Improving crop irrigation for women farmers in Abeokuta, Ogun State, Nigeria

Ripples foundation
Empowering African Women

Problem Statement

"It is hard to irrigate my crops because drawing water from the borehole is a mammoth task - I no longer have the physical strength and my kids suffer the most. I can no longer afford school fees, let alone feed them or take care of myself" - Mama Bolu in Abeokuta, Ogun state, Nigeria

$9 billion annually

Crop harvest losses due to poor irrigation, improper handling of crops, poor land tenure, rising temperatures etc

1%

Proportion of irrigated cropland in Nigeria as of January 2018

$600,000,000

Additional potential revenue farmers could make if an estimated 1 million hectares of land were irrigated on a small scale

Hypotheses

Background

Incorporated in response to the disproportionate poverty affecting **70%** of farmers in Nigeria who are female

While the women are aged between 18-70 years, majority are elderly and thus lack the vitality required for manual labour

Exacerbated by little to no support from their counterparts & the government, women farmers bear the heaviest brunt of poverty

Solution Design

- Mobile
- Modular
- Solar Powered

Back Carry

Shoulder Carry

Hand Carry


DEVENG C200
Rippling HACKS
LITE model

Potential risks & mitigation strategies

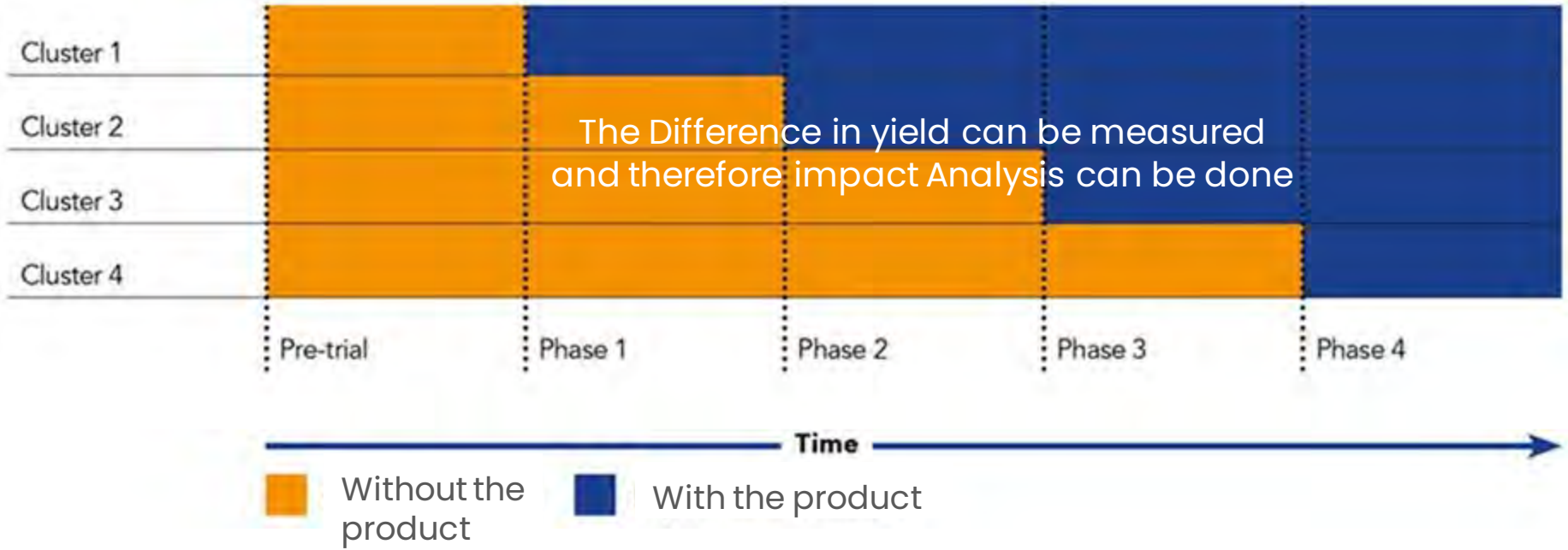
Risks	Mitigations
Constant transferring of the device (especially solar panel) may lead to durability concern.	Training women on the maintenance of the device..
Remote nature of the project means vital pieces of information are missing, e.g, depth of the borehole	Guesstimated dimensions after talking to the field engineer. Incorporated adjustable plates
Access to repair parts	System makes use of standard parts for easy sourcing for repairs

Product Design Evaluation

Requirements	Specification	Met/Unmet	Implementation
Affordability	< $150 at scale	Met	Cost of parts (minus production cost), business model
Lightweight	3 kg	Met	Less labor inputs for the users to operate and to move the device
Mobility	Portable	Met	Handy design, which allows the users to bring the device to their farm and bring it back to their home
Easy to use	Simple operation	Met	Simple modular repair without special engineering skills/tools

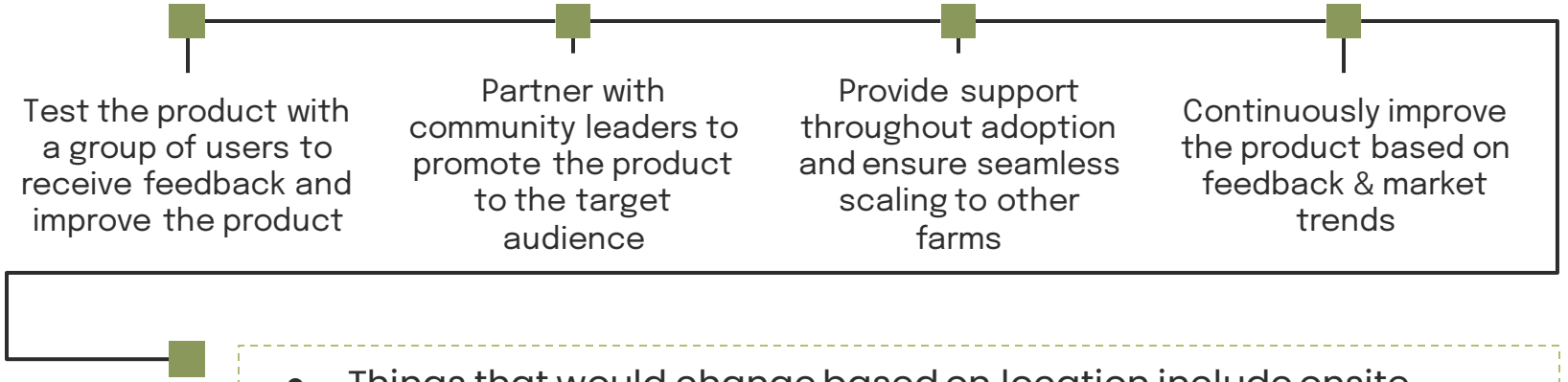
Impact Analysis

Capital Investment is divided between phases instead of all at once



The Difference in yield can be measured and therefore impact Analysis can be done

Scaling strategy



- Things that would change based on location include onsite variables such as water table depth, distance from the water source to farmland
- The instructional language of the farmers in a specific location
- Local research and market dynamics