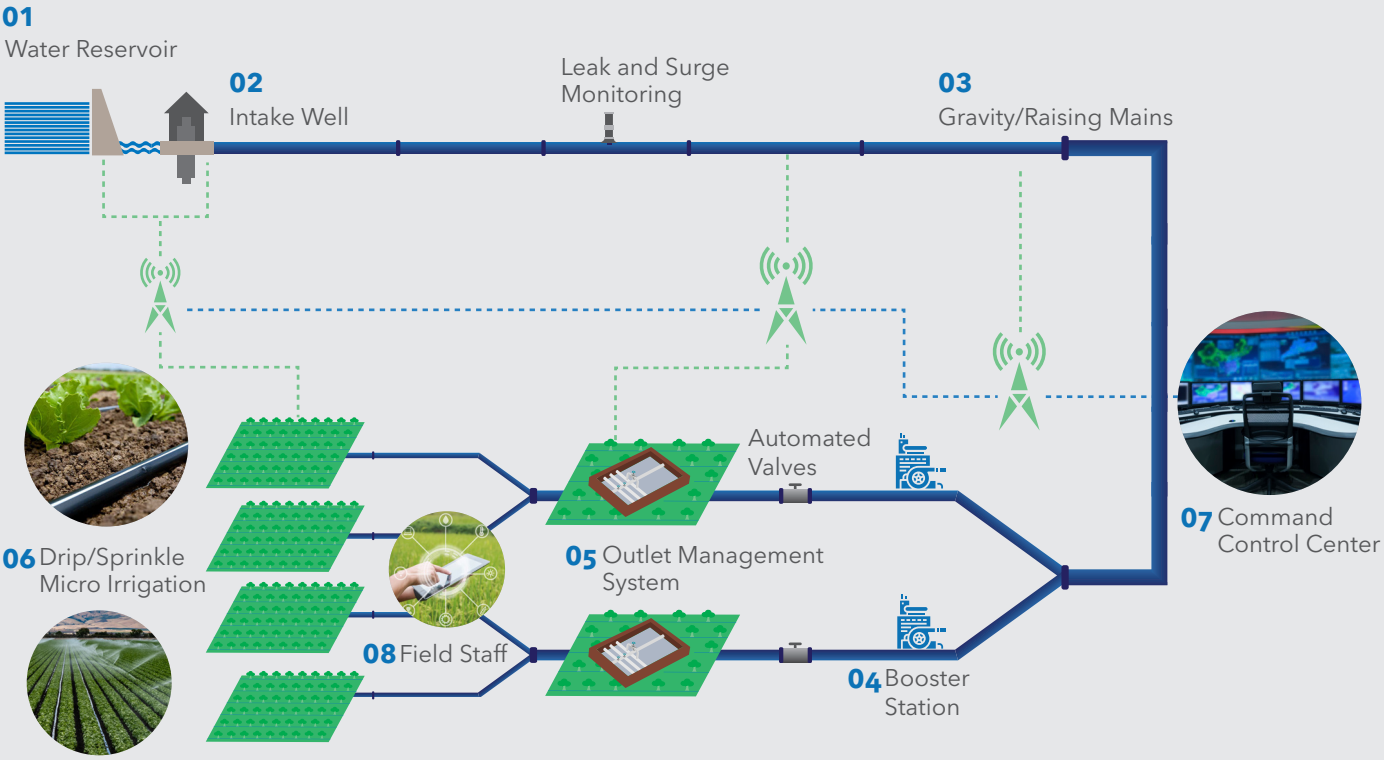
Need for Efficient Irrigation Systems in India

Irrigation and livestock accounts for 91% of water withdrawal in India and around 50% of this water is wasted due to conventional irrigation methods. This is pushing India towards water scarcity and the country is projected to become water-scarce by 2025.



01 Water Reservoir/Canal
- Radar Level Sensors
- Water Quality Sensors
- Flood Monitoring Station

02 Intake Well
- VT/Submersible Pumps
- Level Sensors
- Flowmeters
- Pressure Transmitter
- Valves
- Surge Protection and Monitoring Devices
- Controllers

03 Gravity/Raising Mains
- Valves
- Flowmeters
- Surge Analysis
- Leak Detection
- Solar Panel
- Controllers

04 Booster Station
- HSC Pumps
- Level Sensors
- Flowmeters
- Pressure Transmitter
- Valves
- Surge Protection and Monitoring Devices
- Controllers

05 Outlet Management System
- Flow Control Valves
- Pressure Transmitter
- Flowmeter
- Strainers
- Solenoid Valves
- Solar Panel
- Enclosure for the System
- Controllers

06 Micro Irrigation
- Weather Monitoring Stations
- Soil Quality and Moisture Monitoring

07 Command Control Center
- 24x7 Water Monitoring
- Monitoring and Controlling Platform
- Asset Management
- Machine Learning
- Leak Detection Platform
- Surge Monitoring Platform
- Artificial Intelligence to Improve System Efficiency

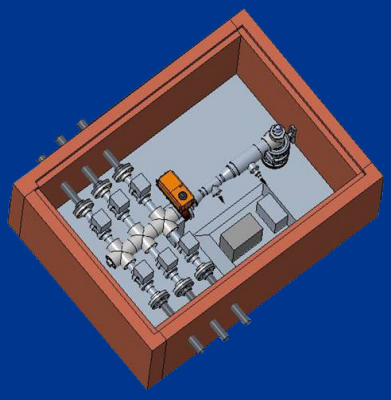
08 Field Staff
- Grievance Management
- Field Area Monitoring
- Field Control
- Asset Management

OMS - Outlet Management System

The OMS is used to control the water flow and pressure supplied to each farm.

It is imperative to control the flow in order to feed sufficient water to the crop and have enough precipitation in soil, until the next irrigation cycle. While controlling pressure is important, so that water is distributed evenly in all areas of the farm.

- The solenoid valves control the flow to each farm as per the schedule
- Programme Logic Controller (PLC) is used to control all the valves and instruments and operate as the required condition. Water flow at each farm can be scheduled in the PLC



- A fire retardant enclosure is provided in order to avoid the fire entering the system in case of stubble burning
- The system has a solar panel and battery backup if solar radiations are not available for a certain time

Traditional vs. Smart Irrigation Systems

Traditional

- Up to 50% of water wasted due to pipeline leakage, evaporation, overwatering, etc.
- Cost inefficient due to excessive water wastage
- Constant need for human intervention
- Adverse effect on crop yield and quality due to inconsistent irrigation

Smart

- Water conservation due to automatically controlled watering schedule
- Cost efficient as watering can be adjusted as per weather and soil conditions
- No need for human intervention
- Improvement in farm productivity and crop quality
- Reduction in non-revenue water

Smart Irrigation Systems – In a Snapshot

01 Water savings **20** to **48%**

02 Energy consumption savings **30%**

03 Fertilizer consumption savings **28%**

04 Productivity increase: fruit/crops by **42%,** Vegetables by **53%**

05 Irrigation cost savings **32%**

Benefits of Xylem's Smart Irrigation System

Reduced human intervention

Xylem reduces the need for human intervention by automatically controlling the water displaced to the field

Water conservation

Xylem minimizes water wastage as the watering schedules are changed as per environmental conditions

Real time monitoring and control

Xylem allows customers to monitor and control the entire irrigation system from real-time data received at the central monitoring station

Outlet management system

Xylem systems manage water rotation with flow and pressure regulators and valves

Real time leak and surge detection

Xylem systems detect leaks, surge, pilferages, sabotages, and automatically shut down valves

Xylem's Smart Irrigation Solutions

Pumps

Flygt A-C Series Large Split-Case Pump

Flygt A-C Series Large Column Pump

Flygt A-C Series Dry Pit Pump

- Customizable pumps to suit every need of water, wastewater, power, and industrial markets
- Robust and durable structure
- Efficient mechanisms for transmission of large volumes of water

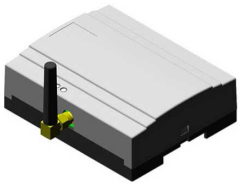
Pump Controller

Flygt MultiSmart®

- Provides a touchscreen interface for commissioning a new station or maximizing the efficiency of an existing station
- Three-phase current monitoring and remote control to reduce control panel costs and unnecessary site visits

Communication Gateway

Flygt CCD



- Smart irrigation system with inbuilt modem and 4G support for quick and easy communication
- Seamless integration of protocols
- Use of RTC for water scheduling

Flow Monitoring

- Offers high accuracy, stability and low maintenance to deliver linear readings over a large range of pipe systems

MJK MagFlux

- Automatic cleaning

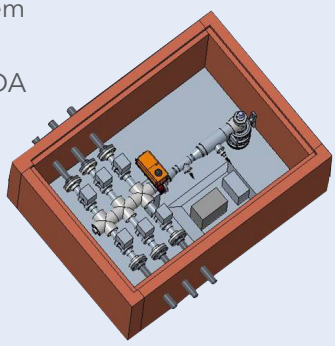
Level Sensor

- Ideal for measuring levels in storage tanks, wet wells, and pump stations in both water and wastewater plants
- A piezoresistive measuring system with built-in breather tube for direct air pressure compensation

MJK Expert™ 7060

Outlet Management System

- Fully automatic, node-based system with wireless communication to Central Monitoring Station's SCADA system to provide uninterrupted water supply
- 24x7 monitoring and control to manage water flow to each farm
- Fully automated monitoring and control system with real time data including local and remote control



SCADA & Monitoring Software

Visenti View Platform

- End-to-end IoT analytics platform for monitoring and controlling the entire water value chain from source to end miles
- Integrates data into a single platform and delivers unified analytics and visualizations throughout the organization