

Action oriented research - An observational study to analyse agro-ecosystems in Central Thailand

MSc thesis research, Charlie Price



Enjoying dinner.

Diversification from rice farming in many parts of S.E Asia, due to falling prices, has lead to the development of a diverse range of horticulture often in ditch dike systems.

The water in the ditches is utilised for aquatic food production and the dikes for vegetable and fruit crops and as such there is a close interaction between both the aquatic and terrestrial compartments of these systems.

In recent years these systems have seen an increase in the levels of pesticides applied to maintain the output of uniform blemish-free produce.

These crop protection practices, based on chemical pesticides, are widely adopted and have a variety of deleterious effects. A vicious cycle of increasing resistance to pesticides leading to increased use is common. The resulting decrease in biodiversity, due to the removal of natural predators, has been implicated in subsequent pest outbreaks in many cases.

This cycle of increased pesticide misuse has huge environmental ramifications, but it is the impacts of these pesticide residues on human health that is causing most alarm. The consumers of these crops are affected on a local level, but also a wider consumer base accessed through export markets. These impacts therefore need to be determined, before the problem escalates out of control.

My MSc research was intended to provide me with experience into how these systems are operated, and to produce a

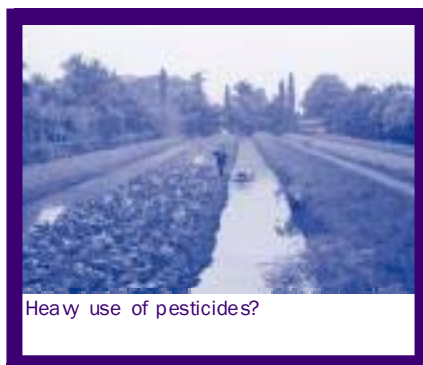
strong foundation for a more analytical PhD study, concerning residue analysis within these systems.

My project was carried out at a study site of the MAMAS project (Managing Agrochemicals in Multi-use Aquatic Systems), in the Nakhom Pathom Province of Thailand. The study was designed to take a social science / anthropological approach to data collection in order to gain a more intimate knowledge of the systems and the people that operate them.

Although structured community and household level enquiries had preceded my work, no one had simply spent time there, observing exactly what was going on. For this reason participant observation was employed in the guise of myself spending one month staying in a village with no means of communication in order to document their farming practices and observe their food collection techniques. I thought that this method would also allow me to triangulate some of the earlier work despite not being able to communicate effectively.

The month was spent entering into the daily tasks of the villagers, which included; attending Buddhist festivals and weddings (involving revolvers and copious amounts of whisky), shooting fish with homemade guns from mango trees, electro-fishing, and the nightly hunt for bull frogs in order to provide for the following days breakfast.

Well-structured observational strategies were implemented along set time frames to assess the resource allocation associated with certain activities, and to assess the risks associated with them.



Heavy use of pesticides?



The marvels of technology.

After a week or so, I felt more and more comfortable within the community and I felt my presence was becoming less conspicuous. The hospitality and generosity shown by the people was quite incredible.

This study validated the majority of the data generated so far and made a number of findings that had the potential to affect future decisions within the project; such as the identification of an intensive orchid farm and a variety of different pesticide application techniques. A number of areas of potential concern were identified, such as the direct pesticide exposure of farmers and the frequent indirect exposure of pesticides to crops, also the adoption of automated irrigation systems, which affects the requirement for a standing irrigation water source.

My study, and the wider MAMAS project, have highlighted the importance of research of this kind in order to understand more about the way in which the environment will react to the continued overuse of these chemicals in the future.

The MAMAS project is currently at its midway point but the results and awareness it has generated has lead to the development of further projects, MAPET and PAPUSSA, and it is within these three projects that I am carrying out my PhD research to produce an ecological risk assessment for agrochemical use in South-East Asia