Constraints to adoption – Learning in highly variable environments

Emilia Tjernström, University of Wisconsin – Madison
Many things affect yields

• The production environment
• The technology bundle used
• The match between production environment & technology bundle
• So a farmer trying to figure out the optimal approach for her field needs to keep many factors in mind
Sources of information for farmers

- A farmer who wants to learn about a hybrid variety (or fertilizer, or herbicide, or...) can learn from different sources
  - you can try the seed yourself
Sources of information for farmers

• A farmer who wants to learn about a hybrid variety (or fertilizer, or herbicide, or…) can learn from different sources
  • you can try the seed yourself
Sources of information for farmers

• A farmer who wants to learn about a hybrid variety (or fertilizer, or herbicide, or...) can learn from different sources
  • you can try the seed yourself
Sources of information for farmers

• A farmer who wants to learn about a hybrid variety (or fertilizer, or herbicide, or…) can learn from different sources
  • you can try the seed yourself – but every “trial” is risky

  • extension agents
  • government information/outreach
  • seed company information
Sources of information for farmers

• A farmer who wants to learn about a hybrid variety (or fertilizer, or herbicide, or...) can learn from different sources
  • you can try the seed yourself – but every “trial” is risky
  • you can learn from others – what did your neighbors do, and did this technology bundle perform well for them?
Sources of information for farmers

- A farmer who wants to learn about a hybrid variety (or fertilizer, or herbicide, or...) can learn from different sources
  - you can try the seed yourself – but every “trial” is risky
  - you can learn from others – what did your neighbors do, and did this technology bundle perform well for them?
How different is different?
How different is different?

Easier to learn in this village...than in this village.
Soil heterogeneity and learning
Soil heterogeneity and learning
Soil heterogeneity and learning

• I conducted network surveys, asking farmers who they speak to about agriculture, who is in their microfinance group, etc.
Two measures of information

- How many ‘treated’ farmers in your network?
- But also elicit “perceived experimental gains”
Soil heterogeneity and learning

• I conducted network surveys, asking farmers who they speak to about agriculture, who is in their microfinance group, etc.

• In all villages, farmers (unsurprisingly) talk to each other
  ...but whether soils in your village are homogeneous or heterogeneous matters!
Soil heterogeneity and learning

• The more fields in your village differ from each other, the less likely you are to imitate a neighbor’s success with the new seeds by trying it out yourself

• But in villages where soils are similar, people seem to learn quite a lot from their neighbors: having more friends who had a good experience with WSC sample pack means that you are
  • more likely to be familiar with WSC varieties
  • willing to pay more for WSC varieties
  • more likely to adopt a WSC variety the next season
  • more likely to adopt other hybrid varieties
Policy take-away

• In some areas, you can get bigger “bang for the buck” by leveraging social networks: give seed samples to a few people in village, and it spreads

• ... but in other places we may need to encourage/subsidize individual learning, since learning from others is difficult