Water Management Summarizations

Problem statements:

1. To forecast weather and reduce the real-time gap for opening and closing of canals. Water Management system for proper irrigation.

2. Weather forecasting using GIS technology for planning purposes

3. Creating alerting/messaging systems on basic communication devices for alerts or cautions on water level in fields, flood or drought and etc

4. Water Management: Proper management of water is the primary need in farming. Agriculture consumes approximately 70% of global fresh water. Irrigation system of the country has been spoiled by excessive water usage and unplanned water management methods. If the intelligent water management system is. Thus, the automatic detection is required used, then the agricultural growth of the country can be substantially improved

5. Water Management system for proper irrigation

6. Weather condition prediction system

Summary

Theme: [IoT, Remote-sensing](Sensors, Cloud, API design), Control System, Time-series

Proposals

a. Sensor-based real-time weather data collection to predict real-time **sequential model based optimal water requirement**(Evapotranspiration rate) in various geographic locations land-wise(even offline capability).

b. Designing control system for actuating pumps in various lands or water sources, canal gates.

c. Design a **Cloud ML API**

- For monitoring, GIS based optimal water survey of a large area, monitoring parameters of water supply throughout several terminals, purpose:
  1. For water scheduling, opening and closing of the canal gates to distribute over the large network.
  2. Monitor continuous water levels in region basis, parameters of water supply over several regions to track whether water supply management fault in the supply lines or not,
  3. If supply is above the optimal, actuate the outlets or notify.

- Forecast weather-condition, purpose:
  1. Local alert system through all the operating centers,
  2. Weather forecast based water optimality, storage estimation for whole area.,
  3. Precautions for adverse weather like storm, rainfall, recommendations for certain situations.

References:

1. Irrigation Water Management
2. Smart Water Management (SWM) Meaning
3. IRRIGATION WATER MANAGEMENT USING SMART CONTROL SYSTEMS: A REVIEW