

# **Picturing Impact of the PEDIGREA Program: A case study from Indramayu, Indonesia**

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(DRAFT)



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**Picturing Impact of the PEDIGREA Program:  
A case study from Indramayu, Indonesia**

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Over the last twelve years, FIELD Indonesia staff has been using various participatory approaches towards measuring impact of its interventions, mainly in the framework of its involvement under FAO Community Integrated Pest Management (IPM) in Asia program. Since 2002, FIELD is one of the partners in the PEDIGREA program, focusing on participatory crop and farm animal improvement. PEDIGREA is a regional program on farmer's management of genetic resources, i.e. rice, local vegetables and poultry, which is implemented by three NGOs in Philippines, Cambodia and Indonesia, and supported by Wageningen UR, FAO, and IPGRI APO.

The first attempt in 1991 (the development of three IPM Village Profiles) involved having farmers draw and discuss the benefits of participation in a Farmer Field School (FFS). Other approaches are relying on aerial planning and interactive participation techniques, iterative appraisal approaches, and socio-economic impacts. Comparing these approaches reveals that a wide scope of options for monitoring impact is available.

Here we report on the results of an impact assessment method that appeared highly practical as a participatory tool: a participatory and interactive perception measuring technique for which farmers were asked to analyze the impact of the PEDIGREA program activities in their villages by making a photograph series of the project results and discussing the photographs in the community. The process distinguishes three steps: a) a three days workshop with farmer representatives from each group/village to discuss the concept of project results and impacts, to learn how to take useful photographs, and to make a work plan of objects and situations for each village to be photographed; b) a two week period of activities in each village to take photos, to select the interesting pictures, and to write the explanatory notes for each of the photos; c) a three days workshop to finalize the notes for each picture, to reflect on the program impacts and farmer's benefits, to evaluate the impact study process, and to develop follow-up plan for each group/village.

Some of the major results as visualized in the impact monitoring approach include: other farmers in the villages started to learn the breeding process from the farmer participants in the FFS; other farmers started to ask for and plant the local vegetable seeds, e.g. luffa and bitter gourd, which resulted from breeding activities in the village; better prices in local market for luffa produce by the farmer participants were realized; and some village authorities provided resources to the groups to conduct local field studies.

This approach appeared important as it enabled program stakeholders to learn through farmer's lenses. Also, farmers themselves can analyze the status of the program through a visual tool (photograph). The results are in the hands of farmers for their own documentation and exhibitions, and can be utilized directly as a planning tool for their follow-up activities. The ownership of the results by the farmer groups is high. Features of the approach are that it is highly qualitative, that it needs some technology normally not available from the village (pocket camera and color photo processing), and that it is moderately time consuming. Some conditions need to be fulfilled for the

approach to work: the farmer groups have to be involved in the project activities for one year or more, availability of good facilitators and organizing capacity among farmer participants is essential, and the activity should be conducted when farmers are not very busy with their jobs. Furthermore, some suggestions can be made for future improvement: expanding the time in the village to 3-4 weeks or a season, and conducting a farmer group meeting every week to discuss progress and issues in taking pictures and preparing notes prior to joining the final workshop

Results of the study show that PEDIGREA activities have a clear impact in the villages studied. From a sustainable livelihoods perspective, the FFS approach employed by the PEDIGREA program appears to have contributed to developing farmers' capacity to work towards the alleviation of rural poverty.

## Picturing Impact of the PEDIGREA Program: A case study from Indramayu, Indonesia

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### Background

Since 2002, FIELD Indonesia is one of the partners in the PEDIGREA – Participatory Enhancement of Diversity of Genetic Resources in Asia program, focusing on participatory crop and farm animal improvement. PEDIGREA is a regional program on farmer’s management of genetic resources which is implemented by three NGOs in Philippines (PPRDI), Cambodia (SRER Khmer) and Indonesia (FIELD), and supported by Wageningen UR, FAO, and IPGRI APO ([www.pedigree.org](http://www.pedigree.org)). It aims at strengthening the capacity of local communities to improve their own crop and animal germplasm, and to create a market for their community products. It works on rice, local vegetables and local farm animal breeds. This way PEDIGREA tries to contribute to food security, including improvement of the diet, and to the *in situ* maintenance of genetic resources. It utilizes the Farmer Field School approach and trains farmers to work as trainers of their farmer colleagues. It builds on the results obtained in Integrated Pest Management human resource development programs. Furthermore, it promotes an active collaboration between local communities and public institutions.

PEDIGREA program in Indramayu was started in early 2002 in collaboration between FIELD and Indonesian IPM Farmer’s Association (IPPHTI) of Indramayu district. Indramayu is located in north coast of West Java province. It has around 118,500 ha of irrigated rice field which is one of the biggest rice bowl districts in the country. Up to now there are 11 village communities joining plant breeding farmer field schools in rice and local vegetables (luffa, bitter gourd and pumpkin) with total participants of 212 male and 52 female farmers. Beside this, FIELD just started a Local Food Systems program in collaboration with International Institute for Environment and Development, UK in two villages (Nunuk and Jengkok) of Indramayu in early 2005.

## **Impact Study**

The goal of this study was to learn about the impact of PEDIGREA program on farmer livelihoods. There were several questions related to PEDIGREA field activities and its impacts which have been raised: what were the changes from the perspectives of farmers involved in the program; how did they feel about the changes; what were their issues and ideas regarding their local livelihoods; and what were their relationships with others in the villages. This impact study also related with issues on local food security, empowerment and poverty in rural areas. The methodology was built upon the earlier FIELD study in Ciamis district, West Java titled “Picturing Impact: Participatory Evaluation of Community IPM in Three West Java Villages” (Pontius, 2002).

There were three villages selected for the study which has been conducted in February-March 2005, one in each of three different sub-districts: Lelea, Juntinyuat, and Kertasmaya. In each village there was one farmer group which has been trained in rice and vegetables participatory plant breeding FFS. “Lamaran” farmer group of Nunuk village of Lelea joined rice FFS in dry season of 2002 and vegetables FFS in rainy season of 2003/2004; “Tani Mulya” farmer group of Segeran Kidul village of Juntinyuat joined rice FFS in rainy season of 2003/2004 and vegetables FFS in dry season of 2004; and “Karya Peduli Tani” farmer group of Jengkok village of Kertasmaya joined rice FFS in dry season of 2004 and vegetables FFS in rainy season of 2004/2005.

## **Methodology**

Participatory evaluation “is a process of self-assessment, knowledge generation, and collective action in which stakeholders in a program or intervention collaboratively define the evaluation issues, collect and analyze data, and take action as a result of what they learn through this process” (Jackson and Kassam, 1998). In the event that the process embodies these three factors, it will be empowering to those involved. Participatory impact study 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 PEDIGREA, this means farmers. Putting cameras into the hands of farmers to evaluate the impact of PEDIGREA is an idea based on Freire’s concept of education for critical consciousness. Photographs can be used to reflect the individual, group or community back on itself (Freire, 1989). Photovoice ([www.photovoice.com](http://www.photovoice.com)) provides a useful outline of the theoretical and methodological issues of this paper.

In this study, five members of each farmer group from three villages were selected to become members of impact study team. There were 13 males and 2 females. Their task was to conduct the impact study in each of their villages. They have been asked to take photographs that showed the impact of PEDIGREA in their villages. Each member wrote short explanations for the photographs that she or he took. There were two experienced farmer trainers and two FIELD staff organized and facilitated the impact study processes.

There were three stages of the study. The first was a three day workshop with the objectives: discussing purposes and conceptual nature of the study among team members,

reviewing PEDIGREA activities in their villages and their perceptions on the results and impacts, and practicing camera usage to take photographs and making notes.

In the second stage of the study, the teams came back to their villages for two weeks period. Each village team carried a camera which was rotated among the five members and each team member had batteries and a roll of film (36 photos) for the camera. Each person had the camera for two days, and she or he could take pictures of one roll of film.

At the third stage, there was a three day follow-up workshop which has activities as follows:

- Writing text to explain the meaning of the photographs, and organizing a PEDIGREA Impact photo album for each team member;
- Analyzing and presenting their results of the impact study in each village;
- Discussing and presenting their conclusions and evaluations on the lessons learned during the course of the study;
- Discussing for follow up action plan for each farmer group.

### The Data

The photographs below represented 15% of the pictures and explanation texts provided by the impact study teams. The facilitators of the study culled photographs and texts to reduce repetition and translated the texts into English. The data was organized together for each Farmer Group in order to show the PEDIGREA related activities and its impacts, and farmer concerns and interventions related with their livelihoods, food security, social and environment issues.

#### A. Karya Peduli Tani Farmer Group, Jengkok village, Kertasmaya sub-district



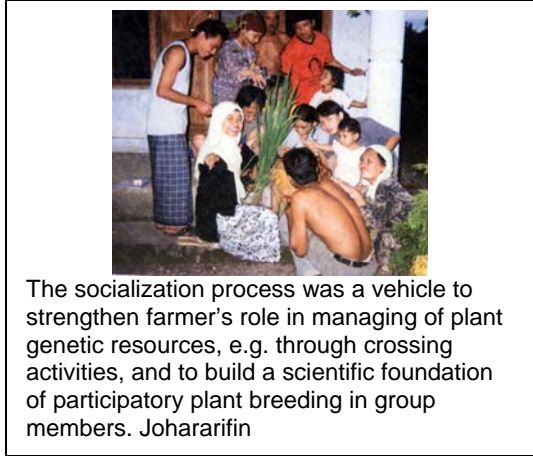
In order to finding better varieties while conserving local varieties, we were learning plant breeding methods from Pedigrea, e.g. crossing. We produced a new variety of luffa "Lokal Secang". Johararifin



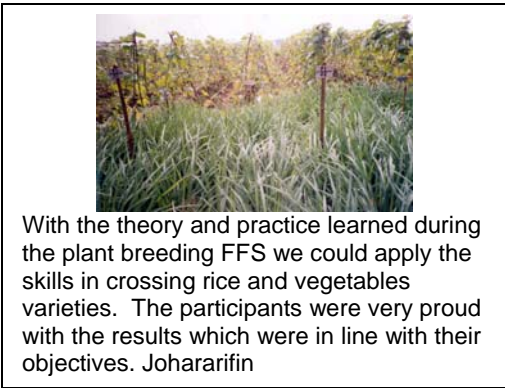
Mrs. H. Wasriah was crossing flowers of bitter gourd. Around one fifth of participants in our breeding program were women. Johararifin



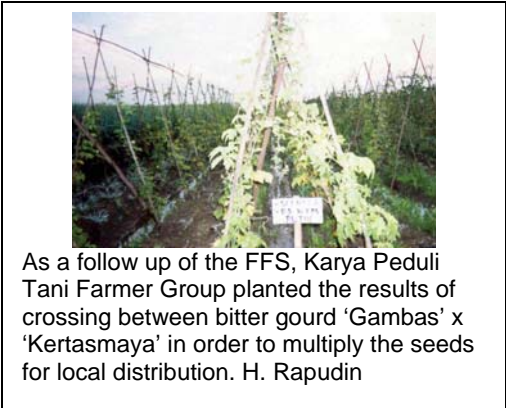
In dry season 2004, the Village Head provided land to our field studies on 11 lines of rice and several lines of vegetables. We continue with follow-up studies in the following season in field plots provided by the chair of the group. The rice lines were at F4-F7 stages. The support from the village head encouraged us to continue to develop the program. We hope in the next two years we can produce our new varieties. Syamsudin



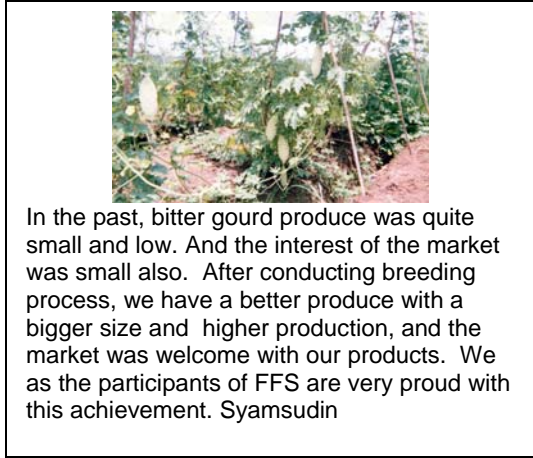
The socialization process was a vehicle to strengthen farmer's role in managing of plant genetic resources, e.g. through crossing activities, and to build a scientific foundation of participatory plant breeding in group members. Johararifin



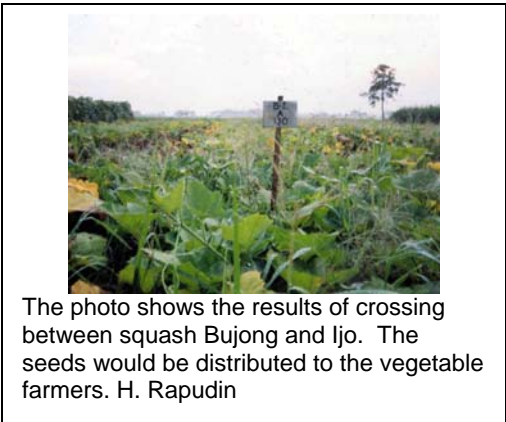
With the theory and practice learned during the plant breeding FFS we could apply the skills in crossing rice and vegetables varieties. The participants were very proud with the results which were in line with their objectives. Johararifin



As a follow up of the FFS, Karya Peduli Tani Farmer Group planted the results of crossing between bitter gourd 'Gambas' x 'Kertasmaya' in order to multiply the seeds for local distribution. H. Rapudin



In the past, bitter gourd produce was quite small and low. And the interest of the market was small also. After conducting breeding process, we have a better produce with a bigger size and higher production, and the market was welcome with our products. We as the participants of FFS are very proud with this achievement. Syamsudin



The photo shows the results of crossing between squash Bujong and Ijo. The seeds would be distributed to the vegetable farmers. H. Rapudin



A kid was holding the produce of crossing luffa Kertasmaya x luffa Kalensari. This is one of the results of Karya Peduli Tani farmer group. H Rapudin



This was a weekly observation of the conditions of our plants as part of our farmer group routine activities. The participants recorded the conditions of the plants, e.g. counting the tillers and reported back to the other members and the chair. The records would be utilized as a reference for activities in the following weeks. Johararifin



A farmer lady had a good harvest from her luffa. The seeds came from our seed bank of Karya Peduli Tani Farmer Group which was produced from vegetable breeding FFS in dry season of 2004. It was an additional income for her because she got 3-5 kg per plant per harvest time. Syamsudin



Policy Support. In February 2005, the Karya Peduli Tani Farmer Group conducted a meeting for preparation of its training program. The head of the village, Mr. H. Abdul Wahid provided support to the participants to continue work very actively in agricultural development in our village. With his policy support our activities in collaboration with Field foundation were well implemented. Syamsudin



I was interested to take the photo because currently farmer was the object of agricultural input businesses. Johar Arifin and friends were preparing a village level exhibition and campaign to other farmers to conserve and improve local genetic resources through plant breeding activities. Abd Muid.



This was an abandoned house of one of field school member. The plan was to upgrade the house as a secretariat of Karya Peduli Tani farmer group and a meeting place for future farmer field school activities. H. Rapudin





One day before the crossing activities, we emasculated the flowers around afternoon up to evening. My colleague and chairman of Karya Peduli Tani Farmer Group, Johar Arifin was observing a rice flower. Abd Muid.



The photo shows Mr. Warsiyah was crossing long luffa of sliyeg x luffa of kalensari. The goal was to improve the variety for suitable size, better taste, and better production. We need to cross breeding in spite of breeding process usually conducted by insects. Duryanto



Husk as a side product from rice mill is abundant. One member from our farmer group was collecting husk as a material for compost. With our knowledge to process organic garbage and others into compost, we can reduce our dependency to chemical fertilizer. Abd Muid.



Many farmers were very dependent to chemical fertilizer because they think it was very practical and it could increased production. But they were not aware on its negative impact on soil condition and community health. This goat's manure is a source of organic fertilizer to reduce the cost of production. Johararifin



The photo shows a process to make a decomposer. The raw materials included coconut liquid, yeast, palm sugar or molasses, and water for cleansing rice before cook. Duryanto



A father accompanied by his two kids was conducting flower emasulation of Cihorang variety which would be crossed with another one. He was developing his skill based on plant breeding FFS of Pedigrea. H. Rapudin



Members of FFS were distributing husk as a material for composting/organic fertilizer. Other materials were dung, mixture of rice-bran, water, sugar, and decomposer. We can reduce the cost of production and our produce will be more environmental friendly. Syamsudin



The photo shows a colleague farmer was collecting worms/larvae from his luffa plants. He was very diligent to take care of his farm and he did not use pesticide. He sold some of the produces in the local market. Duryanto



This photo shows a profile of a Farmer Trainer for plant breeding FFS on rice and vegetables, Mr. Abd. Muid. He raised ducks and local chickens. He was a creative person. His manner and characters were respected by us. Duryanto



The fruits of "grenuk" - a local plant as a source of botanical pesticide mixture. Abd Muid.



If we used pesticides, our environment was poisoned. Look at this picture, two kids were fishing in Johar Arifin's rice field. He applied organic fertilizer with no chemical. Syamsudin



A farmer with a pesticide sprayer. Many farmers did not aware that pesticide applications harm their health. The toxics entered their bodies through respiration or other routes and poison the ecosystem also. And its price is getting expensive. Abd. Muid.



This was Mr. Warsiyah, one of Field Support Team who was very creative. He was crossing luffa "Sliyeg" x "Kertasmaya" as an effort to develop new and better quality seeds. H. Rapudin.

## B. Lamarin Farmer Group, Nunuk village, Lelea sub-district



We would like to learn more on agriculture then we can manage our land by ourselves. We would be able to produce our own seed, produce organic fertilizer, reduce cost, become self sufficient and independent. Dadi I.



Our seed collection/bank. The goal was to reduce our dependency to outsiders. Several farmer groups in the village and from neighboring villages/sub-districts asked some seeds for their trial. Dadi I.



Several characteristics of our ideal variety were as follows: good taste, long panicle, high yield, resistance to pest and disease, strong stem, long grain, short maturity and fill out. This field was a part of our rice breeding activities of crossing between dombret x pandanwangi. This was a follow-up of plant breeding field school. We were proud of the results of our practices. Dadi I.



These were our field study plots which have several rice, luffa, and bitter gourd lines/varieties in order to understand more on the different characteristics of varieties in our breeding programs. Dadi I.



Field study plots of Lamarin Farmer Group. Our goal is to diversify the varieties of rice and local vegetables and reduce our dependency to the seeds from companies. Nurkilah



A lady from the district parliament joined with participants from plant breeding field school to cross luffa varieties. Nurkilah



This local dry land rice variety is a source of genetic resources. We tried to conserve this variety because it's almost extinct and its drought tolerance trait. Nurkilah



Result of breeding of luffa Malaysia x Indramayu. The goal is to supply our community with these seeds and no need to buy it from the store anymore. This vegetable was popular for common people due to its sweetness for soup and its easiness to grow. The black seed was used for medicine for kids and it was used for a good diet. Ms. Husnul Khotimah



There were division of responsibilities and labor among group members in activities, such as plot preparation up to harvest at field study plots of Lamarin farmer group. Nurkilah



A challenge for our community to utilize an environmental pollutant like the organic garbage as a source of material for composts. Kanadi



Producing compost. It was cheaper than chemical fertilizer. The rice yield was the same. Kanadi



A rare 'eel' bitter-gourd garden. This was an opportunity to develop the vegetable seeds for local market in the village. Nurkilah



This is my neighbor's luffa with the seeds come from our plant breeding field school. Many farmers from other villages also are interested to grow our luffa due to its good production and quality. Ms. Husnul Khotimah.



System Rice Intensification (SRI) – with one seed per hole. The plants produce more tillers. Dadi I.



Collecting egg masses of white stemborer. We need to collect them because each egg mass can produce around 75-300 moths and each larvae can attack our rice plant. Ms. Husnul Khotimah.



The village head provided some budget support to conduct farmer field school. Ms. H. Khotimah



A spray operation. This farmer was still convinced that his rice field will be protected from pest infestations. He didn't use protective equipment then he was exposed to poisoning chemical through his mouth, nose and skin. Ms. Lilies Kustiyah.



Photo of one of Farmer Trainers. Mr. Nurkilah joined the first Rice Training of Trainers in Sukabumi. Currently he serves as a farmer trainer for plant breeding FFS in rice and vegetables. He also serves as a member of Field Support Team in Local Food Systems program. Through his service, the knowledge and skills of farmers in Nunuk were strengthened. Dadi I.



Middleman workers were grading the vegetables. They usually buy farmer produces at low price. If farmers could organize and sell their produce to the bigger traders, e.g. in Jatibarang (the sub-district town), we can get a higher price and more income for our family. Ms. Lilies Kustiyah.



A chemical store. Many "medicines" are available for farmers who are still rely on pesticides without analyzing pest and natural enemy populations. The cost is very high for farmers. Ms. Lilies Kustiyah.

C. Tani Mulya Farmer Group, Segeran Kidul Village, Juntinyuat sub-district



FFS participants were practicing flower emasculation skills. The senior participants with eyesight difficulties were assisted by the younger ones. Through this learning process we hope that social relationship among group members could be strengthened. Jaryan



The photo shows the good results of crossing pumpkins. We needed to collect them as the source of seeds for the following seasons. Through this process we can get more income. Karsinah



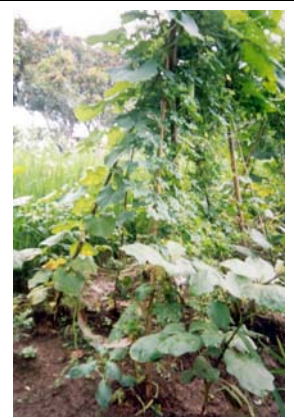
The photo shows the meeting hut for our group to discuss on FFS activities or issues related to our development plan. Somadi



Documentation of Training Process. The goal is to have a record on what we have done. The picture shows a participant who was writing on the results of the training process. Through this documentation we hope we can strengthen the critical thinking capacity of the group members. Jaryan



The photo shows 4 different sizes of eggplants although they were from the same plant. This was a fact of segregation. With joining FFS, farmers understood the factors influencing characteristics and morphology of the plants. Second, farmers learned about the genetic heredity principle. The gene of a plant is determined by its parents then we need to develop a better seed in order to have a good yield. Wartono



The photo shows a mix of vegetables, luffa, eggplant, cucumber, and chili, beside a rice field. In addition to their own family consumption, farmer group members sold the vegetables to the market based on different harvesting times for each plant. Wartono



Documentation of genetic resources. We enhanced, conserved and increased the diversity of varieties. Our goal is to supply our needs without buying from outside. We tried to develop our seed bank for our farmers and then we will not be depended to other parties. Jaryan



Natural resources provided weekly and seasonal incomes. This photo shows that a small parcel of land was planted with rice and cucumber (bonteng timun). We tried to effectively use the land to get more income in different times. Jaryan



The photo shows an abandoned land. The plan was to utilize the land for field studies to compare the vegetable productions with application of organic vs. chemical fertilizers. Somadi



The photo shows unutilized goat dung. We could mix it with barn and other organic garbage and ferment them to become compost. The nutrition is better than content of a chemical fertilizer. We can reduce the cost of production and the soil will be more fertile. Wartono



Preparing the land to plant vegetables after harvesting rice in dry season. The photo shows that some members of farmer groups were working together before planting vegetables in order to get additional income to fulfill family needs. Jaryan



A farmer was selling his produce to a middleman. Many farmers are dependent to local markets or middlemen. After we conducted a market survey we thought that we were fooled by these traders and we have to come with a better way to sell our produce. Karsinah



The photo shows several members of our group were counting the tillers of rice which was using a SRI system. With SRI, we reduced cost of input, have more tillers, and have healthy and bigger rice plants. Somadi



One study team member presented the results of his photographs and their analysis during the follow-up workshop.

## Analysis

In the follow-up workshop, each village study team presented an analysis of the impact of PEDIGREA based on the data collected. The follow-up discussions among team members were on the status and impacts of breeding and conserving seeds in rice, and local vegetables which were happening in each farmer group. They found that these activities led to broaden their knowledge, understanding and skills, then these increased their confidence and creativity. Second, they found that these activities enabled them to decrease the production costs, increase their incomes, and decrease their dependency to others. Third, they explained that the benefits of the program were accessible for others in and outside of their villages.

PEDIGREA activities have increased knowledge, skills, confidence and creativity among farmers. Some quotations from the team were as follows:

- “With the theory and practice learned during the plant breeding FFS we can apply the skills in crossing rice and vegetables varieties. The participants were very proud of the results which were in line with their objectives.”

- “We would like to learn more on agriculture then we can manage our land by ourselves. We need to be able to produce our own seed, produce organic fertilizer, reduce cost, become self sufficient and independent.”
- “In order to finding better varieties while conserving local varieties, we were learning plant breeding methods from Pedigrea, e.g. crossing. We produced a new variety of luffa ‘Lokal Secang’.”
- “The socialization process is a vehicle to strengthen farmer’s role in managing of plant genetic resources, e.g. through crossing activities and to build on a scientific foundation for participatory plant breeding among group members.”
- “Several characteristics of our ideal variety are as follows: good taste, long panicle, high yield, resistance to pest and disease, strong stem, long grain, short maturity, and fill out. This field was a part of our breeding activities in crossing of rice varieties of dombret x pandanwangi which was part of follow-up of based on plant breeding field school. We were proud of the results of our practices.”
- “Documentation of Training Process is an important aspect. Our goal is to have a record on what we have done. Through this documentation we hope we can strengthen the critical thinking capacity of the group members.”
- The local dry land rice is a source of genetic resources. We tried to conserve this variety because it was almost extinct, and it has a drought tolerance characteristic.”
- “I looked at in my farm and there were 4 different sizes of eggplants although they were from the same plant. This was a fact of segregation. With joining FFS, farmers understood the factors influencing characteristic and morphology of the plants. Second farmers learned about genetic heredity principle. The genes of a plant were determined by its parents, then we need to develop a better seed in order to have a good yield.”
- “Weekly observation of the conditions of our plants was a part of our farmer group routine activities. The participants recorded the conditions of the plants, e.g. counting the tillers, etc. and reported back to the other members and the chair. The records have been utilized as a reference for activities in the following weeks.”

PEDIGREA related activities increased creativity which led to decreased costs or increased incomes while decreasing dependence to others on inputs. Examples presented by the team were as follows:

- “In dry season 2004, the Village Head provided land to our field studies on 11 lines of rice and several vegetables. We continued with follow-up studies in the following season in field plots provided by the chair of the group. The rice varieties were in F4-F7 stages. The support from the village head encouraged us to continue to develop the program. We hoped in the next two years we could produced our new varieties.”
- “In the past, bitter gourd produces were quite small and low yield. And the interest of the market was small also. After conducted breeding process, we had a better produce, bigger size, higher production and the market welcomed with our products. We as participants of FFS were very proud with this achievement.”
- “We enhanced, conserved and increased the diversity of varieties. Our goal is to supply our needs without buying from outside. We tried to develop our seed bank for our farmers and we will not be depended to other parties.”
- “Some group members planted rice and mix of vegetables: luffa, eggplant, cucumber, and chili. In addition to their own family consumption, some farmer group members sold the vegetables to the market based on different harvesting times for each plant.”
- “Husk as a side product from rice mill was abundant. With our knowledge to process organic garbage and others into compost we could reduce our dependency to chemical fertilizer.”

- “With the SRI (System of Rice Intensification), we reduced cost of inputs, had more tillers and had healthy and bigger rice plants.”
- “Middlemen usually buy farmer produces at low price. If farmers could organize and sell their produces to the bigger traders, e.g. in Jatibarang (the sub-district town), we could get a higher price and more income for our family.”

PEDIGREA activities provided benefits to wider communities in villages, including social and environment concerns . Some examples mentioned by team included:

- “With our seed collection/bank, the goal was to reduce our dependency to outsiders. Several farmer groups and neighboring village/sub-districts has asked some seeds for their trials.”
- “The luffa seeds from our seed bank of FFS in dry season of 2004 of Karya Peduli Tani Farmer Group were distributed to some farmers outside our group. As an example, she got 3-5 kg per plant per harvest time.”
- “As a follow up of FFS, Karya Peduli Tani Farmer Group planted the results of crossing between bitter gourd ‘Gambas’ x ‘Kertasmaya’ in order to multiply the seeds for local distribution.”
- “Currently farmers are the object of agricultural input businesses. Our colleagues, Johar Arifin and friends prepared a village level exhibition and campaign to other farmers to conserve and improve our local genetic resources through plant breeding activities.”
- “This was my neighbor’s luffa with the seeds came from our plant breeding field school. Many farmers from other villages also were interested to grow our luffa due to its good production and its quality.”
- “In FFS learning activities, e.g. like practicing flower emasculation skills, the senior participants whom have eyesight difficulties were helped by the young ones. We hope that through these types of activities, the social relationship among group members could be strengthened.”
- “A challenge for our community is to utilize an environmental pollutant in the river like the organic garbage as a source for composting material.”
- “Many farmers are still convinced that with pesticide spraying their rice fields will be protected from pest infestations. Without using protective equipments they have been exposed to poisoning chemical through mouth, nose, and skin.”
- “If we use pesticides, our environment would be poisoned.”

Impact study team also made some conclusions, evaluations and suggestions based on lessons learned resulted from the impact study activities as follows:

- “We learned to use camera to document what were the changes happening in our villages.”
- “We can use the photo albums to show to other farmers and outsiders what we were doing.”
- “We can use the “photonovela” as reference for our follow-up plans.”
- “We learned from our experiences that we still have to face many challenges ahead.”
- “For the future it would be better if there will be more time in the village to take photographs, e.g. a month or a season.”

At final session, the workshop discussed the follow-up plans based on the status and the results of the impact study as inputs for the farmer group meetings in each village. Some of the follow-up plans in addition to the training activities of PEDIGREA included:

- Documentation by farmer groups on field activities;
- Local campaign activities in the village, e.g. exhibition, socialization, and newsletters;
- Lobby and advocacy to key stakeholders, e.g. District Parliament and District Head.



### **Five Participatory Impact Assessment Approaches**

Over the last twelve years, FIELD Indonesia staff has been using various participatory approaches towards measuring impact of its interventions, mainly in the framework of its involvement under FAO Community Integrated Pest Management (IPM) in Asia and the FAO IPM Technical Assistance team in Indonesia. The first attempt in 1991 was the development of three IPM Village Profiles involved having farmers draw and discuss the benefits of participation in a Farmer Field School (FFS) (Simon HT, 1993). Other approaches are relying on aerial planning and interactive participation techniques, and on iterative appraisal approaches, and include focus on socio-economic impacts. Comparing these approaches reveals that a wide scope of options for monitoring impact is available.

In the next page there is a matrix which has been developed by Dr. John Pontius based on lessons learned derived from the impact assessment activities within the FAO IPM programs (Pontius, 2002). They have focused on developing and applying participatory approaches to evaluation. These approaches were developed and utilized under the above programs as a means to achieve local community-led actions.

### **Discussion and Conclusion**

This approach appeared important as it enabled program stakeholders to learn through farmer's lenses. Also, farmers themselves can analyze the status of the program through a visual tool (photograph). The results are in the hands of farmers for their own documentation and exhibitions, and can be utilized directly as a planning tool for their follow-up activities.

Features of the approach are that it is highly qualitative, that it needs some technology normally not available from the village (pocket camera and color photo processing), and that it is moderately time consuming. Some conditions need to be fulfilled for the approach to work: the farmer groups have to be involved in the project activities for one year or more, availability of good facilitators and organizing capacity among farmer participants is essential, and the activity should be conducted when farmers are not very busy with their jobs. Furthermore, some suggestions can be made for future improvement: expanding the time in the village to one month, conducting a farmer group meeting every week to discuss progress and issues in taking pictures, and preparing notes prior to joining the final workshop.

Results of the study show that PEDIGREA activities have a clear impact in the villages studied. From a sustainable livelihoods perspective, the FFS approach employed by the PEDIGREA program appears to have contributed to developing farmers' capacity to work towards the alleviation of rural poverty.

**Table I. Approaches to Participatory Impact Assessment**

<b>Approach</b>	<b>Purpose</b>	<b>Time</b>	<b>Cost</b>	<b>Complexity</b>	<b>Capacity for Local Control</b>	<b>Nature of Results</b>
Drawing Impact	Assess benefits identified by participants	Less than one day	Relatively cheap	Easy to facilitate, requires being able to ask open ended questions, one facilitator used	Open for local control and can be used in community-led planning processes	Anecdotal
Areal Planning	Assess resources and develop detailed long-term plans	Relatively fast, one to two days	Moderately expensive	Requires critical analysis and good communication among participants; good facilitation skills needed, two facilitators	Can be highly participative; easily controlled by participants	Graphic representation of results of activities
Iterative Appraisal	Determine strengths and weaknesses and develop plan to use strengths to overcome weaknesses	Relatively fast, 2 to 3 days	Moderately expensive	Fairly complex, depends on the ability of the facilitator to read dynamics, requires good critical analysis	Can be easily controlled by participants and feeds directly into planning for community led activities	No resulting documentation, anecdotal, highly qualitative
Socio-economic	Assess socio-economic impact resulting in written analysis	Requires quite a bit of time, perhaps six weeks	Very expensive	Highly complex to facilitate and implement-facilitator dependent	Implementation decisions can be locally controlled. Need outside help in analysis at least re. use of technology, document probably not accessible to village	Detailed assessment of impact; results in a written document; data available for quantitative analysis
Picturing Impact	Document impacts and provide analysis for future planning	Moderately time consuming, 3 weeks.	Relatively expensive	Requires a good facilitator, good to have two facilitators	Made to be controlled by participants, strong basis for planning, needs technology not in village	Provides detailed qualitative assessment of impact; document highly effective and accessible

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