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Why Attitudes Matter: Measuring Farmer Attitudes in Agricultural Development

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How can measuring farmers' attitudes improve agricultural program design and implementation?

Consumer attitudes are a key component in private sector market segmentation.[1] Knowledge about consumers' tastes can lead to better product design and more effective communication with target markets. Similarly, evidence suggests that farmers' attitudes influence whether they adopt productivity-increasing technologies.[2,3] Using consumer insights from the private sector, agricultural intervention programs can use market research, product development, and communication strategies to better understand farmers as consumers and best target interventions.

For many smallholder farmers, change means a possibly unacceptable downside risk. In choosing a new seed, soil technique, or fertilizer, the magnitude of the costs and benefits being weighed are often one's entire livelihood. Coupled with the inherent uncertainty of farming outcomes, the "safe" choice is often to maintain the status quo – even if it means foregoing a large potential upside. Price incentives for new technologies to increase yields may be insufficient without products that also insure against losses and have known risks and returns. Attitudinal information helps program designers understand which subpopulations (e.g. women and the poorest households) differentially value risk-mitigating features in addition to economic incentives. While program designers can functionally classify vulnerable groups that are likely risk-averse through demographic and livelihood system characteristics,[4] identifying risk attitudes *within* populations through attitudinal surveys could provide more specific guidance in designing risk-mitigation components.

Farmer's trust and risk perceptions can also inform communication strategies. When marketing and delivering programs to meet or generate farmer demand for training, new crop varieties, or other interventions, outreach and educational materials that account for attitudes about media (who delivers the message) and messaging (what information is delivered) may be more likely to succeed.

What kinds of farmer attitudes can we measure?

Farmer surveys typically collect information on observable characteristics such as crop varieties grown, inputs used, and yields. The presumption is that decision-making is largely driven by prices and costs. While economic incentives may provide the most important first level of information, they fail to account for the complexity of the smallholders' perceived risks.

Risk attitudes are arguably one of the most important factors to understand in influencing farming decisions and interventions. Risk attitudes are particularly useful when combined with information about how those attitudes vary with some easily observed or measured individual trait such as age, gender, or education. In addition, attitude surveys can collect other, non-risk attitudes likely to influence farming decisions such as:

- Do farmers want their children to farm the land?
- What sources of information do they trust?
- Are certain crops associated with status and power?
- Is the farmer optimistic about the future?

For example, adding attitudinal variables to a model predicting adoption of inorganic fertilizer in Tanzania suggested that the farmers' overall optimism and willingness to make changes on the farm, as well as their level of worry about land and labor availability and weather, were more significant predictors of fertilizer use than were price worries. [5] In countries with imperfect markets, interventions that subsidize inputs and methods to increase yield may not be adopted if labor availability, including one's own effort, is

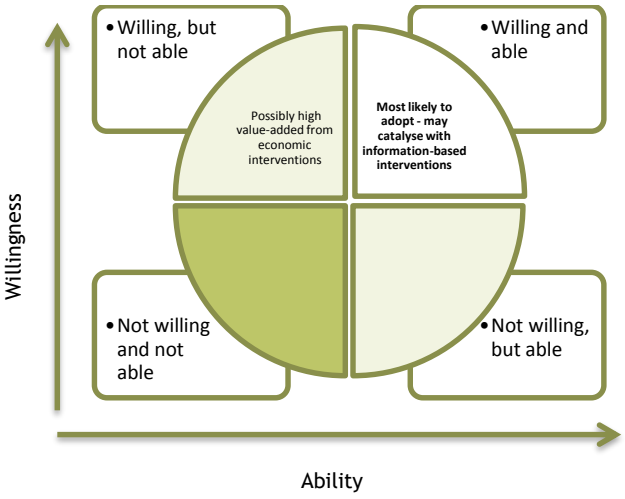
a concern. Especially for women, innovations may be better targeted at *labor-saving*, rather than *yield-increasing* productivity measures.

Farmers with willingness and ability to change are most likely to adopt new farming techniques

All else equal, farmers who are both motivated and have the necessary skills and resources are likely to be the most successful technology adopters. While observable characteristics, such as educational attainment and access to credit and land can affect ability to adopt, attitudinal information is needed to determine willingness.

As shown in Figure 1, program designers can more cost effectively target interventions if information about both farmer ability and farmer willingness is available. Targeting strategies, based on expecting local diffusion from model farmer innovators, are most effective when directed at the upper right quadrant of farmers willing and able to adopt. Information-based interventions may be the most catalytic for this group. Broader value-added strategies are likely most effective directed at the upper left quadrant of farmers willing to adopt, but unable to because of credit, input, or other economic or technical constraints that may be remedied via funded interventions. Resources are less effectively spent, at least initially, on blanket strategies that cover farmers in either of the bottom quadrants. Farmer segmentation identifies clusters of farmers in each of these quadrants and allows us to search for common characteristics to identify them and shape program delivery accordingly.

Figure 1: Willingness and ability to adopt



What do we know from the literature about smallholder farmer attitudes?

Results from Farmer First, an attitudinal survey piloted in Tanzania and Mali by TNS-Research International in 2008-2009, suggest that farmers' attitudes affect their propensity to adopt new techniques and reveal intra-household and gender differences between men and women in attitudes toward risk and willingness to make changes on the farm.[6]

Different levels of spousal risk-taking was a significant predictor of disagreement between spouses on who holds decision-making authority, possibly leading to unanticipated conflict over decisions arising from development programs. Accord over decision-making – be it in the husband or wife's hands – is positively associated with the wife's willingness to make changes and the husband's satisfaction with farming.[7]

Attitudinal data may therefore be valuable for programs attempting to "target" subpopulations such as the poorest and women and to avoid interventions that inadvertently increase the potential for intra-household conflict.

An attitudinal survey in Vietnam likewise found differences between women and men in risk-taking and willingness to compete.[8] Women tended to underestimate their ability to win and were less willing to compete, though they were more willing to compete with each other than with men. These findings may help explain the frequency of women traders downstream when there are women competing with women, but the relative scarcity of women upstream. Upstream, the findings are consistent with the relative success of women's cooperatives and may have lessons for interventions along the value chain. The results may help to explain failures to "mainstream" women into market-based activities.

Knowledge of farmer attitudes can improve program design and implementation. Attitudinal information disaggregated by gender or other characteristics has the potential to improve the uptake of interventions by aligning donor goals and recipient aspirations, improve the targeting of particular subgroups, and more effectively use development dollars.

Please direct comments or questions about this research to Leigh Anderson and Mary Kay Gugerty, at eparx@u.washington.edu

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