The Future of Soil Moisture Sensors in the Age of IoT

*InfoAg*, St. Louis, July 2017

*Jurriaan Ruys*, CEO Sensoterra
Land Life Company: restoring degraded land
2016: 800 sensors deployed in 10 countries
What customers liked

**Simple:** 2 minute installation

**Strong:** 10+ years lifetime

**Flexible:** move sensors around in the field

**Low cost:** $200- $400 all-in cost for 3 years

**Actionable:** support systems for ‘data export to decision’
Technology choices 2017
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<td>Compete in sector</td>
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• Single Depth probes: 4,000 this season
• Multi Depth probe: first pilots
• Estimate for 2018: over 100,000
Cost of IoT solutions are 10 times lower
Installation Single Depth probe
Installation
Multi Depth probe

2 minutes by intern with hammer

2 hours by expert with patented drill
User Interface
Free data access

Amsterdam
ISO27001

Open API

Server push
Results Nebraska

Corn

Avoid pivot rounds
Results Idaho

Potatoes and wheat

Optimize harvest time
Results the Netherlands

Flowers

Optimize drainage
IoT philosophy

- Soil moisture
- Weather
- Plant stress
- ...

Integration

Decision
Towards autopilots

- Valve actuators
- Pivot speed
- Pivot on/off
- Weather station
- Fertilizer
- Water flow
- Soil moisture
- Plant stress
- Tank levels
What is needed to enable IoT?

1. Bring down the cost of devices by a factor 10 and the installation time to 5 minutes max

2. Share and integrate data in smart models that produce actionable recommendations

3. Optimize the quality of the recommendation, not of the individual device
How we can work together

1. Work through the value chain, respect the customer interface

2. Make the pieces of the puzzle work together: open APIs, standardization, focus

3. Aim for the step change, not the incremental change: large scale, low cost, cooperation
SENSOTERRA
Wireless soil moisture measurement