

Scaled deployment of smart-phone agro-applications for field based diagnosis and real-time surveillance data collection

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Adsurv App

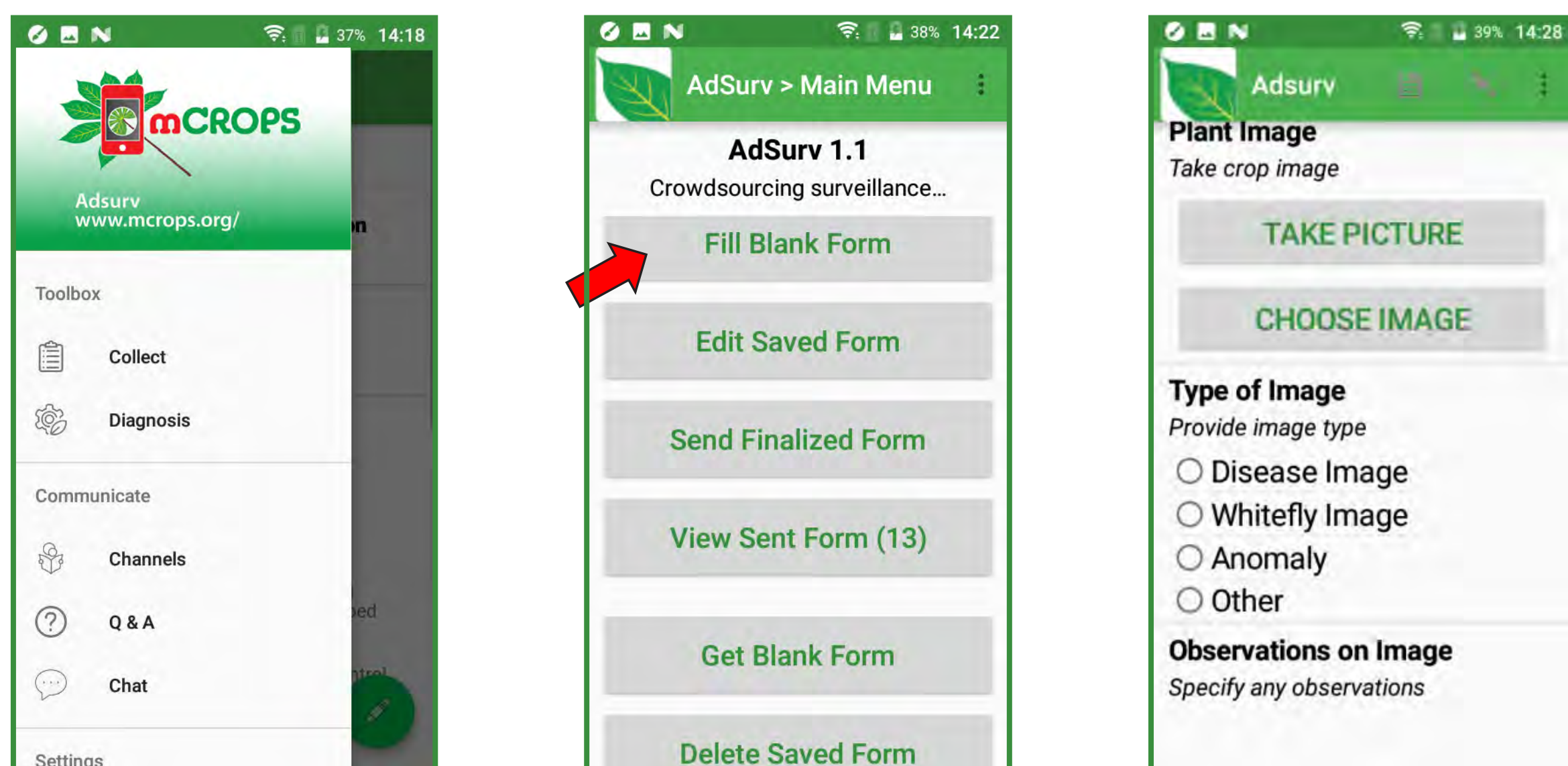
Cassava is a very important food security crop in Uganda and in the region and is a major crop grown by small-scale farmers who depend on it for their livelihood.



This work aims at improving livelihoods of small-holder farmers. We are providing low-cost smartphones to these farmers across the country, the phones are loaded with an app that has the following modules:

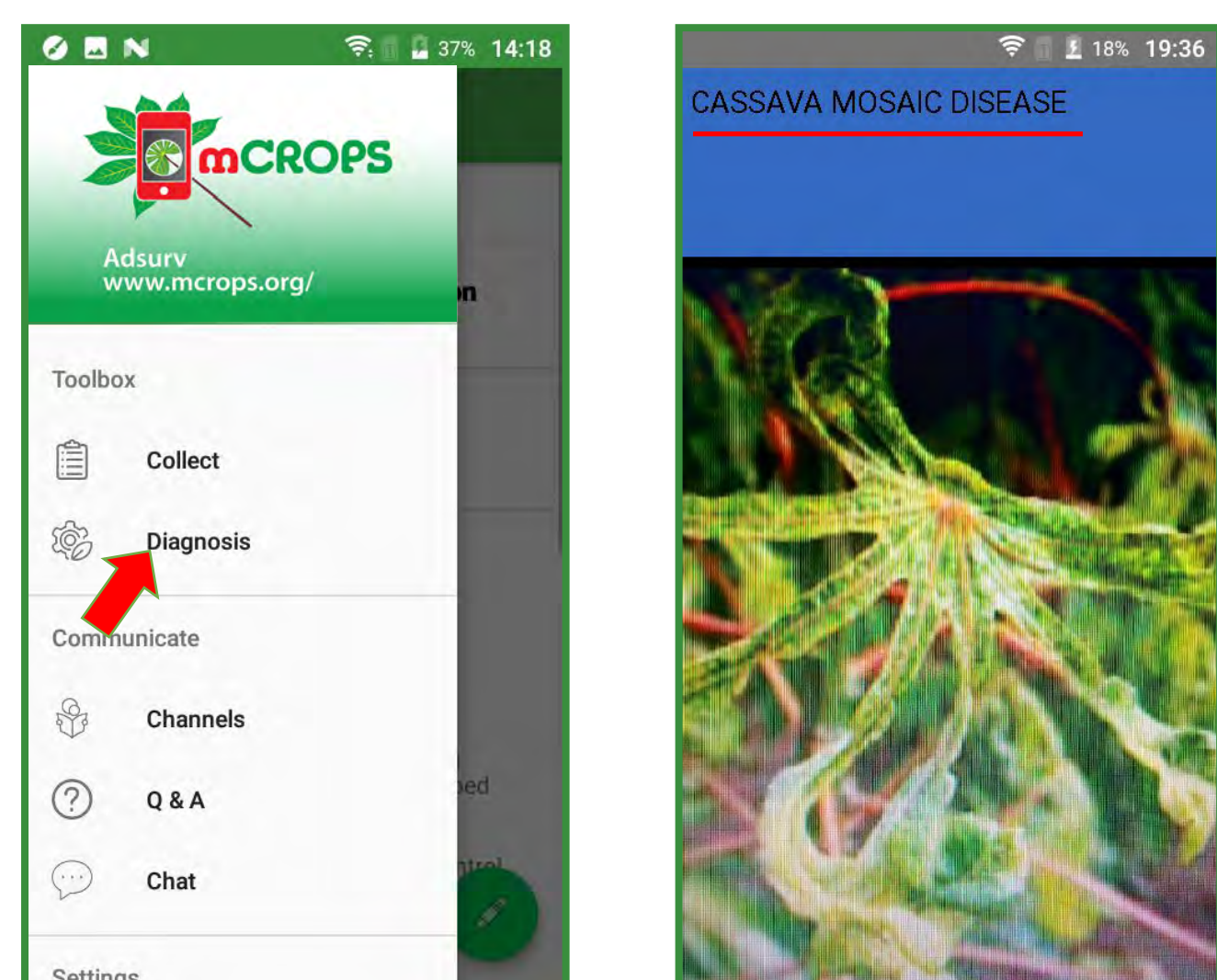
(i) Real-time surveillance data crowdsourcing feature

For this particular module different incentive schemes have been put in place to motivate the farmers to consistently send in data and we are very keen on finding out which incentive works best amongst farmer communities. With this data researchers at the National Crops Resources Research Institute are able to know where Cassava disease incidences are highest. The data collected includes the image, Geo-coordinates and Observation made by the farmer.



(ii) Automated disease diagnosis feature

This provides a realtime diagnosis of farmers' crops. It calculates the state of health the crop by analyzing the leaves. A farmer is, therefore, able to make the necessary early interventions in their garden. This cuts down on the cost of having to wait for the time when the experts are expected to come around. It also saves much on the farmers yield.



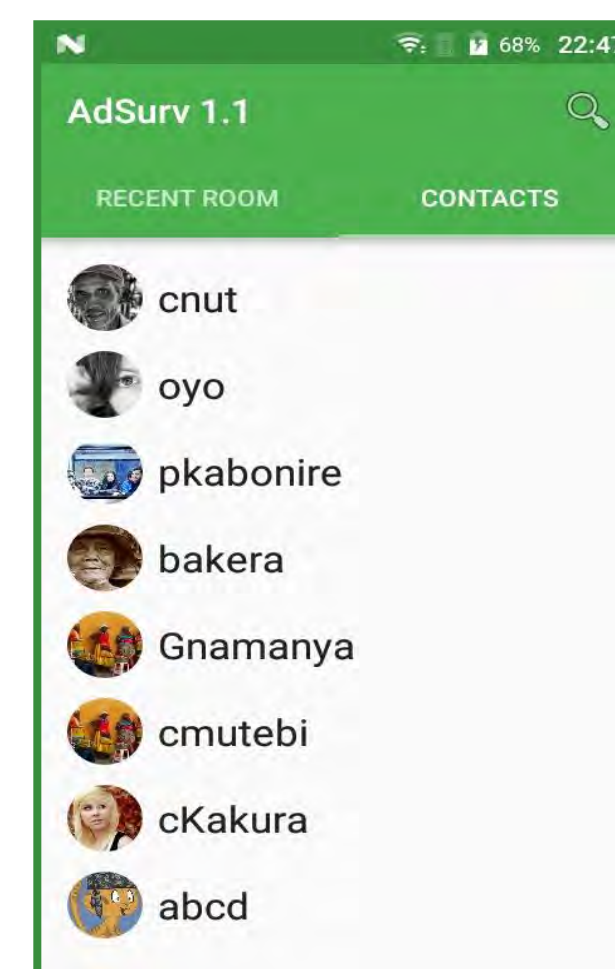
(iii) Farmer social interaction feature

We give the farmers a platform that allows them to interact with each other and also with the experts in cassava. This allows farmers to get instant feedback on anything related to the state of their crops.

The module has three parts:

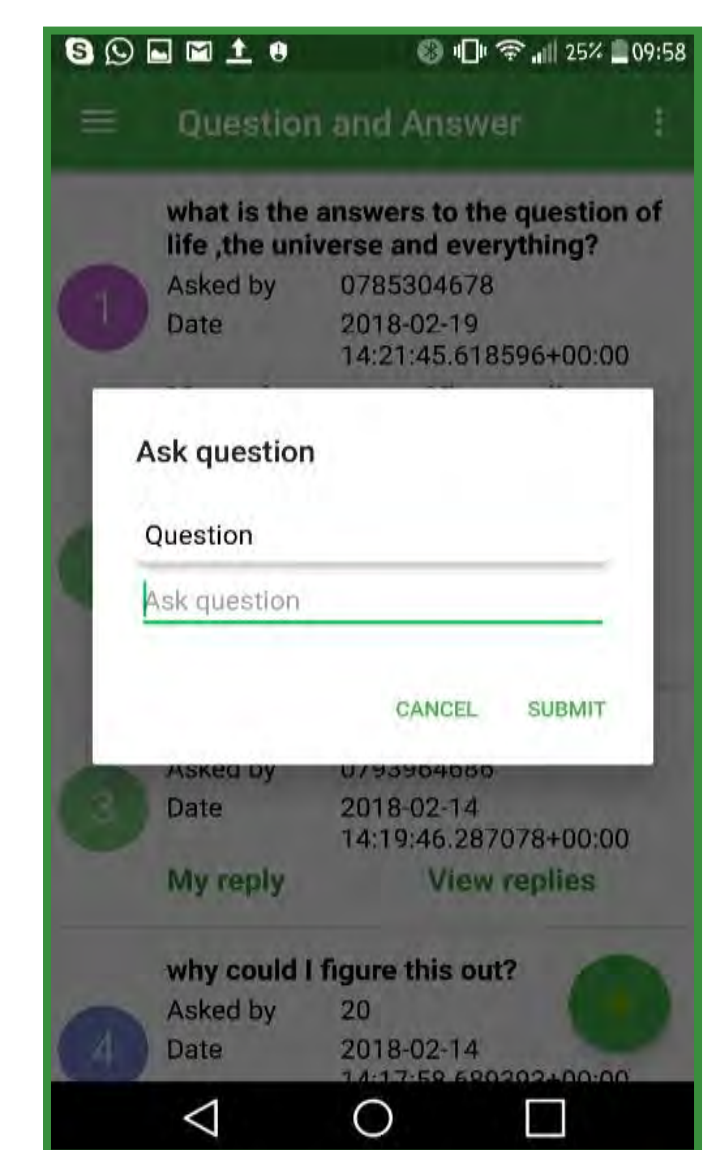
1. The Chat

This allows farmers to chat with fellow farmers and experts just like how WhatsApp works but this is customized to fit the farmer's needs. It allows upload of images, audio and video files, this helps very much in fully putting their messages across to the concerned parties.



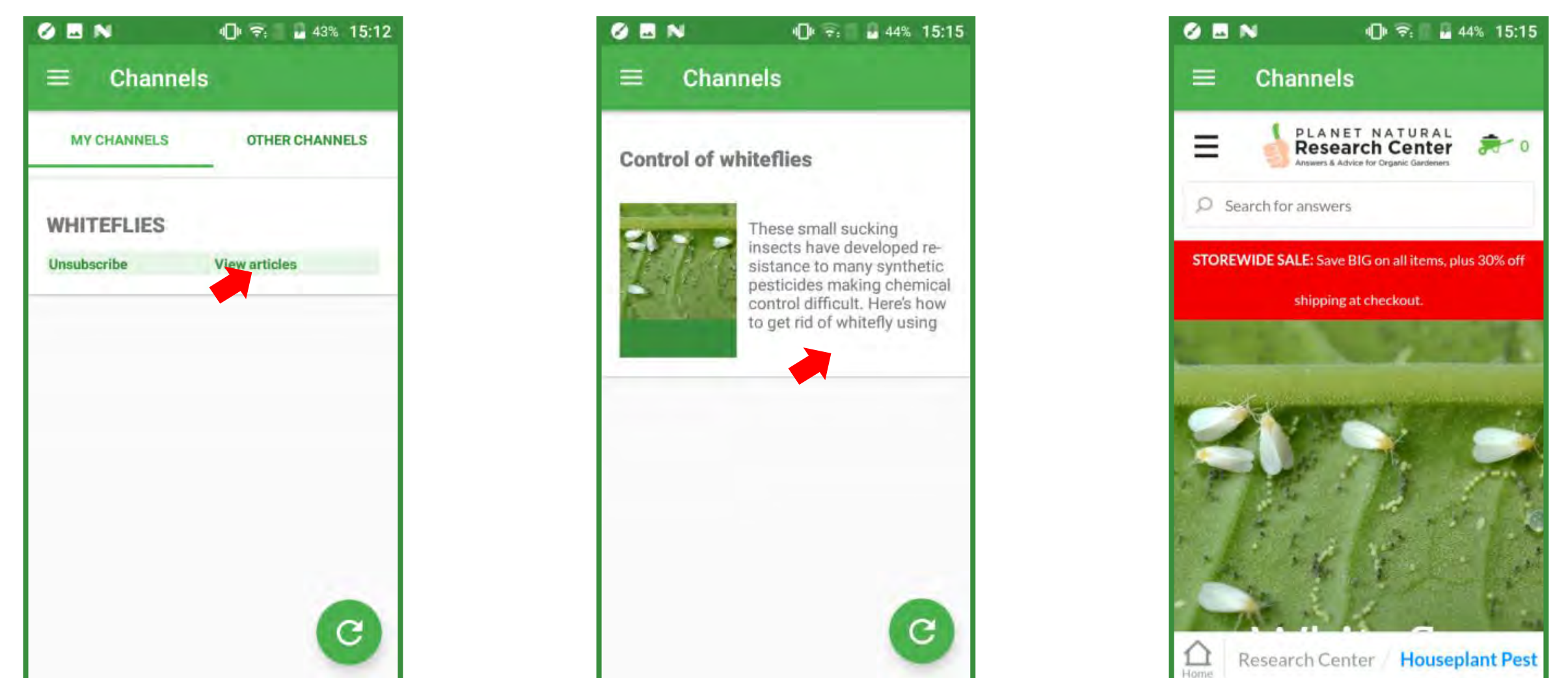
2. The Q&A

The platform has got experts that are there to respond to farmers questions, using the app farmers are able to send their questions and they are given feedback by the experts.



3. The Channels

The platform allows the creation of channels where articles are submitted, the goal is that farmers find them interesting and subscribe to them. But to subscribe the farmer must have uploaded a given number of images. Each channel has a given threshold that if the farmer has uploaded images that meet that threshold then they are able to subscribe to that channel and be able to access articles from the channel.



The end goal of the project is to generate the evidence for a large-scale deployment of a digital system for crop disease surveillance data collection. We are interested in understanding how accurate the inference from this data can be, how useful an on-field diagnosis application can be for small-holder farmers and what incentive mechanisms work. And also understanding how farmers can use a social platform to interact first with themselves and also with experts in cassava.

Spatial spread of farmer uploads

