Innovation lump sum

Project #72

Project Partners: Seacon Europe Ltd.; Isurki SL
Country: Hungary/Spain
Industrial ecosystem: Agrifood
Date of the award: 29/09/2023
Duration: 01/12/2023 – 30/11/2024

~ IoT based smart and ecient crop irrigation solution ~

SmartDrop is an IoT SMART AND EFFICIENT CROP IRRIGATION SOLUTION that addresses the enhancement of the water efficiency of the irrigation networks used in the agri-food sector to make them more SUSTAINABLE AND RESILIENT IN THE FACE OF EXTREME EVENTS, particularly severe and prolonged drought episodes, as a result of the effects of climate change.

OBJECTIVES
The objective of the SmartDrop project is to offer a COMPREHENSIVE SOLUTION specifically developed for the agri-food sector that guarantees:

- MAXIMUM EFFICIENCY IN IRRIGATION, eliminating the current waste of water
- OPERATION WITHOUT EXTERNAL POWER SUPPLY, eliminating the need for connection to the electricity grid or the installation of alternative energy sources
- The maximum ENVIRONMENTAL SUSTAINABILITY of the solution by not using batteries
- The possibility of being used with BOTH NATURAL WATER AND REUSED WATER from MANURE AND SLURRY processing plants from LIVESTOCK FARMS
- A CLOUD APPLICATION that optimizes the scheduling of irrigation sequences and provides information on the level of water efficiency of the infrastructure

ACTIVITIES
To achieve these objectives, the project will undertake the following activities:

- The ADAPTATION AND MODIFICATION OF THE CURRENT IOT CONTROLLERS of one of the technological partners to provide it with the following improvements:
  - Integration of Energy-harvesting technology to make the IoT device energy self-sufficient
  - Adaptation to be able to control any flow and pressure regulation valve on the market
- DEVELOP A SOFTWARE APPLICATION in the cloud that offers all the necessary utilities to improve the management and efficiency of irrigation networks
- IMPLEMENT THE SOLUTION in a fruit tree crop for 8 months to validate and optimize the development through a pilot project

EXPECTED RESULTS

- Reduction in WATER CONSUMPTION: 44406240 m3/ha/year
- Reduction in the USE OF CHEMICAL FERTILIZERS: 69269734 kg/ha/year
- Reduction in GHG EMISSIONS: 67~94 Kg-N20/ha/year

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