Chapter 7
Moving On: Farmer Education in Integrated Insect Pest and Disease Management

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Abstract  This chapter explores intensive hands-on occupational education for farmers in selected European, African, Latin American countries and in south India. An Indian case study of Farmer Field Schools for Integrated Pest and Production Management (IPPM) to ensure food security and livelihood improvement is presented, to introduce discussion of the role of IPPM beyond improving agriculture productivity. Does it enable farmers to adopt practices that move food and farming systems toward a low carbon economy? Does it help mitigate the effects of climate change? Does it help small farmers reach the combined goals of sustainability and development?

India is experiencing unprecedented economic growth, based primarily on service sector development, yet income inequalities are widening and the number of poor – 300–400 million living mainly in rural areas – is not decreasing as a consequence of a deepening agrarian crisis. Agriculture for marginal farmers provides the major part of their family’s nutritional requirements; however, it is no longer the primary source of income, neither does it ensure food security. Climatic change effects, with higher temperatures and less rainfall, have reduced further the viability of farming in drought-prone areas. The tendency is for millions of poor farmers to leave agriculture, aspiring to join the service sector but more commonly ending up among the urban destitute.

The prospect for agriculture in India is thought to lie in a mix of high science applied in favourable areas to sustain the grain, legume, and oil seed output needed for basic food security; for high value crops for the rising domestic consumer and export markets; expanded investment in market-led enterprise development and skills training in rural areas; and renewed attention to farm-based livelihoods and agro-ecosystem functioning, especially in rainfed farming. This chapter addresses livelihoods and agro-ecosystem functioning, and specifically the role of IPPM as a means for strengthening agro-ecosystem resilience in the face of environmental changes.

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7.1 Introduction

Agricultural development effort over the last half century has focussed on the introduction of new technology and practices for increasing yield, and on the strengthening of agricultural services and markets. At the same time, governments in developing countries have struggled to provide to all citizens a general school-based education, focussing on primary-level numeracy and literacy, even in remote rural locations. But there has been a big gap in provision that is in itself hard to understand: the lack of serious effort to provide and sustain occupational education that addresses the core tasks of the majority of rural people, that is, their farming and post-harvest enterprises. This chapter addresses recent efforts to develop farmer-centred occupational education, in particular in relation to the management of insect pests and diseases.

Our principal concern is to explore by means of a case study from India the contribution of Farmer Field Schools (FFSs) to the provision of occupational education in Integrated Pest and Production Management (IPPM). However, we begin by briefly presenting examples of innovation in the way that opportunities to learn about integrated management of insect pests and diseases are being brought to farmers in other parts of the world. We do this in order to provide a frame of reference for discussing in the third section the potential of combining different ways of providing occupational education to farmers in India.

Although we take IPPM as our theme we believe the lessons we draw may have much wider application. Recent scientific assessments provide strong evidence that agriculture is substantially implicated in the exhaustion and degradation of natural resources (Comprehensive Assessment of Water Management in Agriculture, 2007), negatively impacts biodiversity and ecological function (MEA, 2005), is a large emitter of the gases forcing climate change (IPCC, 2007), and that the costs are unequally distributed among income classes (Srinivasan et al., 2007). Many efforts are ongoing throughout the world to reduce these impacts on the one hand and on the other to move toward creating agricultures that absorb carbon and sustain ecological functioning. The two outstanding characteristics that these efforts share is that they (i) require farmers to make informed, site-dependent decisions based on a thorough understanding of the principles of what tends toward sustainability; and (ii), depend on the millions of small farmers becoming organised to take the lead or enter into effective partnerships with other organisational actors to defend their ‘freedom to operate’ in a highly unequal competitive marketplace. Obviously, simple ‘transfer of technology’, extension campaigns and mass media messages will continue to play their part in bringing about change. Yet the key message is that resilient, sustainable agro-ecologies require confident farmers, well-educated in their occupation, who have the skills to learn and who are able to network and organise for self-directed change. We return to these points in Part III.