

Pilot impacts of water-saving rice in Bangladesh

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The technology is drought-tolerant rice in Bangladesh

3 attributes of BD56

1. Drought tolerance: Less affected by dry spells → less need for supplemental irrigation
2. Shorter duration: 105-110 days instead of 130+ for longer duration varieties
3. Lower yield than longer duration varieties

Research questions

1. Impact on water savings, duration and hence dry-season crops, and overall profitability?
2. Does impact vary across different types of early adopters?
3. Diffusion impact of changing method of selecting early adopters
4. Impact of counterfactual demonstration plots, especially when large farmers chosen to demonstrate

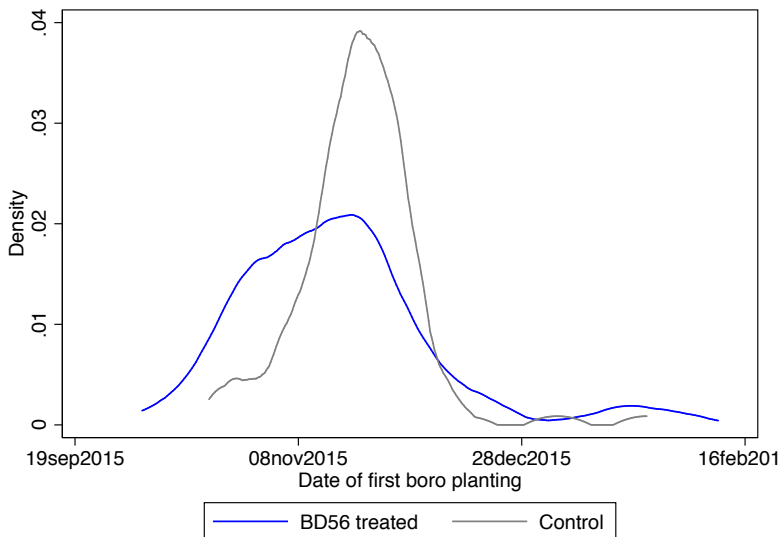
Where we are with the study

Pilot experiment in 35 villages Aman 2015 ✓

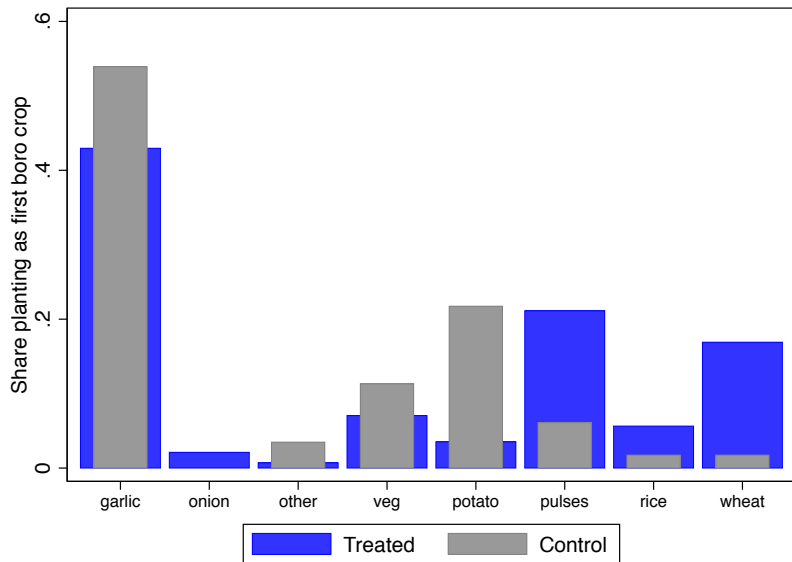
- Door-to-door census completed in 35 villages
- 5 kg of seed provided to 5 farmers (approx 35% of wet season rice area)
- Seed either provided to (1) largest farmers (2) voted best by villagers (3) highest self-stated WTP (4) random (5) most average
- 6 control villages, all surveyed that would have been selected under one of above criteria

What we discovered with the pilot

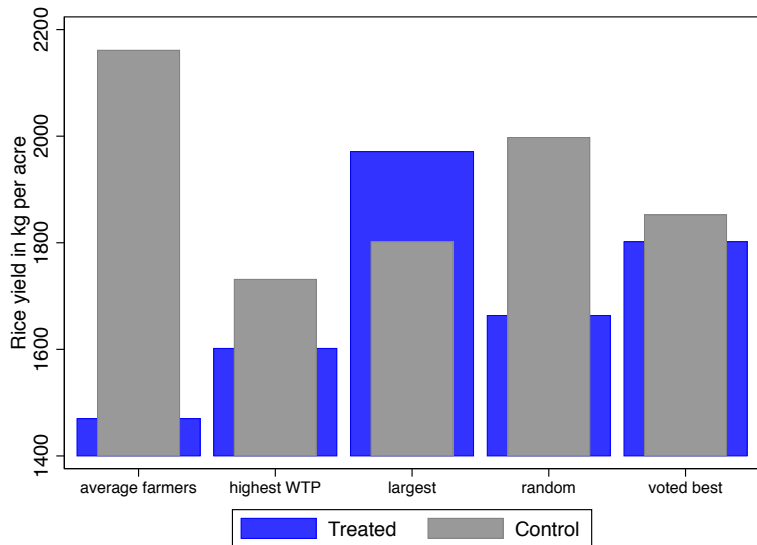
1. BD56 offers shorter duration for farmers



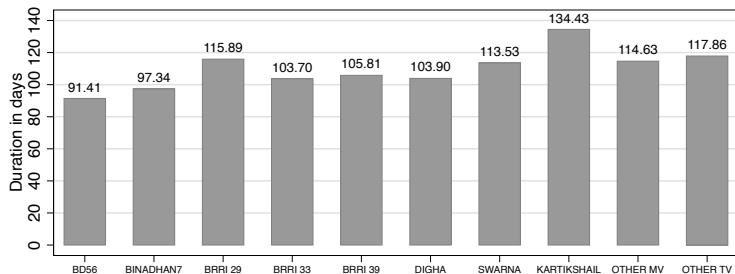
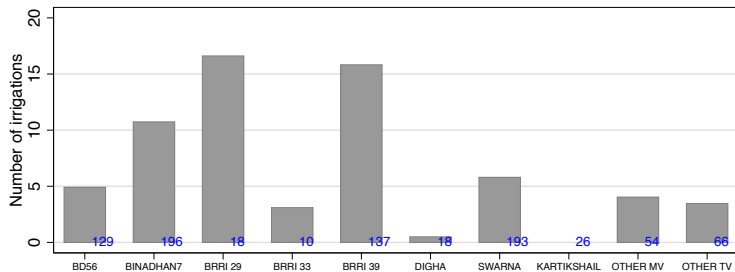
This affects crop choice for the first dry season crop



BD56 reduces yield, but this varies across farmer type



Observational data suggests BD56 needs less water



Now the main experiment

- Door-to-door census / baseline for approximately 22,000 HH in April-May 2016 ✓
- Seed distribution. 192 BD56 villages (large, SAO-selected, random). 64 control villages. All hypothetical recipients treated with BD51, **ongoing**
- Also provide calendar for tracking irrigations, planting / harvesting, yield, **ongoing**
- Follow-up to observe counterfactual plots and take picture, **July 2016**
- Two follow-ups on production / welfare outcomes, February 2017 and February 2018
- Two follow-ups to track diffusion, August 2017 and August 2018

Potential lessons from main experiment

- Effect of BD56 on productivity, although productivity \neq simple crop yield
- Effect on water savings
- Heterogeneity: large farmers, average farmers
- Welfare impacts, perhaps using Ligon (2015)
- Diffusion:
 - More overall impact (because faster diffusion) with large-farmer demonstrators?
 - Faster diffusion when demo plots have counterfactual?

Issues we face moving forward

- Measuring profitability given BD56 affects other seasons and farmers have multiple plots
 - Plot-level record for BD56 plot + random subset of plots
 - Crop-level record for all land, by season
- What is actual water savings from one foregone irrigation?