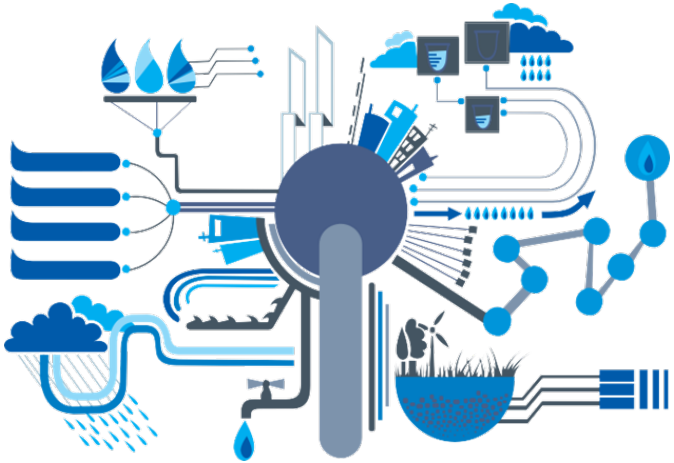
"The paradigm shift in Water Resources Management through the integration of Artificial intelligence, Internet of things & Big data mining analytics {IoT+AI+BDA} architecture"



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CURRENT SCENARIO - INDIAN WATER SECTOR

1. **1545 m3/annum:** The per-capita availability of water in India has declined from 1,816 cubic metres in 2001 to 1,545 cubic metres in 2011. As per the United Nations, any region with annual water availability below 1,700 cubic metres per person is a water-stressed region
2. **20 per cent:** Groundwater blocks critical or overexploited
3. **302 river stretches on 275 rivers** across the country have been polluted due to discharge of both municipal and industrial wastewater over the years.
4. **8.5 per cent and 10.1 per cent:** Freshwater abstraction by industries in 2025 and 2050, respectively.
5. **23 per cent:** Industries do not get water easily or get it at high cost.
6. **River Basin Per capita:** The per capita availability of rivers in India varies from 300 cubic meter to 2000 cubic meter per person per year.

PILOT PROJECT

Integration of Artificial Intelligence, Internet of Things & Big Data mining-Analytics {IoT+AI+BDA} architecture in SMART WATER MANAGEMENT and meticulous examination of their impact on crop economics.

PROJECT OBJECTIVES

- Enhancing crop productivity
- Data collection (ingress) support
- Artificial Intelligence, Internet of Things & Big Data mining-Analytics architecture that links data sources
- A new data model based on document referentiality and eventual consistency
- To suggest policy measures
- Application interfaces with an easy and automatic integration
- Meticulous contributory examination

WORK METHODOLOGY AND RESEARCH PLAN

IoT MODEL

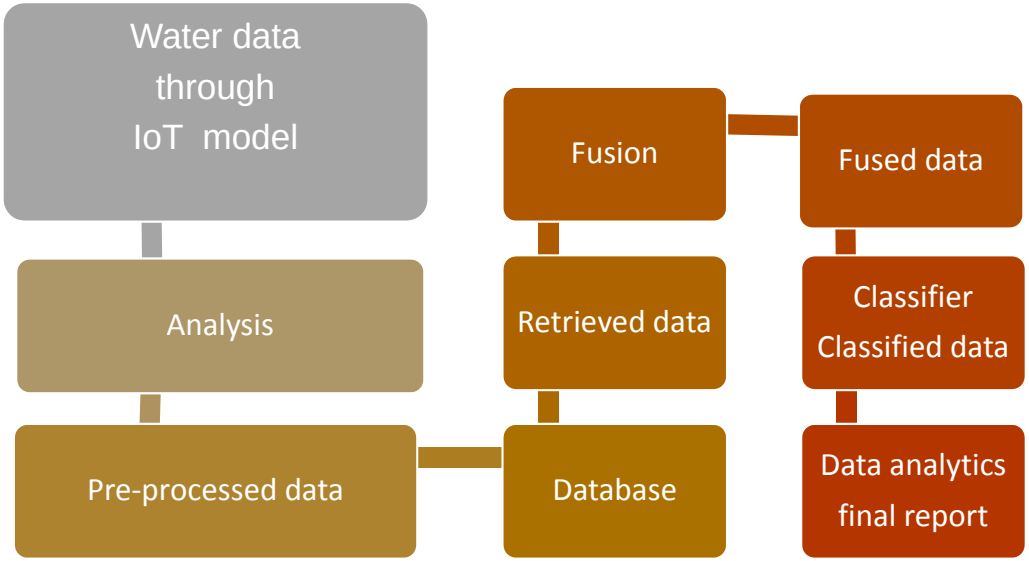
- An Economic and reliable solution for water resource management was used

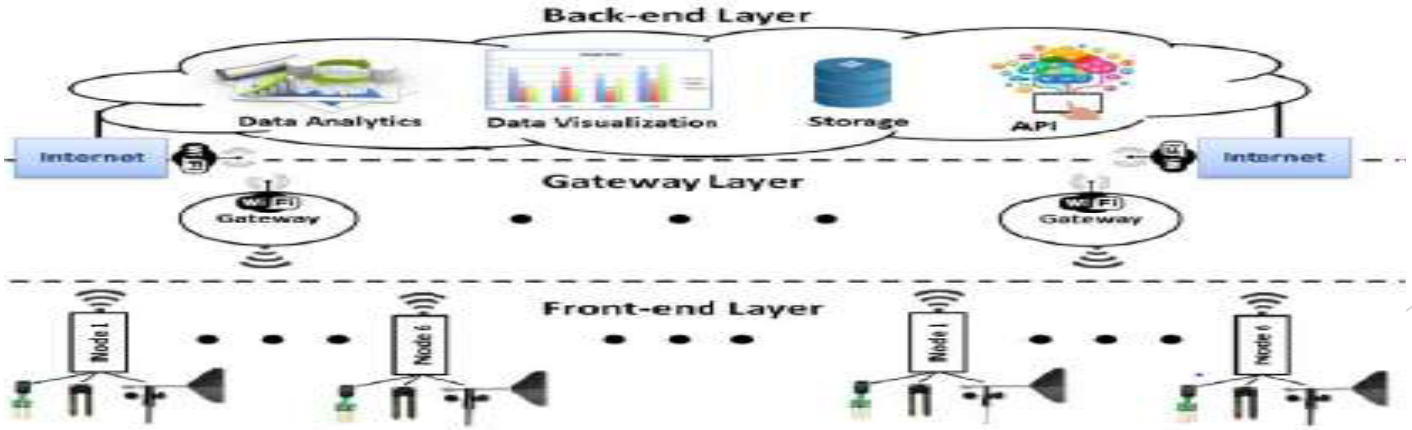
PROCESS

- Data was captured in Visible and NIR spectrum
- High-resolution orthophotos

SPECS

- Images were processed to produce NDVI images.
- Colored and near-infrared data


Water data through IoT model
Analysis
Pre-processed data
Database
Retrieved data
Fusion
Fused data
Classifier Classified data
Data analytics final report


Back-end Layer
Data Analytics
Data Visualization
Storage
API
Internet
Internet
Gateway Layer
Gateway
Gateway
Front-end Layer
Node 1
Node n
Node 1
Node n

PILOT PROJECT OUTPUT ACHIEVED

- Faster problem diagnosis, accurate outcome prediction, and proactive decision-making
- Precise valuation of relative vigor in agri-field
- Efficient water management
- Enhanced agricultural productivity, reduced manual work
- Easy & time efficient crop growth monitoring.
- Proficient soil management
- Unremitting monitoring of the farmland
- Profiting the farmer to make right decisions
- A comprehensive examination of soil temperatures

WAY FORWARD FOR A BETTER FUTURE

- Water policy
- Setting up of water regulatory authority
- Setting up data informatics centre
- Focus on 3Rs of Water (reducing, reusing and recycling)
- Ensuring more drop per crop
- Participatory groundwater management

If we add a little to a little and do this often, soon the little will become great....

Hesiod