



# AgroCares soil testing technology helps to increase yields in Bungoma County

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## The County Government of Bungoma

- Location: Western Kenya
- Population: 1,375,063 people (2009)
- Area: 2,069 km<sup>2</sup>
- Main crops: maize, beans, sugarcane, finger millet, cassava
- Soil types: sandy, clay and loam
- Number of farmers: approximately 300,000 households; most of them farmers (both subsistence and large-scale farming)

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## Environmental conditions:

- Heavy rainfall throughout the year
- Home to several rivers used for small-scale irrigation
- Fertile lands

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## Challenges:

- Generate enough yield and income to ensure the food security of the population of about 1.4 million people

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## Solution:

- Three mobile Lab-in-a-Boxes to promote sustainable soil management and improved soil health that will ultimately lead to increased yield

**Bungoma County, situated in western Kenya, is home to fertile lands and several rivers, which are used for small-scale irrigation. Despite these favorable environmental conditions, agricultural activities have not been able to generate the yield and income required to ensure the food security of Bungoma County's population of over 1.4 million people. In an effort to increase yield and improving food security, the Government of Bungoma County invested in 3 mobile labs (Lab-in-a-Box, developed by SoilCares, now part of AgroCares) in 2016.**

### Soil testing results within 2 hours

Mr Chris Mangoli, Chief Officer Agriculture at Bungoma County: "There has been a problem with the soils in Bungoma County and this was evident by the low yields the farmers have been harvesting. We knew that farmers needed to analyze the soil to find out what the problem was. For some time, we advised them to take their soils for analysis at a traditional wet chemistry lab. This proved to be a challenge because of the long distance to the nearest lab and the long time it took to get the report back which they often received way after the planting season. When we came across the AgroCares Lab-in-a-Box (LiaB) that gives the reports to the farmer on the spot, we were excited and convinced that it would provide a solution to the soil problems of our farmers in Bungoma County."

## Supporting the modern, smart farmer

Currently, the three LiaBs are used across the county to analyze farmers' soils and provide a soil status report. The labs are also used as a tool to raise farmers' awareness on the importance of soil health and sustainable soil management. The County Government wants the Bungoma farmer to be a smart, modern farmer that has a sustainable approach to agriculture by producing more food using fewer resources.

## Adoption of the new soil testing method

Adoption of this new technology did not go without challenges. Chris Mangoli: "We had to bring all the technical experts on board to create a mindshift from wet chemistry to dry chemistry. AgroCares helped us in this process by giving a number of presentations about the technology to our team and providing product demonstrations and printed information."

Another challenge was the lack of people trained to operate the LiaB. Chris Mangoli: "AgroCares helped us to train our lab technicians until they were conversant with the LiaB operation. The support of AgroCares was essential in the successful implementation of the LiaB and interpretation of the results to the farmers."

## Affordable soil analysis with instant results

After the initial challenges, Bungoma County now provides fast and affordable soil testing services to local farmers. Chris Mangoli: "One of the key advantages of this method is the speed of analyzing the soil. The farmer is able to get the report within the same day unlike before when they had to wait for weeks and sometimes even months. One-on-one interaction with the farmers is also very helpful. The farmer can ask all the questions he has regarding the report and the

fertilizer recommendations and the interaction is immediate with our lab operators who have agronomy background."

## Partnership for prosperity

In this partnership between Bungoma County and AgroCares, Bungoma County has put in place structures to mobilize value chain partners that include seed companies, fertilizer companies, pesticides companies and lead farmers for product demonstrations starting from soil analysis to harvest. AgroCares provides soil information leaflets and training during the demonstration events, as well as refresher trainings for the County extension officers. AgroCares Soil Scientists work closely with county agriculture officials and other partners to monitor farmer progress and scientifically analyze and disseminate the results to the respective stakeholders.

## Extending the soil testing services with AgroCares Scanner

Apart from the Lab-in-a-Box, AgroCares has also developed the Scanner - a portable handheld tool used for monitoring soil quality. Chris Mangoli: "I would recommend all the counties to buy a Scanner because it is a soil "first aid kit" that every extension officer needs."

## Increased yield and happy farmers

Many farmers are already experiencing the benefits of soil testing. Chris Mangoli: "An increasing number of farmers in Bungoma County are using the services of our soil analysis lab and are happy with the yield they got after following the soil analysis recommendation. The farmers recorded an increase in their yield and are happy to recommend to other farmers to test their soil."



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