Details on Experimental Design and Sample Selection

Sample Selection

A previous pilot of the technology conducted by the computer scientist who developed the technology (Neil Patel) and the discussions with our NGO partner led us to focus on cotton cultivation, because farmers expressed demand for frequent information in addressing pest shocks. Our partner recommended working in Surendranagar district of Gujarat, where they had relationships with farmers in 7 talukas (a taluka is a sub-district level administrative unit) at the time and where cotton cultivation was widespread.

The NGO's covered 223 villages in Surendranagar in total, with the two largest blocks (Chotila and Sayla) comprising of 156 (70%) of these villages. As such, we focused our study on these two blocks, because they are the main areas of operation of our partner NGO and because their geographic proximity allowed us to minimize travel costs.

For sample selection, crops and the nature of the intervention meant that our respondent had to meet the following selection criteria:
1. Be the agricultural decision-maker of the household
2. Own or have regular access to a mobile phone
3. Intend to grow cotton in the upcoming season

We chose villages where we had support from the extension volunteers (EV) of our NGO partner, adequate mobile networks and a large enough village to list enough cotton farmers from which we could randomize. We worked with our NGO partner to identify these villages.

Based on this criteria, we listed, on average, about 40 people in 40 villages in Sayla and Chotila talukas (the minimum was 44 and the maximum was 62). During May to early June 2011, we informed the EV about our selection criteria and they took us to those households or gave us the geographic makeup of the village. We then spent two to three days in each village assembling a list of respondents from each village.

Our survey team canvassed door-to-door for this listing, but also collected information on farmers they met outside of homes, who reported they were from the village. This listing exercise produced a total of 2,586 farmers: 1450 farmers in Chotila taluka and 1136 farmers in Sayla taluka. We then randomly picked 30 farmers in each village from this frame.

Experimental Design

Overall, 398 respondents were randomized to the control group, 399 were randomized to receive the AO services and a further 399 were randomized to receive the AO service and in-person extension as shown in Figure 1 below. Among the treated (i.e. the AO and AOE groups), 502 respondents were randomized into receiving bi-weekly reminders.

FIGURE 1: EXPERIMENTAL DESIGN