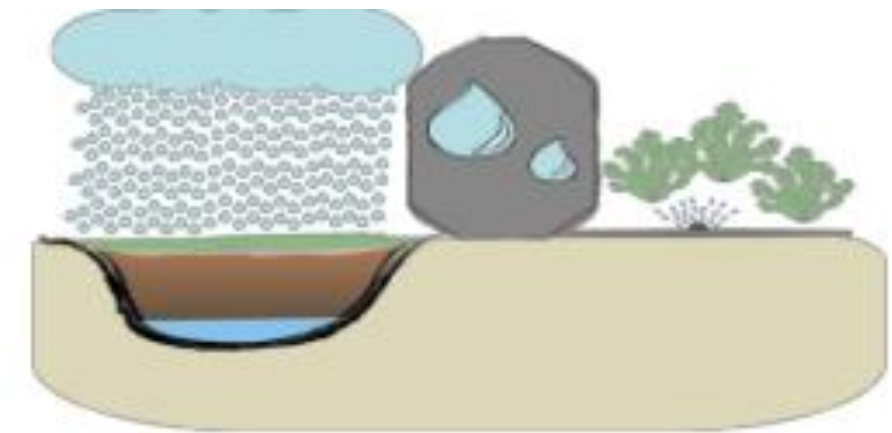




HYDRO 3

Remote and innovative rainwater harvesting system for irrigation

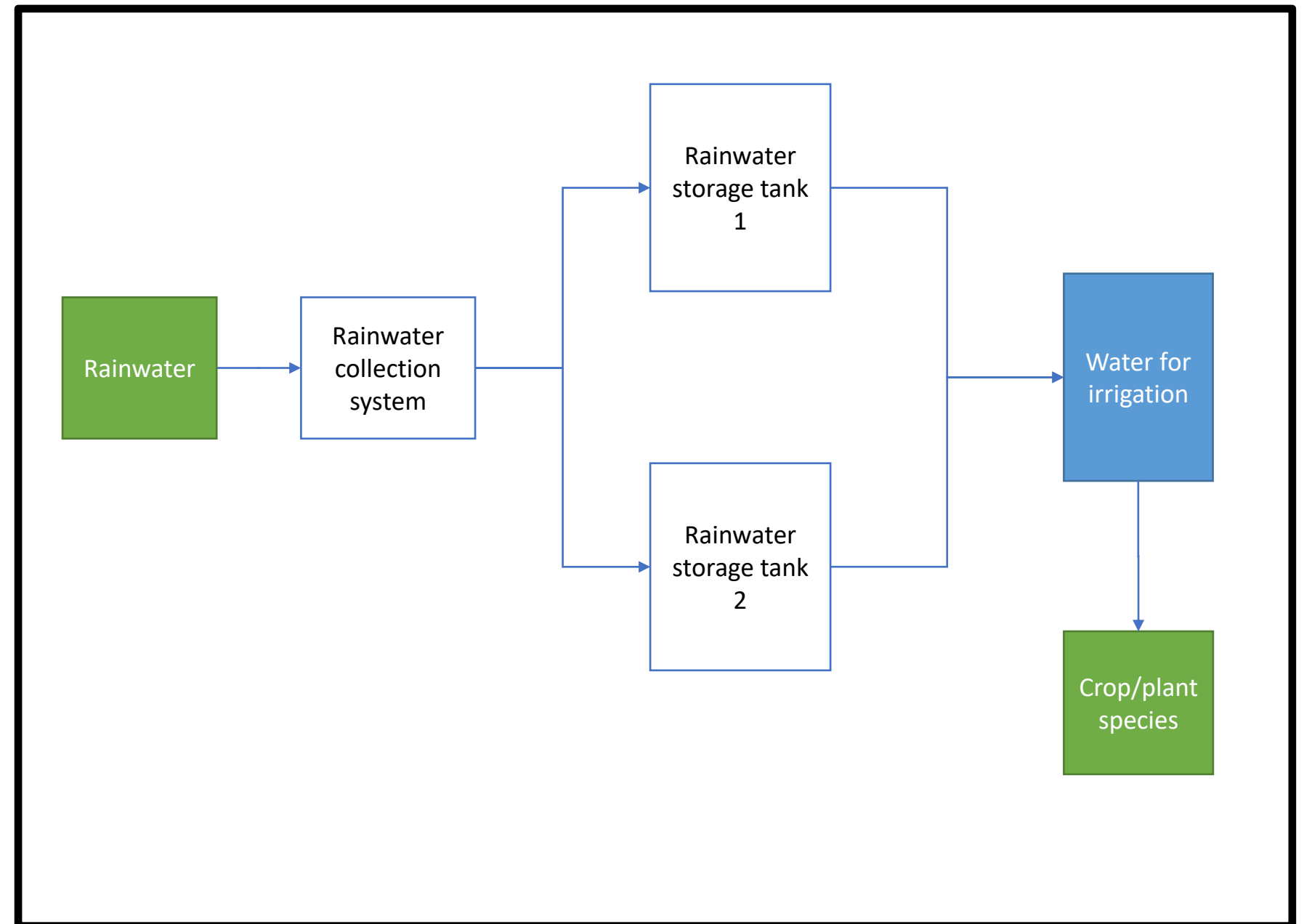


System Description

HYDRO3 consists of a low-cost, innovative rainwater harvesting system for remote areas, where house roofs are not available.

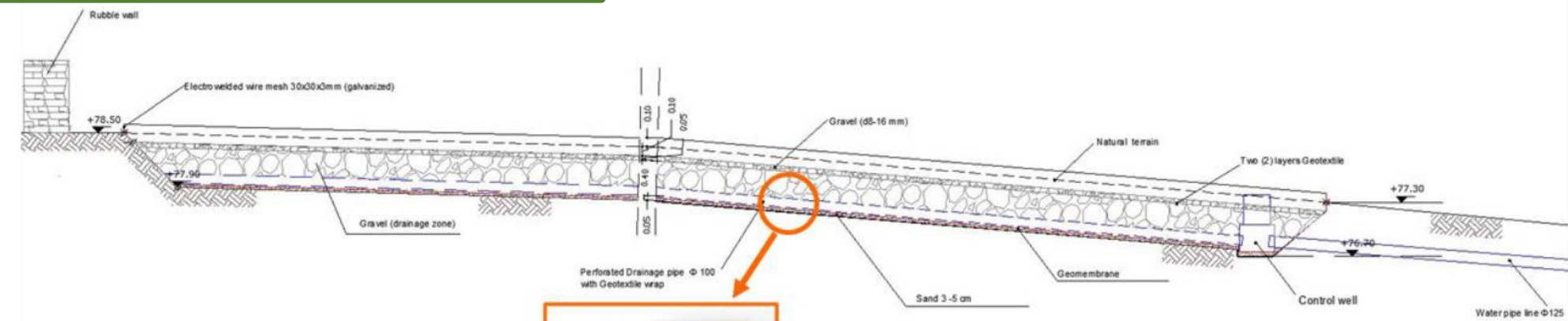
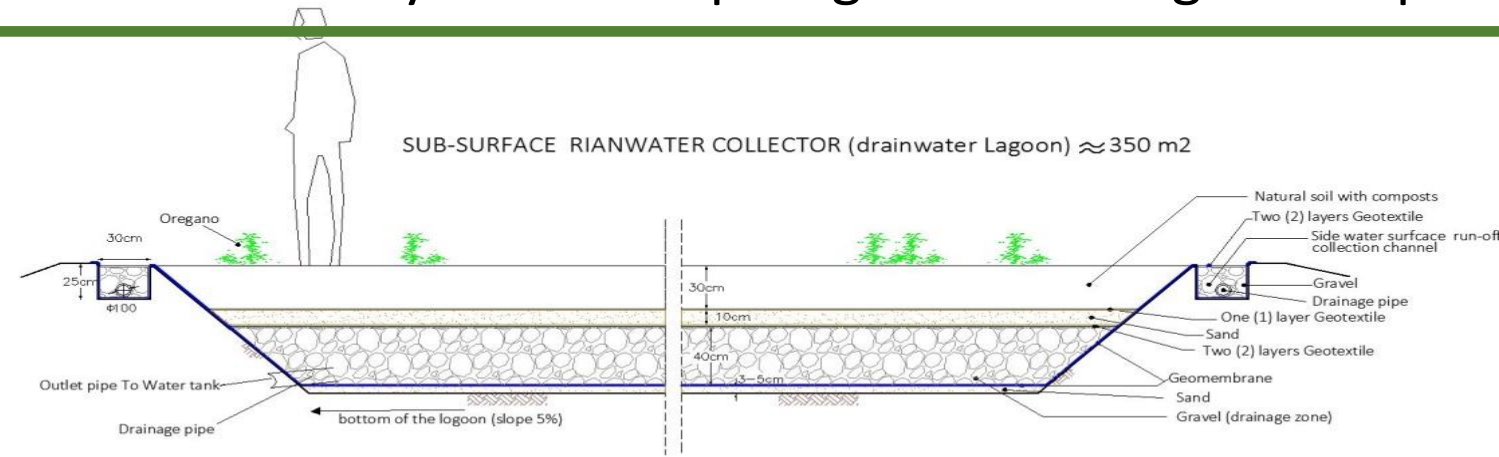
A shallow, subsurface water collection system is designed to collect rainwater by drainage, to transport it to storage tanks, and possibly to utilize water for agricultural irrigation. For instance, in Mykonos harvested water will be used to irrigate oregano which requires small amounts of water.

Online meteorological parameters e.g. rainfall, wind, humidity, pressure are monitored using a weather station in order to optimize the design of the system. Automated irrigation is performed using soil humidity sensors coupled to dripline irrigation systems.



Technical Specifications for Mykonos

- Average annual rainfall = 319 mm
- Subsurface rainwater collector of approximately 280 m² and depth of 60cm.
- Two flexible cylindrical tanks of structural grid with total cumulative capacity of 60m³
- Total water harvesting capacity > 60 m³ / year
- Automated system of drip irrigation in oregano crops of 4000m²



Expected Results:

- > 60 m³/year of harvested water
- Expected production of oregano > 800 kg/year
- Energy consumption < 0.5 kWh/m³ of harvested water
- 0.4 ha irrigated area

Benefits

Cheap water supply at remote areas without other water supply

Savings of freshwater

Create business case with little input (aromatic herbs and essential oil)

Minimization of construction and operation costs to create an economically viable and profitable water collection and irrigation system

Payback period around 3 years