Learning with Farmer Field Schools
Farmer Field Schools have proven to be a very effective tool for promoting farmer learning and empowerment. In particular, they encourage farmers to develop their ability to think and take decisions leading to increased self-confidence. FFS can also be integrated with other approaches for scaling up successful experiences. As the FFS approach becomes increasingly popular, new issues and challenges emerge, such as quality in their implementation, and ensuring that the core principles of the approach are maintained.

These were the issues addressed by an international learning workshop held in Indonesia in October 2002, “Farmer Field Schools – Emerging issues and challenges”. Organisers included the Rockefeller Foundation, the International Potato Centre (CIP) through the User's perspectives with Agricultural Research and Development (UPWARD) network, and Farmers for Innovation in Ecological Livelihood and Democracy (FIELD), Indonesia.

This issue includes Indian experiences as well as selections from international edition. The International edition captured the highlights of the above mentioned workshop. In most cases, included, are the shortened and modified versions of the original workshop papers.

The Editors

Dear Readers

Fundamentals of Farmer Fields Schools

– a cotton IPM FFS as an example

Prabhat Kumar

Describes briefly the objectives and principles of Farmer Field School. Explains with an example how a typical day programme is organized and the steps involved. Discusses how the effectiveness could be improved.

Farmer Field Schools – experiences from Tamil Nadu

B. Vijaya Lakshmi, G Ravi Kumar, S Pattabhiraman and Daniel Anand Raj

Briefly describes the implementation of FFS by AME in Tamil Nadu. Highlights the various issues dealt with, the learnings and the outcomes.
Towards self-financed Farmer Field Schools

James R. Okoth, Godrick S. Khisa and Thomas Julianus

A common point of concern for those considering FFS as an extension mechanism is the cost. This article describes several innovations to improve the financial sustainability of FFSs that have been developed and introduced by the East African Sub-regional Pilot Programme on Integrated Production and Pest Management (IPPM). The cornerstone of these innovations has been the evolution of the original grant system (semi-self financed FFSs) into an educational revolving fund (self-financed FFSs), supported by the proceeds of commercial plots that are managed alongside the study plots. Local governments, NGOs and rural micro-finance institutions are now becoming more and more interested in the approach, and in Kenya some farmers have even begun gathering resources together to fund their own FFS activities, the so-called self-sponsored Farmer Field Schools.

The greening of Self Help Groups

Seema Tripathi and Shiraz Wajih

Self-help groups for women living in the Terai of Eastern Uttar Pradesh have been used not only as appropriate institutions to help women improve their socio-economic status, but also to mobilise them as agents of change. The process of “greening” these groups towards sustainable agriculture has brought together many different extension and support mechanisms, including agro-service centres, master trainers and Farmer Field Schools.
FFS: beyond the rice field

Editorial

IPM Farmer Field Schools (FFSs) for rice farmers in Asia have been immensely successful. Since the Indonesian National IPM Programme initiated the first FFS in 1989, the approach has reached over two million rice farmers. These farmers have increased their yields and incomes, reduced pesticide use, and use inputs such as water and fertilizer more efficiently. They have gained the knowledge and practical experience necessary to manage their agro-ecosystems sustainably. They use their knowledge and understanding to innovate and solve their own problems, and share their knowledge with their neighbours. FFS graduates have become leaders in establishing sustainable agricultural systems in their villages.

The success of the IPM FFS in Asia has attracted the attention of development workers – and donors – around the world. As with every successful approach, there is a strong movement to copy and adapt it to other situations. The FFS concept has been developed far beyond IPM in rice. FFS now exist in over 30 countries around the world, encouraging farmer learning in areas as diverse as dairy farming (Minjauw et al p.8), conservation agriculture and even community health. These approaches do not all fit the original FFS model exactly. Adaptations are necessary to meet the needs of different topics (such as IPM in tree crops, Mangan p.29) or adapt to different cultural situations.

This issue of LEISA looks at the development of the FFS concept beyond rice IPM and into a seemingly limitless realm of possibilities for assisting and educating farmers. But how far can the concepts and principles of the Farmer Field School be developed and modified, and what are the core elements that need to be maintained to reproduce their original success?

A new blueprint for agricultural development?

The IPM Farmer Field School has become a model approach for farmer education in Asia and many parts of Africa, Latin America and the Middle East. The FFS have, many standard features, each of which contributes to their success. The schools usually comprise season-long regular meetings with a set pattern of activities, including agro Ecosystem Analysis (AES), presentations and special additional topic, as well as group building activities. Kumar (p.5) describes the elements that appear commonly across successful FFS programmes.

But Farmer Field Schools are no blue print. A FFS is a learning activity, not an institution although FFS often give rise to new organizations, groups and networks through a process of building capacity and developing connections between people with common interests. FFS are often combined with other approaches and can be integrated into existing groups and extension services. For example Tripathi and Wajih (p.23) describe the role they play in the “greening” process of bringing the topic of sustainable agriculture to women’s self-help groups in India.

The challenges of expansion

Every new adaptation and expansion, and every move away from the original setting involves a trade-off. The original IPM FFS’s in Indonesia were developed in a specific context. For example, considerable knowledge on rice pests and the rice ecosystem was already The FFS were developed to encourage farmers to learn about ecology and gain knowledge that would enable them to control pests and manage their rice ecosystem productively, but not necessarily to develop new knowledge. In some areas, however, there is a need to develop new, locally specific knowledge and technologies. One such example is the CIP sweet potato programme (see Sources, p.32). In such cases, approaches such as PTD can add a new dynamic dimension to a FFS programme (Thijssen p.7)

The process of developing critical thinking, introduced in IPM FFS, can be utilised to address other topics, like human ecosystems.

FFSs are suitable for rapidly scaling up new programmes. The basic curriculum is well developed, and farmer graduates can become farmer trainers, as the hands-on nature of the training means that farmers can easily facilitate the learning activities. However, the manner in which the scaling-up process is developed, particularly the initial training, can be critical to the success of the project. The FFS approach needs to expand from a well-trained nucleus of facilitators who have a good understanding of the concepts involve, as well as the skills to facilitate FFSs effectively (Vijayalakshmi et al. p.11)

As with other agricultural extension activities, the cost of FFS becomes a major issue as the approach becomes more widespread. Innovative solutions to this issue have been developed by a FAO /IFAD project, based on pioneering work by women’s groups in their project area. Okoth et al (p. 27) describe the self- financing methods developed by this project.

Many different groups now call their activities “FFS” and fears are beginning to emerge that they may be making major trade-offs that lower the quality of the approach. Initiators of the Farmer Field School movement fear that the term “FFS” may become jargon to add to project documents, without those involved fully understanding the basis for a successful FFS programme. One of the most interesting aspects of this issue is the range of different perspectives presented on the basic question, “What makes a Farmer Field School a Farmer Field School ?”. These views are based on different experiences in different environments, with different limited factors. It could also be asked, if a programme has a beneficial impact, does it really matter whether it fulfills all the criteria for a “real” FFS?

These questions may have more than one answer, and need to be addressed and guided by those involved or wanting to be involved, in farmer education. Farmer Field schools, like any other approach, are a tool, and their effectiveness depends on both the context and the way in which they are used. They are, however, a very special tool. They cultivate a critical, holistic and creative way of thinking. The process of learning about ecology leads farmers to a greater understanding of the interconnectedness of their environment and the broader impacts of the decisions they make. Such understanding adds to empowerment.
Fundamentals of Farmer Fields Schools
– a cotton IPM FFS as an example
Prabhat Kumar

What is Farmers Field School (FFS)?
As the name suggests Farmer’s Field Schools (FFS) are the schools for the farmers outside the classrooms and on the farms. It operates with the principles of the non-formal education and most of the sessions and contents are based on the adult learning principles.

What are the objectives of an FFS?
In an FFS, the emphasis is on holistic crop management wherein pest management is considered as a part of the overall crop management. Each FFS has four basic objectives which are as follows:
• Grow a healthy crop
• Conserve natural enemies of crop pests
• Conduct regular field observations
• Make farmers competent in their own field
• Reduce production costs

The Field Schools differ from other prevailing extension methods by having the following characteristics:
• FFS are season-long crop and field based training based on pre-identified problem and curriculums.
• Assist each participating farmer to get deeper insights regarding their crop ecosystem through individual evaluation.
• Assist farmers in discovering knowledge and also on the methodology as to how to learn more regarding a problem.
• Developing capacities in farmer to farmer dissemination of the technologies.

Cotton FFS is usually 24 weeks long and covers the topics from field preparation to harvesting. The trainers for these FFS have been trained and are fully exposed to the field problems. Through FFS the capabilities of the farmers in making informed decisions regarding crop and field management based on crop ecology is enhanced.

Regular field monitoring is done through AESA (Agro-Ecosystem Analysis). Decisions are made and implemented.

Selected from the village groups of 25 to 30 farmers participating in the Field School meet once a week for 3-6 hours. They participate in a series of activities including field monitoring, analysis, discussion on technical topics through group exercises.

The Field School provides an opportunity for these farmers to master its basic skills to enable them to make informed field management decisions.

A DAY IN A FARMERS FIELD SCHOOL
A typical FFS session is presented as follows:
7:30 AM
Going to the field in groups and observe general field conditions, collect sample plants and insects, make notes and gather live specimens.

8:30 AM - Agro-Ecosystem Analysis (AESA):
This activity is the core in the weekly process. Each team uses their field samples and notes, to create visual analysis, combining key factors such as pests, predators’ population, plant health, field conditions, weather and current management treatments.

9:30 AM - Decision making:
The output of analysis is a set of field management decisions discussed thoroughly in small groups and defended in open discussion in the presence of all the participants. “What if...” scenarios further hone analytical skills during the discussions among groups. Through right kind of questioning skills, the trainers facilitate each and every aspect of field activity.

10:00 AM - Special topics:
These topics are linked to crop stages and/or to specific local problems. This part of the curriculum is tailored for each ‘Farmers Guide Activities’ mastered by facilitators during their extensive training. These exercises require more fieldwork. Topics covered include pest management, INM, IDM, marketing, post-harvest, crop physiology, health and safety, economic analysis, and water/fertilizer management.

11:30 AM - Group dynamics:
Activities in problem solving, communication, leadership and team building are conducted every week to strengthen group cohesion and to help participants develop organizational skills.

12:00 Noon - Review and Planning:
Each school maintains an IPM and a Local Practice Plot of cotton for comparison of IPM field management versus a locally developed practice. Weekly summaries of developments in the field are conducted by reviewing results of the agro-ecosystem analysis. At the end of the season the group does final analysis of yields and economics. Other long-term activities are reviewed during this session. Such activities may include the development of ‘Insect Zoos’ for learning about plants-insect and insect-insect interactions; dry insect collection, INM trials and defoliation studies. Planning future field school activities and post– FFS activities is also done at this stage.

QUALITY BENCHMARK INDICATORS
Directly related to the programme’s IPM principles is a set of quality benchmark indicators. At the end of the Farmers Field School programme, an IPM farmer
growing cotton crop should be able to perform the following tasks:

**Grow a healthy crop**

1. Choose a variety, resistant or tolerant to local disease and insect complexes suitable for local soil and micro-climatic conditions.
2. Treat the seed with appropriate chemicals and other biological agents like Trichoderma etc. to prevent damage by the early sucking pests.
3. Apply correct amounts of nutrients in combination with organic manure and chemical fertilizers (N, P, K and Zn) based upon soil conditions using the principles of Integrated Nutrient Management.
4. Identify the various insect pests and their life stages and also monitor their early build-ups to take appropriate preventive actions so as to reduce the application of pesticides.
5. Safe and tested botanicals form an integral part of the pest management options along with local and indigenous experiences of the farmers.

**Conserve Natural Enemies**

1. Recognise natural enemies in the field.
2. Explain the effects of pesticides on natural enemies.
3. Promote survival of predators by managing habitats either through inter-cropping, row planting etc.

**Observe field on a weekly basis**

1. Recognise crop eating insects, diseases and damage by rats in the field.
2. Know the population density of an insect in relation to its natural enemy density defines pests.
3. Accurately gauge field conditions of insect populations, diseases, weeds for taking timely decisions.
4. Analyse the density of insects and natural enemies, taking into consideration crop health, potential yield, water supply and other factors affecting yield. The analysis should lead to field management decisions including agro-economic and pest management practices.
5. When specific insect densities must be reduced by use of insecticide, apply the insecticide in proper dosage and delivery and with minimum exposure to self and non-target species.
6. When disease or insect population is high, adjust varietal choice for the ensuing season.

**FARMERS FIELD SCHOOL RESULTS**

**Do farmers attend?**

Attendance rates have been high; in fact, many field schools have recorded a “drop in” the rate of non-registered participants rather than “drop-out”. The goal of each school is that every participant thoroughly masters the skills and principles of IPM farm management. To accomplish this, farmers are encouraged to draw on their experience and knowledge of local agro-eco-systems. The result is an intensive participatory learning environment. Participants are selected in consultation with village leaders who officially announce those selected as participants. This official recognition of participants enhances their desire to do well in school activities.

**Do farmers learn?**

Broad based studies indicate that not only farmers learn, but their attitudes are changed related to farm inputs including chemical use and field management decisions. Over 600 farmers have completed full season field school activities as on March 2002, while 5000 others have attended local ‘Field Days’, IPM People Theaters (Kala Jatras) and other field school sponsored activities. Studies are underway to quantify the successes. Experience in one of the FFS in Raichur, Karnataka proved that farmers could save more than Rs.1400/Unit area by making informed decisions regarding the crop management compared to local/farmer’s practice plot.

Normally evaluation is done with each participating farmer at the beginning, middle and towards the end of the FFS. Based on this periodic evaluation, trainers attend to the individuals needs and interests.

**Do trainers learn?**

With passage of time and experience of conducting FFS, trainers sharpen their interactive skills, skills for conducting sessions and converting a field problem into a learning opportunity. That is the reason, an experienced trainer is assisted by a new trainer in conducting FFS. Thus, it is a two-way empowerment process, where farmers and trainers empower each other.

**What do farmers do after their Field School?**

Besides improving their farming practices, farmers tend to follow-up their field schools with additional activities that benefit themselves as well as the community. In several countries, the learning momentum that is generated through the FFS process, promote formation of an informal forum for farmers to share their experiences and problems. However, the current FFS on cotton has just started picking up the right momentum and it would take sometime to reach that intensity.

**LIFE AFTER FARMERS FIELD SCHOOL**

1. **Farmers Archive**

Consistent monitoring, high level of motivation, team work, problem solving ability, extensive facilitators preparation, and a fast moving logistics / management support team is needed to achieve wide spread implementation of Farmer’s Field School. There are several activities that the farmers group could take up, once they have learned the basics of crop ecosystems and problem analysis.

2. **Farmer to Farmers Spread**

The outstanding farmers from these FFS could be selected, grouped and re-trained to act as Farmer Trainers to further take the newly acquired knowledge and skills to others in their community. Normally, two weeks of training of trainers (TOT) includes:

- Processes of the Learning
- Evaluation and Monitoring
- Baseline Survey and Curriculum development
- Converting problems into learning opportunities
- Fundamentals of Ecosystems
- Agro-Ecosystems Analysis
- Discovery Learning Tools

Once the farmers are through the TOT, the first season of training, they are tied up with an experienced trainer to further sharpen their training skills. Once fully confident, they start their own FFS.

3. **More experiments to learn more**

Important activities that normally farmers group does after the FFS include: working on some key areas like management of a key insect-pest, biological and non-chemical options for diseases and pest management, learning more agronomic parameters and participatory breeding program. The group normally requires regular follow-ups, in terms of monitoring and technical assistance, to keep going.

Based on observations made by author, formerly Sr. Team Member, Farming Systems, AME, Bangalore.
PTD practitioners: back to school?

Rik Thijssen

Farmer Field Schools (FFS) and Participatory Technology Development (PTD) are both participatory approaches for promoting sustainable agricultural development. They both work towards improving farmer decision-making capacity and stimulating local innovation. But what are the differences? Are these approaches overlapping or complementary? And what can they learn from one another?

FFS were developed in the late 1980s to train Indonesian rice farmers on integrated pest management (IPM). They were developed in response to the Green Revolution. The aim was to re-educate farmers in agro-ecology and develop their critical thinking, based on the knowledge already available about rice ecosystems. Farmer field schools focused on bringing this knowledge and understanding to farmers through group learning, based on adult education principles.

PTD was also developed in the late 1980s. The concept arose out of the ideas and “best practices” of small NGOs and the farming systems research and extension movement. PTD refers to a process of joint experimentation by development workers and farmers. The aim is to combine the best of local and external knowledge, and work together to generate and disseminate agricultural innovations.

Contrasting elements

PTD activities include:

- Critical analysis of community-managed changes in the agro-ecosystem;
- Identification and use of indigenous technical knowledge;
- Reconstruction of successful local innovation;
- Self-organisation and
- Self-implementation of systematic experiments.

These can sometimes be difficult to accommodate in the FFS setting. This is mainly because of the creative limitations of a “school” set-up, and the time limits on FFS imposed by a project approach. Not least, limitations are imposed by the attitude of many FFS-facilitators: they can be teachers, but they are not necessarily capable facilitators of a participatory approach, as intended in the PTD philosophy.

The crucial contrasting elements between the two approaches - FFS and PTD - could be summarised as follows:

- Perception of “participation”: while PTD promotes a bottom-up learning environment based on indigenous knowledge, FFS provide a more traditional teacher-student setting for learning about knowledge held by outsiders.
- Attitudinal changes: where PTD seeks major changes in attitudes of researchers and extensionists, FFS could be seen as the most effective way to accommodate the existing attitudes of these professionals.
- The learning process: although both approaches are largely based on self-discovery activities, FFS set “fixed” learning targets, while PTD is an open-ended process.

Conclusion

Clearly, the basic concepts of the two approaches are complementary, and the FFS approach provides fertile grounds for PTD. It is, however, important to distinguish between enhancing the basic knowledge of farmers so that they can experiment according to their specific circumstances (FFS), and agricultural technology development by or with farmers (PTD).

FFSs fill gaps in local knowledge, conduct holistic research on agro-ecosystems, and increase awareness and understanding of phenomena that are not obvious or easily observable. Their strength lies in increasing farmers skills as agro-ecosystem managers. The strength of the PTD-platforms lies in their systematic evaluation of locally acceptable, technological alternatives, as well as their ability to influence the research agendas of formal research and extension systems.

Growing interest in both FFS and PTD by a wide range of financing and implementing organisations reflects an underlying perception that they form viable new alternatives. Both approaches will evolve further, and their development should be carefully managed so as to draw on their underlying synergy. In order to fill the basic knowledge gaps that still exist, PTD groups can borrow from the FFS principle of educating farmers on agro-ecological components, patterns and processes. In turn, FFSs should pay more attention to revising the attitudes of agricultural development professionals to enable them to become more involved in PTD work.

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A full version of this paper is available at www.eseap.cipotato.org/upward

References:


Connecting and expanding knowledge

During an ethno-botanical study in Taropo Village on Sumbawa Island in Indonesia, a local farmer explained about a plant species known as “pupuk” (fertiliser). As he pulled out the small, clearly leguminous shrub, the many root nodules were very evident. The study team asked the farmer why this plant was named “pupuk”. He said that “pupuk” had the ability to improve soil fertility and this species was, therefore, valued during fallow periods. We also checked with this farmer if he knew what the function of the root-nodules was. Without any hesitation, he claimed that they were for water storage. Small farmers possess a good deal of wisdom and experience, with which they manage to survive and produce for their families. But they do not know all of the components and processes that play key roles in agro-ecosystems.

What would be the added value if the farmer from Taropo Village knew about the nitrogen-fixing capacity of root nodules of “pupuk”? First, it validates the local observation that this plant species can play a role in soil fertility improvement. It could also provide the farmer with information that explains other indigenous knowledge held by the community, or contradicts certain local beliefs. Farmers could, for instance, draw a link to other species with root nodules, and thus widen the range of locally available species with potential for soil fertility improvement. The monitoring aspect of FFS, using indicators, could provoke some comparative studies, where farmers evaluate the real potential of different species. Finally, based on an increased awareness and understanding of a phenomenon that is not obvious or easily observable, a farmer like the one from Taropo Village could become a valuable contributor to a team working on agricultural technology development.
Field schools for Kenyan dairy farmers

B. Minjauw, H.G. Muriuki and D. Romney

In the Central and Rift Valley Provinces of Kenya, approximately 90% of rural households are agricultural and of these, 73% have dairy cattle. Studies in Rift Valley Province have shown that smallholder farmers consider the major constraints to increased dairy production to be endemic diseases, particularly tick-borne diseases (TBD), and inadequate supplies of feed resources.

Currently, over 1000 Farmer Field Schools (FFS) on integrated pest management (IPM) and/or integrated soil management are being successfully implemented in Kenya - and many more in Africa as a whole. Can the FFS methodology be developed for similarly complex issues like animal production and health, where responses to interventions may not be as fast?

In 2001, the DFID/FAO project on Farmer Field Schools for livestock began adapting and testing the FFS methodology for animal health and production, focusing on smallholder dairy farmers. Ten pilot FFS have been established in five different agro-ecological zones in Central, Rift Valley and Coastal Provinces of Kenya. In implementing these FFS, Agro-Ecosystem Analysis (AESA, see Gallagher page 5) is adapted to make animals the focal point, and participatory technology development (PTD) techniques are utilised to address livestock-related issues. The project is also developing approaches and methods to test and introduce integrated methods to control tick-borne diseases and helminth infections, and to improve animal husbandry practices and the efficiency of utilisation of available feed resources within the crop-dairy system. These activities contribute to the ongoing DFID Smallholder Dairy Project (SDP).

Initiating FFS for livestock

All facilitators were trained during a two-week training of trainers (TOT) course. This was run as a learning workshop, where participants learned the basic principles of the FFS and at the same time used them to develop specific examples of activities, tools and techniques suitable for smallholder dairy production systems.

Facilitators trained in FFS approaches worked with established groups to prioritise the main constraints to improving the efficiency of milk production, using participatory techniques (pair-wise and matrix ranking). Issues highlighted for all groups were similar and included, in order of priority: 1) feeding strategies; 2) fodder establishment and conservation; 3) calf rearing and mortality; 4) diseases (tick-borne and mastitis); and 5) water management and breeding. Equal priority was given to the last two issues. Based on the results of this exercise, individual grant proposals were prepared by each group, including a detailed work plan with a corresponding budget.

A grant of US$600 was deposited in an account controlled by elected members of the FFS group to cover the cost of field activities and the cost of facilitation (the transport and lunch allowances for the extension worker). Management of this budget empowered the farmers to control activities covered by the FFS and ensured that the extension services offered responded to farmers actual priority problems and needs. The FFS groups usually meet on a weekly basis, but some vary their frequency to once every two weeks. The main participatory techniques used, including Agro-Ecosystem Analysis and Participatory Technology Development, were adapted to suit the specific needs of learning about livestock issues. For livestock FFS, understanding the impact of animal health on productivity and how to control disease occurrence, is of major importance.

Activities

Since the main objective of the FFS is to develop farmers learning skills, rather than to increase knowledge on a particular technical issue, record keeping and accurate observation are important components. Agro-ecosystem analysis is designed to improve observation skills and to develop decision-making skills, and this technique is utilised to record and observe the results of the PTD experiments. This observation process forms the basis for understanding the interactions between livestock and other elements of the ecosystem, as they...
relate to the problem or technology being studied. For example, where the subject is expected to have a direct outcome on the animal, such as a feeding or health management practice, the AESA is focused on the animal.

In practice, farmers are divided into small groups and they observe an animal from one of their farms. Observations are guided by a checklist that includes general information such as the life history of the animal, parameters defining the level of production, and observations describing the health status of the animal. Each group presents their results in a standardised format to the rest of the school. These findings are then discussed, allowing farmer-to-farmer information dissemination as well as an evaluation of progress.

The establishment of the PTD process is one of the biggest challenges in livestock FFS. Indeed, while it is relatively easy to design a comparative study for integrated pest management in crops, the high economic value of cattle does not permit experiments that might involve any risk or even short-term losses in animal productivity. Therefore, one of the objectives of the on-going livestock FFS project is to establish the kind of technology development that can be performed without any risk or detrimental effect, while still allowing farmers to experiment with new technologies. Three types of “PTDs” have emerged from on-going activities:

1) Classical experiments: Although livestock are the focus of livestock FFS, many of the activities of the livestock keeper are crop-related. This is particularly the case for fodder production and grazing improvement. “PTDs” include:

- Establishing alternative sources of fodder. A range of fodders are planted using different planting methods, treatments and/or different fertiliser regimes.

- Preservation of fodder using different techniques such as silage making and a baler for hay.

2) Comparison of existing farmer practices: Observation and evaluation of the different practices of farmers, within and outside the FFS group, provides the opportunity for farmers to address issues that do not lend themselves to experimentation because of the high risk in terms of animal well-being or high costs for implementing the experiment. Examples include:

- Tick control: comparison of efficacy of different acaricides and/or different application regimes.

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Example format for the AESA in Dairy FFS.

<table>
<thead>
<tr>
<th>AESA number</th>
<th>Week/date</th>
<th>Sub-group name</th>
</tr>
</thead>
</table>

**GENERAL INFORMATION**

- Breed
- Name/tag
- Sire name and breed
- Dam name and breed
- Date of birth and age
- Time of observation
- Weather condition
- Last treatment: date and drug used

**OBSERVATIONS**

- Hair/coat
- Body condition
- Ruminating
- Respiration
- Temperature
- Ecto-parasites
- Discharges
- Dung
- Urine
- Wounds
- Movement/temperament
- Eyes condition
- Mucus membrane colour
- Lymph nodes
- Housing and shading conditions
- Presence of other animal/insects
- Noises

**RECOMMENDATIONS**

- How to improve the AESA records
  - Parameter to be included
  - Quality of observation

- What needs to be done to improve productivity?
  - Which treatment should be used?

- Vaccination efficacy: comparison of disease incidence in immunised and non-immunised animals

- Comparison of milk quality and losses due to milk spoilage in relation to the quality of the milk parlour infrastructure.

3) Ex-post analysis: In ex-post analysis, farmers compare actual experimental results with practices that were used before. Results may be quantitative, if records are available from the past or from similar situations, or qualitative, where farmer perceptions are evaluated. This also includes the “Stop and Go” method, where the treatment is stopped and re-introduced several times to show its effect, using an animal as its own control. Examples include:

- Water availability: the amount of water available to the dairy animal is changed according to the calculated needs. Milk production using the new regime is compared with previous records of production using the old regime.

Photo: Bruno Minjauw
- Genetic material: artificial insemination is used to compare calf birth weight with other calves or with expected weight.

- Prophylactic programme: a programme of preventive treatment is applied to a group of cattle and their performance is compared with previous productivity and with neighbouring herds. This could include de-worming, a trypanocide and/or vaccination against prevalent diseases.

Not every problem can be easily dealt with using a “learning by doing” approach. Some problems, such as those relating to contagious diseases, for example, are not suitable or too dangerous for experimentation. Others may be too abstract to be demonstrated physically, such as the importance of epidemiological status or immunological reactions, and these can be addressed in special topic sessions where issues are discussed. Since the facilitator cannot be an expert in every subject, he or she will help the farmer group to invite the right person to talk about the subject chosen by the farmers.

This empowers the FFS group to contact other organisations such as NGOs or national or international research institutes. Special topics can also include livestock and non-livestock related issues, giving farmers the chance to access the information that addresses their priorities at a particular moment. For example, talking to the community about trypanosomiasis when the village is threatened with a cholera outbreak is unlikely to be addressing a priority issue. Advice about cholera control will certainly be more relevant.

Conclusions

If scientific research is to achieve a real impact on farm productivity and livelihoods, new methodologies for dissemination of information have to be developed. Participatory approaches, which facilitate farmer demand for knowledge, give them the opportunity to choose, test and adapt technologies according to their needs. Through participation in FFS, farmers develop skills that allow them to analyse their own situation and adapt to changing circumstances. The ILRI livestock FFS project, funded by the DFID Animal Health Programme, is testing and adapting a participatory method to create a sustainable relation between farmers, extension officers and research institutes. These relationships are thought to be a fundamental tool, allowing scientists to collect appropriate data and to transform developed technologies into products adapted to farmers needs.

Using the FFS approach, the project is developing an innovative process through which farmers adapt existing technologies and try out new ideas. These ideas are developed through interactions between farmers, scientists and extension workers. This unique relationship is an excellent platform for epidemiological studies using participatory methods, to disseminate information on disease prevalence, to design relevant participatory technology development, and to introduce more successful disease surveillance and control strategies.

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References:
Farmer Field Schools - Experiences from Tamil Nadu

B. Vijayalakshmi, G. Ravi Kumar, S. Pattabiraman and Daniel Anand Raj

AME\(^1\) is devoted to improving the livelihoods of dry land farmers through promotion of ecological agriculture in the Deccan Plateau. AME has been working in the dry regions of Tamil Nadu, promoting crop improvements through various participatory learning processes. Farmers Field Schools (FFS) is one such process.

The FFS is a tool to build capacities of farmer groups and NGO staff in managing crop ecosystems, to make them better decision makers in promoting sustainable use of resources at the cropping, farming and watershed systems levels. Farmer Field School is a participatory approach, wherein training is imparted on the basis of farmers needs. Once the need is identified, season long practical training is imparted emphasizing on learning through discovery. Training is provided in the farmers field itself which enables better understanding of the field problems, their management and control. During the training, a holistic understanding of the agro-ecosystem is facilitated among farmers.

AME started its work in the operational areas of Trichy, initially by conducting a Rapid Appraisal of Agricultural Knowledge Systems (RAAKS), in 1997. The process brought out a number of problems being faced by the farmers of which pests and diseases management and soil-water conservation were the indicated priority areas. Thus, based on the farmers needs assessment, AME started its interventions with Farmer Field Schools with the objective of building capacities of farmers (mainly women in SHGs) in integrated pest management. However, AME has made some value additions to the conventional approach by integrating experimentation through Participatory Technology Development (PTD) and facilitating multi-stakeholder concerted effort in conducting FFS. The various stakeholders involved were Department of Agriculture (DoA), Central IPM Centre (Trichy), NGOs and farmers.

FFS which started by training farmers and NGOs in Integrated Pest Management of paddy crop with 3 NGO partners in 1997, expanded to over 14 NGOs by 2002 including crops such as Groundnut, Cotton and vegetables. A total of 86 FFS have been organised, of which, 36 were conducted on groundnut, 23 on cotton, 20 on paddy and 7 on vegetables. A total number of 1669 farmers and 245 NGO staff have been trained through FFS. Of late, FFSs are being conducted by the trained NGO staff themselves, thus, spreading it further.

**FFS - A Learning Process**

Though FFS was started to mainly train farmers in a specific technology with set objectives, as the process progressed, a number of issues started emerging, which led to refinement of strategies and approaches. Following are the approaches that have been followed in making FFS more effective.

### 1. Dealing with multiple crops

FFS was initiated with a single crop for an entire season. Gradually, it was found difficult to sustain attention and participation of the farmers, owing to their diverse needs. For example, a farmer, who attends FFS for a groundnut crop finds it difficult to concentrate only on it, as the time of groundnut crop harvest coincides with paddy sowing. It was also observed that the needs of farmers are not restricted to just one technology of a single crop.

Therefore, the focus of FFS was shifted from single crop approach to a farming system based approach. This approach enabled inclusion of new components required for sustainable farming, such as enhancing organic matter. Technological options for enhancing organic matter content of the soil viz. FYM application, vermicomposting, on farm biomass generation through tree planting etc. were integrated.

Gradually, experimentation and technology development was also included into FFS through Participatory Technology Development (PTD) which incorporates the principle of exploring various technological options (both indigenous and external) on issues identified in crop management. When the FFS is designed and facilitated to address the core issue, it motivates for immediate adoption. The need for good quality seed production, input supplies and marketing of good quality produce from FFS villages etc., were identified as important during the FFS.

Suitable technologies for other crops were also suggested, whenever required. Based on learnings and experiences, the process was built progressively in the next seasons to address complex needs (such as green manure and good quality seeds) at the cropping and farming system levels. This also enabled continued linkage with farmers.

<table>
<thead>
<tr>
<th>Crops</th>
<th>Number of FFS organised</th>
<th>Number of Farmers trained</th>
<th>Number of NGO staff trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy</td>
<td>20</td>
<td>510</td>
<td>99</td>
</tr>
<tr>
<td>Groundnut</td>
<td>36</td>
<td>573</td>
<td>78</td>
</tr>
<tr>
<td>Cotton</td>
<td>3</td>
<td>451</td>
<td>53</td>
</tr>
<tr>
<td>Vegetables</td>
<td>7</td>
<td>135</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>86</strong></td>
<td><strong>1669</strong></td>
<td><strong>245</strong></td>
</tr>
</tbody>
</table>

\(^1\)AME had begun working in Tamil Nadu as early as 1986 at Pondicherry, providing innovative training in ecological agriculture and alternative methods of farming. At present, AME works in 10 districts, with three NGO networks – LEISA, ROOTS, and Vasantham consisting of more than 100 NGOs, in Groundnut, Cotton, Paddy, Vegetables as well as farming systems and watershed development. AME was existent as a bilateral project before it became an Indian organization in 2002.
throughout the year thus, strengthening social mobilization, which resulted in increased attendance in FFS sessions.

2. Family approach

It is generally observed that the onus of technology adoption lies entirely on those who have undergone the training - for instance, adoption of light traps by women. The use of light traps requires going to the fields, which are generally located away from the homesteads in odd hours of the day (6 – 8 PM). In cases where women are trained, the male members of the family felt that it is the responsibility of the woman to do the activities. This increases the drudgery, in turn leading to non-adoption of technologies. Thus, though women enthusiastically learnt technologies, they were not in a position to practice, thereby leading to reduced interest among women to attend FFS.

To enable sharing of responsibilities and bring about a gender balance, a family approach, which required participation of both male and female members of a family, was adopted. The family approach not only resulted in higher attendance of farmers (85 – 90%, as seen in the case of C.R. Palayam village of Trichy where FFS in cotton was facilitated), but also rapid spread of technologies. The female members discussed issues in their women self help groups while male members formed a farmers club, which was also actively involved in spreading the technologies.

In certain cases, children attending the FFS have also been influencing their parents in deciding pest management options. As part of FFS, drawing competition involving children in managing Red Hairy Caterpillar (RHC) was very low even among farmers who attended FFS. This was mainly due to non-availability of quality inputs at the required time and lack of support during the post harvest stage.

It was on these lines that widening the stakeholder base from just technical institutions such as Department of Agriculture, CIPMC etc to others such as input suppliers, financial institutions and marketing agents was taken up by AME. Collective input purchase enabled almost 90% of farmers trained under FFS, to experiment with the technological options learnt through FFS. A farmer group in Thirumanthurai village of Perambalur district also undertook collective marketing of cotton harvest which resulted in an increased amount of Rs 100 per quintal. This has encouraged other farmers who were not a part of FFS also to join the FFS farmers groups in adopting the technologies.

Case 1: Farmer’s club of Thirumanthurai Village, Perambalur District

Kharif 2002 was an important year in the lives of around 20 farmers of Thirumanthurai village. Despite the drought situations, they took up low external input cotton cultivation, in the FFS facilitated by RDS and AME Foundation. One of the FFS participants recorded a net return of Rs 10000.00 per acre, which was a complete turn around for him, while he incurred heavy losses owing to investing and using fertilisers and pesticides in 2001.

The process also included sharing of results through inter farm visits, meetings etc, which strengthened cohesion among farmers. As a result, they got organised into a farmers club. This was later recognized by National bank for Agriculture and Rural development (NABARD) under its VVV (Vikas Volunteer Vahini) Clubs scheme, which will support the maintenance cost of the club. This club was instrumental in collective marketing of 20 q of Cotton, resulting in an extra income of Rs 100.00 per quintal.

This is an example of institutionalisation beyond the FFS.

3. Bringing together various stakeholders

It was found that adoption rates of technological options tried out in FFS was very low even among farmers who attended FFS. Participation of all the stakeholders is essential for enabling farmers in leveraging the support for adoption of technologies in a sustained manner. Towards this end, the farmer groups in Pudukottai and Perambalur were linked to National Bank for Agriculture and Rural Development (NABARD), by which it could access financial assistance for training programmes and input purchases (Case 1).

4. Promoting off-season activities

In rainfed areas, there is a need & demand for creating local employment to generate income for small farmers in off seasons, extending upto 9 months in an year. This situation opens up options for starting agri-based enterprises (like seeds production, value addition, collective marketing) among the FFS trained groups. These have the advantage over others types of enterprises, in terms of easy raw material availability, little investment on skill building and in easy marketing for meeting local needs.

For example, a farmer in Panikondanpatti village of Pudukottai
district was trained in paddy, cotton and groundnut. As part of PTD, groundnut varietal testing was taken up and CO 3 variety was identified to be a good performer. The demand for quality seeds prompted a farmer to go in for breeder seed production of this variety, which had an assured buyback beyond his requirements. This proved to be an income generating activity, which has now attracted many farmers.

Another alternative, which is under consideration by women SHGs, is that of value addition and collective sale of pigeon pea (which is mainly grown as an intercrop in Groundnut based farming systems), which can earn higher net returns for farmers. On the production side, an assured market demand will increase the area under pigeon pea. This will also create impact at the household nutritional security and health aspects. These enterprises will create visible changes in the livelihood levels of the farmers.

5. Improving documentation and sharing

Data collection and documentation are necessary components of FFS for facilitating sharing of experiences in a more systematic manner. Analytical information and inferences from FFS data will support the monitoring and evaluation processes. The formats and logistic arrangements should be in place before initiating the process. Arrangements for documenting the follow up exercises and the independent spread are vital, to realistically arrive at impact created, during various stages.

AME has been facilitating national level interactive workshops to share on farm results. Farmers from FFS groups have been able to share their experiences with adequate confidence in such multi stakeholder group based on data collected during the season. One such example is it was suggested by the cotton round table to increase intercrops to the extent of 20% based on previous data derived from FFS conducted in cotton during Kharif 2001. Recognition to farmers in such a platform also encourages them to serve as better extension agents enabling wider spread.

Major Outcomes

FFS in various crops have built up the capacities of farmer groups and NGO staff in managing crop ecosystems, to make them better decision makers in promoting sustainable use of resources at the cropping, farming and watershed systems levels. It has helped farmers change their attitudes considerably from the “all insects are pests” mindset and resorting to indiscriminate pesticide sprays. Post FFS scenario has proved that pesticide-free crop can be possible even in crops like Cotton, Paddy and Vegetables (like Brinjal).

Improvement in farm income and soil quality following the use of intercrops as a pest management option was another outcome. In Groundnut, trap crops (Cowpea, Castor, Pigeon pea, Sunflower) and other crops such as Sorghum / Bajra/ Blackgram performed multiple roles of income generation, insurance crop, soil nourishment etc.

FFS has effectively combined the indigenous knowledge with scientific technologies resulting in innovations (Case 2).

The farmers who learnt the management options in certain specific crops started applying it to other crops. For instance, the FFS farmers in P.K. Agaram village of Trichy district who were trained in cotton began applying the available technologies to other crops such as onion and groundnut and got good results.

FFS had visible impact on women in agriculture. The capacity building process enabled them in getting due recognition in the family while taking decisions on crop management. The drudgery involved in lifting water for spraying pesticides was reduced drastically as alternative control options were understood. Intercropping remained largely the domain of women as they had the control on the income realized from it while it also influenced the nutritional security of the household.

The ultimate outcome of FFS was a decrease in cost of cultivation leading to higher net incomes. New avenues like collective marketing that opened up in cotton helped in increasing further the net incomes.

Conclusion

FFS approach is considered the most successful among various agricultural extension methods. However, the adoption of the technologies disseminated through FFS largely depends on the initiative and interest shown by the individual farmers. To be able to sustain and spread on its own, the processes need to be institutionalised within the group. Till that time, regular follow-up for the FFS trained groups is necessary. If facilitated in a meaningful way, the FFS approach will enable improving livelihoods of farmers in a relatively short time.

Acknowledgements

AME Foundation acknowledges the NGO partners, stakeholders, participating farmer groups and SHGs, the contribution of whom was vital in consolidating these learnings. Much of the data used are from the AME project Phase IV. We thank ETC India (which implemented the AME programme) for its support.

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Case 2: Innovations in snail management

For farmers of Kunnam village snails are a menace. Snails cut the young plants and eat the fruiting bodies. Spraying several rounds of pesticides usually controlled it. As, it was not effective in the long run, the farmers resorted to hand picking, which was a tedious process.

During the Cotton FFS, farmers innovated that Cowpea, as an intercrop was useful to trap snails. It was noticed by the farmers that snails preferred cowpea than any other crop and hence were attracted to cowpea, where they were simply picked and destroyed.

One more innovation was that, snails got attracted to earthen pots, and pots with Neem seed kernels inside were found to be effective in mass trapping of snails.
Community forest management and FFS

Hukum Singh

Sharada Devi forest has been protected and used by local communities under community forestry arrangements since the 1980s. Here, as in many other parts of Nepal, the rights and responsibilities for forest resource management have been successfully transferred to the local Forest User Group (FUG).

However, although the condition of both forest and water resources have visibly improved under these arrangements, the flow of products from the community forest is far below its capacity for sustainable production. Community forestry has succeeded in protecting the forest, but has failed to provide the expected benefits to users. The main reasons for this are a tendency to over protect community forests, and a lack of forest management support to the FUGs. Recent initiatives to set up Farmers Forest Management Schools (FFMSs) have attempted to address these issues.

What are Farmers Forest Management Schools?

Farmers Forest Management Schools (FFMSs) are fora for group learning. The FFMSs aim to add value to community forestry practices by developing ways of managing the forest to ensure that it yields substantial benefits to its users. FFMSs bring farmer users and forest management practitioners together to explore ways of combining the principals of formal forestry science and technical forest management with local community experience and knowledge. Together, they are able to develop methodologies for active management of community forest areas. Through training and joint action, the formal science of the facilitator and the knowledge of local farmers interface to become a new body of knowledge. With these insights, FFMS can facilitate a process of negotiation that can result in new plans and principals for forest management (see table p. 14).

Sharada Devi Forest User Group

The case of the Sharada Devi Forest User Group illustrates one set of experiences in integrating FFMS into community forest practices. The Sharada Devi FUG is located in the middle hill district of Kabhre Palanchok, about 25 km east of Kathmandu, at an elevation of 1500m. The FUG had been registered with the District Forest Office since 1993 and has been granted authority to manage the forest. Prior to this, community forestry practice was based on traditional institutional arrangements.

The Sharada Devi community forest covers about 44 hectares. It lies above the village and consists mainly of Schima castanopsis (Katus-Chilaune) forest. The principal tree species are Schima wallichii (Chilaune), Castanopsis tribuloides (Musure Katus) and Myrica esculenta (Kafal). The forest is mostly at a young stage with vigorously growing saplings. However, in terms of stocking levels and volume of timber, it is in a moderate to poor condition.

Most of the 152 households affiliated to the Sharada Devi FUG are farm households but some farmers also have off-farm employment and businesses. Most households depend directly on drinking water sources found in the forest area. Local people have observed that both the forest and the water sources have improved since they were formally handed over to the community.

The FUG in Sharada Devi is represented by an elected executive committee consisting of 13 members, including two women. Negotiations and compromise among village-level political parties has resulted in all major political parties being represented on the committee. The only group without representation are the lowest caste, the Dalits.

Piloting FFMS in Sharada Devi

The idea of using the FFMS approach originated during a national level training workshop for forest rangers and project staff organised by the Regional Community Forestry Training Centre (RECOFTC).

Good training is an important aspect of FFMS, and therefore capacity-building for facilitators and selected users from the FUGs was the first step. A training workshop was organised for 16 men and women from the FUG who were interested in taking part. Facilitation training for the FFMS was carried out through a process of questioning, brainstorming and field practice, and included the development of action plans.

Consultations then took place with the FUG committee, and an informal FFMS group was established.

With help from the Nepal-Australia Community Resource Management

Women farmers learning how to measure trees
As data became available, project staff helped those involved in the experiment to record their results in a register (see box). Although this way of recording data and assessing results was foreign to most households in the FUG, they were also able to observe directly the effects of different treatments on the experimental plots.

**Positive impact**
The men and women taking part in the FFMS reported that the most successful part of the programme had been the collection of data on forest growth. Working closely together, they observed the rate of growth of different species of trees, analysed the data and verbally presented the results of what they had learned to the members of the FUG Committee. The group assembles were used to inform other members of the FUG how experiments were progressing.

During the trials, many non-FFMS members passed by the experimental plots to see what was going on. Some of those who had initially criticised FFMS participants for destroying the forest in the name of their experiments later made it clear they valued the results, and suggested that other trial plots should be established to investigate other aspects of forest management. During the trials, the FFMS participants carried out most of the activities. Project staff provided support during the application of different treatments, and when measurements and data analysis were being carried out.

The results of the Sharada Devi FUG FFMS trials provided the group with information relevant to the development of appropriate community forest management practices for their region.

However, despite farmer enthusiasm for the trials, there are very real challenges when it comes to translating the results into practice. Although RECOFTC and some of its collaborators have clear objectives as far as FFMS are concerned, the continuation of the FFMS process is far from certain once project staff have withdrawn their support. Although the Sharada Devi FUG trial plots indicated ways in which the availability of fuel wood could be maximised, these insights have yet to be incorporated into the formally approved forest management operational plan for the FUG.

**Challenges**
The value and innovative aspects of the FFMS have been acknowledged, and to some extent absorbed by some of the participants and service providers in experiments such as those conducted in Sharada Devi. In practice, however, the full potential of the approach has yet to materialise. Following are some of the challenges that can be identified from the experiences of the Sharada Devi FUG in implementing FFMS.

First, the on-site training was conducted by outsiders and little attention was given to strengthening the FUG itself. Project staff from RECOFTC were required to train under-paid and overburdened middle-level managers in the skills they needed to facilitate the FFMS process. However, creating new knowledge and developing good facilitation skills does not necessarily

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**Potential added value of the FFMS to Community Forestry (CF)**

<table>
<thead>
<tr>
<th>Elements</th>
<th>Current practice of CF</th>
<th>Possible added value to CF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regime type</td>
<td>Protection only</td>
<td>Sustainable production</td>
</tr>
<tr>
<td>Management Objective</td>
<td>Subsistence – fulfilment of basic needs</td>
<td>Considers both subsistence and commercial production of forest products</td>
</tr>
<tr>
<td>Management mode</td>
<td>Passive management, focusing on selection felling of dead, diseased and dying trees</td>
<td>Active management, focusing on timber and non-timber forest products</td>
</tr>
<tr>
<td>Source of knowledge and technology</td>
<td>Based on farmers experience and local knowledge</td>
<td>Both local knowledge and formal forestry knowledge</td>
</tr>
<tr>
<td>Emphasis on communication</td>
<td>Among community members only</td>
<td>Between community members and outsiders</td>
</tr>
<tr>
<td>Model of Technology Transfer</td>
<td>Training, publications, extension materials</td>
<td>Demonstration, observation, memory, verbal</td>
</tr>
<tr>
<td>Main role of facilitator</td>
<td>Capacity building of local institutions</td>
<td>Capacity building of local institutions, and also facilitators’ own capacity building working together with communities</td>
</tr>
<tr>
<td>Who is involved?</td>
<td>Committee &amp; local elites</td>
<td>Committee, user groups, facilitators &amp; community</td>
</tr>
<tr>
<td>Who generates the technical information?</td>
<td>Outsider facilitators, forest technicians and professionals</td>
<td>Facilitators and users together</td>
</tr>
<tr>
<td>Who implements the programme?</td>
<td>Facilitators train the users, and users implement programme</td>
<td>Both facilitators and users learn together and users implement the programme</td>
</tr>
<tr>
<td>Who monitors the programme?</td>
<td>Service providers</td>
<td>Both users and service providers</td>
</tr>
</tbody>
</table>
mean that these managers will provide the sort of support a community needs to manage its forest resources in a sustainable way. In addition, not all facilitators will be equally effective, and some will be more committed to setting up FFMS sites than others. This means that the process of developing a methodology for forest management using the FFMS approach must take into account the need to strengthen the capacity of local institutions such as the FUGs, and the need to ensure that appropriate institutional changes take place at government level.

Second, a broader uptake of the FFMS approach has been hindered by a lack of information. Currently, information and publications on the FFMS training approach, methods and process is limited and only accessible to very few people, even at the level of service providers such as the District Forestry Office. In addition, most of the literature on FFMS is published in English. Access to this type of information is therefore limited to those in donor-funded organisations who can read and write English. Equally important, no materials have been developed so far for illiterate community members.

Third, very little attention has been given to organised training, demonstrations and exposure visits on FFMS for community members. In those FUGs where FFMS are being initiated, very few people are actually involved in planning, designing and implementing FFMS. Those who are involved are usually committee members or persons selected by the committee. The majority of FUG members do not know how selections are made, what an FFMS is or what it is designed to do.

Finally, social issues including the exclusion of the Dalits and women from FUGs and FFMS needs to be adequately addressed. The issue of social exclusion has been raised by many different development organisations, and is discussed during facilitator training. In practice, however, Dalits and women are still excluded in many cases. This implies that they are excluded from planning how forest products should be extracted, setting prices, and deciding when to harvest and how the harvest should be distributed. In defence of the FFMS, it has been argued that the FFMS in Nepal is still a pilot programme, and that marginal groups can be included later when the programme is better established.

Opportunities

Despite the challenges mentioned above, the experiences of the Sharada Devi FFMS also show that FFMS have had a positive impact, and that there are opportunities for developing the approach further.

The need for a production-oriented regime is now widely accepted among professionals and community members, and there is a consensus that the current focus on forest protection should be changed to one of active management. Some FUGs have begun to manage their forests in order to optimise their productive capacity. Visits by FUGs and professionals to FFMS sites have resulted in FFMS being facilitated in an increasing number of areas. Lessons continue to be learned from those sites where FFMS are more established.

There is considerable donor support for community forestry projects in almost every district in the hills and also in some districts in the Terai region. This means there are human and financial resources available to carry out forest management activities so that the condition of the forest resources, and the people who depend on them, can be improved. More than 11000 FUGs have been established throughout Nepal, and many of them are functioning well and are willing to adapt to active forest management. There is also an enabling policy environment. Community forestry legislation is in place and FUGs have their own operational plan that allows them to carry out harvesting operations and to market forest products themselves.

Conclusion

Experience has shown that during the process of developing the concept of FFMS, a number of basic challenges must be faced. Facilitators must have enough institutional and organisational support to enable them to work consistently and effectively. Also, fundamental issues such as appropriate follow-up training, and making forestry officials in general more aware of the potential of FFMS, must be dealt with, as well as constraints of time and finance that can inhibit facilitator effectiveness. On another level, the policy and legislative environment and current practices – including procedures for drawing up and ensuring compliance with operational plans for timber production – must all be taken into account when new approaches are being negotiated.

Today, in addition to the District Forest Offices, there are many service-providing organisations, including bilateral projects, NGOs, local organisations and the FUG federation, who are willing to support the community forestry programme. Synergies between their competencies, roles and responsibilities can be utilised to convert the current protection-oriented regime of the community forests into a sustainable production regime. FFMSs have a role to play in this process, as the Sharada Devi experience has shown.

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A full version of this paper is available at www.eeap.cipotato.org/upward.
Evaluation in FFS: a burden or a blessing?

Kim Groenweg and Jorge Chavez Tafur

Looking at the many training and extension programmes currently taking place in the rural areas of Peru, there is not one that does not include the word “evaluation” as one of its activities. On paper, all projects and programmes evaluate many of their activities and resources. In practice, however, the picture is not so clear or straightforward: evaluations are perceived as being very difficult and complex. So much so, that often they simply do not take place.

A short field survey, carried out as part of the FFS process initiated with an FAO IPM-FFS Project in Peru, showed many of the limitations all FFS actors face around the processes of monitoring and evaluations. The following five most significant limitations and difficulties could be identified:

- **Lack of time and resources** of FFS facilitators
- **Lack of ownership** giving facilitators limited possibility to control and influence the process.
- **Little experience and capacity** for monitoring and evaluation, and this experience is limited to the use of quantitative indicators.
- **Little diffusion or use of what is found** - evaluation results are seldom published and reports are not distributed.
- **Negative perception of evaluations** by field workers who often see them as “control-tools” applied by those in charge.

**Trying out PM&E**

In this context, the FAO project tried to identify whether and how monitoring and evaluation could become beneficial to FFS trainers and their organizations. It did so by trying out different Participatory Monitoring & Evaluation (PM&E) processes, hoping to throw off the image of evaluation as a burden.

PM&E was seen not as a structured set of steps and activities, but rather as a multifunctional toolbox containing guidelines, methods and tools to facilitate participatory assessments, interactions and understanding between the actors involved. In short, the process implemented showed that PM&E is useful to: strengthen institutional involvement; learn and improve performance and link different actors.

**Strengthening institutional involvement**

The FAO IPM FFS project offered the FFS methodology for potato and cotton cultivation to several institutions, as an alternative to their usual agricultural extension and training activities. However, after a complete training process and implementation phase, many of the decision makers were still not convinced about the effectiveness of the FFS methodology. Many of the “bosses” had very little notion of their field workers’ new activity. The achievements of facilitators in their FFS were rarely discussed in staff meetings, neither were they included in the institutions’ reports or analyses. Consequently, facilitators received very little assistance from their own institutions.

In order to strengthen the involvement of the whole institution in FFS activities, the project’s Board of Directors was asked to evaluate the FFS methodology and to give their opinion on the project’s achievements. An evaluation plan was designed jointly with all representatives, requiring their direct involvement in the process. The members of the Board identified their own indicators based on what they considered a “good” project should contain. Later, in a full day visit to the field, these Directors implemented their plans, “evaluating” according to their indicators. Returning from the field, they all sat together to analyse and present their results, trying to come to collective conclusions. Their visions, opinions and conclusions were presented the next day to a group of FFS facilitators. This provided an opportunity to exchange perceptions and experiences; to jointly reflect upon the strengths and limitations of the methodology; and to develop a common understanding between decision makers and FFS facilitators.

This brief experience demonstrated that evaluation can be an effective way of provoking interest and involvement, even in those situations where knowledge and interest are initially modest. It showed that actors feel appreciated when their help and opinion is asked for, and moreover, it provided valuable information on the institutions’ perceptions, interest and values. After having evaluated the FFS methodology, the members of the Board who participated in the evaluation showed much more interest in and appreciation of the methodology. At the same time, the project workers gained a much better idea of the Board’s point of view.

**Improving immediate performance**

Two main evaluation activities are common to all FFS training processes. The most significant is Agro-Ecosystem Analysis (AESA). This is based on a series of field and crop observations carried out during the whole cropping season. Farmers are trained in various AESA tools, which enable them to make informed decisions on crop management. A second integrated evaluation approach is the “ballot box”, an exercise involving tests that measure farmers understanding and abilities before and after an FFS training season. This is usually based on relevant, practical agro-ecology such as crop growth strategies, weeds, insect pests, the damage they cause and their natural enemies.

In both AESA and the “ballot box” exercise, evaluation is considered an essential element for farmer learning. It is accepted that field evaluations improve farmers capacities. So why not utilize evaluation to improve the capacities of facilitators and other actors involved in FFS? This was tried in the context of the IPM-FFS project, with the objective to ensure quality throughout the whole FFS implementation. Evaluation was considered part of a process rather than a separate activity. Facilitators were encouraged to evaluate every FFS session, to reflect on their own performance and carefully prepare each new session. In addition, PM&E tools were elaborated to strengthen the analyses of IPM, crop reproduction and experimentation results. This meant focusing on evaluation not only immediately after harvesting, or at the final session of the FFS training process, but at each stage of the training process, as a continuous activity included in each FFS session.

In a short training session on participatory methods, all facilitators designed PM&E plans for their field schools. Each plan identified clear objectives for evaluation, including who should participate and what inputs were required. A set of indicators were selected to be discussed and analysed with the participants, including for example yields, costs, quality of product and the presence of pests. Issues of immediate relevance were discussed in every meeting, such as those related to the facilitator’s performance, the topics discussed, the whole learning process and interest showed by participants. Practical methods and tools were also used that could be easily applied in farmer communities such as matrix
scoring, role plays, songs, poems, letters and drawings.

Both farmers and trainers expressed their satisfaction at being able to exchange opinions and discuss items of importance in a relaxed and entertaining way. The methods enhanced not only the interactions between facilitators and farmers, but also reinforced the interfaces between farmers themselves. Facilitators emphasised that PM&E improved their relationship with farmers and provided them with valuable feedback. This left them feeling a lot more secure about their performance and motivated to improve their FFS. At the same time, farmers felt appreciated and enjoyed this dynamic way of evaluation.

**Linking actors**

PM&E tools and methods were also used to create platforms for discussion between the different actors, both to validate the FFS methodology and to stimulate interaction. Various types of workshops were organised with the participation of representatives of the different institutions, facilitators, farmers, and members of the FAO Project.

In every workshop, members of each group were invited to define the most important aspects to be evaluated. This showed clearly that each actor or group of actors had different backgrounds, interests, and expectations, which did not always coincide with the FFS principles. A thorough analysis was needed to gain an understanding of these different backgrounds and objectives, and to determine the type of benefit that the FFS methodology could provide to the specific actor. It was noted that with indicators of their own choosing, each actor found it easier to analyse both the process and the results achieved through the FFS. Farmers appreciated the opportunity to express their opinions, analyse the achievements and limitations of the methodology and identify future plans. These workshops made both the project and actors aware of the different perspectives of those involved, opening a door for increased co-operation and common work.

**Limitations**

Various constraints and limitations were also identified in the use of PM&E. First of all, the methodology is relatively unknown, and it usually requires those involved to change some of their attitudes. Undoubtedly, this also means changes in the institutional policies and M&E methods and tools currently applied, something that is not likely to happen overnight. It should be mentioned, however, that within the existing systems there are many possibilities for this approach, as more and more development organisations and fieldworkers share a positive view and express a need for participatory methodologies.

A recurring problem is that few facilitators have the necessary skills. Therefore, intensive training is recommended in rapid and practical methods and tools for PM&E. Assistance is also required for strategic planning to develop location- and actor-specific PM&E mechanisms. Considering FFS practitioners lack of time and resources, development of easy, fast, dynamic, time and cost-effective PM&E methods is necessary.

**Conclusions**

The activities implemented showed that PM&E enhances involvement by inviting key actors to evaluate activities, leading to an increased sense of ownership. PM&E activities strengthen participation, raise awareness of the current situation, and enhance the willingness to continue participating. They encourage dialogue and motivate actors to look closely at the situation and develop an opinion. Interaction and understanding between the different actors is stimulated through the creation of platforms for dialogue.

As with other kinds of evaluation, time and resources are limited. There is still, therefore, a need for simple and fast methods, and specific training programmes are required. PM&E requires clear and well-defined objectives to avoid unnecessary and ineffective work, which, not surprisingly, is perceived as a heavy burden. Efforts should be made to include evaluations as an integral part of FFS implementation, rather than a separate activity.

PM&E encourages learning, as it generates feedback and self-reflection. It motivates FFS facilitators and farmers to improve their activities and skills because they themselves identify what is achieved. They become aware of their own strengths and weaknesses, and of the results of their actions. Hence, PM&E enhances peoples self-esteem, confidence and motivation to improve their activities undertaken. In contrast to conventional evaluations, PM&E has the power to empower.

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References:

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**Participatory Monitoring & Evaluation in the FFS cycle**

**Community and participant selection**
- Baseline study (needs and problem analysis using PRA tools)
- Mapping of farmers practices provides material for final evaluation
- Introduction of the FFS methodology to the community
- Selection and inscription of participants

**Preparations**
- Elaboration of curriculum, official FFS agreement and time-schedule
- Training norms, group forming and identification of role of host team

**Getting started**
- Pre-ballot box test
- Evaluation of participants knowledge, to adapt training and monitor advances
- Analysis and design of FFS
- Analysis of soil health and fertility and selection of seed
- Field preparation
- Introduction of record keeping for all expenses
- Tool for analysis of field production results (cost-benefit analysis)

**Implementation of FFS training sessions**
- Opening
- Review and evaluation of agreements
- Agro-ecosystem analysis (AESA)
- Decisions on pest management made based on field evaluations
- Special topic
- Group dynamics and energizers
- Agreements and compromises
- Evaluation of session

**Decisions on content and process are based on evaluations with all participants and trainers at the end of every FFS session**

**Harvest and analysis of field results**
- Analysis of production and ICM
- Evaluation of FFS process and activities

Participants develop indicators for analysis of field results, the process and activities using PRA tools & baseline study data
- Post-ballot box test
- Final test to assess participants’ advances which can provide a basis for planning follow-up activities
- Planning of future activities
- Closing ceremony
Picturing Impact!

John Pontius

Over the years, many participatory approaches have been used by the staff of IPM projects in Indonesia to examine the results of IPM activities. The most recent, a photo study in the Ciamis district of West Java, was carried out by Farmer Study Groups to learn about the impact of Community IPM on poverty in farming communities.

A total of three villages were selected for the study, one in each of three different sub-districts, Padaherang, Lakbok, and Cikoneng. By 1999, the final year of the national IPM farmer training project, there existed in all three sub-districts:

- Government trainers who had conducted FFS;
- Farmer IPM trainers who had conducted farmer-to-farmer FFS;
- Groups of FFS alumni conducting field studies;
- IPM trainers who had facilitated technical and planning meetings for alumni at the sub-district level.

Farmer Field Schools for Integrated Pest Management (IPM) began in the Ciamis district in the early 1990’s, but there have been no nationally funded IPM activities in Ciamis since 1999. However, numerous activities have been funded or supported by the district governments, by FAO’s Community IPM programme, and by the National IPM Farmers Association. Two field workers from Ciamis District Agriculture Services, who were part of the national IPM farmer training project, have been coordinating the support from these organisations and providing technical support to the activities of FFS “alumni” (graduates of the field schools) in the area.

Farmer Study Groups were formed over the last two years as action research groups for FFS alumni. The FSG have become the organisational foundation for FFS alumni in the villages, as they work to establish farmer-led community IPM programmes. The members of the FSG have been conducting various field studies in vegetable and rice production systems. One of the primary concerns of the groups is soil ecology. As a consequence, the groups have worked on issues related to composting and organic soil amendments. The three FSGs have also been assessing the effectiveness of SRI (System of Rice Intensification). The groups have been trying to increase the numbers of farmers applying IPM approaches in their villages. Although there are similarities among the three FSGs, their activities have varied due to the differing social and ecological conditions. These groups and their members are the driving force for Community IPM in their villages.

Methods

Participatory evaluation should set out to capture the perspectives, voices, preferences and decisions of the least powerful stakeholders related to a given project. In the case of Community IPM, this means farmers. Photographs can be...

CINTA ALAM FARMER STUDY GROUP
Sidaharja Village, Lakbok Sub-district

Marsim and Samini are members of the evaluation team

This photo shows the study plots of our Farmer Study Group, Cinta Alam. We have planted vegetables and are using organic fertiliser. The plots help to provide an example for other folks and we learn about growing vegetables and using organic fertilisers. The idea is to help us increase our incomes. Our meeting place is in the background. Marsim

This is rice straw. Before we had IPM, this straw was burned. Now the straw is being composted or turned under. Also we have learned that using a cangkul for field preparation is better for the soil than using a tractor. And once the land is prepared we spread ash. These things help the fertility of our soil. Marsim

This is the yard of my neighbour, a non-alumnus. You can see eggplant, chillies, and cassava. My neighbour used to let this land go to waste. Now, having seen what alumni are doing with organic fertiliser and their back yards, my neighbour is copying them and planting empty ground with vegetables and using organic fertiliser. Now my neighbour has a “living store” that helps with daily needs and provides some income. Marsim

FSG Cinta Alam organised advocacy led to the repair of this irrigation ditch in our village. This ditch was broken and caused our homes to flood. Alumni have helped the whole village by their advocacy to local government to get support to repair this ditch that provides water to over 25 hectares of rice fields. To do the job, 6 million rupee was needed. We collected US$ 2 million from farmers. Negotiations led by Bapak Sukendar, a Farmer IPM Trainer, between alumni and the Public Works Department led to their contributing the other 4 million. The houses next to these ditches use to be continually flooded. The fields didn't get enough water. Now, with the repairs, the fields will get water and the houses stay dry. Samini
used to help the individual, group or community reflect on itself (Freire 1989).

For the study, five members from the FSG in each of the three villages were selected to become members of the evaluation team. They were mostly the newer members of the FSGs, and their task was to conduct the evaluation study in each of their villages. In brief, the teams were asked to take photographs that showed the impact of IPM on poverty in their villages. Each team member wrote short explanations for the photographs that he or she made.

The study took place in three stages. The first stage was a four-day workshop with three objectives: establishing a perceptual focus for the study among team members; reviewing IPM activities in the villages and what members perceived as the results; and familiarising the evaluation team members with the cameras that they were to use.

During the second stage of the study, team members returned to their villages. Each participant carried a roll of film and a battery for the camera. There was one camera per village and it rotated among the five evaluation team members in each village. Each person had the camera for a day and each could take as many pictures as they wanted up to the capacity of the role of film that they carried (36 photos).

The third stage of the study was a follow-up workshop. During this workshop, team members:

- wrote an accompanying text describing the photographs and made “IPM impact albums”;
- analysed their results and made team presentations on the impact of IPM activities on poverty in each village;
- discussed and presented their conclusions about what they learned during the study;
- developed action plans for their FSGs;
- evaluated the study process that they had experienced over the last several weeks.

Below are a few of the photographs and accompanying explanations made by the evaluation team. In a very real sense, each of these photographs portrays the impact of IPM activities.

**Analysis and Conclusions**

During the follow-up workshop, each village evaluation team was asked to present an analysis of the impact of IPM on poverty in their village based on the data that they collected during the study. Discussion followed the presentations and the teams went on to note that in general, community IPM activities had led to greater creativity, independence, lowered costs and improved incomes.

The following quotes are further examples of their analysis.

**IPM activities have increased creativity among farmers.**

The teams cited examples including the following:

- “Trichoderma, which is an antagonist of fusarium, can be used effectively in chillies. Because we want to apply IPM and avoid using pesticides we are forced to be creative to find alternative approaches to pest control.”

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**TURANGGA FARMER STUDY GROUP**

Mangunjaya Village, Padaherang Sub-district

Mafahir, Nasiman, Lin Suryanih and Sakiman Holil are members of the evaluation team

*This is Bapak Zakaria and his wife. He is an IPM Farmer Trainer and has become the head of his hamlet. He has been a part of Turangga’s activities and he is now using ground that was once empty to grow chillies. He uses compost to help improve his soil. Lin Suryanih*

*This is the kitchen in Bapak Parijan’s house. He uses the ashes from the cooking stove to enrich his soil. He learned in his FFS that wood ashes could be used to create better soil, increase soil fertility, and fight pest and disease in his plants. Nasiman*

*Growing pesticide-free rice and vegetables with organic fertilisers allows alumni to make ponds in their fields that can be used to produce fish. This provides additional income. Samini*

*A creative farmer makes use of his land by planting mung beans after rice. This yields beans and green fertiliser is made from the leaves of the mung bean plant. These farmers are drying mung beans. Mafahir*
“The FFS opened my eyes. Because my family was able to analyse its daily needs and could determine how to try to fulfil those needs by, among other things, using our yard for a vegetable garden, we have been able to improve ourselves. I learned about these things in my FFS.”

“Making use of used plastic bags and plastic ware as pots for planting vegetables”

The use of inter-cropping and organic fertiliser.

The use of open land and yards for vegetables and fish ponds.

“Producing and using “bio-lahang” lowers our dependence on commercially produced decomposers.”

“Before IPM, all farmers were planting certified seeds which were unsatisfactory, now we produce our own seeds which have better rates of germination and higher yields.”

“The application of rice-fish practices.”

This creativity has led to either decreased costs or increased incomes, while decreasing dependence on others for inputs and meeting daily needs. Included in the examples presented by the team as evidence of this are:

- “IPM and not using pesticide increases our confidence in using rice-fish culture. The fish will be able to survive. This increases our income.”
- “Our studies of SRI in which IPM and soil ecology principles are applied show increased yield rates.”
- “Using cow urine to control oteng-oteng (a chrysomelidae beetle) in cucumbers and mustard greens has lowered production costs.”
- “Composting of cheap and available organic materials to produce organic fertiliser is a way to overcome the high costs of chemical fertilisers.”
- “Producing and using “bio-lahang” lowers our dependence on commercially produced decomposers.”

The benefits from IPM activities are not limited to only alumni, but are accessible by all in a village. Examples of this that were pointed out by the team included:

- “Our irrigation ditches were causing problems. For six years in a row, every rainy season there would be flooding. Our group organised activities to lobby local government for repair of the ditches in 1998-1999. These activities resulted in repairs being made (work organised and completed by farmers). The repairs have lowered flooding and fields that once couldn’t be planted can now be planted.”
- “The use of open land and yards for vegetables and fish ponds. This has lowered dependence on others for vegetables and increased incomes. Many who have not attended an FFS now use these practices. This is just one example of how everyone in a village has access to IPM knowledge.”

During the first workshop, the team developed a “Farmer Poverty Framework” of conditions that they felt arise because one is poor. According to them, poverty leads to:

- Limited opportunities for learning both for children and adults.

Produce your own seeds!
In the bags are seeds that I have saved. After we studied the problem of seed quality, it turned out that farmers can produce higher quality seeds than we can buy. IPM farmers are not anxious to buy from others. Sakiman Holil
• Limited access to a balanced diet.
• Limited scope for work.
• Reduced living conditions.
• Decreased self-regard.
• Increased discrimination.

The framework can be used to determine whether and in what ways Community IPM activities have affected or could affect these conditions. The data show that FSGs and community IPM support a wide variety of activities, from farmer research to advocacy. The data also show how these activities affect the conditions identified in the “Farmer Poverty Framework”.

The major conclusion of the evaluation team was that IPM has helped to alleviate poverty in their villages. Besides this major conclusion, the evaluation team concluded that there were some definite benefits in doing this study both for them and potentially for their village:

• “We learned how to use a camera and this is important because we can continue to document the IPM activities in our village.”
• “We have analysed and summarised our data and now have a document to show other people in our villages, as well as being able to tell them what we discovered about the impact of IPM.”
• “We have been able to discover what is being done in the village because of IPM and can describe the impact of IPM on poverty in the village. This is important for at least two reasons. We can evaluate our activities and improve them. We can raise the awareness of others regarding the importance of IPM in the alleviation of poverty.”
• “We understand the characteristics of poverty, its causes, and what arises because of poverty. This will help us to discuss poverty with others and find ways to alleviate poverty.”
• “We will be better able to provide leadership in the village related to poverty because the study has motivated us to follow-up on activities that have had the greatest impact on poverty in the village. The study has increased our awareness, confidence and determination.”

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References

I took this photo of a goat shed at the edge of the rice field to show how farmers have made it easy to have manure on hand to compost for their fields.
Euis Holisoh

The farmer in this picture is watering his plants with a mixture of cow urine and water. Cow urine can keep away hama katuh daun. Urine replaces pesticide.
Aleh Soleh

By not using pesticides we can create a healthy agro-ecosystem. This makes it possible for farmers to diversify by raising fish in combination with rice or vegetables.
Jarot Indraloka

It used to be that farmers were told what to do by the extension worker. Now we have learned for ourselves how to do such things as reproducing trichoderma. It used to be that only the agriculture department lab made this.
Euis Holisoh
The greening of Self Help Groups

Seema Tripathi and Shiraz Wajih

Self-help groups (SHGs) for women living in the Terai of Eastern Uttar Pradesh are moving beyond the usual SHG goal of helping women improve their socio-economic status. These groups are also being utilised to mobilise their members as agents of change and advocates for not only gender issues, but also sustainable agriculture. Farmer Field Schools have played an important role in the capacity building aspect of this “greening” process, which has involved bringing together many different extension and support mechanisms.

Self-Help Groups

The plains in the Terai region, at the foothills of Nepal Himalayas, have good rainfall and fertile alluvial soil. The majority of farmers can be categorised as small or marginal, with average land holdings of less than an acre (about 0.4 hectare). Agriculture is the main source of employment and livelihood in this region.

The area has a feudal background with a caste-dominated society. Rural women of the region have very limited access to credit, information and extension services, in spite of their major contribution to agricultural activities and their ever-increasing responsibilities as their men migrate to the cities. To help empower these women, Gorakhpur Environmental Action Group (GEAG) initiated the formation of women self-help groups in 30 villages in Gorakhpur district. Self Help Groups were originally started in Bangladesh as an innovative and “self help” approach to savings and credit, and have proved effective in empowering rural women.

The GEAG SHGs have grown from three groups in 1996, to a total of 310 groups by mid-2002, with approximately 4500 women members in 30 villages. Most SHGs range in size from 10-18 members and 73% of these groups belong to the category of oppressed classes (Dalits) and small-marginal farming families. The group members make a monthly deposit ranging from Rs. 10 to 20 (roughly US$0.20-0.40c). SHGs have their accounts in a nearby bank. GEAG has ensured a commitment that these banks will provide a loan to the SHGs of up to 4 times their original deposit.

SHGs in a village federate themselves to form a “Sangha”. This organisation is entrusted with the responsibility of nurturing SHGs and making collective efforts for the development of village. The self-help groups and the federation, besides facilitating credit flow for consumption and productive purposes, have played a pivotal role in creating a self-sustained agriculture production support system.

Greening the groups

SHGs have been promoted not only as appropriate institutions to help women improve their socio-economic status, but also as a means to mobilise them as agents of change and advocates for gender issues and sustainable agriculture. GEAG has consciously developed the capacity of these groups through a “greening” process, to equip them with appropriate, sustainable technologies, conceptually as well as technically. These “greened” SHGs have been working to promote and disseminate LEISA techniques and practices, and to establish self-sustained, community-owned extension systems. The groups have spearheaded the ecological agriculture movement and become extension agents of green technologies.

So far, approximately Rs.1,200,000 (roughly US$24,000) have been lent by the bank and repayment is almost 100%. The savings and loans obtained are used for agricultural production activities such as purchasing seeds, developing vermicompost, buying agricultural equipment and marketing. This has helped to ensure the women have direct control over these productive resources.

<table>
<thead>
<tr>
<th>SHG Members adopting LEISA practices</th>
<th>Number of SHG Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEISA Practice</td>
<td></td>
</tr>
<tr>
<td>Bio-pesticide (cow urine, neem products, tobacco, ash etc)</td>
<td>3100</td>
</tr>
<tr>
<td>Composting (pit)</td>
<td>2500</td>
</tr>
<tr>
<td>Tree plantation</td>
<td>750</td>
</tr>
<tr>
<td>Vermicomposting</td>
<td>432</td>
</tr>
<tr>
<td>Liquid compost</td>
<td>528</td>
</tr>
<tr>
<td>Nadeep compost</td>
<td>238</td>
</tr>
<tr>
<td>Seed treatment</td>
<td>940</td>
</tr>
<tr>
<td>Seed production</td>
<td>580</td>
</tr>
</tbody>
</table>

The major components of the greening process are as follows:

Farmer Field Schools (FFS)

To facilitate sharing of experiences, innovations, ideas and the dissemination of technical know-how on LEISA techniques, FFSs have been operationalised. The FFS have gained popularity amongst farmers not only from the project villages but also from other neighbouring villages. They are run by experienced farmers, who have extensive practical knowledge of the topics covered. Occasionally, experts from outside are also invited. On average 40 farmers, mostly women, participate regularly in monthly FFS sessions. FFS are managed by the SHGs/Sangha, who also decide on the place and topics, on the basis of the felt seasonal demand. There is one such FFS for every five villages in the project area.

LEISA INDIA • MARCH 2003 23
Agro Service Centres (ASC)
In order to ensure the availability of quality inputs such as seeds, vermicompost, bio-fertilisers, bio-pesticides, and treadle pumps (low-cost, manually driven pumps for irrigation), and to facilitate direct marketing of these inputs, Agro Service Centres have been established. These ASCs, established in the clusters of 5 villages, are controlled and managed by the women’s self-help groups. Soil samples are also collected in these centres for analysis in a small laboratory established by GEAG. This laboratory makes the necessary recommendations on LEISA approaches.

Master Trainers (MT)
A number of interested farmers have become Master Trainers, after receiving intensive training in facilitation techniques and communication skills. The Master Trainers are selected by the SHGs/Sangha, according to their background expertise and the specific needs of the area. As the Master Trainers live in the villages, they are always available and also ensure ongoing interaction with SHGs.

There are usually two Master Trainers in each village, and they organise regular training sessions in the village according to the felt demand. These MTs are also invited by other NGOs and projects to contribute their expertise. Tijia Devi, for example, an illiterate woman farmer from Awadhpur village, was invited as a resource person for training sessions organised by CARITAS for its Project Managers in Madhya Pradesh. There are several other examples where farmer MTs have helped orient people towards, and convinced them of the viability of LEISA techniques using the examples of their personal field experiences.

Extension System through the SHGs
The three major components of the “greening” process mentioned above are inter-linked and interdependent. However, there are also a number of other support mechanisms linked to this LEISA promotion system:

• **Laghu Seemant Krishak Morcha (Small-marginal Farmers Forum):** Farmers are unionising in this forum to advocate their interests and promote LEISA, at village, district and state levels.

• **Farmer Interest Groups (FIG) and Participatory Technology Development (PTD):** Farmers with specific needs, problems and interests (such as landless farmers, vegetable growers, seed producers, livestock farmers) are being organised to facilitate more focused interventions and linkages. These Farmer’s Interest Groups are formed by members from different SHGs who share a common interest. Non-SHG farmers who share the same interest are also welcome. In the Sardarnagar area they are involved in seed production and collective farming, while in Campierganj most of the interest groups are involved in vegetable growing and livestock rearing. The FIGs are also developed around common problems such as pest and fertility management, and finding solutions through participatory technology development.

• **Demonstration farms:** Farmers have taken the lead in developing their own farms. These are integrated with households and livestock and function as demonstration models of LEISA farming.

• **Experimentation site:** GEAG has provided land where farmers can experiment, take risks and innovate.

• **Awareness Group:** Selected women from different SHGs, as well as interested men, have come together and formed a cultural group to promote LEISA through local culture, for example, through street plays.

• **Soil Health Laboratory:** Through the SHGs, farmers can get their soil samples tested in the laboratory established by GEAG and get necessary advice.

Looking ahead
Extension of LEISA practices through women Self-Help Groups has been effective and meaningful. It has ensured that women have access to information, techniques, institutions and the means to experiment with new techniques.

Women are able to do better within their recognised roles through the skills acquired and the confidence gained during this process. At the same time, gender-mainstreaming efforts have enhanced their position and contributed to their emancipation. They are now able to unionise and advocate for their rights in a traditionally male-dominated society. Their enhanced control over resources and increased decision-making capacity, backed by the skills they have acquired, have given a meaningful dimension to low-external-input agriculture in the area. The adoption of LEISA practices has significantly reduced the use of high-cost external inputs like chemical pesticides and fertilisers, thereby increasing the net gain to small and marginal farming communities.

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Gender field schools

Mansour Fakih

Since it began in 1989, the majority of participants and facilitators in the successful Indonesian IPM FFS programme have been men. Some efforts have been made from the beginning of the programme to include women, but with limited success. While there are now more women trainers and women participants involved in IPM FFS than in the beginning, evaluations of the IPM Network still indicate that the experiences of women in IPM FFS are different of those of men. Many of the women engaged in IPM felt “there is something missing”: something that has not been understood or addressed. They wanted to see a move from “women’s involvement” to gender equality.

Going one step further

As a result of the ongoing perception that FFSs in Indonesia are still not gender equal, a special programme is now being introduced into IPM activities. This programme is firmly rooted in the participatory approach and aims to make all those involved in IPM FFS aware of what gender discrimination is, and why and how it occurs.

This requires a supportive policy framework, as well as a commitment from the programme staff to integrate gender issues. The National IPM Farmers Association stated its support and established a policy framework for the programme in 2001, providing the necessary framework for the first National Gender Workshop.

The first National Gender Workshop, organised by farmers, concentrated on developing a strategy, a plan of activities and a curriculum that would support a wholly participatory approach to mainstreaming gender into IPM FFS activities. At the same time, farm-level discussions were initiated. Farmers involved in IPM FFS agreed to take part in gender training and curriculum-building activities, as well as to collect information on gender issues that could later be discussed and analysed.

A core team was recruited from amongst women facilitators who were experienced in FFS and interested in gender issues.

A gender-training curriculum was set up, using the FFS approach, to introduce and explore the concept of gender inequality in rural communities. The curriculum focused on the actual incidences of gender injustice and sought to inventories the social and political factors underlying gender inequality. Strategies for effectively collecting information on gender issues and clarifying what gender inequality means at farm level were discussed extensively, and farmers were given a key role in collecting data and in developing family case studies. Farmers enthusiasm for the initiative resulted in a strong process of farmer-initiated knowledge development and gender analysis.

Key questions

Farmers and the core team of facilitators met in field-based provincial and district workshops, where they developed tools that could be included in the first curriculum. During these workshops, insights were gained into how to raise gender consciousness in rural areas and within the IPM network.

Two key questions raised during these workshops were: “Why do we want to introduce gender into IPM?” and “What is it for men?” The answer to the first question revealed the depth and complexity of the gender inequality. Women responded in direct and emotional terms. “We are second-class in our own culture” and “We are just followers”. They showed they were well aware of the fact that discrimination

Towards a gender sensitive approach

In 1990-91, during the first cycle of the National IPM programme, it became clear that women had more limited access to and opportunity to benefit from IPM training than men. In addition, Indonesian women often feel less competent than and inferior to men, which can hamper their active involvement in training.

This had serious implications for the IPM programme. Women make up 50% of the farm labour force in Indonesia, and in rice growing areas such as Central Java, agricultural tasks are shared equally between men and women. Not only are women involved in transplanting, weeding, routine observation of the crop, supplying food to hired labourers, harvesting, threshing and selling the harvest, they also have the important task of managing the household money.

In addition, a significant number of women head farm households in Central Java, either because their husbands are migrant labourers or because they are alone. Women with a lower socio-economic status are heavily represented in the female-headed household group. In general, they have low levels of education and tend to be overlooked in development programmes.

The fact that women farmers in Indonesia are often “screened out” of FFSs is a direct result of the inclination of local officials to automatically select male heads of households for IPM training. They also tend to select men from high and middle - income groups. This not only prevents women from participating in IPM FFSs, it also means there is little “trickle over” of knowledge because men in these socio-economic groups often do not farm themselves – they usually hire labour – and they have very little contact with women of lower socio-economic status.

Domestic and educational factors also play a role. Women have household tasks that make it difficult for them to consistently follow weekly FFSs for an entire session. In some sections of Indonesian society, women feel less competent than men and this can inhibit them in group learning situations. For example, in Central Java, it was found that when women were selected for FFSs they participated actively in all activities except those involving group presentations.

Women are not deliberately excluded from IPM training. As one official put it “I just never thought about the issue”. No specific attention had been given to identifying the social conventions and cultural practices that limited women access to agricultural development programmes until, in 1989, the National IPM programme and the local NEO IPM programme, coordinated by World Education, developed a training preparation process that specifically addressed the issue. Gender analyses and needs identification were carried out with farm communities and village officials and by 1995, results showed that in all parts of Indonesia women’s participation in IPM FFS had increased by an average of 15%.

The National IPM programme concluded that women’s involvement in IPM FFS could be enhanced by a training preparation process prior to the FFS, strengthening the role of farmer trainers and extension officers, and emphasising women’s leadership development. After 2001 and on the bases of these experiences, policy was initiated that lead to the development of Gender Field Schools.


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was accepted as normal because women were regarded as second-class people. The question “What is it for men” was answered during the course of the workshop. Participants concluded that tackling gender issues did not imply an attack on men’s status, but could have a direct benefit for the family and community by strengthened women’s confidence, self-esteem and status. Exploring problems in the context of gender inequality also opened the way for effective solutions.

In discussing gender inequality, workshop participants made a clear distinction between the biological definition of sexual difference and the socio-cultural concept of gender that included culture-specific roles such as the male breadwinner and the female homemaker.

FFS for gender - Gender Field School

The participatory approach chosen for integrating gender in the IPM movement places farmers, both men and women, at the center. It is a long-term, process-oriented activity. Farmers use their own experiences to identify what exactly gender inequality and discrimination meant to them and they use these insights to make adjustments to their own IPM programme. The members of the core gender team also become facilitators working with the first farmers groups on gender.

Gender Field Schools have become the basis for efforts to “mainstream” gender in the IPM network in Indonesia. Participants follow five basic steps towards a more in-depth understanding of gender issues in their community.

- The first step is gender training, to raise awareness of gender issues and enable farmers to conduct participatory gender research.
- The second step is data collection. The farmers use their training to identify gender issues in the farmers household and community and collect data on these issues. The data collected are grouped into five categories: access; participation; control; benefit; burden and level of violence.
- The third step is the Gender Analysis. The facilitator helps the farmers analyse the data collected. Farmers come to understand the way local perceptions of gender affect women’s lives.
- The fourth step is to plan for action to reduce and eliminate the identified inequalities between women and men.
- The fifth step is monitoring and evaluation. The evaluation helps to identify the activities that will increase women’s access to, control over, and benefits from the IPM programme, and expand women’s participation in the IPM farmers organisations, programmes and processes.

The development of core groups to pioneer the process of gender mainstreaming in the IPM networks is considered crucial in the process. To start with, the farmer communities to be involved in Gender Field School experiments are carefully selected. For the time being, eight GFS groups have been started, all of them with farmers groups that have previously been involved with FFS for IPM. The GFS are farmer-run and farmer-financed.

After a GFS is conducted, a Farmers Family Crisis Centre (Tim Pembimbing Keluarga Petani-TPKP) is established. The Centre is located in the IPM farmers community. It is hoped that the Centres will help to lower divorce rates, and minimise domestic violence and other forms of discrimination against women. So far, eight such Centres have been established.

Lessons learnt

From the experiences of the farmers IPM network in trying to integrate gender into their development programme, it is clear that if such initiatives are to be successful, farmers must be fully involved and the farming communities participating in the Gender Field Schools experiments must be carefully selected. It is also important that the farmers have prior experience with FFS. Other lessons learnt include:

- Integrating gender into development programme cannot be induced from outside. It requires a process led by farmers themselves, both men and women.
- Gender mainstreaming needs political will and the commitment of the leadership of the IPM programme. A strong effort and appropriate mechanisms are needed to integrate gender into the national IPM structure, and into the activities of the National IPM Farmers Association.
- Gender mainstreaming is a process of education, research and action. Capacity building is therefore essential. Capacity building support has been provided to the farmers to conduct gender data collection and for the creation of an information system, through a participatory approach. The capacity building process should include enabling farmers to establish their own vision, mission and strategies, as well as the organisational structure for mainstreaming gender.

Conclusions

So far, the efforts to mainstream gender have increased the capacity of the IPM farmers networks to integrate gender into their policy, planning and monitoring. The IPM project staff have increased their awareness about their roles in the gender mainstreaming process. The experiences gained through this process of gender mainstreaming can contribute not only to the FAO-IPM project, but also to other groups who are pioneering the field of gender equality in rural areas.

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A full version of this paper is available at www.exeap.ciptoato.org/upward
Towards self-financed farmer field schools

James Robert Okoth, Godrick S. Khisa and Thomas Julianus

The effectiveness of Farmer Field Schools often depends on their financial sustainability. This article looks at several innovations for financially sustainable FFSs that were developed by the East African Sub-regional Pilot Project on Integrated Production and Pest Management Farmer Field Schools, and are now being taken up by a number of other FFS programmes. The cornerstone of these innovations has been the evolution of an initial grant system (semi-self financed FFSs) into an educational revolving fund (self-financed FFSs), supported by the proceeds of commercial plots that are managed alongside the study plots. Involving farmers right from the start has been crucial in successfully implementing these innovations.

Semi-self financed FFS

The semi-self financed FFSs were initiated in 1999 with the introduction of the grant system, in which farmer groups wrote simple proposals for grants to run their FFSs. Figure 1 provides a flow chart of steps in the development of a semi-self financed IPPM FFS. Step One is for a group to submit a proposal in response to an announcement that grants are available. Grant forms include guidelines and application forms for groups. Currently, IPPM FFS grants require that the group have three officers (Chairperson, Treasurer and Secretary) of which at least one is a woman (in mixed gender cultures). Groups must have a multi-signatory savings account and agree to record keeping and audits, and the grant must be used for at least one high value crop and a food crop. The group may also include other topics such as IPPM for poultry. An indicative budget is provided for partial guidance, but it is also stated that extension staff should be paid based on officially published rates, although these can be negotiated. The grant form provides space for background, justification for grant and activities, work plans and budget, and should include the signatures of all group members as well as the local agriculture officer.

Once the grant is approved, Step Two is to transfer the grants to the groups. Typically this is a combination of materials and cash or cash alone. Materials such as flip-chart paper, crayons and other stationary are more cheaply available (or only available) in large cities, so it is more efficient to provide some materials. Cash is provided in at least two instalments over the season, depending on the length of the FFS (for example, annual crops are usually 4-5 months, soil and perennial crops are 12-18 months). The size of the grant for IPPM FFSs is typically US$100 to US$400 per season of study. The grant reporting must include bookkeeping, maintaining receipts and accepting an audit. Grants can in some cases be transferred electronically to accounts, and in other cases they are provided in cash. In many cases the opportunity to handle and control funds has led to increased ownership with farmers providing co-financing as well.

In Step Three, payments to field school facilitators are made directly by the field school group at pre-agreed rates. If the facilitator lacks technical skills, is a poor facilitator or even has inappropriate social skills (arrogance and top-down approaches are leading problems), the group may “release” or “fire” the facilitator – and this has indeed been known to happen.

Facilitators receive important feedback from this! If the facilitator does not show up or shows up in an inappropriate state (for example, drunk or late), the group can withhold payment. On the other hand, the facilitators usually receive payment on the day they travel – a far better situation, they feel, than filling out paperwork and waiting for a delayed payment, as is typical of most extension travel allowances. Groups may also request that information on special topics such as soils, nutrition, or environment be delivered by specialised staff, in which case they use the grant to pay transport for the specialist.

IPPM FFS participants also arrange their own field study plots (as shown in Step Four in Figure 1). The study plots are typically 0.2 to 1 ha. in size, and include various educational features – such as comparison trials between IPPM and conventional practices, fertility management methods, and new variety testing. Groups in Western Province, Kenya were the first to begin the “commercial plots” which are larger fields that the group manages together in order to raise more funds. These groups converted the “snack” budget line to field inputs to get started. This has now been institutionalised and it is recommended that all groups have commercial plots. The land arrangements depend on local conditions and include the use of village
land, as well as donations from larger landowners and the sharing of crop produce with owners. It is the responsibility of the participants to provide the land and the labour for both the study fields and commercial plots. It is the responsibility of the facilitator to provide a profitable educational activity, including bringing in socially important issues such as HIV/AIDS, women’s reproductive health, and soil fertility management.

In Step Five, proceeds from the FFS plots are re-invested in the groups own account. This has now become possible because all grant-recipient FFSs must have their own accounts and means of managing them. The funds are used by the group for further study, and the purchase of animals or other activities. Each group is also requested to assist in training one other group, and farmer-led field schools are quite successful.

As a result of this grant process, groups have shown a very high level of ownership of the FFS process. Many FFSs enjoy a high level of matching funds, material inputs provided by the community and participants, and display an increasing ability to manage funds and activities on their own. Groups become more independent of extension services, and they are also better partners for the extension services – even though many extension services still have difficulty seeing this. The process of applying for grants, making work plans and budgets, organising fields, paying facilitators and managing funds, enables groups to organise themselves to continue on their own. Although FFS grants are intended to support a group for a set time period, many field school participants go on to develop longer-term associations due to the cohesion, trust and joint fund-raising ability developed during the FFS period. The grants provide capital to groups and catalyse new ways of working together. Case studies from various beneficiary semi-self financed groups indicate that if well guided, the groups are able to recover the whole grant after a couple of seasons. As a result, semi-financed FFSs are emerging, where the grant has been transformed into an educational revolving loan.

Self-financed FFS

Although semi-self financed IPPM FFSs partially solve at least one issue some of the problems of maintaining the sustainability of farmer groups, extension officers need a new set of funds each season to keep the programme expanding year after year. Thus, new ideas have been sought by IPPM facilitators and farmers, resulting in the self-financed model. The basic difference between this model and the organisations with minimum overhead costs. So far, the FFS networks provide the most suitable structure for handling the revolving fund.

A major concern is the issue of reputation. The model requires that farmers trust the knowledge and teaching ability of IPPM facilitators before signing the contract. Unfortunately, the top-down programmes of the past have given many extension systems a poor reputation, so this may be a very serious problem. Retraining of extension staff into IPPM facilitators with technical and facilitation skills has helped, but the farmers long-term experiences with extension services may be difficult to overcome.

One positive development is the increasing interest of local governments and some NGOs in the approach, to the extent of committing some of their meagre funds to sponsoring the establishment of FFSs. As a result, the FFSs are recognised as a major channel for community development. Similarly, rural micro-finance institutions are also using the FFSs as an entry point for group loans. In Uganda, Village Banks have been established by private sector promotion centres in the three pilot districts, where the FFSs are able to buy shares and acquire simple loans. The same Centres provide financial management skills to the groups. In Kenya some farmers have begun pulling together resources and funding FFS activities, the so-called self-sponsored Farmer Field Schools. This level of confidence in the FFSs indicates a very bright future, which will be strengthened more by the self-financing approach.

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A full version of this paper is available at www.eesiap.cipotato.org/upward.

Reference

FFS for tree crops

James Mangan and Margaret S. Mangan

Since 1997, Farmer Field Schools (FFS) have been developed in Indonesia for Integrated Pest Management (IPM) in five tree crops - cashew, cocoa, coffee, pepper and tea. Applying the FFS approach to IPM for perennial tree crops has required several adaptations, including changes in content and duration of the FFS, and in the methods employed in Agro-Ecosystem Analysis (AESA). This article is based on our experiences with the IPM Smallholder Estate Crop project (IPM-SEC project) and the SUCCESS Project to control Cocoa Podborer (CPB).

Adapting to perennial ecosystems

The five tree crops mentioned above are perennials. Tree age before complete renewal varies from crop to crop and even from farmer to farmer, but averages around 20 years. The rice ecosystem, where the FFS approach was developed, undergoes destruction and hence catastrophic change during harvest. But the perennial ecosystem remains fundamentally unaltered, particularly in the case of continuously harvested crops like cocoa, which produces fruit throughout the year and cashew, which has three flushes per year. Tea also grows leaves continuously throughout the year. Of these five perennial tree crops, only one - coffee - can be said to have a significant period during which no fruiting and fruiting takes place. This means that any pests are presented with two conditions not present in an annual crop like rice or cotton: a continuous food supply and a dependable habitat.

As a consequence, certain mechanical practices are not possible with perennials. One example is the practice of “ploughing down” after a clear harvest, which results in the drastic reduction of a pest, for example rice yellow stemborer in China or cotton pink bollworm, through destruction of its food supply and habitat.

Pest difficulty

The “natural” condition for perennial ecosystems is one in which the pest is always present in the cropping system. Some tree crop pests are difficult, others less serious. Each crop requires its own observation techniques, its own cultural/mechanical practices, and has its own particular pests and diseases. The most difficult pests, such as Cocoa Podborer, spend all of their larval life inside the fruit to be harvested, invulnerable to natural enemies and pesticides while they are inside. Leaf eaters are a less

Some IPM constraints and opportunities for various tree crops

<table>
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<th>IPM method</th>
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<th>“Classical” Biocontrol (introduction of exotic predators and parasitoids to control introduced pests)</th>
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<td>CASHEW</td>
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<td>Augmentation of <em>Aphephonemus</em> sp., an egg parasitoid of <em>Machacqos rostrata</em>, may be possible</td>
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<td>Trichoderma can control root rot; <em>Synnematium</em> can control Fl solid pests; <em>Beauvaria</em> attacks <em>Helopeltis</em></td>
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<td>COCOA</td>
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<td>Trichoderma can control <em>Phyllostigma</em>; <em>Beauvaria</em> can be effective against CPB; <em>Beauvaria</em> attacks <em>Helopeltis</em></td>
<td></td>
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<tr>
<td>COFFEE</td>
<td>Coffee Berry Borer (CBB) has few natural enemies: <em>Zeuzera</em> coffee, a branch borer, has parasitoids and some predators. Weaver ants may provide some protection against CBB, but there are as yet no experimental results on this.</td>
<td>Complete seasonal harvest prevents establishment of CBB parasitoid <em>Cephalonomia stephanodera</em>, first introduced in 1989. Ample populations of <em>Coccinellus lamarck</em>, introduced in 1986 to control jumping lice in the lamtoro bean now limits green and white scale in coffee.</td>
<td>Simultaneous flowering and fruiting has not resulted in a CBB die-off; little is known about alternative hosts during the fallow period.</td>
<td><em>Beauvaria</em> can be effective against CBB</td>
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<tr>
<td>PEPPER</td>
<td>Lots of jumping spiders and robber flies; a parasitoid <em>Spathius piperis</em> can control the branch boring weevil <em>Lophobaris</em>, as a result disease, not pests, is the main problem.</td>
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<td>Trichoderma can control <em>Phyllostigma</em></td>
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<td>TEA</td>
<td>Loopers are parasitised by <em>Tachinidae</em> and <em>Ichneumonidae</em> parasitoids, but there is not a very rich range of spiders feeding on <em>Helopeltis</em>.</td>
<td>Within Indonesia, the parasitoid <em>Spathius piperis</em> may need to be introduced in certain islands like Bangka, where it has not been observed to occur.</td>
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serious problem (except on tea). There are two reasons to reassess the seriousness of tree crop pests. First, we need to know the true pest impact if we are to figure out mechanical or biological controls. Second, we need to overcome the tendency of pest protection bureaus to exaggerate the danger of minor pests, as this can distort the decisions resulting from weekly AESA.

Ecological IPM began with rice, whose pests all have a rich array of natural enemies, both aquatic and terrestrial. By the start of the FAO IPM Programme, a substantial body of research already existed on the role of natural enemies in the control of the chief rice pests, Brown Planthopper. Compared with rice, very little research on the ecosystems of perennial crops has been done in Indonesia. Tree crops also lack the aquatic element of the rice ecosystem, which provides many beneficial insects and spiders. More research is needed on the habits and biology of the most important pests and beneficials - but lack of research cannot prevent us from proceeding with IPM control methods that work.

AESA in high trees and vines

AESA includes observation of pests, natural enemies, neutrals such as detritivores, disease, and plant nutrition, which should all be taken into account when making a decision on pest management. In rice, this observation is carried out weekly in ten randomly selected spots (hills) throughout the field. It involves the entire rice plant from roots to the tip of the flag leaf. Each tree crop, however, requires its own approach to AESA and its own frequency of observation. Pepper and coffee usually undergo AESA once in two weeks, whereas cashew, cocoa, and tea require weekly observation.

Tree canopies are also much more difficult to observe than rice plants. Some cashew trees grow to more than ten meters high. Some coffee canopies are two-tiered. Ladders are required for AESA on cashew, high coffee, and pepper vines. This also entails some risk - during training, one facilitator trainee fell from a tree.

More complete canopy observation using a ladder should be carried out on one tree in every three, but this is just a rule of thumb. Budding branches in cashew, fruits in coffee and cocoa, and leaf condition must be observed, especially for disease. Roots require inspection for fungus or nematodes. In this way, AESA delivers more information about the ecosystem than any scouting method for simply counting pests.

Adjusting the FFS training season

In the SUCCESS Cocoa Podborer (CPB) project, the content of the FFS was changed radically in order to deal with a single pest. The FFS format was changed to emphasise knowledge of one major pest and the cultural methods that will best control it, instead of knowledge of the entire crop ecosystem through AESA. This adaptation involved shortening the FFS to just seven meetings, five of which were field-learning meetings. In terms of content, four cultural methods for control of CPB were emphasised: frequent harvesting; pruning to open the canopy; adequate use of fertiliser; and crop sanitation. These changes were in large part driven by donor desires to reach all Sulawesi Cocoa farmers with the new technologies.

In perennial agro-ecosystems, there are solid reasons for doing full season training for IPM: ecosystem changes can be followed throughout the crop season, including the outcomes of pest simulation experiments. However, a full season for coffee, including all cultural practices, would be a whole year long if all methods were done in season. This is far too long and costly to be practical. Other crops do not need such a long season. In the IPM-SEC project, a standard FFS length of six months was decided upon for bureaucratic and budgetary reasons, and this is adequate for all crops. Duration was set at 20 sessions for all FFS, regardless of the duration from flowering to harvest.

Assessing the trade-offs

Each crop has its own particular pests and diseases, and requires its own observation techniques and cultural/mechanical practices. Adjustments and changes in the FFS approach had to be made accordingly.

The FFS approach of involving farmers in participatory field learning activities remains a powerful one. In adapting the approach, however, a number of trade-offs are involved. In the case of the SUCCESS project, the adaptations meant exchanging open-ended field experimentation – the classic FFS approach – with teaching a few specific mechanical practices. Adjustments and changes in the FFS approach had to be made accordingly.

The impact of training is still positive at www.eseap.cipotato.org/upward.

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A full version of this paper is available at www.eseap.cipotato.org/upward.
Learning by Practicing

FFS have been very effective in making farmers understand and gain confidence about various technologies and practices of farming. The approach makes them observe and think critically while working on their own lands. They also appreciate the involvement of the family members in various activities like land preparation, compost making, seed selection, sowing, weeding, IPM, harvesting, seed storage and also animal husbandry activities. Importance of bio-diversity like tree cropping, inclusion of animal husbandry for better utilization of natural resources, labour relationships and management are well understood when the FFS participants visit others participant’s fields. New challenges and issues that arise are better understood while the participants work in groups and share their experiences. Importantly, it is not only agriculture technologies, but also other issues of rural areas like health, education, food habits, lifestyles and financial resource management can be learnt more easily and effectively through this approach.

Generally, FFS consists of a group involving both men and women wherever possible or separate groups of only men and only women with the common interest to study together, the various aspects of rural issues and challenges, on a weekly or a fortnightly basis. Even SHGs (Self-help groups) and youth clubs can participate and also conduct FFS on their own after getting adequately trained. FFS conducted on farmers’ fields not only attracts men and women peasants but even their children who join in large numbers. With my own experience, the participants will be happier in the fields than in the classrooms.

FFS is facilitated by experienced persons with practical insights. Gradually a core group of farmer ‘master trainers’ should be built up. Involving local expertise like retired agriculture extension officers can be effective as well as cheaper if they can stay around FFS, available at times of necessity. The dependence on highly paid extension official will be minimised. Since most of the operations happen at the participants’ land, it is very easy for a farmer to practice what he learns at FFS. FFS not only provides information on technologies, but enables working on their own lands with emphasis on action, observation, understanding and assessment and decision making. Learning by practicing is very important than learning by reading.

How to promote ownership, benefit sharing and sustainability of this process? The self-help groups or the farmer associations or the youth clubs can identify a commonly agreed learning process involving various aspects of the crop management on a specific field. Local ‘master farmers’ could guide the learning process along with NGOs and the Government.

FFS should have trial plots ranging from 2 to 4 hectares, where they can practice various systems like rain harvest, soil and water conservation, tree cropping at the edges, agro-forestry, animal husbandry, bee keeping, sericulture, food processing and marketing etc. Similarly they can lease in village, community lands or even private lands on crop sharing basis. To begin with, the self help group or the youth club may obtain a grant of two lakh rupees. Later on, they can be made self sustainable either by reinvesting up to 60% of the benefits back to FFS or by the members contributing little amounts on a weekly or fortnightly basis to build up a revolving fund. Alternatively, seeds could be lent to the needy farmers during the sowing season and collect 50% or more seeds on such lendings and establish their own seed banks which can be a resource for FFS.

Besides financial stability, building up an empowering process both for the participants and the facilitator is necessary which calls for imposing full faith in the capacities of each other. Transparent budgeting and maintenance of accounts accessible to participants is also essential. The FFS is everyone’s ‘asset’ and the approach can be more effective than the one directed by any government or external agency.

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This publication features highlights of the International Learning Workshop on Farmer Field Schools: Emerging Issues and Challenges, held in Indonesia on 21–25 October 2002. It synthesizes global experiences in FFS, derived from 30 case and thematic papers, as well as the outputs of the small-group and plenary discussions. The key lessons, issues and challenges cover the following: 1) Adaptation of FFS from rice IPM to other crops, systems and constraints; 2) Application of FFS for research and development, training and extension, and other learning purposes; 3) FFS institutionalisation, scaling-up and policy development; and 4) FFS monitoring and evaluation. This publication is the first in a series of workshop outputs, which also include a volume of papers and a CD-ROM documentation of the activity. To obtain a copy of the publication, contact Dr. Dindo Campilan, cip-manila@cgiar.org or visit www.eseap.cipotato.org/upward.

From farmer field school to community IPM: Ten years of IPM training in Asia by Pontius J, Dils R, Bartlett A. 2002. 106 p. FAO Community IPM programme. FAO regional office for Asia and the Pacific, 39 Phra Atit road, Bangkok 10200, Thailand / www.fao.or.th/Publications; Doris.vonWerner@fao.org; Chongyao.Shen@fao.org

This is a comprehensive account of integrated pest management (IPM) as a farmer-centred and local need-responsive approach, developed on the rice farms of South-east Asia to tackle the risks arising from the excessive pesticide use promoted by the Green Revolution. The FAO programme owes it success to the pioneering Farmer Field School (FFS) approach that was first tried with Indonesian paddy farmers in early 1990, and has since become a model for farmer education in Asia, several parts of Africa and Latin America. More than 2 million rice farmers in Asia have taken part in over 75 000 farmer field schools between 1990 and 1999, boosting their yields and incomes, cutting down the use of chemical pesticides and improving the ecological health of their fields. Above all, it has given them greater control over their livelihoods and greater confidence to face up to new challenges.

The publication includes step-by-step instructions on organising and running farmer field schools, along with detailed case studies of farmer field schools in South-east Asia and several personal experiences of farmers who have gained from the programme. A separate section outlines the IPM programme activities in Bangladesh, Cambodia, China, Indonesia, Nepal, Sri Lanka and Viet Nam.


Farmer Field Schools (FFS) were established to introduce farmers to discovery-based learning in dealing with pest management in particular, and good crop management in general. Their ultimate goal was to improve farmer’s decision-making abilities to cope with both biotic and abiotic stresses. This publication describes a village-level case study in the Philippines that measured the educational, economic, and efficiency impacts of the FFS. This four-season study compares decision-making between FFS graduates and non-FFS farmers. (WR)

New ways of developing agricultural technologies: the Zanzibar experience with participatory integrated pest management by Bruin GCA, Zeeman F. 2001. 167 p. ISBN 90 6754 624 0. Wageningen University and Research Centre. Technical Centre for Agricultural and Rural Cooperation (CTA), PO Box 380, 6700 AJ Wageningen, The Netherlands / cta@cta.nl

This work shows that FFS can function in an East African context if certain conditions are met. See the review in issue 18(1).


This still-impressive information source examines the implications of adopting more ecologically sound agricultural practices, at the level of both individual farmers and large-scale agro-ecosystems. The emphasis is on human and social aspects, learning through participatory approaches, and appropriate institutional support and policy structure. Examples from around the world are provided. (WR)

Farmer field school for integrated crop management of sweetpotato; field guides and technical manual by Fliert E (van de), Braun, AR. 1999. 101 p. ISBN 90 9060 216 3. International Potato Center, Regional Office for East and Southeast Asia and the Pacific (CIP-ESEAP), PO Box 929, Bogor 16309, Indonesia, UPWARD.

Highly fluctuating prices and a weak bargaining position provide little incentive for sweetpotato farmers to produce high yields. Nevertheless, comparison of yields and profits obtained by farmers in Indonesia showed a tendency for farmers who produced higher yields to earn higher profits. This suggests that farmers can increase profits by increasing their yields through better crop management, and by learning to estimate what the yield is likely to be before entering into negotiations with a trader. How can farmers knowledge and skills be developed so that they can improve their crop management and business capacities? This book gives an answer to this question. Integrated Crop Management (ICM) is presented as an alternative way to tackle these constraints, and FFS as a way of learning about ICM. Approximately one third of the field guides and the technical manual delve into crop protection topics, including numerous full colour photos, suggested training exercises and data recording forms, brought together by cartoon-style drawings. This publication is available in English, Indonesian, Spanish and Vietnamese, and the English version can be downloaded from the ESEAP ICM-Training Resource homepage at www.eseap.cipotato.org/Training-resources.htm

Learning integrated crop management for sweetpotato 1997. CD-Rom with video. International Potato Center, Regional Office for East and Southeast Asia and the Pacific (CIP-ESEAP), PO Box 929, Bogor 16309, Indonesia, UPWARD. http://www.eseap.cipotato.org
This video examines common constraints faced by Indonesian farmers who grow sweetpotato. It was produced to promote ICM to sweetpotato farmers and to motivate them to attend ICM farmer field schools.


This workshop report focuses on the insights, lessons and recommendations derived from formal presentations, analysis of cases, poster sessions, small group discussions, and individual contributions. The workshop aimed at the institutionalisation of PTD in the following settings: research institutions, civil society actors such as farmer organisations and NGOs, extension development agencies, and multi-stakeholder platforms. Each of these settings has a chapter in the report with issues, lessons and recommendations on PTD. The annexes provide abstracts of 19 case studies from all over the world, as well as the PTD framework.

The workshop report is also available on CD-Rom, which is useful. It is a pity that the CD-Rom contains only the basic text of the report and one chapter of a related study. IIRR missed an opportunity to provide an extensive information source without much effort. (WR)


The Farmer Field School (FFS) approach on Integrated Soil Management (ISM) has been successfully experimented with at field sites in China, Philippines, Thailand and Vietnam. This facilitator’s manual was developed on the basis of these experiences. The objective of the manual is to assist facilitators by providing a basic framework and materials on FFS-ISM.

The training materials can help farmers to make their own decisions, to organise themselves and their communities, and to create a strong working network with other farmers, extension workers and researchers. The manual is meant for field-based extension officers, farmer leaders and field-level development workers and their trainers and co-ordinators. It contains a large number of FFS-ISM exercises on general FFS-related topics and a selected range of soil management topics. (CR)

**Way out of the woods: learning how to manage trees and forests** by Mele P van (ed). 2003. 143 p. ISBN 1 872691 67 6 ; EURO 50 – Marnix Book store, Nederkouter 109, B-9000 Gent, Belgium / info@marnixbooks.be

This book is an account of how the success of forestry and agroforestry projects in three countries (Nepal, Kenya and Bolivia) depends on understanding biological, social and cultural diversity and applying this knowledge to meet the needs of rural people. “Way out of the woods” explores the roles that scientists and rural people play in finding a way to sustainable management of trees and forests. New ideas come from existing knowledge articulated with the help of researchers or local facilitators. This knowledge illuminates the path out of darkness, the metaphorical place in the woods, where the ability to see forward and beyond the trees is restricted. The solutions to sustainable management lie in using local and scientific knowledge and the case histories show how simple approaches can provide new solutions to old problems. An important lesson is that this can only take place if actors trust each other and communication between groups is open. Profit of the sales of Way Out of the Woods is directly invested in the Centre for Agro-Ecology and Development, the Nepalese NGO who contributed one of the chapters of the book. More information on their activities can be found at http:// www.alternatives.org.np/


This resource book is now available in electronic version, in English, French, Spanish and Arabic. It shows how group promoters can help men and women in rural communities to join together and work to improve their income and living conditions. It presents a participatory approach in which group promoters play a key role. Their task is to help the poor to form sustainable self-help groups and undertake income-generating activities. http://www.fao.org/sd/2001/ PE0303_en.htm


This publication is based on a Philippine study that centred on the transfer of rice IPM principles to coconut ecosystems. The 15-month study had three objectives: to identify some of the constraints to institutionalising the IPM farmer field school approach, to advise on the social and technological issues arising from the FFSs, and to test research and extension methodologies compatible with IPM concepts. The report provides an evaluation of the project with an overview of constraints and recommendations to overcome them. (WR)

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**ICRA**

23rd ICRA training in interdisciplinary team work for participatory rural development

January 12 - July 23, 2004 (English, Wageningen, the Netherlands) January 19 - July 30, 2004 (French, Montpellier, France)

ICRA offers an experiential learning programme for professionals working in rural development. The programme focuses on designing interdisciplinary development and research activities for sustainable development.

The programme consists of the following elements:

- 10 weeks - knowledge acquisition, workshops including a field exercise in the Netherlands
- 16 weeks - interdisciplinary team work to conduct a professional assignment for a Client Institute in the South on a specific problem and formulating plans for future action
- 2 weeks - exchange of results of the professional assignments, individual action plans and evaluation.

Requirements: PhD/Msc, 2 years relevant working experience after last degree, age under 40.

The full cost is EURO 29 500 including all travel, accommodation, tuition, field costs and allowances. A limited number of fellowships are available for candidates from developing and transition countries.

Deadline for applications is 1 October 2003. Applications for fellowships should be received before 1 July 2003.

For further details and application forms, please contact: ICRA P.O. Box 88, 6700 AB Wageningen, The Netherlands e-mail: secretariat.icra@wur.nl web site: http://www.icra-edu.org
Community IPM website
http://www.communityipm.org/index.htm
This site includes many very useful documents and teaching materials related to Farmer Field Schools. It was originally created as an activity of the FAO Programme for Community IPM in Asia. The site is being maintained as an archive of information relating to the groundbreaking work carried out by government agencies, NGOs and farmer groups that were associated with the FAO Programme. The Community IPM website is managed on the principle of “information for all”, meaning that anybody can visit the site and download the content.

CGIAR task force on Farmer Participatory Research for Integrated Pest Management (FPR-IPM)
http://www.ciat.cgiar.org/fpr-ipm/inicio.html
A forum for people and institutions interested in fostering farmer participation in research and development of Integrated Pest Management. Visit the file library to download the FPR-IPM proposal and documents contributed by the FAO-Intercountry Rice and Vegetable IPM, CIP/CARE, UPWARD/CIP and ISNAR. These include case studies, evaluations of impact and press releases. If you have case studies or other documents relevant to farmer participatory research for IPM or other approaches to sustainable agriculture, send them to be posted in the file library.

ECOPORT
http://www.ecoport.org/
This Internet portal provides resources and databases on ecology, including information about pests. There is a lot of information available though it is not organised in a very user friendly way.

Navigate this site via the columns on the left.

Soil Productivity Improvement through Farmer Field Schools
http://www.fao.org/ag/agl/agll/farmsg/default.stm
The Land and Water Development Division of FAO has just launched this web site on Soil Productivity Improvement (SPI) through Farmer Field Schools (FFS). It provides information on FAO’s pilot programme on SPI-FFS. Specifically, it aims at promoting the exchange of information and experiences on the development and implementation of FFS for enhancing and sustaining soil productivity. The site is targeting those involved in developing participatory or FFS land management and conservation programmes, resource persons and senior extension officers as well as agricultural development specialists.

IPM forum
http://www.cabi-publishing.org/IPM/links.htm
This CABI site provides a wealth in links and background material on IPM, included teaching material.

The Communication Initiative
http://www.communit.com
This website aims to improve strategic communication thinking on development issues, expand dialogue, debate and review of key communication issues and programmes. The work of The Communication Initiative is primarily in support of communication practitioners in developing countries, management staff in local, national and international social development organisations - including NGOs, government, bilateral aid organisations, foundations and academic institutions.

Capacity Development Resource Book
http://magnet.undp.org/cdrb/
This resources book presents the lessons from four decades of technical cooperation -and the fundamental changes that UNDP has instituted to capitalise on the potential contributions of capacity development. These processes are designed through facilitative and participatory approaches, and they are responsive and accountable to national priorities and objectives. These characteristics renew the main goals of development co-operation: long-term sustainability and an enabling environment that facilitates human development. This document is available in English, French and Spanish (pdf) and also in English, in html format.

Global IPM facility IPPM expert database
http://www.wisard.org/wisard/ippm/index.htm
This is a directory of experts in Integrated Production and Pest Management (IPPM) from all over the world, including experts on FFS. This joint initiative aims to enhance the access and use of expert knowledge in local and intermediary organisations dealing with IPPM issues.

CM-Training Resource homepage
http://www.eseap.cipotato.org/Training-resources.htm
This Integrated Crop Management (ICM) Training Resource for potato and sweetpotato is a compilation of training guides and modules developed within a range CIP projects. It contains both technical background information on the various components of ICM, and methodological guidelines for facilitating farmer learning. These guides and modules can be downloaded, modified and used as needed, provided that reference is made to the original document. The site is managed by a task force of the ICM Working Group.

Links for development change in Natural Resource Management
http://nrm.massey.ac.nz/changelinks/
An on-line resource guide for those seeking to improve the use of collaborative and learning-based approaches.

Participatory Training and Extension in Farmers’ Water Management
This site provides training material for participatory training in farmers water management. It aims to provide tools to introduce effective water management technologies and practices, to put farmers in charge in water management, and to establish effective support services. All the material can be downloaded and is also available on CD-Rom. CD-Roms can be ordered by email from farmer-water-training@fao.org

The present global problems of poverty, ecological destruction and loss of cultural diversity call for innovative solutions. Experiences indicate that the cultural identity and initiatives of local people can provide important keys to sustainable rural development. This book describes the processes whereby the present-day diversity of knowledge and cultures has emerged. It presents a number of field experiences of endogenous development, or development from within, in Sub-Saharan Africa, Asia, South America and Europe.

By building on local needs and resources, innovative methodologies have been developed to understand and experiment with indigenous practices, and to find synergy with modern knowledge systems. The activities include identifying development niches, retaining benefits within local areas, maximising local control, and making selective use of external resources. With a good balance of theory and practice, this book can be immensely useful to development practitioners, researchers and policy makers, especially in the field of rural development, agriculture, natural resource management and health.


This book brings together 30 case studies and scientific papers that show the effects of pesticides, particularly on farming communities and agricultural workers. It gives details of pesticide hazards and explanations of the toxicity manifested. It focuses specifically on the dangers they present to women. Silent Invaders shows the importance of studying impacts on both women and men, taking account of gender divisions of labour, of the imbalances in the economic and political realities of women and men’s lives, and of the clear physiological differences between the sexes.

The final section provides details about community action to overcome pesticide hazards, ranging from community-based pesticide monitoring in Indonesia, Malaysia, Korea and other Asian countries, to the establishment of a free local health care centre for victims of the Bhopal gas disaster, and to a successful community and trade union campaign in the UK to have Linden banned. The section details practical strategies (including FFS) for sustainable agriculture that can help farmers manage pests while reducing their reliance on hazardous pesticides. Recommended (WR).


Pictures and stories speak a thousand words. This message emerges from this volume of experiences from central Australia. The editors have created a wonderful reading journey with dozens of evocative pictures, striking photos and stories about well-tried methods. It is clear from their selection of experiences and focused editing that both authors are themselves skilled in participatory planning.

The book opens with a context-setting description of Aboriginal people in central Australia. This helps the reader understand some of specific issues about the Aboriginal context and implications for planning. A section on participatory planning highlights key ethical questions, such as misappropriation of Aboriginal information and Aboriginal language and “high English”. This is followed by a series of frequently asked questions that are both thought provoking and practical.

Methods are also discussed in the book. The authors discuss conflicts, problems, and the considerable time and negotiation that are present in all multi-stakeholder participatory planning processes. The stories offer innovative solutions to problems that many others will recognise from their practice. (IG)


This book is part of a series of practical field guides produced by FAO for people working in small-scale dairying in developing countries. Milk producers can increase their income and utilise their skills and resources better if they work in groups. It promotes the organisation of small-scale milk collection and processing as a sustainable, income-generating activity for household food security. It also seeks to provide a means for improving the safety, quantity and quality of milk and milk products available for consumers in developing countries.

This book aims to play a role in poverty alleviation in developing countries, in a gender sensitive and sustainable way. Participation is a key pillar of the strategies promoted throughout the book without gender, age, race, social class or any other bias. The intended readers are (future) leaders of milk producer groups, extension workers, project staff and group promoters who are working to set up milk producer groups, and those developing already existing groups at village level in rural areas.


This CD-Rom contains the report and annexes of a case study of Tonle Sap (the Great Lake) ecosystem and ricefield fisheries in Cambodia. More than 100 aquatic species (fishes, reptiles, amphibians, crustaceans, molluscs, insects and plants) collected in rice fields and used daily by rural households are presented. The species descriptions and photos are linked to information on collection tools and methods, uses and traditional knowledge. In conclusion, the authors caution against measures threatening aquatic organisms such as pesticide use, clearing of flooded forests and destructive fishing tools, and outline promising approaches for the sustainable management and use of this rich aquatic biodiversity.
Visit to Central America

In November 2002, Teresa Gianella, Editor of LEISA Revista de Agroecologia, and Anita Ingevall, Director of ILEIA, travelled together in Central America. The purpose of the trip was to present the LEISA Revista magazine to the region and to make contacts for future information exchange. Teresa and Anita had the opportunity to meet and discuss with farmers, technicians and NGO representatives in El Salvador, Honduras and Guatemala.

Here we only have room for a brief account of one of our visits in Guatemala. We also have other stories to tell from our visits in Guatemala, El Salvador, and Honduras. We have fond memories of all our visits and promise to share more of our experiences in future LEISA magazines, and on our web sites.

Visit to the coffee farmers assisted by IJAT’Z

Coffee is the most important agricultural product for the Mayan farmers on the slopes of San Lucas de Toliman, three hours from Quetzaltenango in Guatemala. Coffee has been grown in Guatemala since the 18th century, but over the past few decades it has been promoted intensively as an export crop, providing to farmers to increase their yields. Unfortunately, these technologies had negative effects on the agro-ecosystem and on farmers health. Over time, yields declined and higher inputs of agro-chemicals were required to maintain production.

In San Lucas de Toliman we meet Guillermo Campa, Germán Xep Ajcalon and Inocente Jacinto, some of the Mayan farmers who are involved in IJAT’Z. IJAT’Z started as a reaction to the problems the farmers were facing. Geramn tells us that when he became ill from the pesticides he was using, he started to think that there must be another way of farming. He also remembered older people telling him about the traditional Mayan agriculture. Germen decided to try and find more information. He got in touch with a few of the oldest farmers who still remembered the old ways and started to experiment on his own.

More than ten years later, IJAT’Z has become a training and promotion centre for the local farmers association, where they share their experience in ecological coffee growing with other members of the association. Our hosts were all local farmers, who are available to provide advice and training to other farmers who wish to grow ecologically, particularly organic coffee.

We were able to visit the coffee plantation of one of the participating farmers. The coffee was growing in the shade of a variety of fruit trees. Between the coffee and fruit trees grew a variety of green manure crops, as well as plants for erosion control and for increasing water retention. Minimum tillage is also practiced. The farmers said that their vision was to create “a forest of food”. Guillermo pointed out that management is one of the most important aspects of farming “One must be very conscientious about pruning, incorporating green fertilisers, maintaining the plant cover and managing pests”.

The number of coffee farmers adopting ecological methods is increasing, not only because of the health benefits but also because it improves their economic security. Diversified crops ensure food security for their families, and agro-chemical free coffee can be sold at better prices. The elimination of agro-chemicals in the area also means less pollution in the water courses. To make the change to ecological farming, the farmers associated through IJAT’Z drew up their own project proposal and obtained the assistance of a small grants programme (SGP-GEF-UNDP) in Guatemala.

The initiative taken by these farmers has not been an instant success – their commitment and persistence in innovating has carried them through a number of difficulties and it is finally starting to pay off. We were very impressed by their commitment and enthusiasm.

Thank you...

We are grateful for the co-operation of all the technicians and NGO staff who welcomed us and gave us the opportunity to gain valuable experience in getting to know the rural areas of Central America, the hazards and challenges they deal with and their progress. Special thanks to the farmers who made time to see us during their very busy working day.

Teresa Gianella-Estrems
Anita Ingevall

Themes for the LEISA-India

Vol. 5, 3 September 2003

Access to and control over resources

Many different systems and arrangements determine who has access to and control over natural resources like land, water, trees, grazing, manure etc., and under what conditions. Systems of access and control change and evolve over time and range from formal to informal, from traditional to new, from collective to private. This issue of LEISA India will try to bring into focus some of the practical aspects of these different systems and arrangements. We invite you to share your experiences.

Deadline for contributions is 31st October 2003

Vol 5, 4, December 2003

Rehabilitation of degraded land

This issue of LEISA India will deal with practices that contribute to maintaining productive soil and rehabilitating land that has been degraded. Please contribute your experiences, ideas and solutions.

Deadline for contributions is 31st October 2003