

AgTech for all: a technical solution to measure soil moisture

The project developed a technological solution for measuring soil humidity that is robust, low-cost and highly usable, to bring the Agriculture 4.0 revolution to all farmers in Colombia, Honduras and Nicaragua.



-  **702**
Seminars and podcast visualization
-  **111**
Trained people
-  **90**
Producers with direct technical assistance
-  **71**
Followers in social media
-  **49**
Trained women
-  **17**
Technical and scientific team
-  **5**
Involved students
-  **1**
Technological solutions



Co-creation and human-centered design

Initiative

The Project brought together academic and research institutions together with private companies to generate a technological solution that allows measuring soil moisture and is robust, low cost and highly usable. Through this solution, the objective of the project is to bring the agriculture 4.0 revolution to all farmers in the region. In addition to the device, which is encapsulated, without a remote

connection and with a charging autonomy of up to six months in the field, an offline data visualization tool was also created that does not require an Internet connection to operate and is open access. Additionally, video tutorials for installing the device, downloading and viewing data, and a manual for soil moisture management practices were created.

Digital agriculture has the potential to increase productivity, while minimizing the negative impacts of climate change.

Tech solution

The technological solution consists of a device that allows measuring soil moisture, encapsulated, robust, low cost and highly usable. The device is complemented by a data visualization tool that does not require an internet connection to operate. Once loaded in the browser it can be used offline. Additionally, tutorial videos were created for the installation of the device, and the download and visualization of data, as well as a manual of soil moisture management practices.

In addition to the design of the technological solution, the main causes of non-adoption of new technologies were identified, the producers participating in the project were trained, and the demand for low-cost and high-impact digital agriculture technologies was evidenced. It was identified that 86% of the extension agents or technicians presented with the solution would be willing to adopt it, because it allows decisions to be made more easily, and at a lower cost than the alternatives available in the market.

Acknowledgments



Impacts and Results

The existing technological solutions on the market are only probes, portable devices or complete stations, which require advanced knowledge for their installation, do not collect data continuously, are not economically accessible, may require an internet connection to operate or do not have local support.

By contemplating the barriers to adoption of digital agriculture technologies, the proposed solution collects data continuously, without

the need for remote connection or permanent electricity, is affordable, and robust enough to tolerate adverse field conditions. Tutorial videos show how easy it is to install the device, download and view data.

With this technological solution, farmers, with the support of extension agents, can understand the moisture behavior of their crops, and make informed decisions about the climate-smart practices that work best for them.

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Organizations

