PRECISION AGRICULTURE FOR DEVELOPMENT

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Overview

- The opportunity
- Our solution
- Our work to date: Kenya
- Future
- Questions and answers

The opportunity

Developed countries: precision agriculture is transforming agricultural production by allowing farmers to better target inputs to local conditions

- New sensors: soil and yield monitors
- New processing techniques for existing data: spectroscopy that measures growth stages and nutrient deficiency

Developing countries: the same precision agriculture technologies are beyond the reach of most smallholder farmers, but several technological innovations have created scope for providing tailored info to farmers

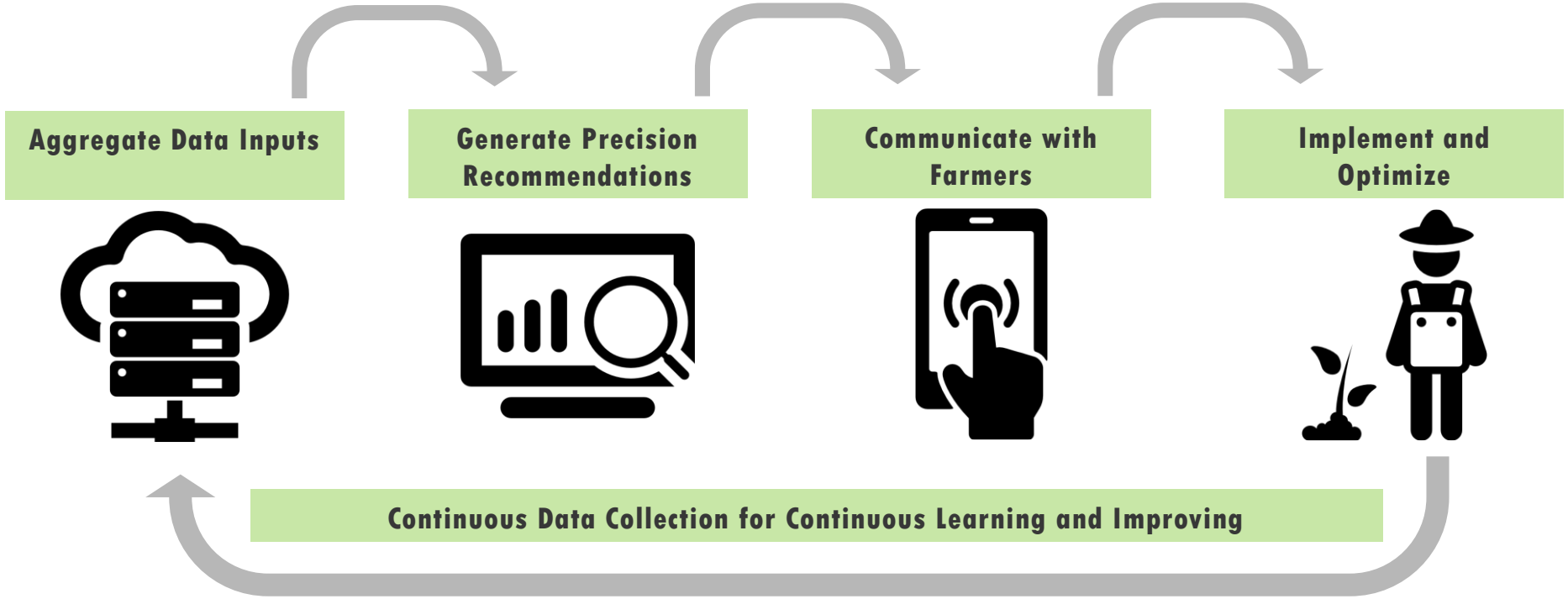
- New measurement technologies that enable better learning about local conditions: detailed weather forecasting data, soil mapping, remote sensing yield-monitoring
- Machine learning techniques help to improve recs with time
- Widespread adoption of mobile phones makes it inexpensive to communicate with farmers

Our solution

Mission: Support smallholder farmers in developing countries by providing customized information and services that increase productivity, profitability, and environmental sustainability.

Direct	Develop country-specific intelligent platforms that provide farmers with context-relevant and personalized agricultural recommendations through their mobile phones.
Indirect	Support, evaluate, and improve systems that currently exist, particularly to help render these advisory services more customizable and intelligent with time.

Our solution



Our work to date: Kenya

- Goal: Develop and test system with smallholder maize farmers focused on soil fertility
- Collaborators & Partners::
- Developed a pilot SMS product, released and evaluated with ~1,900 farmers in short rains season (SR)
- Learned lessons from that experience; integrated into upgraded product, targeting approach, content offering in main long rains season with an additional ~5,900 farmers (LR)
- Served ~8,000 farmers to date

SMS

- Lime, planting and top-dressing fertilizers recommendations at the ward level based on more than 50,000 soil analysis
- Designed by experts based on local crop and geography

Follow up Calls

- 5 minutes explanation on the phone of the SMS recommendations

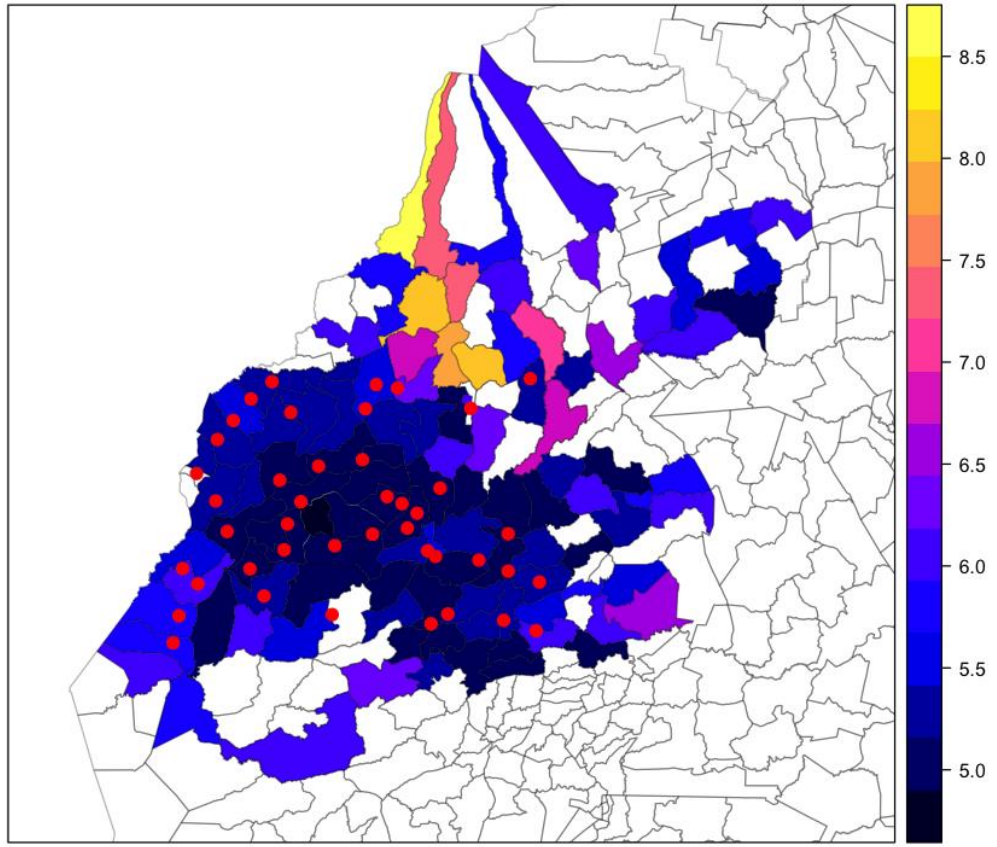
Q&A

- Farmers can call in and ask questions, answered by expert agronomists

Our work to date: Kenya

Focusing on soil fertility

- Soil acidity is a major issue in the region → agricultural lime can help to alleviate
- Farmers use fertilizer types and amounts not optimally suited for their soil nutrients → other fertilizer types are available
- Using available soil data, we provide and communicate lime and fertilizer recommendations to farmers based on their location
- Tested recommendations using test plots
- Suggested farmers experiment on 1/4 acre



Map of soil pH by ward and market location (red dots) across area of work in Western Kenya

Future of PAD

1. Focus on direct vs. indirect model, e.g. One Acre Fund in East Africa
2. Search partners who provide agricultural extension systems to offer mobile services through them
3. Focus on knowledge-generation and consulting service provision
4. Trial and learn from revenue models

Questions and answers

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