

4. Community IPM

“Community IPM” is a strategy for sustainable agriculture development where farmers:

- Act upon their own initiative and analysis;
- Identify and resolve relevant problems;
- Conduct their own local IPM programmes that include research and educational activities;
- Elicit the support of local institutions;
- Establish or adapt local organisations that enhance the influence of farmers in local decision making;
- Employ problem solving and decision making processes that are open and egalitarian;
- Create opportunities for all farmers in their communities to develop themselves and/or benefit from their IPM activities;
- Promote a sustainable agricultural system.

Community IPM is the conceptual framework in which Field Schools are now being conducted by national IPM programmes in the member countries of the FAO regional programme. In fact, the name of the regional programme has been changed to FAO Community IPM Programme to reflect this.

“Community IPM” is a strategy in which the Field School is a first step in the development of the sustainable management by a community of its shared agricultural and ecological resources. The goal of this strategy is to institutionalise IPM at the local level. This chapter will discuss the Community IPM strategy and present case material from Indonesia to help demonstrate the Community IPM strategy.

4.1 Community IPM Basics

The three basic elements of Community IPM are learning, knowledge generation, and organising (see Figure 4.1, below). The three overlap in practise, but Community IPM begins with education, the Farmer Field School. The next step is the follow-up of the FFS with additional opportunities for farmers to build their skills. These activities further farmers’ learning so that they are able to: a) create their own knowledge through research; and b) organise groups and activities. The goal of post-FFS activities is to enhance the capacities of farmers to create their own mechanisms to manage their shared resources. Community IPM leads to farmer empowerment. Community IPM seeks to institutionalise IPM at the local level by putting farmers in control of the process of planning and implementation of their own IPM programmes.

4.1.1 Building Community IPM

Laying a foundation upon which FFS alumni can establish a farmer led IPM programme in a given village requires several key activities:

- Building a cadre of experienced Farmer IPM Trainers.
- Implementing several FFS plus other follow-up activities.
- Creating opportunities for IPM Alumni/Farmer IPM Trainers to interact.

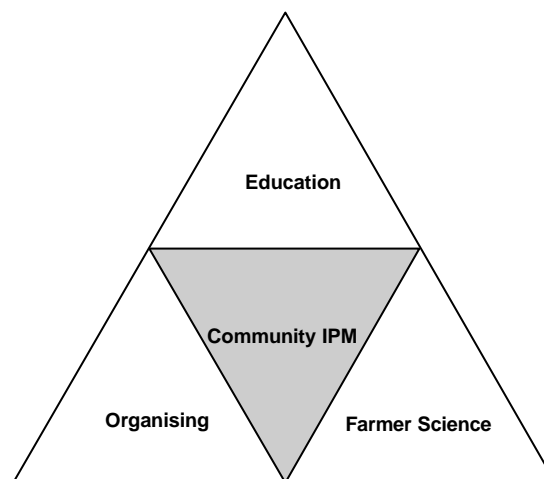


Figure 4.1 Community IPM

Experienced Farmer IPM Trainers provide village level leadership for the establishment of Community IPM. This local leadership will be “on call” 24 hours a day, seven days a week. When there are several Farmer IPM Trainers in a village they can share the leadership load and provide the critical mass of motivation required to get a community approach moving. Farmer IPM Trainers are FFS alumni who, in essence, emerge during their FFS by displaying good facilitation skills and high commitment to IPM. These potential IPM leaders then attend TOT’s where they learn to facilitate Farmer Field Schools. The status and confidence of a Farmer IPM Trainer is proportional to the number of IPM activities that he or she has organised.

Without post-FFS educational opportunities there will be no community movement. At the outset, these activities will most likely have to be externally funded. Experience has shown that over time farmers can both generate the funds needed to support their activities and implement them. These activities should include FFS’s that are conducted by the Farmer IPM Trainers and farmer led field studies. The farmer led field studies should help alumni to first identify a field problem to study and then design a research study to address the problem. The goal of these studies is to increase farmers’ understanding

of ecological or agricultural principles as well as to search for solutions to field problems.

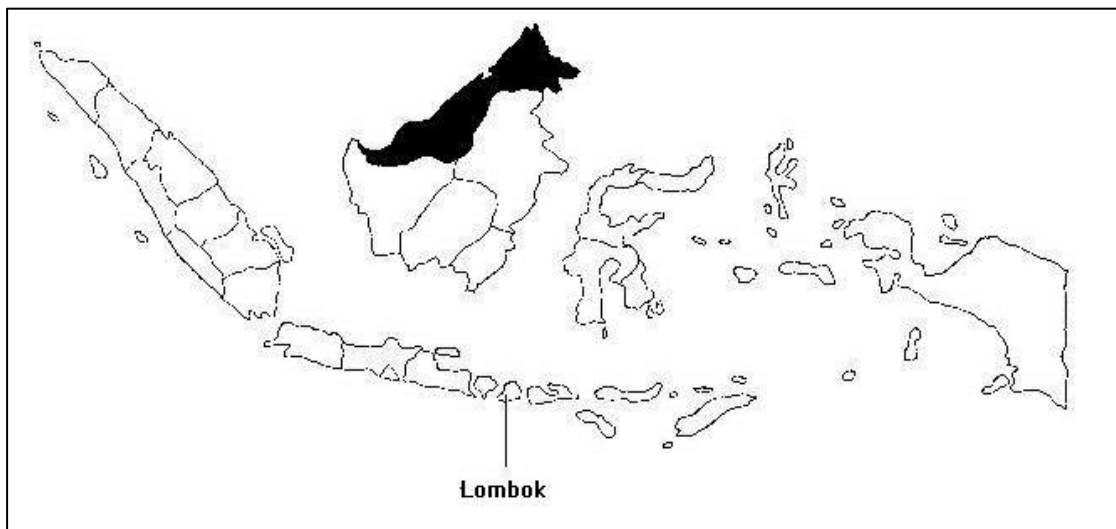
Alumni forums held at the village and supra-village levels enable farmers to interact and discuss various issues related to IPM. If farmers are conducting field studies they can share results. If farmers are conducting FFS they can share experiences. If farmers are organising IPM groups and activities they can share plans and ideas. Initially forums might be organised by IPM trainers with some help from IPM alumni. Over time alumni and trainers will exchange these roles.

Helping farmers to initiate and establish their own local IPM programmes will result in enriching the assets of rural communities and contributing to the promotion of sustainable rural livelihoods.

4.2 Community IPM in Gerung Sub-district

The following is excerpted from a case study prepared by an IPM Field Leader, Paiman, from Central Java, Indonesia (Paiman, 1998, pp. 138-189). The case describes Community IPM activities being conducted by farmers in Gerung Sub-district in late 1997. Gerung is located in West Lombok District on the island of Lombok in West Nusa Tenggara Province, Indonesia.

Map 4.1 Map of Indonesia showing the island of Lombok



4.2.1 Gerung Sub-district

Gerung Sub-district is located about 20 kilometres south of Mataram, the major city on the island of Lombok. There are eight villages in the sub-district: Gerung, Banyu Urip, Dasan Geres, Beleka Gapuk, Kebun Ayu, Jembatan Kembar, and Lembar. The primary source of income for people in Gerung is agriculture. The city of Mataram has had little influence on people's incomes, as employment opportunities for villagers in the city are few. A result of this is that young people are involved in farming and hence there are many young farmers involved in IPM activities.

There are 2,688 hectares of irrigated rice fields in Gerung. There is a continuous supply of water in the sub-district, which allows for two seasons of rice production, and farming is the primary occupation of farmers in the sub-district. The cropping cycle in the area is rice - rice - soybeans/vegetables. Commonly the cycle begins in December with the planting of the main rice season crop. In April the second rice crop is planted. In August crops such as soybeans, corn, chillies, cabbage, cucumbers and watermelons are planted. Gerung Sub-district ranked second in 1996 in West Lombok District in rice and soybean production with respective yields of 27,568 tons and 2,423 tons.

The Mosque is a major factor in people's lives in Gerung. People who have made the trip to Mecca are proud of their accomplishment and respected by others. The homes of the people of Gerung may be simple, but most households have members who have gone on the Haj to Mecca. There are many IPM alumni who, while they might own as little as 0.33 hectare, have earned the title of Haji. Given the importance of religion in these people's lives, it is not surprising that religious activities have become one method used by IPM alumni to spread IPM among the villagers of Gerung. Religious schools, religious discussions, Friday sermons at the Mosque have all been used as venues for spreading information about IPM. Farmer IPM Trainers who teach religious training classes have used these classes to promote IPM.

A Lombok tradition that has been taken advantage of by IPM alumni is the gathering of small groups of people to discuss issues or just relax together in a structure known as the "bruga" (see photograph). This simple open structure is common to every house in Lombok. A bruga may have an area of up to 3 m. x 6 m. There are four to six posts that support a platform for sitting at about 50 cm. from the



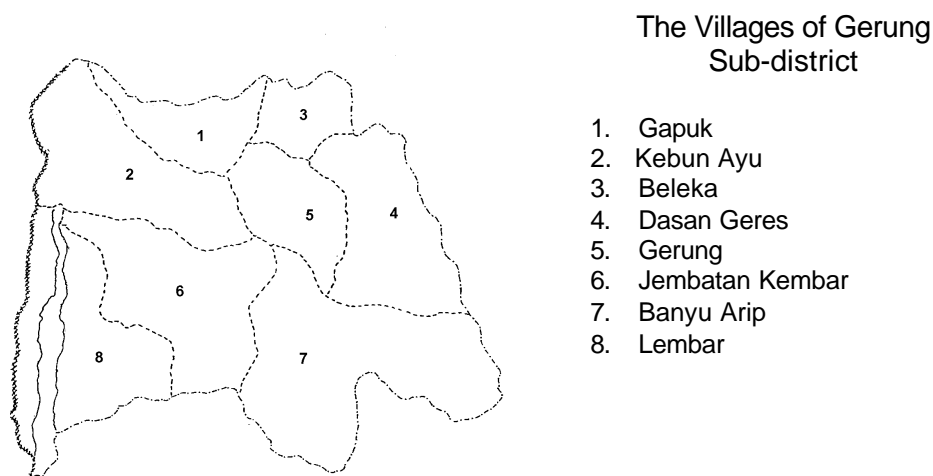
ground, a roof, plus, in many cases, a second enclosed level that serves as a storage area. Members of a household use the bruga for relaxing. When guests come they are invited to the bruga, not the house. People say that the bruga was originally connected with sacred ceremonies and as an area for the storage of rice. IPM farmers use the bruga as an informal meeting area. In the bruga IPM alumni will discuss IPM among themselves or they will invite non-alumni to a bruga to talk about IPM.

“When we gather in the bruga we usually end up discussing social issues or problems concerning farming including IPM issues.”

Rusdi Aminullah
Farmer IPM Trainer, Lembar Village

4.2.2 National IPM Programme Field Activities in Gerung Sub-District

A total of 40 FFS's had been conducted in Gerung by October of 1997. The National IPM Programme funded 35 of the FFS's (see the table below), which were conducted by the local IPM Field Trainer (a field worker from the Directorate of Crop Protection). The National Programme also funded four Farmer Planning and three Farmer Technical Meetings for alumni in the sub-district. The IPM Field Trainer and Farmer IPM Trainers shared managing and facilitating these meetings.



Map 4.2 Gerung Sub-district

Farmers from 35 of the 52 Farmers Groups in Gerung have participated in the 40 Farmers Field Schools conducted in Gerung. The Field Schools were reasonably spread among the villages. The table below summarises FFS sites and the types of FFS that were conducted between 1992 and mid-1997.

IPM FFS in Gerung Sub-district Between 1992 and Mid-1997

Village	Rice FFS	Rice FFS (by Farmers)	Soybean FFS	Shallots FFS	Follow-up FFS	Farmer IPM Trainers
Gerung	4					1
Dasan Geres	7	1		1		
Beleka	4	1	1			2
Gapuk	2					2
Banyu Urip	1					
Kebun Ayu	6		1			
Jembatan Kembar	4		1		1	2
Lembar	1	3	1			2
Total	29	5	4	1	1	9

Table 4.1 IPM FFS, Gerung 1992-mid-1997

Five of the rice IPM Field Schools received funding support from local government. By mid-1997 850 farmers had participated in an FFS and nine alumni had been trained as Farmer IPM Trainers. The names of the Farmer IPM Trainers and the villages in which they live are listed below.

I Nengah Sukma Widarta	Gerung Village
H. Burhanuddin	Beleka Village
Rizaliadi	Belaka Village
Zakub	Gapuk Village
Nasrudin	Gapuk Village
Bachriandi	Jembatan Kembar Village
Jumahir	Jembatan Kembar Village
Rusdi Aminullah	Lembar Village
Nurudin Romli	Lembar Village

4.2.3 IPM Farmer Activities

IPM National Programme efforts established a critical mass of IPM alumni in Gerung. Since 1996, IPM alumni have been organising several types of activities that, for the most part, they have funded themselves. Among the alumni conducted activities, field studies have been most prominent. FFS alumni have been very creative in making use of available forums for informing others about IPM and in establishing their own organisations and forums as venues for communication. They have forged steadily ahead in the development of a local farmer-led IPM program. This section presents a description of alumni field studies, the informal approaches that have been used to disseminate IPM, and alumni organising efforts. While the presentation of these activities may make them appear to be discreet efforts, in reality the activities were related one to the other and occurred concurrently.

Farmer Conducted Field Studies. Field studies in Gerung have been conducted to increase farmer understanding of ecological issues, to adapt or

test out recommendations in local conditions, and to increase alumni confidence regarding their understanding of specific practices.

“Experience in Gerung has shown that IPM farmer alumni are inclined to conduct field studies. For example IPM trained farmers studied the effectiveness of SP 36, conducted variety trials, analysed the effects of defoliation, and tested various planting distances and their influence on yields. Alumni conducted demonstrations for themselves and others on the ability of plants to compensate for damage caused by pests. There are other things that you can see regarding IPM alumni. They are creative, dynamic, and have taken on the leadership for developing a sustainable approach to agriculture.”

Ir. L.L. Noverdi Bross
Head, Provincial Agriculture Service

By October of 1997 alumni had conducted many kinds of field studies including:

- The influence of planting distances on yields in soybeans;
- The influence of plant loss due to bean seedling flies on yields in soybeans;
- The effects of inter-planting tomatoes and chillies;
- The effects of varying planting distances in rice;
- The use of alternative control measures for rice seed bugs;
- The comparison of Membramo and IR 66 in resisting Tungro Virus.

Alumni originally learned about research procedures via their rice FFS experience. Post-rice FFS's in alternative crops also made use of studies. By 1996, alumni were conducting their own field studies. All of the above studies were based on alumni identified field problems. The IPM Field Trainer served as a consultant on some of the earlier studies helping with study design and analysis. Later studies were all alumni designed and implemented.

Box 4.1

Planting Distances in Soybeans

This study was conducted in Kebun Ayu by IPM alumni from the Mustika Sari Farmers Group. The farmers who conducted the study were Udin Muslim and Haji Abdurrahman. In Gerung Sub-district, there is a tendency among farmers to not pay much attention to planting distances in soybeans. They will set out seeds according to how many seeds they have and how large the area is that they are planting.

“The planting of soybeans with regular distances between plants is rare here. The common practice of farmers is to broadcast the seeds and let them fall where they will. So with this study we wanted to determine

optimal planting distances in soybeans and demonstrate to others the effect of regular and optimal planting distances on yields. We will present the results of our studies to other farmers.”

Udin Muslim
IPM Farmer Researcher

The basic study design was:

- Variety - Willis
- Treatments - 4 treatments with 3 replications each
 - T1. Broadcast sowing of seeds
 - T2. Seeds planted at 40 cm. x 10 cm.
 - T3. Seeds planted at 40 cm. x 20 cm.
 - T4. Seeds planted at 20 cm. x 20 cm.
- Date of planting: 23 July, 1997
- Area planted: 1000 m²
- Plot layout:

T 1.1	T 2.1	T 3.1	T 4.1
T 4.3	T 1.2	T 2.2	T 3.2
T 4.2	T 2.3	T 1.3	T 3.3

At the time of the field visit the soybeans had not yet been harvested so there was no way to determine which treatment was optimal. However, Udin Muslim did have some interim observations regarding the soybean plants.

“Physically, plants with a distance of 40 cm. x 10 cm. look the healthiest. The plants in treatment three, 40 cm. x 20 cm. look the worst off. These plants are the smallest of the four treatments. Perhaps the leaves of these plants are too exposed.”



Udin Muslim
IPM Farmer Researcher

Box 4.2

The Effect of Reduction of Plant Populations Due to Bean Seedling Flies

H. Fatchurrohman along with 25 farmers from Berkat Batuh Farmers Group of Gapuk Village conducted this study. Bean seedling flies often attack soybeans in the first or second week after planting with a maximum loss of

five percent of the plants. This early infestation scares farmers. When they see that plants are dying, they turn to pesticides to protect their remaining plants.

“Farmers get worried during the first couple of weeks of soybean growth because of the appearance of bean seedling flies. Although only five percent of the plants may be lost, farmers begin spraying at this time. So that we would know when and at what levels damage could be sustained without significant loss in yields my friends and I set up this study. Planting distances are also important to this issue so we have worked with the farmers of Kebun Ayu Village who are conducting a planting distance study. We will use this study to establish a set of basic practices among the farmers in our Farmers Group in the planting of soybeans.”



Haji Fatchurrohman
IPM Farmer Researcher

This study was selected based on what members of the Farmers Group felt was an important issue. The full group was involved in the decision, as these were the people who would be responsible for the study and who would eventually make use of the results of the study. Every time that a field observation was held during the study there were at least 25 farmers involved in the collection, analysis, and discussion of field data.

The design of the study was as follows:

- Planting Date: 16 July, 1997
- Treatments: Three treatments with three replications
 - T1. Control, no plants were pulled
 - T2. Ten percent of the plants were pulled after two weeks
 - T3. Ten percent of the plants were pulled after four weeks
- Variety: Willis
- Planting distance: 40 cm. x 20 cm.
- Seeding rate: two seeds per hole

Cultural practices were the same for all three treatments. Each treatment received the same amount of fertilizer and water, hoeing was the same for each treatment, and the planting distance was the same in each treatment. The treatment, T2, was conducted on 30 July, 1997 and T3 was conducted two weeks later. Field cuts were taken at harvest time to determine yield

rates that were converted to reflect yield per hectare. Yield rates per repetition per treatment were as follows:

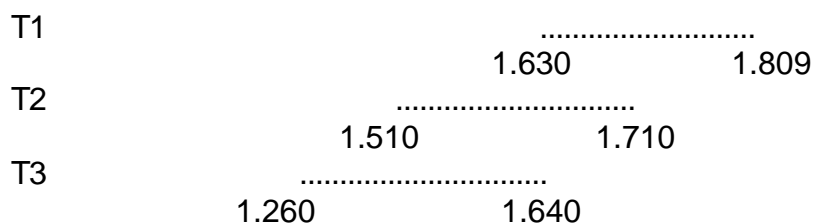
Treatment	Repetition	Yield(T)/Ha	Average
T 1 (control)	1	1.809	1.703
	2	1.670	
	3	1.630	
T 2 (10% at 2 weeks)	1	1.710	1.620
	2	1.640	
	3	1.510	
T 3 (10% at 4 weeks)	1	1.260	1.506
	2	1.640	
	3	1.620	

The farmer research team that conducted the study had the following to say about their results:

“Looking only at average yield rates per treatment would lead to the selection of the first treatment (T1) where there was no deliberate reduction of plant population as the optimal treatment. In other words we should try to protect all of our plants so that none are lost to pests.

“If we look a little closer, we see that there was no consistency among repetitions of increased yields. For example the first repetition of T2 was higher than repetitions two and three of T1. The second repetition of T3 was also higher than the third repetitions of both T2 and T3. Thus while there seem to be differences in yields, there is in truth no real difference.

“A simple analysis of the data shows that the ranges between the maximum and minimum yield of each treatment overlap. Look at this drawing. (One of the farmers drew the following diagram on a piece of paper.)



“The drawing shows how much overlap there is among the treatments. The treatment with the lowest average yield (T3) has one replication with a higher yield than the lowest yielding replication of the highest yielding treatment (T1). This overlap means that its hard to tell if there is or isn’t any difference among the yields of the various treatments.”

The following is part of a discussion held with Haji Fatchurrohman about the results of this study.

So what do you make of these results?

“There is no difference in yields as a result of the various treatments in our study. We will try this study again next year. However, my take on these results is that loss of plants due to bean seedling fly does not imply that there will be lower overall yields.”

If that's true then what do you think about crop protection in the early stages of plant growth?

“Come again?”

There are those that spray pesticides at the beginning of the season, are they solving or creating a problem?

“Losses of plants at the beginning of the season due to bean seedling fly are not important, they are insignificant, less than five percent of plants die due to the fly. Whether we pulled out 10 % of the plants at two or four weeks had no measurable effect on yields. So there is no reason to spray early in the season, especially when you consider the effect of pesticides on the natural enemy population which is just beginning to develop at that point in the season.”

Alumni Help Others to Learn About IPM. IPM alumni in Gerung Sub-district have taken advantage of every means available, formal or informal, to help educate other farmers in their villages about IPM. The approaches they have used have made optimal use of existing opportunities in their villages.

Dissemination Via Religious Activities. The majority of the residents of Gerung are Moslem. Farmer IPM Trainers and IPM alumni have often made use of religious activities as forums for talking about IPM. This approach has been especially effective when Farmer IPM Trainers and IPM alumni played a major role in a particular activity, for example as an imam, the presenter of the Friday sermon, or as the leader of a religious study group. Nurudin Romli, village secretary of Lembar Village, officiates at marriages and has used that role to provide information about IPM.

“I always take the chance of incorporating IPM into every sermon I deliver during a marriage ceremony. I urge newlyweds to not endanger the environment by going wild with the use of pesticides as these poisons endanger both the environment and our health. I impress upon them the importance of passing on to our children and grandchildren an environment that is clean, free of dangerous poisons. I usually use an appropriate phrase from the Koran, for example one of the sayings of Allah expresses the thought: ‘You should not do damage to this earth as Allah will not befriend the person who does this’.”

Nurudin Romli
IPM Farmer Alumni

Religious Training as a Vehicle for IPM Dissemination. Twenty-nine year old Rusdi Aminullah, a Farmer IPM Trainer from Lembar Village, serves as a religious teacher at the Madrasah Nujumul Huda in his village. In the classes that he conducts he usually finds a way to incorporate IPM into his lessons. His goal is to help his students to acquire an understanding of the environment and its management. He hopes that this will influence their approach to life in the future and help them to remind their parents of alternatives to the use of pesticides.

“I don’t necessarily rely upon the curriculum or the school’s schedule. Every time a topic arises that is connected to the environment, nature in general, or health I discuss the basic principles of IPM with my students. I hope to plant the seed of love for the environment that was created by God for the enjoyment of humanity not for humanity to destroy. If I can plant this seed now, they will grow to appreciate the importance of nature. I would be thankful if at the very least they will be able to influence their parents.”

Rusdi Aminullah
Farmer IPM Trainer

Dissemination of IPM by Women Through Informal Groups. Women often take advantage of informal situations to discuss household issues with each other. Women in Gerung who are IPM alumna are actively helping their friends by telling them of IPM. The following is an interview with Ms. Syifa’iyah of Lembar Village.

So what do you think of IPM?

“IPM has been very profitable to me. We no longer have the problem of buying pesticides which are expensive and which we can’t say have been of any benefit. Our rice is safe, there are no dangerous residues, and, more importantly, we are protecting our environment.”



If you feel that IPM has profited you, how have you told other farmers about this?

“I often gather with other women in the bruga and talk about IPM. I also teach at the Madrasah and every time we hold religious instruction for women I slip in information about IPM.”

What do you talk about?

“Well I have told them that in this world, if you have rice plants you surely are going to have pests. But if there are pests, there will also be natural enemies that prey upon them. These natural enemies are there to help farmers. I have also talked about the danger of pesticides to the environment and to people.”

IPM Farmers Organising. At their own initiative IPM alumni have created a multi-tiered structure of semi-formal and formal groups. They have established an IPM Alumni Association. In each group are individuals who serve as nodes of a communications network that keeps each group in contact with the other groups. The goal of the organising activities is to develop a system that will sustain an IPM movement in Gerung and be responsive to the needs of farmers throughout the sub-district. Alumni efforts have been independent of outside agencies. The following describes the different levels of organisational activity of the IPM alumni in Gerung Sub-district.

The Bruga as the Foundation for an IPM Movement. The custom of people gathering in the bruga of a household has been taken advantage of by IPM alumni to create a foundation for a semi-formal IPM network. The bruga of 46 households in the sub-district are being used as meeting places for IPM discussion groups. These groups meet on a regular basis to share information regarding IPM and farming. The Alumni Association plans to establish IPM discussion groups in every neighbourhood in every village in Gerung. The “bruga level” discussion groups are the foundation of a farmer controlled IPM network.

“Spreading information about IPM via the bruga is appropriate, we farmers don’t much care for formal meetings. At the bruga we can talk about IPM in a relaxed and informal manner without worrying about protocol. Farmers usually gather in the bruga for a cup of coffee in the afternoon as it starts to cool. While families have always had bruga, the role of the bruga has expanded in village life. The bruga serves a greater social purpose. With the advent of IPM an additional role has arisen for the bruga, they now serve as neighbourhood forums to support the spread of information about IPM and to strengthen the understanding of farmers regarding IPM principles. The bruga has given birth to farmers who embody the spirit of IPM. The farmers are changing how they farm.”



Bachriandi
Farmer IPM Trainer

Farmers Groups Reorganised. Farmers Groups were organised by Extension Field Workers as part of the modified Training & Visit system used by Extension in Indonesia. Farmers were meant to meet on a regular basis to receive recommendations, instructions, and establish seasonal plans for input requirements. Over time the basic weaknesses in the organisational structures of Farmers Groups led to the erosion of their vitality. The farmers of Gerung say that their Farmers Groups were inactive because the groups were poorly organised, failed to be relevant, and had poor leadership.

The Farmer IPM Trainers and other alumni in Gerung Sub-district have provided the leadership to breath life back into these groups. The revivification of Farmers Groups got an initial boost from the first round of Farmers Planning Meetings where alumni identified the reactivation of Farmers Groups as one of their objectives. Alumni note that their FFS experience provided them with new ideas and a new perspective on how to work effectively as a group. Alumni determined that the Farmers Groups provided the appropriate formal organisational context for their IPM activities. Once the groups had planned activities and begun to implement them there was good reason to continue to meet to learn about the results of those activities. As alumni brought new energy to their Farmers Groups, farmers in general learned that alumni had something new to offer both in terms of knowledge and motivation. The membership of Farmers Groups lost little time in electing FFS alumni to leadership positions.

IPM alumni have thus been recognised by their villages because of their new knowledge and leadership. They have helped members of their Farmers Groups to improve their farming practices. Field studies have been important, as they have served to actively involve all Farmers Group members in learning. Gerung Farmers are no longer the passive targets of messages brought to them by the Extension system. Rather, FFS alumni are becoming recognised as the key to the development of sustainable agriculture in Gerung as evidenced by the statement of L.L. Noverdi Bross, the head of the Provincial Agriculture Service

“IPM alumni, including Farmer IPM Trainers, have become the heads of their Farmers Groups and as such the nodes of an IPM movement. Among their roles as heads of Farmers Groups, the Farmer IPM Trainers have worked to connect one Farmers Group with another via the IPM network that has grown up. Farmers Groups have become the second tier in the organisation of an IPM movement in Gerung Sub-district. The Farmers Groups provide bruga discussion group members with a forum for discussing IPM issues among a larger group of farmers. Farmers Groups provide a context in which farmers can plan and effectively manage a variety of activities that respond to their needs.”

L.L. Noverdi Bross,
Head, Provincial Agriculture Service

At the Sub-district Level. The next tier of alumni organisations is at the sub-district level. At this level an organisation has been established by IPM alumni for IPM alumni. The following is a conversation with Rizalihadi, a Farmer IPM Trainer from Beleka Village, about the beginnings of the sub-district level IPM Alumni Association.

What are you doing to pursue the establishment of an on-going IPM program led by farmers?

“Along with other Farmer IPM Trainers and IPM alumni we are in the process of creating an IPM Alumni Association at the sub-district level. We feel that the primary activity of the association will be to expand the application of IPM by farmers via the implementation of field studies in response to field problems identified by farmers.”



When do you expect the association to be on its feet?

“We’ve already begun this process. We began the process over a year ago when there was a Farmers Technical Meeting for 30 IPM alumni from six Farmers Groups in five villages. Our Farmers Group, Dasan Tapen of Beleka Village, was the host for the meeting and I was among the team charged with organising the meeting. Several of us had already floated the idea of forming a sub-district level association and I had spoken with Bachriandi from Jembatan Kembar Village about it. There were several key leaders in attendance at the Technical Meeting including: I Ngh. Sukma Widarta, a Farmer IPM Trainer from Gerung Village; I Wayan Galang from Banyurip Village; Bachriandi, a Farmer IPM Trainer, and Haji Haerudding from Jembatan Kembar Village; Haji Mustofa Syafii and Rusdi Aminullah, a Farmer IPM Trainer, from Lembar Village; and from Beleka there was Haji Burhanudin, the head of a Farmers Group, and Haji Mujiburahman. We discussed the issue of forming an association for IPM alumni and all 30 participants were in support.

“What we agreed to as a programme at that time was:

- ***A common vision: Gerung Sub-district would become an IPM Sub-district and the site of a farmer-led IPM program at the field level.***

- ***Informal activities: to promote IPM through every means available.***
- ***Formal activities: to conduct field studies on a rotational basis among Farmers Groups based on needs/problems faced by farmers of those groups.”***

A Mega-tier. The creation of an IPM Alumni Association, the re-vitalisation of Farmers Groups, and the development of bruga discussion groups led to a new initiative for which Bachriandi and Rizalihadi have provided the leadership. Bachriandi came to Rizalihadi with the idea of promoting IPM through Water Users Association to all farmers in the sub-district. The sub-district is divided into Water Users Associations. One association is located in each watershed of the sub-district. All farmers belong to one of these associations. In general, rice farmers are more active as members of the Water Users Associations than they are in the case of Farmers Groups. As water is of primary importance in growing rice, all farmers are interested in participating in decisions regarding the use of water.

This strategy takes advantage of the strengths and positions of leadership that IPM alumni and Farmer IPM Trainers have come to hold in their Farmers Groups. There are usually several Farmers Groups represented in one Farmers Water Users Association. The heads of Water Users Associations are drawn from the leadership of Farmers Groups. This has resulted in most of the Farmer IPM Trainers who are heads of Farmers Groups also becoming heads of Farmer Water Users Associations.

Each Water Users Association is part of a larger collective of water users associations. The sub-district has two of these collectives. Meetings of the collective are attended by the head of each Water Users Association in the area under the oversight of the particular collective. Each collective meets once every 40 days. Bachriandi is the head of the “Collective of Farmers Water Users Associations for Pengga Kanan” and Rizalihadi is the head of the “Collective of Farmers Water Users Associations for Pengga Kiri”, between them they co-ordinate the activities of all Farmers Water Users Associations in Gerung Sub-district.

“Rizalihadi and I agreed to try to expand our organising to truly cover all of the sub-district. Fortunately I am still trusted by farmers to co-ordinate the Collective of Farmers Water Users Association for Pengga Kanan and Rizalihadi holds the same position for Pengga Kiri. We will use this opportunity to spread Field Schools throughout the watershed areas of the sub-district. Wherever the watershed includes another sub-district, we will be active there as well. I get really nervous whenever I see farmers using poisons. Many farmers still don’t realise that they are playing with fire. If they are unlucky they could die. We need to stop this. We, all of us Farmer IPM Trainers, are now actively pursuing this.”

The inclusion of water users groups forms a network that is more inclusive and more extensive than an IPM Alumni Association, a collective of Farmers Groups, or neighbourhood brugas. The same key individuals, IPM alumni and Farmer IPM Trainers, are in both, but there is a potentially larger audience for IPM by including water users groups. The regular meetings of the collectives provide a forum that allows for communication amongst all affiliated groups. Each collective meeting brings together the nodes of the IPM network. The bruga discussion groups, Farmers Groups, the IPM Alumni Association, and Farmers Water Users Associations are all connected via the IPM alumni and others that participate in the collectives of Pengga Kanan and Pengga Kiri.

The network has helped Farmers Groups to take a co-ordinated approach to their activities. The IPM network has also helped Farmers Groups to:

- Plan and organise activities such as field studies across the sub-district ensuring that the studies are of use to all farmers in the area.
- Share results of field studies among farmers across the sub-district.
- Inform other groups of innovations developed by members of any one group.

The role of leadership in the network is to co-ordinate the basic planning and decision-making that takes place at the Farmers Group level. The network circulates information internally and to groups outside the sub-district. There exists a common vision among the farmers connected by the network. Bachriandi, who, as a leader of one of the water users collectives, is a key figure in the network, had this to say.

“The trust placed in me by the farmers is not something that I intend to use to expand my power. I work with farmers so that we are working towards a common goal. I have not pushed an agenda upon others. The farmers are the ones with the right to determine the direction we take, not me. If I have an idea I will express it, but the group, not me, takes decisions. They have the power. Thus we work together with the same rights and responsibilities to struggle to realise our shared vision.”

In Gerung, alumni initiated their own organising efforts. IPM alumni, who began by using the bruga as a meeting place, reactivated their Farmers Groups, and ended in forming a sub-district IPM Alumni Association, have found their ability to communicate at all levels has been enhanced by the IPM network. Farmers can communicate among groups via the network, as the leaders of their Farmers Groups are part of the network. Farmers in Beleka have access to farmers throughout the sub-district. The various levels of organisations serve to ease implementation of activities while the IPM network enhances communications.

4.3 A Change in Roles

IPM Field Trainers play a key role in initiating Community IPM activities. This was the case in Gerung Sub-district and throughout Indonesia as well as in all countries where Community IPM programmes have been established. IPM alumni, over time, take on the roles of trainers and leaders of local IPM programmes and IPM trainers are free to play a more consultative role. The Gerung case study provides some insight into the roles that IPM Field Trainers and IPM alumni have played in establishing a Community IPM programme in the sub-district.

The Gerung case begins by identifying IPM field activities that were conducted in the sub-district. An IPM Field Trainer, a Plant and Disease Observer from the Directorate of Crop Protection, facilitated the first FFS in 1994. By the time the case study was conducted in 1997 there were nine Farmer IPM Trainers in the sub-district who had conducted a total of five FFS. At this point the implementation of FFS was being turned over to Farmer IPM Trainers. Thus the FFS implementation, initially an IPM Field Trainer role, became a Farmer IPM Trainer role. IPM Field Trainers picked up additional training activities, for example, the soybean, shallots, and Follow-up FFS. The Follow-up FFS was primarily a field study and reinforced research methods initially learned in the rice IPM FFS. The case presents a variety of examples of field studies being conducted by farmers. Gerung farmers, who initially looked to outside resources (the IPM Field Trainer) for knowledge, were, by 1997, creating their own knowledge base.

The IPM Field Trainers organised two types of forums for IPM alumni, the Farmer Technical Meeting and the Farmer Planning Meeting. These forums:

- Further enhanced the role of farmers while lowering the profile of IPM Field Trainers in activity planning and implementation.
- Re-emphasised the role of farmers as a legitimate source of knowledge for other farmers.
- Put farmers in the driver's seat of programme development by giving them a planning role in the development of a local Community IPM Programme.

The beginning sections of the case show the importance of the IPM Field Trainer in organising IPM field activities and the final sections show how IPM alumni replaced "outsiders" as the organisers of the Gerung Sub-district Community IPM programme. This replacement process is described in the following graph, Figure 4.2.

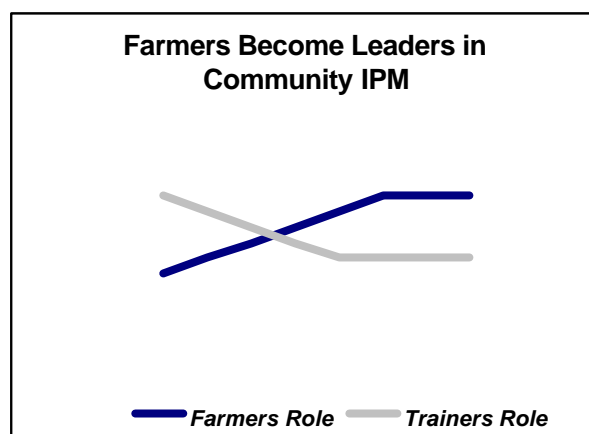


Figure 4.2 Farmers Replace IPM Field Trainers In Community IPM

IPM Field Trainers in Gerung in 1994 played the most prominent role in terms of providing training, information, and leadership related to IPM. By 1997, the roles of IPM Field Trainers and alumni had been reversed. FFS alumni had taken on providing training, information, and leadership. The case also indicates that local sources were being tapped for funding. In a sense, the high profile of the National IPM Programme was phased out over a period of several years in Gerung and replaced by a locally driven Community IPM Programme.

4.4 The Farmer Planning Meeting and the Farmer Technical Meeting

At the beginning of the chapter, meetings or forums for alumni at the village or inter-village level were identified as a key activity in laying the foundation for Community IPM. Two types of meetings, the Farmer Technical Meeting and the Farmer Planning Meeting, were mentioned in the Gerung case. These forums were designed to set in motion the development of Community IPM activities within sub-districts in Indonesia. While these forums might go by different names in different countries and there might be some difference in agendas, their primary goal would be the same:

To provide an opportunity for IPM alumni to share information related to IPM and initiate the establishment of a network among alumni as a foundation for a local Community IPM programme.

Perhaps a key difference between Community IPM and other community development approaches is that these meetings occur after a season-long training process, the FFS. The FFS helps to establish a common vision, group norms, and problem-solving skills. These are important to the efforts of alumni in institutionalising IPM at the village level.

4.4.1 Farmer Planning Meetings

The Farmers Planning Meeting in Indonesia was designed with a goal of laying the foundation for a network among IPM farmers at the sub-district

level. Creating a network among alumni is an initial step in establishing Community IPM activities. Rice farmers tend to maintain friendships at a very local level, among neighbours and those who farm near them. Rarely do they have acquaintances among farmers from other villages. These meetings, while focusing on IPM issues, helped to keep neighbours in touch with each other and helped farmers from across a sub-district to get acquainted. The process of preparation for and implementation of the meeting required that farmers identify local issues, plan activities to resolve those issues, and share those plans with other farmers on a sub-district level.

Box 4.3

Farmers Planning Meeting, Kaligondang, Central Java

The IPM Field Trainer and the IPM District Leader established a committee of IPM alumni to organise and facilitate the meeting. The committee was made up of representatives from six of the 'rice bowl' villages of the sub-district (two IPM trained farmers per village, usually Farmer IPM Trainers). This committee met to determine the nature of plans to be developed, the format for the plans, and how each group might conduct village level planning meetings. The representatives returned to their villages and met with other IPM alumni to formulate the plans that they would present at the Planning Meeting.

Field School alumni from five villages (Tejasari, Arenan, Penolih, Kembaran Wetan, Sempor Lor and Kaligondang), six per village including two Farmer IPM Trainers per village, attended the Farmers Planning Meeting. Other attendees included not only the IPM Field Trainer and Field Leader, but also Extension Workers from the sub-district, the Sub-District Extension Officer and the heads of each Village. The meeting was conducted in the house of the head of the village of Kaligondang on 19 December, 1995. The meeting started at 9:00 AM and closed at 1:30 PM. The agenda of the meeting included an opening, a presentation on the purpose of the meeting, presentations of plans, the editing of plans by the groups based on comments from participants, and the determination of a schedule for implementation and where funds would come from. Each group had written out its plans on newsprint and these were attached to the walls of the meeting room. A member of each village group presented the group's plans. Members of the organizing committee facilitated the meeting.

"This is a meeting that will strengthen the network among IPM trained farmers, help farmers to share their experience, and contribute to the continuation of IPM activities at the village level. This is a meeting for and by farmers."

Pak Eko Sugiyanto
IPM Field Trainer

Pak Hadi Suwito a farmer from Tejasari Village said:

“Our group came up with the idea to study the use of urea tablets and Super Phosphate 36% because we want to test new Extension recommendations. We aren’t rejecting the urea tablets and SP 36. We want to determine the proper approach to using them in Tejasari Village. The results of our study will be useful to all farmers in the village.”

Examples of Some of the Activities Planned by Farmers

<u>Farmers Group</u>	<u>Activity</u>	<u>Source of Funds</u>	<u>Schedule</u>
Sri Mukti Group Kaligondang	Rat control study, Urea tablet study; IPM promotion	Farmers and local government	95-96 Main Season
Sri Rejeki Group Arenan	FFS by Farmer IPM Trainers; Urea tablet study	Farmers and local government	95-96 Main Season
Kencana Group Tejasari	FFS by Farmer IPM Trainers Urea tablet & SP 36 study	Farmers and local government	95-96 Main Season
Sri Lestari Group Penolih	IPM Promotion; rat control; Urea tablet & SP 36 study	Farmers and local government	95-96 Main Season
Rukun Tani Group Sempor Lor	Urea tablet & SP 36 study; Rat control	Farmers and local government	95-96 Main Season
Karang Blimbing Group Kembaran Wetan	Produce improved weeding tools; repair irrigation	Farmers and local government	95-96 Main Season

After the presentation of their plans, the groups did further work on the technical aspects of implementing their plans. There was lots of discussion among and between groups.

“Funds for our study will come from our farmers group. Each member will contribute Rp. 1000”

Pak Atmo, Sempor Lor Village

“Our activities are based on issues we thought were important including the testing of what Extension has been promoting. The activities that involve just our group will be supported by the farmers in our group. As the rat control activity involves the whole village, we will seek support from the village.”

Pak Hani, Penolih Village

“The meeting was very appropriate for us. We were able to share news among farmers from throughout the sub-district about the progress of our groups.”

Farmer from Kembaran Village

“We should be able to bring back to life Farmers Groups throughout the sub-district that are now ‘asleep’ by means of the activities that we have planned.”

Farmer from Arenan Village

4.4.2 Farmer Technical Meetings

The agenda of the following Technical Meeting included the review of the results of activity plans that had been presented at a Planning Meeting during the 1994-1995 rainy season. The purpose of the Farmers Technical Meeting is to provide an opportunity for IPM farmers to share their experience, knowledge and skills through the discussion and analysis of field based problems and activities that have been implemented to resolve those problems. Like the Farmers Planning Meeting the Technical Meeting is designed to help create and support a network among IPM farmers.

Box 4.4

Farmers Technical Meeting, Kaligondang, Central Java

Prior to the meeting the IPM Field Trainer and IPM District Leader formed an organising committee of IPM alumni from Tejasari, Arenan, Sempor Lor, Kaligondang, Penaruban and Penolih. The committee determined the agenda of the Technical Meeting, designed a format for presentation of activity results, and inventoried activities previously planned that were conducted in their villages. Members of the committee returned to their villages to meet with their groups to write up presentations on those activities that their groups thought were most important. The Technical Meeting was held at the house of the head of Kaligondang Village. Thirty farmers participated in the meeting, five from each village including Farmer IPM Trainers. Extension Workers from the sub-district, the Sub-district Agriculture Officer, and village heads also attended the meeting. The agenda of the meeting included an opening, a presentation and discussion of field activities, and closing comments from farmers. The organising committee facilitated the meeting.

<u>Farmers Group</u>	<u>Title of Presentation</u>	<u>Year Implemented</u>
Tirta Kencana Group , Tejasari Village	Planting Distance Study	1995
Rukun Tani Group , Kaligondang Village	Analysis of Farmers' Activities	1995
Sri Rejeki Group , Sempor Lor Village	Planting Study	1995
Sri Murni Group , Penaruban Village	Turning waste metal into farm tools	1995
Sri Lestari Group , Penolih Village	Rat Control Study	1995
Sri Mukti Group , Arenan Village	Fertilisation Study	1995

After the presentation of reports on field trials and other activities, a general discussion session was held. Among the points made during this discussion were the following:

“There is a wide disparity among planting distances used by farmers in our village. We wanted to know what was most appropriate. We did the study for two seasons. What seemed to be the best planting distance was 25 x 25 cm. The results of this study were provided to the farmers in Tejasari during farmer meetings that take place there. Now there are many farmers using this planting distance.”

Pak Hadi Suwito, Village Tejasari

“We wanted to know the advantage of planting rice in straight rows. It turns out that straight rows yielded more and were easier to weed than crooked rows. We also tried out different planting distances to determine appropriate spacing.”

Pak Riswoyo, Village Sempor Lor

“What we found, like those in Village Tejasari, was that a planting distance of 25 x 25 cm was best for us.”

Pak Muntako, Village Sempor Lor

“Because of our study we have succeeded in involving all local farmers in controlling rats.”

Pak Hani, Village Penolih

4.5 IPM, Institutionalisation, and Civil Society at the Community Level

The goal of Community IPM is the institutionalisation of IPM and sustainable agriculture at the village level. Most external donors insist upon a project being “institutionalised”. From their perspective this means that the project becomes, in some way, an on-going programme of the national government with its own budget. These donors rarely give thought to the possibility of sustainable institutionalisation at the village level thereby ensuring the continued flow of benefits at the village level.

Uphoff (1986) suggests that institutions may or may not be organisations (money is an institution but not an organisation). Institutions are, in fact, a set of norms and behaviours that persist over time because they serve collectively valued purposes. On the other hand organisations, whether or not they are institutions, are structures of acknowledged and accepted roles (a co-operative is, generally, an organisation). Organisations can become institutions. Institutionalisation occurs when there is a growing acceptance of a structure of roles or set of norms and beliefs capable of channelling and patterning behaviours so that they become more sustained and beneficial (Ibid).

Uphoff (1999) holds that membership organisations like those in Gerung can effectively be institutionalised through a process that begins with self-help projects. That process includes:

- Implementation of “self-help” projects to solve acknowledged local problems;

- Mobilisation of resources on behalf of those projects;
- Acknowledgement that those projects are contributing to the efficiency and effectiveness of local development by local institutions.

The Gerung case provides a look at how alumni in one sub-district in Indonesia are working to institutionalise IPM in their villages. Specific organising activities include reactivating Farmers Groups, organising a sub-district alumni association, and taking advantage of water users associations. The Farmers Groups are planning and conducting a variety of activities to help farmers overcome specific field problems. The alumni association and water user associations serve to spread the results from field studies to all farmers in the sub-district. Apparently the leadership skills of Farmer IPM Trainers, their ability to facilitate open processes and group decision-making, have been recognised by local farmers. The Farmer IPM Trainers have been elected to leadership positions of Farmers Groups and maintain prominent positions in the water user associations. Local governments have provided funds to support Field Schools conducted by Farmer IPM Trainers. The provincial agriculture service believes that the activities of IPM alumni will lead to a sustainable agricultural system in Gerung. Thus, Gerung alumni have generally followed Uphoff's outline concerning a path to institutionalisation: implementation of "self-help" projects, mobilisation of resources, and acknowledgement by others of the value of those projects. And having put themselves on the local institutional/organisation map, alumni organisations are becoming institutionalised through the legitimacy accorded to them.

4.5.1 Building a Civil Society

An important outcome of Community IPM activities is the strengthening of Civil Society in a village. Civil society arises when:

- The interests of members in a community, especially those who do not belong to the "official" class of the community, gain "voice" and are taken seriously as part of the decision making process of that community;
- The decisions affecting a community are reached via a process that is open and inclusive;
- Benefits of community decisions flow in many directions; they are not the exclusive property of one segment of the community.

The approaches used to establish Community IPM enhance the analytical, decision-making, and leadership skills of alumni. Alumni are able to conduct decision-making processes based on open and democratic processes that lead to consensus. Community IPM is about a collaborative effort among farmers to strengthen the overall agroecosystem management skills of the community in a specific locality. This collaborative effort as shown in the Gerung case can increase the credibility that is given to farmers by official society. In the Gerung case, alumni were working to achieve broad common consent regarding decisions related to the village "commons", the agroecosystem or watershed shared by the farmers of a village. Additionally, Gerung FFS alumni were determined that decisions arising from their communicative action processes should be of benefit to their communities.

Government, non-alumni, and other local organisations are legitimising IPM and the IPM organisations being established in Gerung. This institutionalisation will influence behaviour patterns for all local organisations in Gerung. Hence, the conditions common to a strong civil society are being established. The civil society taking root in Gerung will enable the community of farmers in Gerung to better manage the ecological and social conditions in which they live, which will in turn ensure greater stability in food production in their villages.

4.6 Pitfalls

Applying a prescriptive formulaic approach to Community IPM will not necessarily result in farmers establishing their own village based IPM programmes. Laying a foundation upon which farmers can build their own local IPM programmes requires flexibility. Two common pitfalls related to Community IPM are presented below.

4.6.1 The “Task at Hand” Trap

The first pitfall that can limit a Community IPM programme is the tendency for facilitators to become absorbed in the immediate job to be done, the activity that must be conducted now, the meeting that must be run today. IPM field trainers are task oriented; they get the job done. They may be good facilitators of FFS’s and meetings, but they may fail to see beyond the task at hand. The systems or organisational cultures in which IPM Field Trainers work usually reinforce this approach. The job of Community IPM programme leadership is to help IPM field trainers to see beyond the FFS. The FFS opens the door on a vast landscape of potential. The job of leadership is to help alumni and field trainers to enter into that landscape.

Leadership needs to create activities that will help alumni realise their potential. These activities should lead to alumni being in control of IPM activities at the local level. In order for IPM field trainers to be able to effectively make use of and integrate new IPM activities there needs to be regular training meetings or forums for field trainers. In general, these meetings should focus on how to implement any new field activities and help field trainers to broaden their vision regarding the potential of post-FFS IPM activities.

4.6.2 The Template Trap

Programmes should avoid the trap of trying to develop a formulaic approach to Community IPM. Creating a “template” that would generate village IPM programmes across a country is a snare and a delusion. A national IPM programme needs to create a “menu” of activities that can be used creatively by field trainers to help alumni establish their own IPM programmes. Every effort needs to be made to capture evolving ideas for activities that emerge from field trainers and farmers. In Indonesia project offices served as “coffee

shops". They were places where trainers and farmers felt comfortable in visiting and talking with staff about field issues and possibilities. Many ideas for field activities were generated by these discussions.

When programme leadership employs a template approach, it suggests that they lack of confidence in both alumni and field trainers. A possible reason this trap might arise is because a programme wants to get village IPM programmes up and running as fast as possible. Speed is not of the essence in developing Community IPM. Building local institutions is more important, and this takes time. "National plans" also tend to generate constraints on flexibility because of the importance that they put on targets, log frames, and budgets in the planning process. National plans describe reality in terms of activity units, costs per unit, units per province, and total cost. Templates are convenient for those who are charged with planning and managing large projects. However, they are a constraint for field workers. Field workers are in the position of actually being able to develop activities that are relevant, feasible, and effective.

The "Template Trap" reinforces the "Task at Hand Trap". Templates produce a formulaic approach with a set of fixed activities that facilitators will be expected to perform, usually within prescribed guidelines. Facilitators will focus on the task at hand and getting it "right". Should they feel that they need to conform to a set of fixed expectations regarding activities, the facilitators will tend to be more controlling. The more top down and controlling the system that puts the template into play, the more controlling the facilitators will be. As we have seen, Green Revolution systems tend to have centralised management structures. Community IPM, on the other hand, requires a decentralised approach that not only allows local initiative and innovation, but also encourages it. Dynamic field based decision-making needs to be applied not only by farmers, but also by facilitators and programme managers. The Gerung case shows that this is feasible in farmer-led village or sub-district IPM programmes. The Indonesian National IPM Programme has seen several hundred sub-districts evolve in ways similar to Gerung. The National IPM Programme in Indonesia demonstrated that a decentralised field based management system is feasible on a large scale. Chapter Eight further explores the issue of establishing a decentralised field based management system to support farmer-led village IPM programmes.