

COMMENTARY: The right message and method

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Pesticide abuse among tropical smallholders is one of the greatest challenges to sustainable agriculture today. The alternative, integrated pest management (IPM) depends on conveying the right message (a technology and its background information) in the clearest way to as much of the target audience as is possible (method). In recent years, farmer field school (FFS) has been the dominant method for IPM extension. Field schools meet weekly to observe and discuss pests in the field, from seed to harvest. From its start in Indonesia in the 1980s, FFS was creative, ecologically sensitive and people-friendly. It caught the imagination of many IPM specialists and spread to various countries.

However, there has now been time for detailed evaluations (reviewed in Bentley, 2009). Some of these show that farmers like FFS and change their attitudes as a result of it. FFS graduates learn about pest ecology, and often decrease their insecticide use. Some studies show that FFS graduates farm more profitably than their neighbours (e.g. spend less money while reaping larger harvests), although not all of the studies replicate these results. The more quantitative studies tend to show the fewest benefits. FFS farmers are often chosen from among the wealthiest farmers, confounding comparisons with others.

The studies agree that FFS graduates do not teach what they have learned to their neighbours. This is sobering, since FFS can reach about 25 people per community per season. FFS is a high-quality, face-to-face method which reaches few people. If those people do not or cannot convey their new knowledge to others, then most of the farming community learns little about IPM; thus other extension methods would probably reach more people, and so be more appropriate and democratic.

There are other extension methods, including radio, video, television, promoters (villagers trained to pass a message on to others through practical demonstrations), written material, workshops, extension agents, picture songs, going public (Bentley *et al.*, 2003) and plant clinics, among others. While these methods deserve more creativity and thoughtful evaluation, it is clear that radio especially can reach enormous audiences at low costs in local languages.

Although FFS reaches small audiences which then fail to pass information on to their neighbours, this intimate audience contact makes FFS an exciting tool for participatory research. FFS gives farmers and agricultural scientists a way to work together. In the weekly field-side classes, researchers and farmers break down social barriers between them, discussing topics of mutual interest (such as crops and pests). Researchers learn about farmers' conditions, while field school farmers learn new ecological information. Together, they perfect the technologies. There are many examples. Field school farmers in Central America improved traps to catch slugs (molluscs). Farmers in Indonesia created ploughing practices to kill stem borers. International Potato Centre (CIP) researchers in Peru have adapted the FFS for research. In one experience, researchers organized the FFS graduates into local agricultural research committees (CIALs) to do formal, on-farm trials of rotation crops to decrease soil-borne bacteria, besides inventing several ways of controlling bacterial wilt in potato. Such productive farmer–scientist collaboration was made possible by the information that farmers and researchers shared as a result of the FFS. The lack of shared information and distrust have hampered participatory research in the past.

FFS combines well with the alternative extension methods listed above. FFS fine-tunes IPM messages

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(both the bio-ecological background information and the technology itself), which can then be conveyed affordably to mass audiences using radio and other methods. For example, in Bangladesh farmers developed rice seed health techniques with researchers, in experiences similar to FFS. The researchers made extension videos; then the farmer-experimenters spoke on camera, to share their new information with thousands of other smallholders.

The above information is summarized from a recent review of IPM extension (Bentley, 2009). Since writing that article, I have learned of other research tools inspired by FFS. For example in Ecuador and Bolivia, the NGO World Neighbours used a method called 'Katalysis', heavily influenced by FFS, to help researchers and smallholders develop water harvesting methods for semi-arid areas. In West Africa, the participatory learning and action research (PLAR) approach adapts the FFS, bringing farmers and scientists together for weekly sessions that develop appropriate rice-farming techniques. Farmers in Mali who took a PLAR sponsored by the Africa Rice Centre (WARDA) demonstrated the resulting new techniques (e.g. land preparation, transplanting) in

four videos (see <http://www.warda.org/warda/guide-video.asp>) which will be shown across the continent in local languages. Thoughtful learning videos made with the farmer-experimenters themselves stimulate other farmers to make further innovations on their own, which researchers can document in the field (Zossou *et al.*, 2009).

Extension of FFS for sustainable agriculture must get the message and the method right. Since farmers are the largest occupation on earth and culturally the most diverse, the tricky part is to keep the quality high while reaching a mass audience.

References

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