

Response Farming using “AgriCloud” App for Farmers in South Africa

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Introduction

Response farming

- Focuses on water and its management at **farm** level.
- Concept: Improved information about rainfall prospects and impacts of alternative actions can equip **farmers** to more closely meet production goals (FAO).
- A method of identifying & quantifying seasonal rainfall variability and unpredictability.

Digital technologies currently

- provide an opportunity to develop useful tools, to respond to climate and
- to calculate and deliver daily updated information to farmers.

Such info can equip farmers

- To make informed decisions based on current variations in weather conditions that influence agricultural production
- To increase their productivity and food security of the community.

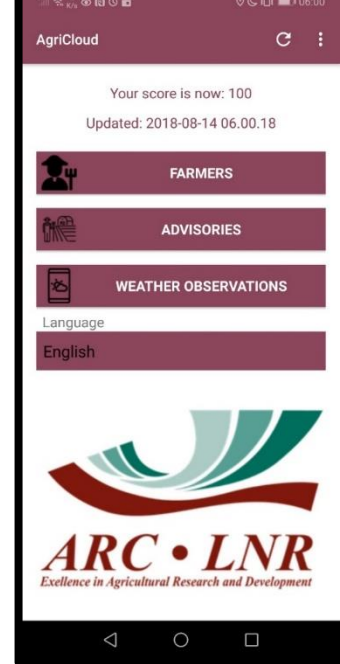
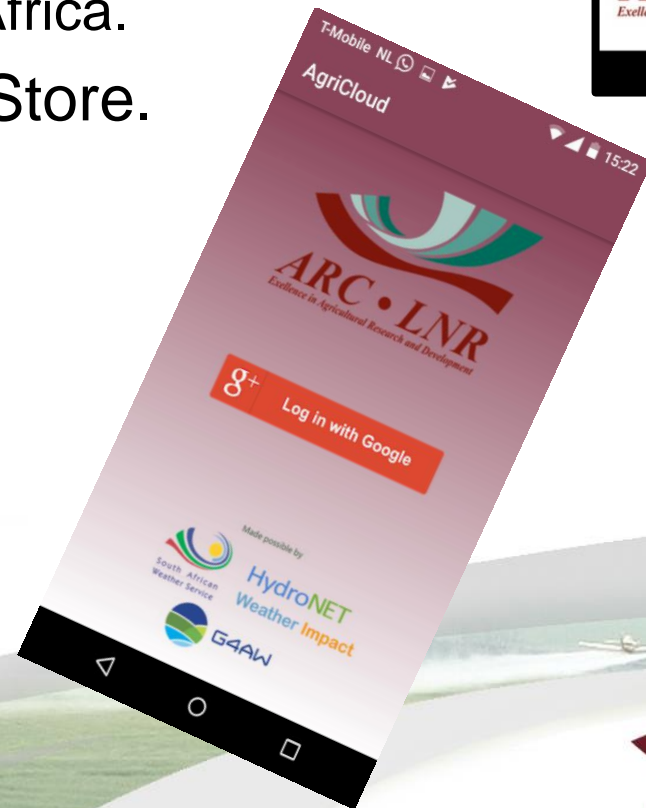
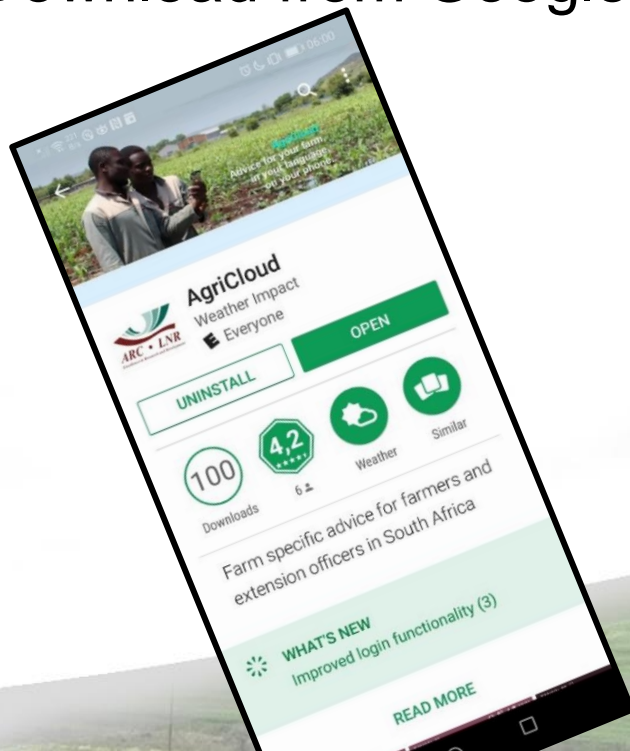
Addressing Farmers Info Gap

- Farmers make decisions about when to plant dryland crops like maize every growing season.
- Many factors influence such a decision
 - past experience;
 - current information;
 - climatic conditions;
 - logistics & availability of inputs.
- During the Rain for Africa (R4A) project (funded by NSO = Netherlands Space Office),
- AgriCloud mobile phone app was developed to provide:
 - Planting advice
 - Spraying advice against pests, diseases and weeds.
 - Collect weather observations = crowdsourcing.




AgriCloud App

- Farmers and extension practitioners register
 - At a specific location using a map
 - Select local language
 - For android cell phones
 - Or via a USSD code in South Africa.
- Download from Google Play Store.



Advisories based on Scientific Information

- Use remotely sensed Rainfall data for past 10days
 - Use Rainfall predicted in weather forecast for upcoming 10days
 - Good planting conditions criteria:
 - when 25 mm rainfall received within 20 days
 - Indicate good time to start planting maize
- 
- A gridded map indicates whether each day meets the criteria.
 - Map is interrogated for each required farmer location.
 - Provides an advisory for upcoming 10 days,
on whether to plant or not.



Unique aspects of “AgriCloud” App

- Advice is updated everyday
- Crop specific information
- For both Smart and Simple phones
- On computer dashboard for managers
- In South African local languages
- Includes collection of qualitative weather observations from farmers & extension practitioners by crowd-sourcing.
- Modular system to easily add new advisories



Progress with AgriCloud

- *Roll-out* during 1st week of September 2018
 - In time for summer rainfall & planting
 - High level meeting in Pretoria
 - Provincial meetings in Mpumalanga and KwaZulu Natal
- Presented to Parliamentary Portfolio Committee
- Meetings with provincial Directors of Agricultural Extension during October – KZN, Limpopo, Eastern Cape
- *Step-up* meetings held with Extension Practitioners & Forums
 - Eastern Cape: 7+ meetings during October & November
 - Gauteng: 2
 - KwaZulu Natal: 11+
 - Mpumalanga: 7
 - North West: 2
 - Limpopo: 6



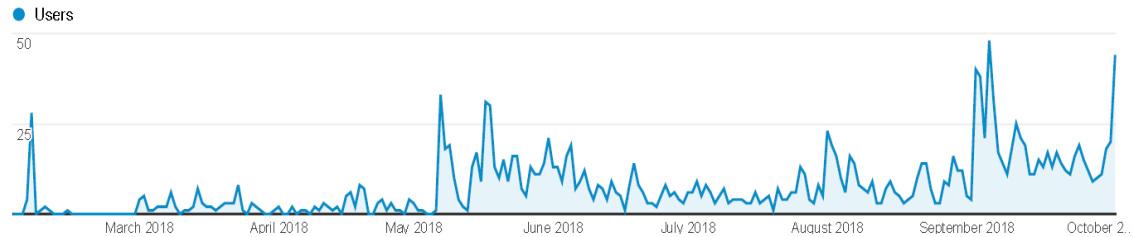
Stats of Users: Roll-out to Step-up 2018

Users Overview

All Users
100.00% Users

1 Feb 2018 - 4 Oct 2018

Overview



Users
1,151

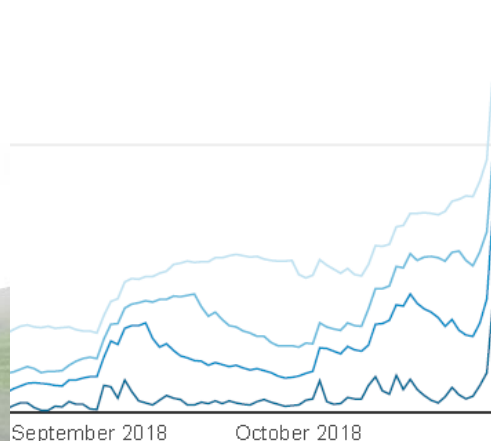
Sessions
3,720

Screen Views
0

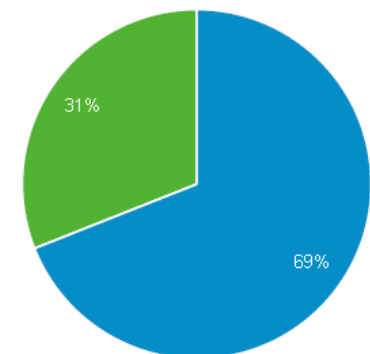
Screens / Session
0.00

Avg. Session Duration
00:05:25

% New Sessions
30.97%



Returning Users New Users



Google Analytics

- 685 as at 4 Oct
- 1,151 as at 31 Oct
- See peaks 3-6 Sept,
- Thru Oct & begin Nov.
- More than 70 countries
- Total > 3720 sessions
- Average time 5+ mins
- Many returning users
as new info daily

Future Plans: Knowledge Engines to Apps

Important

Less Important

Easy to implement

Hard to implement

Integration of 2 additional languages

Languages in alphabetical order

Increase number of different advisories

Using rainfall product of SAWS (calibrated with stations of SAWS & ARC), for advisories

Integration of a disclaimer on advisories

Links to ARC Hub and SAWS Weather Smart app

ARC and SAWS logos both appear in AgriCloud

Change "score" to "number of activities"

Send reminders when planting season is starting

Grape compass as additional advisory

Improved registration of farmers (on the map)

Space for banners/advertisements

The advisories should contain more texts

Improved user interface (general looks)

Umlindi data in app

AgriCloud HydroNET portal

Showing a map to users with all crowdsourced observations

Improved user interface for crowdsourcing

Implement seasonal forecasts/advisories

Improvement of HN data-request (grids instead of timeseries)

Inclusion of weather forecasts

Improved farm guide information

Implement database of common weeds

More active credit system.

Develop an IOS-version

Integration of rainfall measurement reporting's in app. User submits amount of mm measured in rain gauge, app provides a graph.

M&E: active questions to users if they like the information/trust it, etc. User can receive credits for answering such questions.

AgriCloud portal for extension officers

Registration of farmers coupled to the South-African cadastre

IT time

1-3 days

3-8 days

>8 days

Conclusions

➤ AgriCloud provides:

- A practical means to respond to climate change,
- A useful tool to integrate information about agronomic crops, together with current short-term weather forecasts

➤ AgriCloud provides planting date advice to farmers

- *at their specific location*
- *on their own phone*
- *in their own language*
- *with daily updates*
- *a means to give feedback by crowdsourcing.*

➤ Long-term learning to understand environmental systems

➤ Extension plays a vital role in dissemination and training

- to assist farmers to access information for their own farm
- also obtain a general view across a wider area.





Acknowledgements



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Weather Impact



**South African
Weather Service**

HydroLogic

