Soil moisture sensors as part of an Ag Tech IoT ecosystem

July 2019
Market insights
Mega trends

1. A third of the world will be living in water stress.
2. 80% of water consumed by ag; 60% is wasted.
3. Precision ag to €40 billion by 2024.
4. $7 billion investments in Ag tech.
5. Less than 2% use soil moisture data.
Sensoterra philosophy

**SUSTAINABLE**
More crop per drop
Building solutions for positive impact for smarter land resource use

**PARTNERSHIPS**
For planet, people, and profit
Working in trusted partnerships, collaborating for growth

**SCALE**
Grow more, waste less
Built for scale, with ease, simplicity, and confidence in smart data
An ecosystem is required for better decisions

- Soil moisture
- Weather
- Plant stress
- Soil composition

Integration

Decision
Case to buy soil moisture sensors


2. *Improve yield*: healthier crops.


10 million soil moisture sensors per year
IoT product
Data flow & API

Installed sensors wirelessly connect to the LoRa network.

Sensoterra partner LoRa or private network transmits the data to the cloud servers wirelessly.

Data is received by the network server which sends it to the Sensoterra servers for calibration. We offer an API for private network servers.

API's collect the calibrated data and send it to the Sensoterra customer portal and to a third-party ecosystem.

KEY:

- NETWORK SERVER
- SENSOTERRA SERVER
- API SENDS CALIBRATED DATA TO SENSOTERRA CUSTOMER PORTAL
- API CAN SEND THE CALIBRATED DATA TO A THIRD PARTY ECOSYSTEM
Market is capped by cost and complexity

- 3-5x faster RoI than conventional sensors.
- Under 1 minute installation.
- Hourly data via app, portal and API.
- 3-year connectivity, range of several km.
- Over 3 year battery life with normal usage.
Single Depth installation

2. Hammer in the probe
Multi Depth installation
Sensoterra creates product standards and IP

1. New algorithm (patented). Low energy, cost, transport signal.
2. Calibration curves in cloud, API for soil data (IP).
3. Extremely strong materials and design. Hammering (patented).
4. Software solutions to improve accuracy, 12m data points.
5. Project with UC Davis to make new standards.

Integrated ecosystem and IoT scale

- No wires, buttons, display, or solar panel
- Battery 3-5 years
- Under 1 min to install, no special tools
- More accurate
- Fast RoI
Measurement accuracy
RoI within a year
Ag customer and partner snapshot
Hourly soil moisture data from >5,000 sensors
Expand market leadership in other markets

Over 5,000 sensors globally
Companies built on Sensoterra solution

**ConnectedGreen - Rene Voogt,**

“Sensoterra probes go beyond simplicity. With Sensoterra sensors we can see at a glance which projects need immediate attention. This saves time, money & irrigation rounds - it keeps the plants healthy. Sensoterra has been a great partner.”
ROI

“The ROI pays for itself within the season, and it returns the value to your crop.”

“To be a pioneer demands fast learning about the functionality of new things, with no previous references to guide you.”

Justin Shepherd
Shepherd Farms
Data driven irrigation

“The sensors help growers turn a gut-feeling into a data-driven decision for irrigation”

Geert Steenhuis, GMN

“With Sensoterra, farmers can see their crop irrigation needs”

Gert Steenhuis
GMN
Better quality, less water

“Sensoterra probes helped me reduce water usage of at least 10%.”

Tom van den Berg
Van den Berg Est BV

“With Sensoterra, I can see what’s happening at the root-zone of the plant. With better roots, comes better flower quality, and yield.”

Tom van den Berg
Van den Berg Est BV
Tell me more

Visit us at booth #24.

JURRIAAN RUYS, BAS VAN DER VELDEN
sales-team@sensoterra.com
www.sensoterra.com