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### FARMER FIELD SCHOOLS AND FARMER EMPOWERMENT

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#### ABSTRACT

The Farmer Field School approach was developed in the late 1980's in Asia. The FFS approach provides a platform for farmers to strengthen their knowledge and field management decision skills through a process of hands-on field-based learning. The FFS also enhances group collaboration. The FFS strengthens ecological understanding to make informed decisions examines through experimentation and exchange of experience, building on local knowledge systems as well as on knowledge generated outside rural communities. FFS groups often engage in follow-up activities, to further develop agricultural activities and improve livelihoods. Since the 1990's the approach has been spread to other regions. It is now being used for farmer education for a diversified range of topics in different socio-economic settings. A Global Review on FFS conducted by FAO in 2012 underlined again the importance of the quality of education in a FFS to enable farmer empowerment. Pakistan has use FFS approaches for different topics in the last 15 years. FAO's programme in Balochistan (funded by USAID and AusAID) starts with Community Organizing to identify potential for agricultural development in 14 districts in Balochistan. These Community Organizations assess the potential to access markets for their products. FFSs are organized for farmers to gain the necessary knowledge and skills that will allow for better access to markets, while ensuring sustainable production approaches.

**Keywords:** Farmer Field Schools, Skills development, Empowerment, FAO, USAID

#### FARMING OF THE FUTURE - SHIFTING PARADIGMS IN EXTENSION

These days farmers are expected to respond to a range of opportunities and challenges that range from increasing production in a sustainable way, integrating (more efficiently) into markets, mitigating changes in climate and conserving natural resources for future organization. Farmers need improved skills sets, access to information and linkages with a range of partners to even start accessing opportunities. Especially for small-scale farmers in developing countries efforts are required to allow farmers to do so. In the past extension systems were mostly focusing on delivering messages and transferring technologies to farmers to improve their production, often in a top-down manner. The limitations of these approaches are becoming more evident, and debates are ongoing on how extension systems can interact with farmers to provide skills and information needed in a changing context. In a World

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Bank publication of 2010 (Strengthening Agricultural Extension and Advisory Systems: Procedures for Assessing, Transforming and Evaluating Extension Systems; BE Swanson and R Rajalahti) outline four major paradigms that are current in agriculture extension systems:

**Technology Transfer:** "top-down" model, public extension delivering specific recommendations from research to all types of farmers. The primary focus is on increasing food production.

**Advisory Services:** both public extension workers and private service providers respond to specific requests of farmers about specific production problems. Farmers are advised on how to solve a problem using a specific practice or technology.

**Non Formal Education (NFE):** training farmers in how to utilize specific management skills and/or technical knowledge to increase production efficiency or to use specific management approaches (eg Integrated Pest Management through Farmer Field Schools). Both NFE and facilitation extension help farmers with similar resources and interest to organize in self-help groups

and to intensify or diversify crops (high value crops, marketing).

**Facilitation Extension:** focuses on getting farmers with common interests to work together to achieve individual and common goals. Extension workers work as 'knowledge brokers', facilitating a teaching-learning process for all types of farmers. A first step is to identify specific groups and identify their interests and needs, followed by identifying linkages and access to expertise and information.

This paper provides information on the Farmer Field School approach that was developed in the late 1980s in Asia for IPM on rice, and that since then has spread to other regions and countries to educate farmers in a broadening range of topics. A group of FFS practitioners engaged in a review in 2012 to discuss FFS approaches, appropriation and relevance for the future.

#### **FFS – DEVELOPMENT AND EXPANSION OF THE APPROACH**

The green revolution of the 1960s increased rice production in Asia, due to introduction of high yielding rice varieties, use of chemical fertilizers and better access to irrigation. The use of chemical pesticides, in particular insecticides was part of the technical approach. However, in the 1970s and 1980s rice production in several countries was experiencing serious problems with brown planthopper, a pest that was known but considered a minor problem before green revolution days. In Indonesia outbreaks were

important, and posed a threat to the rice self sufficiency that had been obtained in the 1980s. Ecological research confirmed that the increased use of insecticides was actually the root cause for the increasing brown plant hopper problems, by destroying the natural enemy complex in rice fields.

Indonesia's policy makers took action, once they were convinced of the causes of the brown plant hopper problems. They put measures in place to reduce the use of insecticides in order to control the brown plant hopper outbreaks, and to promote Integrated Pest Management in rice. These measures included the phase-out of government subsidies for pesticides, the ban of over 50 insecticides for use in rice, and the start of educating and informing farmers on how to manage brown plant hopper using IPM. In this context the Farmer Field School approach was developed, in 1989, by staff and partners of the FAO Regional Rice IPM programme. The FFS aimed to create a space for farmers to actively learn about rice ecology, working together in groups and becoming expert decision makers in their fields. The role of government field workers was to facilitate a hands-on field based season long learning process. The approach emphasizes education through a process of experimentation, observation and critical analysis, rather than transfer of technology or information as was commonly used in the a Training and Visit systems.

"The FFS was originally designed as an educational approach. With extension approaches there is admittedly some learning that goes on, but that learning is primarily focused on a technical element. I wouldn't refer to extension as an educational approach. Extension is much too shallow; it is better referred to as an information marketing approach. The FFS was designed with reference to the critical theory analysis of Jurgen Habermas of why adults want to learn. His analysis and the FFS approach distinguish three specific areas of social existence: work, interaction and power. These in turn relate to three domains of learning: technical, social and empowerment. The characteristics of these domains form the basis for why adults seek to learn."

*John Pontius, Indonesia*

From the Global FFS review, conducted by FAO in 2012

The FFS constitutes a platform for farmers to learn, integrating areas of technical and social issues, and empowerment of participants. The approach was well appreciated by farmers and facilitators in Indonesia. The FAO regional rice IPM programme then played an actively role in introducing and testing the FFS for rice IPM in other countries in the Asian region. In the 1990s several Asian countries developed national IPM programmes that were using the FFS approach, on rice

as well as other relevant crops. Farmers that joined FFS training, were able to improve their knowledge and change practices using IPM, reducing the use of pesticides while maintaining or improving yields. The empowering nature of the FFS approach became clear when farmer groups started to develop local initiatives after having joined a FFS. Farmer driven innovations in the Asian region include farmers taking on responsibility to act as FFS facilitators in their communities, to

broaden the range of topics for FFS learning, and to take a leadership role in planning and implementing community agriculture development programmes in partnership with local government and other partners. The FAO programme evolved into a community IPM programme.

Farmer Field Schools on crops share a number of characteristics like working in a group of 15-25 farmers and the set up of experimental or FFS study fields that compare local practices with integrated practices. The learning process takes place over a full season, with regular meetings often weekly at critical stages of crop development. During the meetings farmers will conduct Agro-Eco System Analysis to observe and analyze their study fields to come to an informed field management decision.

The session also includes group dynamics exercises, to stress elements of collaboration and team building and to serve as ice breaker as well. Special topics are included in each session, to highlight specific issues of interest for the group. For these also hands-on learning is used as much as possible.

In 1993, representatives from other regions of the world (Africa, Near East, Latin America) visited Asia to see and learn about FFS experiences first hand. Mid 1990s FAO started to support the development of FFS core capacities in Africa, followed by other regions later on. Since then the FFS approach is being used in an increasing number of countries, involving a broadening range of partners. The topics of focus have been diversified, including a wider range of crops, but also agro-pastoralist FFS, business FFS and so on. The FFS approach is being used in over 80 countries, for a range

of topics.

**BALUCHISTAN AGRICULTURE PROJECT AND ASSISTANCE TO BALUCHISTAN BORDER AREAS PROJECT**

The FAO is implementing two sister projects in 14 districts of Balochistan: the USAID supported Balochistan Agriculture Project and the Australian Assistance to Balochistan Border Areas (AusAID funded). The projects emphasize the organization of communities as a first step to reflect on agricultural activities and the potential to develop agriculture in the area. At present over 800 COs are set up, about one third are female COs. Once Community Organizations are functional, the project supports value chain analysis and approaches, and assists groups in identifying market opportunities and organizing themselves for better market negotiations and access (bringing together COs in Farmer Marketing Collectives). FFS activities are being developed in the project to support interested groups in strengthening technical skills to improve agricultural production that meet market requirements. Currently FFSs are being implemented at a modest scale, with field workers from Extension and Researchers as facilitators of the process. They receive training from the project that draws upon national and international expertise to develop FFS approaches. The approach used in Balochistan can be considered an example of the facilitation-extension paradigm mentioned above. The table below, from the WB publication illustrates phases and steps the project is working with. Lessons learned from this project can be a useful input in transforming extension systems in Balochistan (and elsewhere) to better meet needs of small-scale farmers.

**2. Identify innovative farmers and current/potential markets for high-value products; then conduct a SWOT analysis for each agro-ecological zone within a district.**

- 1. Conduct a PRA to assess the resources and needs of small-scale farm households.
- 9. Evaluate group outputs; determine next season's plans; begin working with other producer groups.
- 8. Monitor and provide technical support during first production cycle.
- 7. Train farmers in different groups; assist them in securing the necessary inputs and services.



- 3. Work with farm leaders to develop an extension strategy that will increase farm household income.
- 4. Begin organizing men and women's groups; assess their needs and constraints.
- 5. Discuss and identify the most suitable high-value crops, livestock, or other enterprises.
- 6. Organize exposure visits for group leaders who are interested in specific enterprises; decide whether enterprise is feasible.

Figure. Overview of Extension planning and implementing procedures to help small scale men and women farmers improve their farm household income.

**WHAT FARMERS SAY ABOUT FFSS**

Feedback from farmers on their experiences on joining a FFS include some common domains:

**Gaining knowledge and technical skills:** Farmers appreciate the process of experimentation and hands-on learning in the FFS. Regular observation and analysis of the study fields helps them to become better field decision makers.

**Social skills and collaboration:** Many farmers say that

the FFS has helped them to gain confidence and to better interact with other farmers, as well as others within and outside the community. The group work that is part of the FFS can be the start of better collaboration and further group action to improve agricultural livelihoods. Below are some examples of feedback provided by farmers in Jordan that were interviewed in May 2013, on their experiences of joining FFS activities in earlier years.



Feedback from the field. Jordan farmers talk about their experience in joining FFS on IPM for horticultural crops: Khalifeh Albawat (Abou Omar), Khamis Albawat, Asma Aleshoosh, Sumaia Aleshoosh, Saleh Alnwaji (Abou Aghab), Sameeh Salman Hashem, Shaher Garaebbeh.

The FAO Regional Near East IPM programme started its activities in 2004, using FFS to promote IPM for horticultural crops in the Near East Region. Jordan is one of the member countries. In Jordan FFS activities were organized from 2004 onwards. In May 2013 some of the farmers that joined FFS activities earlier were visited and interviewed to provide feedback on their experiences on FFS and activities and ideas that were developed as a spin-off. Below some of their comments are given.

**On FFS as a platform to learn and exchange**

“We did field studies to learn about diseases and insects. I also know what types of fungicides and insecticides can

be used to control these pests. The same is true for Tuta absoluta. We participated in different practical meetings and discussed as a group different symptoms of disease and how to control them. We learn to distinguish Tuta symptoms and signs and how to control it by using pheromones or some insecticides to reduce its effect.”  
 “The FFS was great. A positive effect is that we succeed to reduce the cost of production, and learn about agro-ecosystem analysis. This helps us small-holders to increase our profit.”  
 “When I joined the school we did not know that there are bad insects and good insects. We used to fertilize and spray randomly. We didn’t know why we were doing it. We joined to gain more

experience and learn more to get benefits and to learn from other farmers.” “We used to think that yellow leaves are due to water shortage but then we recognized it is due to nutrition shortages. We start to rely on ourselves.” “The participants became more skilled due to sharing their experiences and experimenting new things together.” “I joined the FFS immediately when it reached our area. When we heard about it, we joined. As farmers, we usually meet every morning to share our problems. The FFS organized our work so we became a more organized group of 10 farmers that share the same interest, crops, environment and problems.” “First we reduced the costs by 30-40%, and then yield increased by 40%. This gives us more income.”

***On being a farmer facilitator organizing FFS in their communities***

“I learned to solve problems and I wanted to share this with my community. When I became a facilitator I learned different skills like how to manage the FFS, and new technical field skills. I became aware of other FFS in the area. We improved as leaders.” “I was a facilitator and with other members I used to go to the field doing AESA which helps us to know more about insects. It was difficult in the beginning, especially doing AESA.” “We like to work with the project team doing the FFS. After they explain the idea we learn new things. After 2 years I became a facilitator in this area. We like to improve ourselves and that why we join FFS and search for new markets. We can get there by learning new things. I became a facilitator in my community where I am available for the other farmers. With our own networks we try to explain and expand the approach to others because I believe it is a good thing.”

***On collaboration with others - within and outside the community***

“The field schools strengthen the links and relations between farmers, we are like brothers now. We ask each other many times about farming problems and we visit each other and exchange ideas and experiences.” “I have a very good relation with other farmers. Due to my knowledge gained in the FFS they trust me. We have good cooperation and if they are facing any problem they usually come and ask me to try to give information and help them. We usually visit each other and meet trying to solve problems. Sometimes we take some samples to the lab for analysis in MOA and NCARE to find the cause of a problem and to find solutions.” “Farmers start to look for other projects to get benefits,

and they are not depending anymore on the private sector for advice. They became decision makers themselves in their farm, they discuss and share information, and ask themselves how to reduce costs and increase benefits. “Concerning MOA, especially Extension the relation became much closer. Many farmers did not really trust extension, but through the FFS we know them better and we became aware how much efforts they make and how they follow up.”

***Other issues- farmer initiatives and innovations***

“We learned grading of the harvest in a practical way. Also we talked about what the market needs and when to best harvest.” “Exporters and traders start to visit our fields. What we learned in the FFS reduces inputs and improves the quality of our products. The market recognizes that and as a result prices increase 5-10% compared to other products.” “The major challenges are the prices and the high costs of inputs. When prices are low and there is no good market, the income will be low for farmers and will hardly cover their expenses. This year, 2012/13, with the bad situation around us and markets closed in neighboring countries farmers are facing bad conditions and have expenses with agricultural companies that need to be paid back. If there is no good market, it will mean we will lose small-holders in the future.” “We were the first to change to new practices, and we started looking for something new. The local market is not stable, but there are good opportunities for export. We worked with the exporters and got contracts with them. In the summer we got a contract for okra grown using IPM. As we learned in the FFS, we produce clean products, we are well organized as farmers. In the beginning it was difficult because it was like an adventure for us. All other families were watching us. Now it is clear to all that we succeeded, especially in this season with low prices for tomatoes and other crops. We have our own contracts and are organized and we got benefits.” “In my family farm we apply now IPM approaches. Also we introduced bumble bees for tomato pollination which helps in getting better quality of tomato and a higher quantity and this is increasing income. When we did a study on bumble bees, farmers can apply what they see as result. They start to buy the bumble bees after seeing the results and they start learning how to best use it in their own farms”

**GLOBAL REVIEW OF FFS, 2012**

With the uptake and expansion of the approach, and a growing community of FFS practitioners, several issues



and concerns emerged over time that merit further reflection and discussion. These include the quality of FFS (non-negotiable principles of the FFS approach, ensuring an adequate learning process), appropriation of the FFS – at community level, as well as at programme level (FFS programme development, institutionalization), and the relevance of the FFS approach in a changing world.

In a global FFS review, conducted by FAO in 2012, these themes were discussed with a community of over 200 FFS practitioners from over the world. The review included 15 country reviews that were conducted by local FFS practitioners as well as several rounds of email discussions on these themes. Pakistan was one of the countries to do a country review, and FFS practitioners participated in the web-based discussions as well.

FFS practitioners underline the importance of quality of the FFS learning process. Basic characteristics and principles need to be in place – working in groups, assessing and addressing local problems and needs, emphasis on understanding ecological relations and critical analysis for decision making, strengthening groups and so empowering farmers to continue activities in their farms and communities, and to better link with other agents and stakeholders. Learning is field based and hands-on, underpinned by non-formal adult education approaches. The training of facilitators is an

important investment to make to ensure they have the right skills set. FFS approaches can be used in a diverse range of ecosystems, for a diverse range of topics. In cases where the quality of the FFS approach is compromised, diverse reasons can be identified. These include lack of understanding of the FFS approach during project design, or flagging FFS to attract resources, leading to flaws that are not easily corrected later. It is important access the right kind of expertise when developing the capacity to implement FFSs (facilitators, farmers) and to allow sufficient resources for training and follow up activities.

To ensure that FFS learning leads to continued action, programmes need to build in post-FFS activities from the beginning. In some cases this is done, but in other cases time constraints (and financial constraints) do not allow sufficient space for continued action after the FFS. Knowledge and practices that are acquired need to be nurtured, at community and policy level. If this is not happening, (outside) pressures might cause farmers to revert to earlier practices. In recent years, the strong increase in production of pesticides produced in China and exported to neighbouring countries is an example where adequate response at policy level, and increased attention for farmer education is needed to maintain the gains made in promoting IPM and managing Brown Plant hopper.

FFS are a remarkable innovation that has opened new potential and possibilities for thousands, maybe by now millions. But they remain a drop in the ocean, weak in relation to powerful vested interests. Pesticide sales have never been so profitable nor so huge... - and small farmers rarely are in a position to dictate the terms, let alone negotiate effectively in their own interests. *Janice Jiggins*  
Global ffs review

Most FFS programmes in different regions consist of a patchwork of projects, programmes and other efforts that promote FFSs. In some cases extension systems have incorporated FFS into (national) programmes, which in some cases has led to adaptations in the

approach that can compromise quality (eg reduction of number of sessions, limited training for facilitators, difficulties to respond to diverse farmer demands, etc). FAO is in the process of finalizing a paper on the FFS institutionalization process.

**“Who needs FFS and how does it fit into the changing agricultural reality that is sweeping our world?** It has obviously no place in the heavily promoted industrialized agriculture that has been spreading over the world as a result of globalization in which farmers function more as farm laborer for global corporations who have to follow fixed procedures. Or do we see FFS's role in improving a country's comparative advantage with regard to its export crops while it is forced to import subsidized food crops from industrialized nations? Or should FFS help the millions of subsistence farmers that fall through the cracks of the modern agricultural system, but then, who would pay for their education? If we want to find the comparative advantage of FFS, we need a vision of future agricultural systems and a strategy **for building sustainable food production**. I firmly believe that certain aspects of FFS can play an important role in this future.” *Gerd Walter-Echols*  
Global ffs review,

Concerning the relevance of the FFS approach, current thinking on agricultural development and the need to feed the world in the coming decades reflect the importance to intensify production systems while enhancing and respecting ecosystem services. This means that farmers will need to have location specific knowledge of complex relations to continue to enhance production while using (external) resources more efficiently. Approaches like the FFS that integrate and build on these principles will have a place to move towards this direction – given that quality of farmer learning can be guaranteed and that sufficient resources (time, human, financial) will be provided in the situations where good ecological understanding is key to sustainable production intensification. Building and strengthening groups as part of FFS activities can enable farmer communities to better access and demand other services needed for good livelihoods.

#### **WHAT NEXT? SOME THOUGHTS FOR THE FUTURE**

To meet farmer demands and challenges to feed the world extension services will need to transform to be more responsive to better position farmers to meet these challenges. The FFS experience can provide inputs into discussions on how to transform towards pluralistic systems that empower farmers, and that offer diverse

services. The Balochistan experience is a learning ground to develop a more comprehensive system of facilitation-extension. Reflections on lessons learned and sharing them with a broader public can help in shaping other initiatives in other places and regions.

The FFS experience continues to be relevant in different settings and context, provided that quality of learning in the FFS is ensured. When FFS projects and programmes are developed, basic understanding of FFS features and how programmes can expand and develop in a feasible way need to be in place. The FFS community needs to play an important role in this, and FAO can help facilitate dialogue in this direction. The FFS networks seem to be dynamic and reflective and can continue to come up with ideas on how to use basic principles in a changing context.