Advancing Impact

AHI brief

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Adding Nuance: Constructivist Inquiry in Agricultural R&D

Researcher from the Areka benchmark site interviews a group of women to identify key watershed issues affecting their livelihood.

Inclusion of "constructivist" steps within standard research protocols can help to nuance and ground agricultural research and development in local realities, furthering the goals of more relevant and more equitable R&D practice.

Standard practice in agricultural research and development is for outside agents (researchers, facilitators) to define relevant variables to be researched or discussed in community fora. This might be called "proscriptive" inquiry, due to the fact that parameters are pre-determined without consultation from other social actors. An alternative form of inquiry is gaining momentum which can transform agricultural R&D by making research questions and methods, as well as group learning, responsive to multiple realities.

Constructivist evaluation is based on the premise that the world has multiple, socially-constructed realities. The implication is that only by forging interactions among diverse views can socially-informed research and development processes be forged. This brief describes three recent examples of how constructivist inquiry can better inform agricultural R&D.

Case Study 1: Tracking the Fate of Technological Interventions

The standard methodology for tracking technological adoption is a survey in which standard household and farming system variables are statistically correlated with adoption (adopter vs. non-adopter). This approach assumes a certain degree of omniscience on the part of the researcher, leaving little room for farmers to suggest key adoption variables based on their own observations. Recent experiences in AHI suggest that constructivist methods can help to nuance the tracking of technology adoption through local identification and interpretation of adoption patterns. The approach follows four simple steps: a) focus group discussions with adopters and non-adopters to identify key patterns in adoption (characteristics of adopters, main constraints, etc.); b) integration of new variables into a standard tracking survey; c) data analysis, and d) focus group discussions to ask farmers to interpret observed patterns. Table 1 outlines standard ("proscribed") dependent variables often used to track adoption, and additional variables "constructed" by farmers (in red) and researchers with extensive on-site experience (in blue) in Lushoto District, Tanzania.

Technology	Proscribed Variables	"Constructed" Variables
Banana (germplasm and management)	Household variables: ✔ Labor ✔ Gender ✔ Wealth ✔ Off-farm income	✔ Susceptibility to drought ✔ Limited access to suckers
Soil and water conservation		✔ Demands on nutrient resources ✔ Access to technical assistance ✔ Cultivation of high-value crops
Tomato (germplasm and management)	Farming system variables: ✔ Landholdings/tenure ✔ Livestock holdings ✔ Access to irrigation	✔ Harmful effects of pesticides ✔ Access to quality land ✔ Access to technical assistance ✔ Access to inputs (manure, other)

Table 1. Proscribed and "constructed" variables for tracking technology adoption

Case Study 2: Socially-Optimal Problem Diagnosis and Planning

It is by now common practice for problem diagnosis in agricultural R&D to be carried out using standard PRA tools at community level. Yet, the literature now suggests that community-level fora are insufficient for bringing out the views of more marginal groups who fail to speak out or to attend such meetings. In AHI's benchmark sites of eastern Africa, a more socially-nuanced approach to problem diagnosis was recently utilized to initiate a participatory watershed management program. Rather than diagnose problems at community level, individual and focus group interviews were carried out on the basis of gender, wealth and age characteristics. In sites where resource access can be broken down into clear landscape categories (upslope vs. downslope), this criterion was also used to select interviewees for problem diagnosis. These same social categories were then utilized to "sample" interviewees to rank the identified problems according to their level of importance. By averaging these ranks according to diverse social variables, a more nuanced understanding of "community" priorities was achieved.

While this first step (diagnosis) was "constructivist" to the extent that it drew upon many viewpoints, the categories utilized to select interviewees were nevertheless pre-determined or proscriptive. Yet a more open-ended, constructivist identification of key stakeholders could only be done once key watershed problems had been identified—as a "stakeholder" is defined relative to a particular issue or agenda. The second step was therefore to utilize constructivist inquiry to identify stakeholders for the top-ranked issues, and to engage these stakeholders in negotiation and planning. This was done through household interviews, in which the list of key stakeholders was assumed to be complete once no new groups emerged.

Case Study 3: Historical Timelines

In conducting historical timelines, *proscriptive* communities are generally asked to track variables deemed to be of greatest importance by outside facilitators. This results in a generic tool applied irrespective of the local context. Recent experience in Lushoto, Tanzania, suggests that constructivist inquiry can lead to much more nuanced and relevant outcomes. The approach consisted of four basic steps. First, key informant interviews with groups of elders helped to identify the most salient trends in land use and landscape change. Emerging variables were then extracted and added to an existing list of proscribed variables, which farmers were asked to rank to specify rates of change over time (using a matrix and 1–10 ranking system). Farmers were then asked to state the causes of observed changes, leading to new variables which were also extracted and ranked.

One of the variables identified by elders in Lushoto was decreased water flow in rivers. They proposed the increase in Eucalyptus cultivation as a causal factor. We then added "prevalence of Eucalyptus" to the list of variables to be ranked. When contrasted, a sharp decline in water resources is shown to correspond with a dramatic increase (from 2 to 10) in the prevalence of Eucalyptus between 1950 and 1980. A second example comes from tracking a proscriptive variable: trends in crop pests and disease. Farmers identified decline in a traditional pest control practice called *Hande,* involving collective action in botanical pest control, as the cause behind sharp pest increases. Thinking this trend might result from influx of modern religious beliefs or the decline in customary norms governing the use of natural resources, or alternatively from increased use of industrial pesticides (known to enhance genetic resistance), researchers decided to track these additional variables. The independent variable most strongly correlated with trends in pest increase was found to be adherence to modern religious beliefs, supporting farmers' original observations (Figure 1).

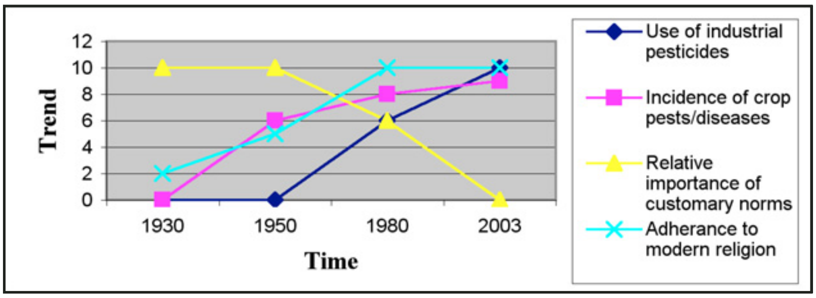

Figure 1. Trends in cultural change, pest management and prevalence of crop pests

Conclusion

These examples illustrate how the simple addition of "constructivist" steps within standard research protocols can help to nuance and ground agricultural research and development in local realities. This can significantly further the goal of more relevant and equitable R&D practice.

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