



Unveiling JalXChange Water Safety Advisory Tool

This presentation offers highlights for the need and relevance of the Water Safety Advisories for citizens.



INREM
Foundation

India Natural Resource
Economics and Management



Question:

**What are your problems of Water
Safety?**



Water Safety Problems

*My village needs to construct a **new water supply line**. Where do I drill so that Water is Safe?*

*Everyone in our township is spending money to **purchase water** or have an expensive household water purifier. Is the water supply to us Safe? Do we need to spend this much money for other safer water?*

*We are starting a **Water recharge** programme. The concern is whether this will purify or further contaminate groundwater*



The Thirst For Water Data

Our decision making is blind, in absence of Water Data

For those who can seemingly afford, one does not know how to generate new Water Data.

Newly generated Water Data **remains locked**; no one else has access to it

| Laboratory Provided Information | | | |
|---------------------------------|------------|---------------------------|------------|
| Sample Receipt Date: | 30-01-2025 | Analysis Completion Date: | 10-02-2025 |
| Sampling Details: | NA | | |
| Other details (if any): | NA | | |

TEST RESULTS

1 Biological

1.1 Water

| Sr. No | Parameters | Unit | Results | LOQ | Test Method |
|--------|----------------------|-----------|---------|-----|-------------|
| 1 | E.coli | per 100ml | Absent | - | IS 15185 |
| 2 | Total Coliform Count | per 100ml | Present | - | IS 15185 |

2 Chemical

2.1 Residues and contaminants in Water

| Sr. No | Parameters | Unit | Results | LOQ | Test Method |
|--------|------------|--------------------|-------------------------------|-------|---|
| 1 | Arsenic | mg/l As Such Basis | Below limit of quantification | 0.005 | CALF/SOP/CHEM/M MS/07 (By ICP-MS) |
| 2 | Fluoride | mg/l As Such Basis | Below limit of quantification | 0.500 | CALF/SOP/CHEM/M MS/05 (By Ion Analyzer) |

2.2 Water

| Sr. No | Parameters | Unit | Results | LOQ | Test Method |
|--------|---------------------------|--------------------|-------------------------------|--------|------------------------------------|
| 1 | Iron | mg/l As Such Basis | Below limit of quantification | 0.050 | CALF/SOP/CHEM/M MS/06 (By ICP-OES) |
| 2 | Total Hardness (as CaCO3) | mg/l As Such Basis | Below limit of quantification | 10.000 | IS 3025(Part 21) |
| 3 | Turbidity | NTU As Such Basis | Below limit of quantification | 0.100 | IS 3025 (Part 10) |

Question:

How many Water Data sources are there in India?



Users and Data portal accessibility

There seem to be **200** different Water Data sources in India.

Around 10 major Water Data portals exist.

But, the core question is the User Metrics – Who are the users accessing these data portals, and how many?

India Water Resources Information System

Home About WRIS Water Data + WRIS Tools + Data Download + Utilities + Publications + Co

District At A Glance

Find address or

Unit Wise Selection

Basemap Gallery

Layer List

District Layer

State Capital

Airport

Golden Quadrilateral

North-South Corridor

East-West Corridor

Express Highway

National Highway

District Name : Buxar

Export Clear

Statistics

| Sr No | Name | Description |
|-------|-------------------|-----------------------------|
| 1 | District | Buxar |
| 2 | State | BR |
| 3 | Area in SqKms | 1624 |
| 4 | Population | 1706352 |
| 5 | Growth Rate | 21.67 |
| 6 | Sex Ratio | 922 |
| 7 | Literacy | 70.14 |
| 8 | Density | 1003 |
| 9 | Seismic Zone | Seismic Zone-III |
| 10 | Water Resources + | Redirect to Water Resources |



Water Quality Data accessibility

India has multiple water quality data sources, but most are fragmented, difficult to access, and **not available** in open, machine-readable formats.

Existing datasets from agencies such as JJM, CGWB, and CPCB capture different parts of the water system, but **lack integration**, consistent formats, and clear licensing for wider use.

There is a strong need for an **open, interoperable** water quality data ecosystem that aggregates multiple datasets and supports actionable water safety decisions.



A single “network” for Data sources

Emerging thinking is of Water Data being seen as an **“Open Network”**.

Innovation around User discovery of Data can happen with access of multiple Data sets and common standards for interactions.

Data needs to reach users where they are and for what value Data can create.

Question:

**What problems do we face with
multiple data sources?**



Challenges with multiple Data sources

- Water Quality is not one thing such as TDS, but too many parameters
- Every Water source has a **different Water Quality**
- Water Quality changes with Depth below us, every few Feet, and over time

All this makes Water Safety advisories based on Water Quality Data quite complex

Additionally, each Data source measures something different.



User personas and validation

- We have envisaged **6 different types of User persons** and designed their user journeys with support of the IBM Impact Accelerator team

FTK Women/AWW | Pump Operators | Students/Youth | WQ Inspector | CRP | Chemist

- Based on this design, field validation of User journeys have been done across 6 states, to understand their core reality, challenges and needs.
- The validation confirmed that real water quality actors exist as assumed, but data fragmentation, fear of blame, and **lack of clear action pathways** strongly shape how water quality information is used



Data really needs to talk with us

- User surveys shows that **Data literacy** is weak
- Additionally, visual representation of Data also has very poor reception
- Data needs to speak in the language of the user: Stories, simple actionable interpretations and visuals which assume no additional expertise

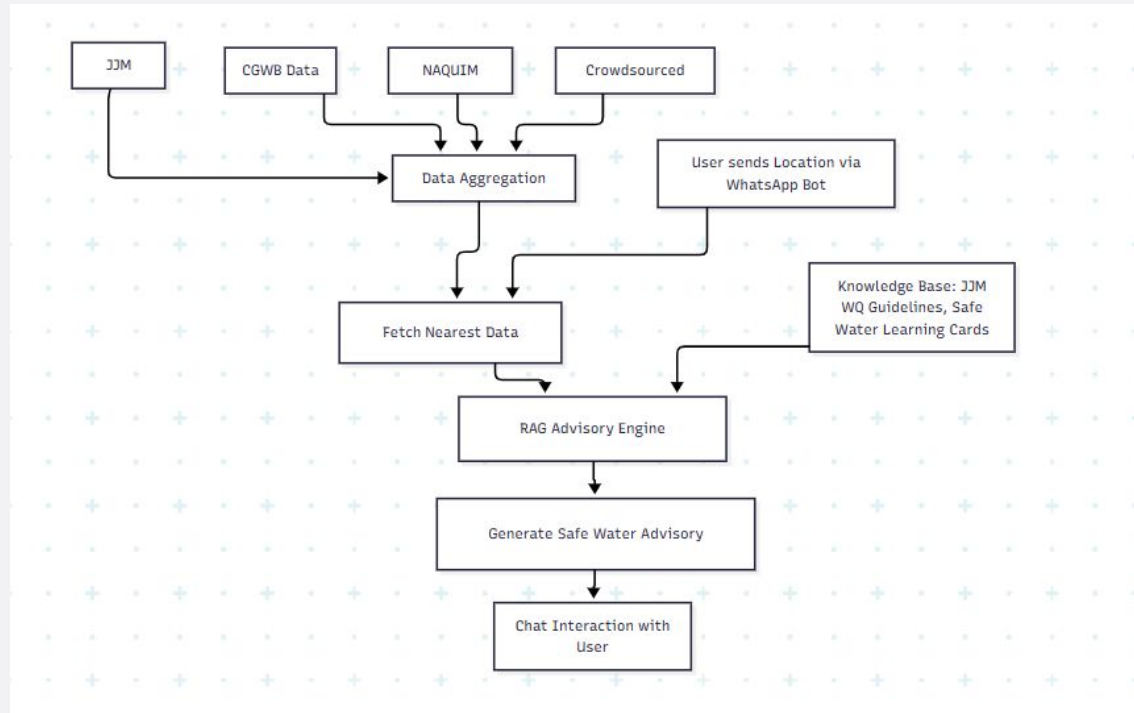
Question:

**Are you ready for the Water Safety
Advisory**



Design of Water Safety Advisory

- User prompted for **Location**
- Nearest data from each Data source is reported
- **Advisory** is generated based on a Knowledgebase
- Further, queries can be put forward and continued





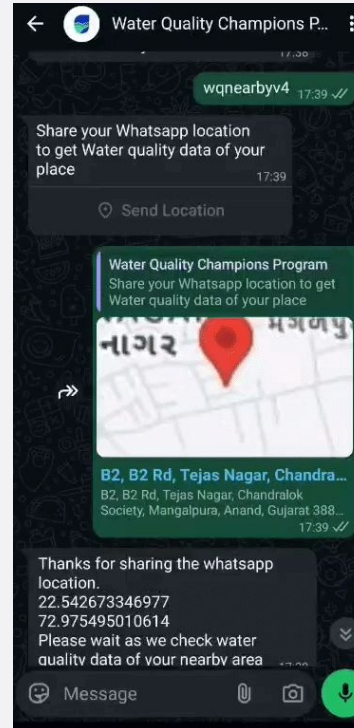
Releasing Data from Documents

- A single data source of NAQUIM aquifer reports have more than 1,00,000 Data points
- However, currently these data points are within separate PDF documents
- **IBM Impact Accelerator** has supported Data extraction and validation of NAQUIM Water Quality Data to be released here as part of the Open Data Network



Prototype v 1.0

- **JaIXChange Water Safety Advisory 1.0** is Released now !
- This can be accessed after registration on the Water Quality Champions Whatsapp Bot in English and Hindi
- Users are invited to provide feedback on the experience





Open API for Water Safety Advisory

- Design of the Advisory is based on an API that returns **Nearest Data** from each source
- We plan to release the API soon for access to other Solution developers
- Feedback and collaborations welcome on API development

Question:

**How can you access and use this
Advisory**

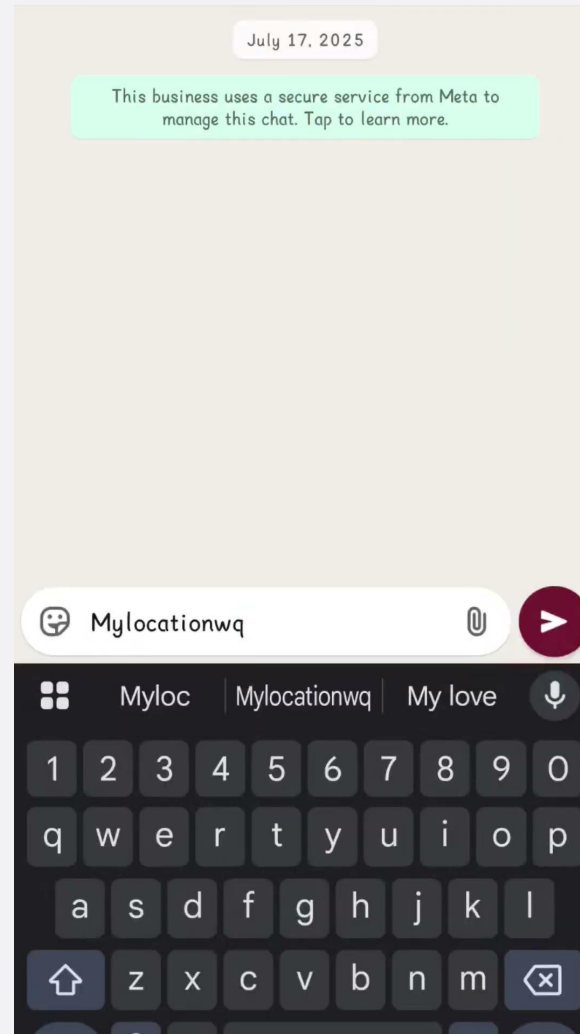


Accessing the JalXChange Water Safety Advisory 1.0

- Follow instructions for Bot registration
- **After registration**, Type the keyword provided and follow the instructions
- You will also receive messages from the Bot on specific campaigns and features developed using this Tool



Prototype 1 - Demo Video





Scan or Type the Keyword to access

Link -

<https://api.whatsapp.com/send/?phone=919724090832&text=mylocationwq>

Key Word

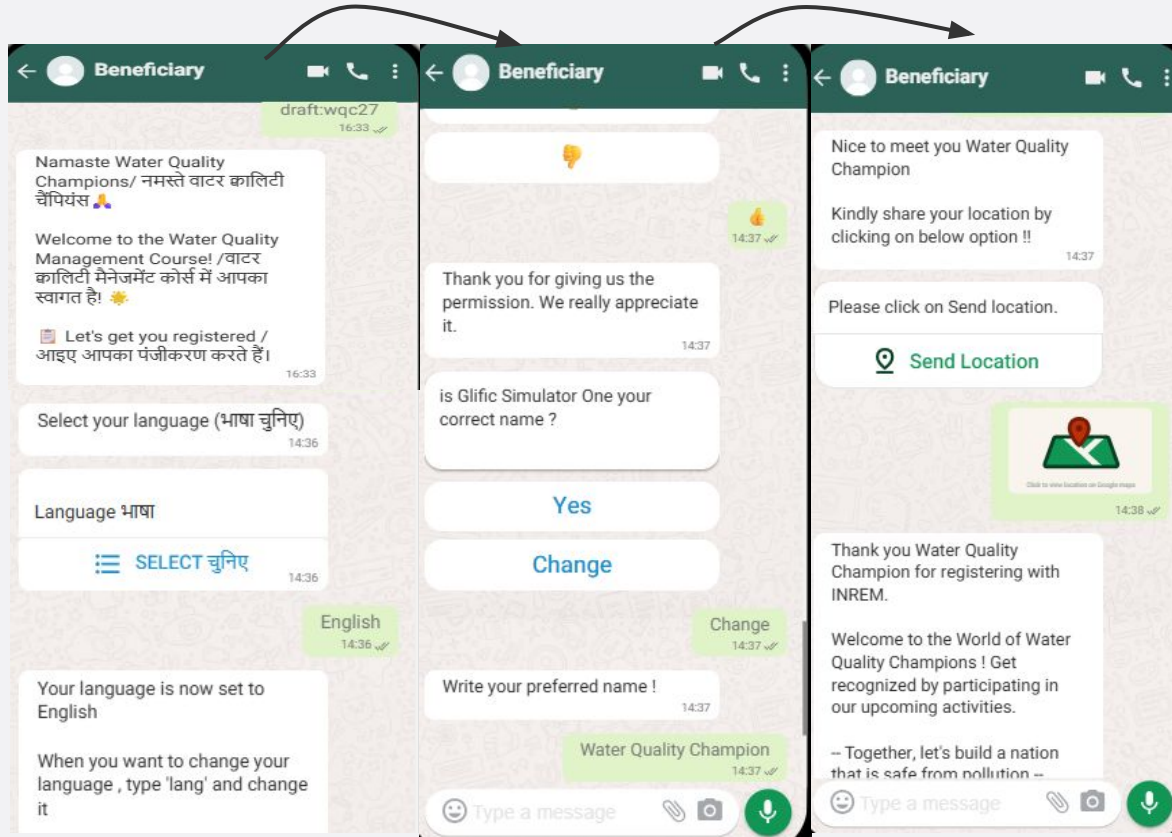
MYLOCATIONWQ



Scan this QR Code to Onboard

We anticipate that there will be technical challenges in this version of the Bot, please give your valuable inputs

INREM FOUNDATION | Unveiling Water Safety Advisory

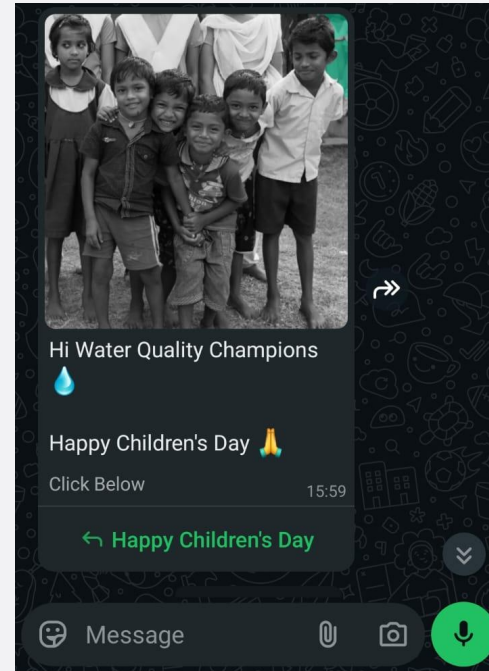


**Step of
Onboarding**



Testing & Learning with Partners

- Nudges to be sent to all partners
- Learning will be done through follow up conversations.
- Support on building self- awareness & decision making effort for safe water will be evaluated.





Contributions to Open Data Network

- We invite you to **Contribute Data** into this Open Data Network
- When you contribute data, you will get it back, together with every other Data point in the system - and enhanced by AI conversations
- We will need your participation towards taking decisions on how this Data gets used and how it gets communication



INREM
Foundation

India Natural Resource
Economics and Management

Thank You

Do you have any questions?

sunder@inremfoundation.org

kiran@inremfoundation.org