

# How AgriCloud Is Going To Make The Future Of Agriculture



Even today, many farmers still manage their crops based on gut instinct, which can result in incorrect fertilization, plant damage, and unnecessarily damaging the environment. Plant nutrition expert knowledge is backed by AgriCloud, which is the first holistic **cloud-based precision farming (PF)** approach to process all available data from agronomic sensors, machinery, and service companies and, as a result, allows for more targeted application of fertilisers and pesticides, as well as more efficient machinery utilisation and workflow management.

Farmers are using a variety of stand-alone agricultural machines to get their work done. AgriCloud, a digitized agriculture platform based on low energy IoT devices, developed by [Mnogo Limited](#) (Cyprus) and experts from [Sofia University](#) (Bulgaria) under the 1st SMART4ALL Open Call for [Knowledge Transfer Experiments](#), addresses farmers' requirement for integrated solutions requiring just a single data infrastructure for a coordinated, easy-to-use equipment control from a single user interface by providing only one data infrastructure.

The agricultural business in the EU is confronted with the issue of meeting the rising demand for food while also ensuring the sustainable use of available resources. The Commission has previously selected PF as a critical technology for addressing this issue. Farmers in Europe, on the other hand, have not yet adopted PF because of the disadvantages of existing solutions. AgriCloud, thanks to the scientific background,

the research experience on advanced technologies and expertise on circuit and software design that involved partners share, is capable of removing such bottlenecks and making a significant contribution to Europe's push towards greater competitiveness and long-term sustainability in agriculture, as well as to the recent [EU Common Agriculture Policy](#) (CAP).

## So, what is AgriCloud solution and how does it work?

AgriCloud provides farmers with the ability to do advanced analyses while also lowering the cost of inputs. The Internet of Things (IoT) allows AgriCloud to monitor fields and crops.

What is the mechanism through which it operates? **The software programme enables real-time crop analysis and transmits a broad range of data to any screen that is connected to it.**

The Internet of Things (IoT) is quickly becoming [a crucial component of the agriculture economy](#), and the cloud has made this transition feasible. Wireless sensor networks, which are currently available thanks to connected technologies, can assist in increasing agricultural output and yield. In addition, real-time agricultural data, made available by cloud computing, give information that may be used to optimise farming operations such as purchasing, inventory management, planting, and harvesting. Farm productivity needs to be improved in order to optimise production. More sensors, irrigation control devices, and linked technologies are required in order to achieve an increase in farm production while simultaneously reducing the number of resources consumed. All of this is something that the cloud can take advantage of.

Previously, a Wireless Sensor System (WSN) with tree topology was created, consisting of sensor units and a base station that acted as a gateway to a web-based platform. Environmental data such as temperature and humidity, as well as soil moisture, were collected using WSUs (Wireless Sensor Units). The data was then communicated through a Zigbee wireless network to a base station known as a Wireless Information Unit (WIU).

The key functions of this programme are data collection and transmission to a web server. Furthermore, by receiving command inputs from users, it enables interactive communication via a web-based application. One of the planned improvements was to replace WSU's existing CPU (Central Processing Unit) with an ultra-low-power microprocessor rather than the current microcontroller.

What is more and makes AgriCloud rise above competition in terms of innovation was that it improved the WIU's communication technology, such as Nb-IoT

(Narrowband IoT), in order to increase bandwidth, reduce communication costs, and lengthen battery life.

## How did SMART4ALL help?

AgriCloud was selected to be part of the Smart4All programme as one of the most innovative and feasible concept in the IoT world. They were in particular able to improve production and distribution efforts as a result of [Smart4All funding](#). But being involved in the Smart4All programme was not only about the money, it was also about business and technology coaching. -AgriCloud partners got to collaborate, and conduct tests to improve the performance of the device, with the support of world leading experts from the SMARTALL board of coaches, who supervised the execution of the experiment at a technological level and consulted the consortium for future steps to work on the sustainability and penetration of this innovative system of smart farming in the market, making a considerable impact on water, energy and food efficiency. This helped in refining AgriCloud's concept, in terms of hardware and software implementation, as well as of better understanding the needs of today's users and claiming a good place in the huge and continuously growing market of digitized agriculture.

