



Poliprespa Sustainable Development Program



Name of the Organisations Involved

- Stavros Niarchos Foundation, Greece (www.snf.org)
- Society for the protection of Prespa, Greece (www.spp.gr)

Challenges Identified

The practice of smart farming came to Prespa through the Poliprespa sustainable development program, which is implemented by the local bodies of the area and with a donation from the Stavros Niarchos Foundation (SNF) and other supporters. The numerous and varied actions of Poliprespa aim to synchronize good environmental practices, economy, and society in a common trajectory for the benefit of the region and its people.

Goals and Solution

The inhabitants of Prespa are basically engaged in the primary sector and in the cultivation of beans. In the context of Poliprespa, the cooperation of the Prespa Protection Society (EPP) with the American Agricultural School (AGS) began with the aim of introducing precision agriculture practices in organic crops. Precision agriculture aims, both to increase production and improve its quality, and to reduce negative impacts on the environment, with tools that enable farmers to adapt farming methods to the real needs of their field. In a protected area, a rare ecosystem, such as Prespa National Park, the implementation of such practices is essential and has multiple benefits.

The pilot program in Prespa has been implemented since the spring of 2020, which also marked the start of this year's growing season, numbering six beneficiary organic bean growers. Experienced scientists from the AGS side with regular visits provided individualized counselling to the six farmers. Soil analyses were carried out on the parcels to determine soil parameters critical for production and special sensors were installed to monitor and record valuable information about the prevailing conditions. From the studies that were carried out, the needs for irrigation, the quantity and the time intervals during which it had to be carried out, were determined exactly, while instructions were also given for fertilizing the crops. In addition, a meteorological station was installed in Prespa, providing the most valid forecasts possible, both in the short term (7 days) and in the medium term (14 days). The intervention of the Poliprespa program is hoped to be a model for implementing smart agriculture pilot actions in protected areas.

Actions Taken

Prespa has now entered the Internet of Things (IoT). The necessary infrastructure has already been created, which gives possibilities to monitor and control the production, which could hardly be found in other regions of Europe now.

One of the most important conclusions was related to water management, in which a particularly increased use was observed in relation to the actual need of the plant. The farmers are not responsible

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for this use, but the irrigation system in the Prespa plain, which does not give the cultivator much control (irrigation method with open furrows). The good thing is that after systematic work and persistence of all Prespa agencies, one of the biggest irrigation projects in the country, drip irrigation, is going to be implemented in the Prespa plain in the coming years.

Benefits and Impact

- The organic farmers threshed their fields in November, without losses, according to the expected harvest and are ready to release an excellent product with great added value, the famous and protected PGI-certified Prespa bean.
- Farmers do not have to guess what is happening in their field, but they know it for sure. And they can easily find all these valuable information on their mobile phone.
- They can work with expert scientists and see a difference in both the quality and quantity of the beans. When experience is combined with science, there is always a result.
- Producers with great knowledge of the subject manage to produce excellent quality products and assimilate the new knowledge in an effective way.
- The Poliprespa program strengthens the primary sector with the aim of environmentally friendly farming practices, beneficial to the farmer and attractive to the new generation that will take over the fight for the land.
- The wider area of the Prespa plain is currently gathering a great deal of technology, supporting current and future needs of the area in terms of possibilities to receive and transmit measurements from sensors. The increased capabilities resulting from the combination of LoRa, mobile telephony and 3 satellite communications technologies are exploited and give the digital ecosystem the ability to interconnect more than 3000 devices (sensors).
- The smart agriculture program in Prespa can contribute to the operation of the drip irrigation system, which will be installed in the future, help to accurately calculate the requirements and capabilities of the network, to achieve the correct irrigation practice by all producers in the plain of Prespa. The main goal is the economy of water, the most precious of natural resources, but also the strengthening and safeguarding of the produced product.

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