

Use Case #3 decrypted by Sebastian Engell !



The LOTUS use case #3 is about Irrigation System Management in Jalgaon, India. In India, more than 70% of the water usage is for irrigation. In addition, water scarcity will be increasing in the upcoming years due to climate change, human consumption, and wastage of water. Therefore, it is very important that the water is used as efficiently as possible.

The LOTUS team is working with a vendor of irrigation systems in India who is specialized in a specific type of irrigation system called “drip irrigation”. Drip irrigation is a micro-irrigation system that releases water in a slowly way directly to the roots of the plants. It has many advantages and notably allows to minimize evaporation, to efficiently use the water and to minimize the nutrients’ losses. Therefore, it has the potential to save water, nutrients and ultimately, money.

The main issue is that the drip irrigation systems are mostly sold without control which means that the irrigation systems are operated manually by farmers. Most of them are lacking knowledge and tools to define the optimal quantity of water and nutrients needed on their fields and therefore, the full potential of the drip irrigation system is not exploited.

To tackle this issue, the LOTUS team has been conducting computer studies, modelling the water intake of the field and what is called “evapotranspiration” being the amount of water that evaporates through the soil and plants into the air. This modelling system will allow to identify the optimal quantity of water to be used to irrigate the fields taking into account the soil moisture, weather forecast and type of crops. The LOTUS team will provide the results

to the Indian farmers and support them in optimizing the amount of water used for irrigation.

As a next step, the LOTUS team will measure the content of the water, the fertilizer and other elements present in the water using the LOTUS sensor and extend their modelling system to fertigation to be able to optimize the amount of fertilizers used in irrigation

The goal of LOTUS team by the end of the project is to provide Indian farmers with the right knowledge and tools to exploit the full potential of the drip irrigation system. This will allow them to better manage the use of water and fertilizers on their fields, to limit unnecessary waste and to save money.

STAY TUNED!



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