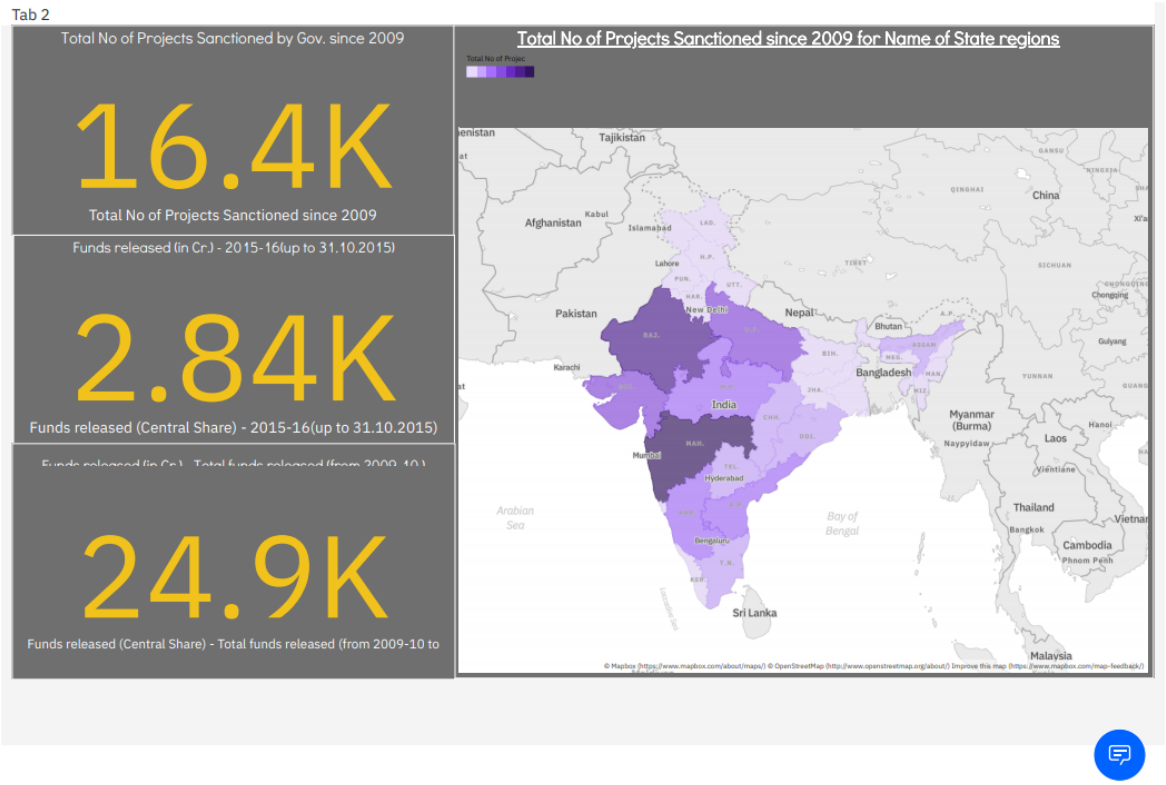
Using IBM Congo Analytics.
It shows how different Indian states use water & how Government supports in this field using making new projects.



In this tab 1 of the dashborad we can check, in how many different ways every states in India consume water.

This ia a dashboard which is working hands on by clicking on the state (but you have to an IBM accont)
DASHBOARD

In the tab 2 we know how Gov. plans their projects and their funds for the projects in this field.



* Chat_Bot using IBM watson assistant

This Chat Bot helps teh user to intarct and show the dashboard, tell us about the safe drinking water, how we can purify water on small and large scale and what to do in water borne diseases. This is created with the help of IBM cloud service, i.e. Watson Assistant.

Use this link to use this Chat_bot: click here

* Machine learning module

Using IBM Machine learning, Auto AI and with the help of water quality data we prepare a model that predicts wheter the water is safe or not safe with the help of its chemical constituents.

IBM provides us a better tool i.e. Auto AI which read the dataset and according to the output it creates a module for prediction.

watch this video

* Datasets

In this project we use th dataset provided by gov. datasets

Click here to check all the datasets:

- water usage
- Gov. projects and funds
- Water quality

* Advantages & Disadvantages

Advantages

The scale of the solutions required can also be seen in accordance to the amount of impurities in the water and the area of people affected by those particular impurities. The level of life people live can also be improved drastically, as better water means better crop produce, healthier and disease free people.

Disadvantages

Small scale solutions may or may not be applicable if an impurity is present in small amounts with another one in large amounts. The do-it-yourself solutions advised to people may not result in the total removal of the impurities present in the water, thus continuing to cause diseases

Always try to save water, so that we can reduce such problems.

* Conclusion & Future Scope

Access to safe drinking water and Gov. projects and their funds for this situation were visually demonstrated with the help of interactive visualization tool - IBM Congo Analytics.

We will move on to compare the changes in access to safe drinking water and sanitation facilities over the years at multiple spatial scales and asses the level of changes that can be seen in the level of impurities and the number of people affected by them.

* Bibliography and Appendix

- Thanks to mentor of SmartInternz
- https://data.gov.in/
- IBM services with their documents
- Video links : Dashboard chat_bot ML module
- Dashboard pdf : click here
- Github link : click here

THANK YOU