



*Presented at the TWAS 18th General Meeting 13-14 November, 2007
After receiving the TWAS Prize for Agriculture 2006.*

Communicating Agriculture to Rural Farmers

K. L. Heong

International Rice Research Institute
Los Banos, Philippines

ABSTRACT

Despite advancements in agricultural science and technology, many rural farmers remain poor. It is perhaps true to say that much of agricultural information remains inaccessible to rural farmers. Some may have access to modern agricultural technologies, like new varieties, new pesticides, agronomic practices and equipment, but they are unable to achieve the expected productivity. This may be due to variability in bio-physical conditions, but the wide knowledge gap between science and what farmers know or perceive plays a more significant role. Knowledge may be information embodied as products (improved seed, pesticides, machinery or the “hardware”) or it may be abstract, embodied in agricultural practices (or the “software”). Communicating products may have been more successful, as seen in the widespread adoption on modern cereals varieties. Practices (or software) on the other hand have less success and in some cases led to misuse of the products (like pesticides and fertilizers) or are unable to fully benefit from them. This may be due to the lack of distillation of information into farmer-friendly practices (or software development), lack of efficient mechanisms (or platforms) to communicate and lack of incentives for target farmers to adopt. Decisions to adopt new practices are also constrained by farmers’ inherent beliefs and loss aversion attitudes. To improve communication of agriculture to rural farmers we will need participation of concerned stakeholders along a pathway of phases, from research on the ecological and sociological dimensions to planning, implementing and monitoring a communication strategy.

Understanding farmers’ decision making is an important first step. Here, behavioral decision theories can be usefully applied. Technical information maybe “distilled” into an “actionable” entity expressed in the form of a “heuristic”. Heuristics are informal rules-of-thumb most people use in decision making. They are developed through experience and guesswork about possible outcomes and may thus have inherent faults and biases. Research to understand farmers’ heuristics and identify the faults and biases will help scientists frame new heuristics that are “farmer-friendly”. For instance, scientists discovered that leaf damages by leaf feeders in the early growth stages of the rice crop have little effect on yields, but farmers spray insecticides to control the larvae (or “worms”) because they strongly believe otherwise. These beliefs might be due to farmers’ loss aversion behavior as described in Prospect Theory (Kahneman and Tversky, 1979). A new and conflicting heuristic, “Spraying for leaf feeding insects in the first 40 days of the crop is not necessary” can be established to motivate farmers to experiment and initiate change in attitudes.

Most rural farmers will continue to rely on traditional ICTs, like radio and TV for information. The use of entertainment-education (E-E) as a platform to incorporate technical information into soap opera, usefully applied in public health and HIV/AIDS prevention, needs to be explored. Mass media to scaling up may be highly successful when it communicates a single intervention or message. An incremental approach can be applied by adding one or two more heuristics in series through continuous drama episodes. Any further delay in information reaching farmers may be information denied. The challenge to agricultural scientists to add value to their research may be “to go beyond the experimental station gates”, avoid being “locked-in” to single research paths and to structure their work so as to efficiently bring new information to fruition or “market”.