Appendix Table: Trials conducted by PAD and affiliated researchers

Year	Location	Sample	Intervention		Impact		
				User engagement	Knowledge and comprehension	Adoption behavior	Agricultural outcomes
Assessment of mobile phone-based interventions for farmers							
2012	India (Gujarat)	800 (cotton and cumin)	PRECURSOR OF PAD: Weekly advisory IVR calls on recommended practices and inputs		4.56-6.27% increase in knowledge on cotton (control mean = 4.847 out of 20 questions answered correctly) 2.47-5.36% increase in general agricultural knowledge (control mean= 14.15 out of 44 questions answered correctly)	6.1-12.5% adopted recommended inputs for cotton (baseline mean = 0), +9.1% used recommended seeds (baseline mean=0)	0.45-2.82% increase in cotton yields 1.24-28.0% increase in cumin yields
2012	India (Madhya Pradesh)	2,080 (cotton and cumin)	PRECURSOR OF PAD: Weekly advisory IVR calls on recommended practices and inputs		+ 9.5% number of correct answers to questions on fertilizers, pesticides, and fungicides (baseline mean=1. 008)	+ 0.9 std dev shift in the index of recommended pesticides usage	Insignificant yield effects
2012	Kenya	2,000+ (sugarcane)	NON-PAD: SMS-based two-way hotline. (1) outbound - recommended practices (2) inbound - delivery delay reporting to a contract farming company			- 22% late fertilizer delivery by contract farming company (control mean=0.393)	+ 11.5% yield (control mean=41. 625)
2013	Kenya	830 (sugarcane)					Insignificant yield effects: cannot reject either the hypothesis that the intervention had no effect or had an effect as large as the previous trial
2013	Kenya	830 (maize)	NON-PAD: SMS messages on lime use by government		Insignificant change in lime knowledge	Insignificant change in lime adoption	
2016	Kenya	2,000 (maize)	Customized SMS messages on lime use by PAD		+ 28% lime knowledge (control mean=0.33)	+ 20% lime adoption (control mean=0.22)	
2017	Kenya	4000+ (maize)	Customized SMS messages on lime use by PAD		+ 21% lime knowledge (control mean=0.43)	+ 10% lime adoption (control mean=0.3)	
2018	Kenya	370	SMS messages to dispel misconceptions about invasive pest		+ 0.54 higher score out of 5 Fall Armyworm knowledge questions (control score 2.70/5 knowledge questions)		
2017	India (Gujarat)	3,600+	Weekly IVR calls promoting high-return and higher risk crop (cumin)			Insignificant increase in share of farmers who grow cumin + 12% increase in fungicide use (control mean=0.292)	
2018	Rwanda	114,000 maize farmers	Customized SMS messages on lime use by PAD			+ 18% lime adoption (control mean=0.04) + Diverse messages to a group increases adoption for all farmers within group, including those who did not receive messages	
2018	India (Gujarat)	200	Add an agronomist call to the SHC and supplemental materials received by farmers		No significant effects on agricultural knowledge.	No significant effects on adoption of fertilizers.	
2019	India (Gujarat)	1585 cotton farmers	Weekly push calls and a SHC to deliver plot-level soil fertility information and customized fertilizer recommendations.			11.2% - 19.9% of the treated farmers changed fertilizer type based on recommendations	No significant increase in yield

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2019	Kenya	3,000	Farmers were sent push reminders on accessing information about Fall Armyworm (FAW), or sent push reminders on using an interactive FAW monitoring tool, or sent push reminders about both.		0.155 increase in the number of questions correctly answered. (control mean=4.889/7.0) 1.3 pp increase in likelihood of farmers answering at least one question correct (control mean = 98%)	+2.3 pp increase in the 'hand-picking' method of dealing with FAW (control mean= 9.9%)	
2019	Kenya	2,343	In addition to push reminders on accessing the FAW informaion and monitoring tool, treated farmers received received recommendations on optimal timing for pesticide use based on modeled infestation rates.		No significant effects on knowledge on FAW	8 pp increase in farmers who used at least one natural practice to combat FAW (Control Mean = 30%)	
2019	Various Locations		Meta-analysis of agricultural recommendations delivered by mobile phone			11.28% increase in adoption of recommended inputs (95% Confidence interval: 6.48% - 16.09%)	4% increase in yields (95% Confidence interval: 0%-8%)
System and message design tweaks							
2016	India (Gujarat)	2,800+	IVR messages with different voices (agronomist v. farmer, male v. female)	No differences in listening rates by voice type			
2016	India (Gujarat)	600+	Supplement to Soil Health Cards (SHC): Audio guide via mobile phone vs. agronomist vs. control		+ 37pp comprehension of fertilizer recommendations on SHC with audio guide +41 pp with video +41pp with agronomist (control mean=0.059)		
2017	India (Gujarat)	20,000+	Removing branding jingle from beginning of the IVR phone call	+ 69.2% in proportion of the content heard (control mean=25.62).			
2017	India (Gujarat)	3,700+	Call length keeping content fixed: (i) one call / week (ii) two shorter calls / week (iii) farmer preference	+ 28.8% in content heard for preference group + 9.2% in content heard for two short calls group (control mean=0.326)			
2018	Kenya	20,000+	Asking for feedback via a rating survey	- 21% opt-out rate (control mean=6. 9%) - 15% access to additional menu topics (control mean=40%)			
2018	Kenya	17,000+	Encourage farmers to refer other farmers to join system via phone survey / SMS invitation	+ 9% higher referral rate from phone survey (679 referrals at control) + 5% higher referral rate from SMS invitation (2580 referrals at control)			

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				User engagement	Knowledge and comprehension	Adoption behavior	Agricultural outcomes
2018	Kenya	3,000	Ask users for their location. Randomize reason (i) better recommendations (ii) helps us help you combat pests better	+ 4.3pp response rate to better recommendations framing (25.0% completion in "better recommendations arm", 20.7% completion in "Fight FAW" arm.)			
2018	Ethiopia	300,000+	Direct new users straight to IVR menu of options vs. request registration first	+ 21% in farmers that reached content (control mean=52%)			
2018	Ethiopia	350,000+	If no option was selected during IVR navigation, (i) hang up, (ii) repeat the menu option	+ 2% in farmers that reached content (control mean=52%)			
2018	Ethiopia	200,000+	Removing prompt to save crop to user profile after accessing content	+ 2% in farmers that reached content (control mean=52%)			
2018	Ethiopia	30,000+	Rotating IVR menu options throughout the crop calendar so that most relevant content is always "Option 1"	+ 200% in farmers that reached most timely content (control mean=20%)			
Multiple	Kenya / Rwanda, multiple years	10,000+	Number of SMS messages to get behaviour change	Large jumps in adoption from follow-up messages			
2019	Kenya	97,000+	Ask farmers their prefered language and offer the option to switch langugages (English and Swahili).	+ 6% completion of registration survey on first day (control mean=0.64) + 17% more interaction with the system (control mean = 0.0158)			
2019	Kenya	954	Ask farmers to give their first name at the start of registration.	+ 6.8pp more replied to first question over control 73.6% response rate. + 2.2pp more completed the registration over control 64.2% completion rate.			
2019	Bangladesh	4,425	Voice messages in a conversational style vs. accompanied with a trivia fact vs. a standard message	+9.7pp more of a message was listened to when in a conversational style. +2.6pp more farmers pick up when a message is accompanied by trivia -25pp would listen to a full message if it is accompanied by a trivia fact.			
2019	Bangladesh	4000	Voice messages in regional dialect vs. standard language	+3.8pp in listening rate when the message is in the local dialect. +7.0pp increase in likelihood of listening to the full message.			
Assessment of mobile phone-based intervention for extension agents (preliminary findings)							
2018	Rwanda	1,800 model farmers	SMS messages promoting fertilizer use and encouraging peers to adopt fertilizer		Up to +9% in fertilizer knowledge (control mean=0.767)	+ 0.123 std deviation in following fertilizer recommendations (control mean=0); No increase in number of peers encouraged to use fertilizer	

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2018	Rwanda	1,700 model farmers	SMS messages encouraging model farmers to register more farmers to register for free trees			Up to + 18% in share of model farmers who meet their target number of registered farmers (control mean=0.38)	