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GOOD PRACTICE PAPER



## GOOD AND PROMISING PRACTICES

# Integrating the Methodologies of Farmer Field Schools into Universities' Curricula: The Case of Kenya's Pwani University

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## Good and promising practices in the integration of Farmer Field Schools methodologies into Universities' Curricula: The Case of Pwani University in Kenya



### INTRODUCTION

Eastern Africa continues to face acute and chronic food insecurity and malnutrition. Combined with a high incidence of conflict and security issues, displacement and natural disasters, food security continues to affect a high proportion of the population, jeopardizing marginalized households' health, economic and social wellbeing. Thus, there is a growing recognition of the vital importance of expanding agricultural development capacities to include food security and nutrition objectives, particularly in agricultural extension and training.<sup>1</sup>

One solution to address this need is the FFS methodology. FFS was introduced by FAO and partners more than 30 years ago as an alternative to the prevailing top-down extension approach.

<sup>1</sup>Elizabeth Nafula Kuria. 2014. Integrating Nutrition in Farmer Field Schools In Eastern Africa – Lessons Learned. Feed The Future.

FFS promotes farm-based experimentation, group organization and local decision-making through discovery-based learning methods.

FFS involves season-long learning of field-based groups of 25 to 30 farmers, who meet regularly to learn through discovery, experimentation and share experience. FFS combines local and scientific knowledge and aims at making farmers better decision-makers. Whereas the conventional technology transfer approach focuses primarily on developing and transforming technologies that work for farmers, the FFS approach, on the other hand, empowers farmers to become better decision-makers towards developing or adapting technologies that work and are acceptable to them.

Farmers, agro-pastoralists, and fisherfolk worldwide have benefited from the unique ability of FFS programmes to address their technological, social and economic needs. As a result of

### KEY FACTS

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#### AUDIENCE

Leadership in universities, academicians and policy-makers in government and partner institutions engaged in the fields of food and agriculture, extension and rural development in Eastern Africa; and more broadly, practitioners and researchers, extension experts and workers, and Non-Governmental Organization (NGOs) in the area of Farmer Field Schools (FFS).



#### LOCATION

The FAO Subregional Office for Eastern Africa has implemented a Technical Cooperation Project (TCP), titled: Institutionalization of Field Schools (FS) in Extension Curricula of Institutions of Higher Learning in Eastern Africa, covering selected universities: Pwani University, located in Kilifi, Kenya; Hawassa University, Hawassa, Ethiopia; Makerere University and Kyambogo University, Kampala; Serere Agricultural College, Serere; Uganda Christian University, Mukono; Busitema University, Tororo; and Gulu University, Gulu, Uganda. This good practice paper depicts the experience of Pwani University.

this success, the demand for FFS programmes continues to increase. In some countries like Kenya, the approach is institutionalized in extension systems and NGO programmes. Since then, member countries in the Eastern African subregion have expressed their interest in scaling up existing FFS initiatives and integrating the methodology in national extension policies, strategies and programmes.

In response to this need, the FAO Subregional Office for Eastern Africa (SFE) developed a project, titled, “Institutionalization of Field Schools (FS) in Extension Curricula of Institutions of Higher Learning in Eastern Africa”, aimed at developing and putting into practice a contextualized and practical approach to mainstream FFS into the agricultural extension curricula of Institutions of Higher Learning.

The purpose of developing and integrating FFS methodologies into the agricultural extension curricula of Institutions of Higher Learning is to assist member countries in producing extension trainers, either FFS Facilitators or Master Trainers (MTs), that are well versed in the FFS approach. In such curricula, FFS Facilitators lead farmers through a season-long learning cycle of seed-to-seed, egg-to-egg, or whatever selected enterprise is utilized cyclically. The MTs are meant to train current and future field extension workers, who can reach out to smallholder farmers and provide them with crucial technical knowledge and advocate for FFS to produce empowered farmers who can significantly impact national food security, economic and social development outcomes.

The project has helped bridge the gap in the three pillars of Higher Learning: teaching, research, and outreach. Students who undertake the FFS courses/unit receive field practice



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experience by working alongside smallholder farmers; meanwhile, the smallholder farmers receive facilitation and technical expertise from highly qualified university staff, lecturers, and students. The project has presented an opportunity to conduct research in fields of FFS that have identified previous gaps, such as the monitoring and evaluation of FFS impacts on individuals, groups and communities served. This good practice paper captures the experience of Pwani University in institutionalizing FFS into its curricula.



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## OBJECTIVE

This document aims to impart the good and promising practice of integrating FFS into the curricula of universities. In so doing, the practice can be replicated to other academic institutions to spread FFS across the Eastern African subregion, and more broadly, globally. This document shares practical examples on how to embed FFS into national agriculture extension systems fully. It shows how the practice can enable farmers to learn new skills, solve practical problems and conceptually adapt modern production technologies, thus ensuring sustainable agricultural production and natural resources management.

## STAKEHOLDERS AND PARTNERS

A facilitator is a critical person in the FFS. The success of the entire FFS group and its selected enterprise depends on having facilitators capable of and willing to encourage participants to guide their learning process. Proper training of FFS facilitators is essential to enable participants to carry out independent discovery-based learning, explore alternative interventions, and ultimately take a group decision that is democratic for all involved. The facilitator must have command of the technical issues; otherwise, the farmers sense that the facilitator does not understand the material. Therefore, well-trained and equipped facilitators are crucial to tackling a wide range of eventualities.<sup>2</sup>

FAO's primary support was given to several universities: Hawassa University of Ethiopia, Pwani University of Kenya, and in Uganda:

2. Gregory C. Luther & Stephen Sherwood. 2003. Developments and Innovations in Farmer Field Schools and the Training of Trainers



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### METHODOLOGICAL APPROACH

The institutions received training from FAO on the FFS methodology and guidance on the development and integration of FFS methodologies into their agricultural extension curricula. The cascade of training among university staff participants have enabled these institutions to deliver a systematic, coherent and comprehensive education on FFS to students (future agriculture extension agents) – which will, in turn, contribute to the enhancement of national extension services provision. Apart from the concept of developing future generations of FFS facilitators, several of the universities that took part in the project have created a short course on the FFS methodology for extension agents already involved in service delivery.

Implementing a successful FFS requires that those involved in its establishment and management have the right skills and mindset (attitude) to deal with the challenges and demands of the participants and the methodology. FAO describes the training of facilitators (ToF) as one of the six key and decisive steps for the successful institutionalization of FFS.<sup>3</sup>

FAO has developed an FFS Guidance Document to guide through the essential steps required to establish a solid basis for such programmes, in tune with the specific local conditions. It also defines the necessary elements and processes needed to ensure programme relevance, quality, growth and sustainability. Complying to these, Pwani University focused on the following five key areas:

3. Gregory C. Luther & Stephen Sherwood. 2003. Developments and Innovations in Farmer Field Schools and the Training of Trainers

Makerere University, Kyambogo University, Serere Agricultural College, Uganda Christian University, Busitema University, and Gulu University. Within these universities, academic departments responsible for agricultural extension programmes were targeted.

The government line ministries have played a vital role in the uptake of FFS and further institutionalization into its ranks. The Ministry of Agriculture in Ethiopia, the Ministry of Agriculture, Livestock and Fisheries in Kenya, and the Ministry of Agriculture, Animal Industry and Fisheries in Uganda have all played a leading role in the acceptance and further uptake of FFS in Eastern Africa.

Following the recognition of the livelihood transforming potential of the FFS methodology by line government ministries in the sub-region, the African Forum for Agricultural Advisory Services (AFAAS) has since been identified to play a vital role as a partner to FAO in support of the institutionalization process. The Eastern Africa FS-Hub, under AFAAS management, was officially launched in Entebbe, Uganda, in May 2018. The hub is expected to open many avenues for accelerating the ongoing scale-up and institutionalization of FFS.



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### Sensitization and buy-in

The programme began with sensitizing the faculty staff on what FFS is and explored fundamental concepts, principles, and implementation processes. This first step was essential to familiarize the target group with theoretical concepts and plans and nurture a service-provider work culture with the intended programme. The sensitization programme was instrumental in incorporating feedback from and achieving buy-in among the participants. The sensitization process allowed participants to clarify any initial confusion about the process and gave them an insight into what was expected of them to achieve their goals of fully institutionalizing the methodology into their Institution of Higher Learning. Finally, the group created a plan of action and a calendar of activities to maintain a schedule and develop a sense of ownership of their institutionalization process.

### Curriculum development, revision and submission

After reaching a shared understanding and buy-in on the FFS methodology and institutionalization process, a group of academicians met and reviewed current course materials alongside a sample FFS curriculum to enhance their academic programme. The group identified how the FFS courses that best fit into their educational programmes, such as agricultural extension, rural development, or sociology programmes. While the core group identified the areas, there was an additional need to adapt the existing FFS course content to meet the geographic location and agro-ecological conditions that the Institution of Higher Learning serves. For example, it would not be sensible to teach technical FFS content on pastoralism if most producers in the area grow crops or vice versa. After the



FFS course content was adapted, a series of consultative meetings took place with key stakeholders (other academic departments, local agriculture extension officials, FFS Master Trainers, NGOs and intergovernmental organizations, etc.) to validate the content. After validation and respecting university curricula restructuring regulations, the course content was submitted to the University Senate for approval for instruction at the classroom level.

### Training of Facilitators (ToF)

The initial training phase of the faculty staff members began in this phase when selected participants went through a series of training, which could be arranged in one lump or split up to meet the demands of the participants' schedules. A core set of training topics was covered in Facilitators' Training (ToF), which took at least 21 days to cover. Other training can run longer than three weeks to cover the ToF content, which includes:

- Introduction and principles of FFS
- Steps in FFS implementation
- Experimentation in FFS
- Ground working in establishing trial plots
- Agro Ecosystem Analysis
- The topic of the day
- Group formation, constitution, leadership positions

- Group dynamics
- Participatory monitoring and evaluation
- Development of learning schedule
- Group visit
- Adult learning in FFS, non-formal education
- Communication skills
- Experiential (discovery-based) learning
- Concepts of participation
- Participatory training techniques
- Facilitation skills for FFS Facilitators
- Facilitating discussion
- Visual aids
- Evaluating learning events
- Participatory appraisal
- Team building
- Group formation, constitution, leadership positions
- Group management
- Conflict management and peacebuilding
- Business skills
- Technical topics and cross-cutting issues
- FFS group sustainability

Following the training, 15 Pwani University staff and lecturers were certified as FFS Facilitators.

### Season-long training of FFS Facilitators to become FFS Master Trainers

Following the curriculum development process and ToF, a season-long training to upgrade the 15 FFS Facilitators to the Master Trainers level took place. In this step, the university staff had to practice the lessons learnt during the ToF and were required to lead their own FFS group through season-long learning. In doing so, five university staff sub-groups were formed based on their diversity of technical expertise, gender, and tenure. Each group was tasked to visit communities near Kilifi, Kenya, spur interest among community members and establish an FFS group, constituting 25 to 30 community members.



In total, five FFS groups were established in the vicinity of Pwani University, with a total of 122 FFS participants.

The FFS Facilitators assisted in forming and naming each group, establishing a constitution and electing leaders. The names of the five FFS groups were: Mwakuhenga, Ebenezer, Boyani, Tumaini and Kayanda. The groups elaborated and ranked their problems and decided on the productive enterprise they would focus on for the duration of their learning cycle. Poor soil fertility, pests, inadequate farming knowledge, and limited access to markets were the key challenges the groups identified. Four of the five groups decided to conduct experimental trials on maize, while the remaining group decided to take a risk and experiment with watermelon production during the off-season. Watermelons are grown during low-rainfall seasons because the crops perform well with less rain. However, the group took a risk and planted during the long rains, and this is unfavourable for the watermelons as the crops absorb too much water and burst.

While implementing the FFS outreach groups, the FFS Facilitators from Pwani University conducted experimental trials in a process called Participatory Technology Development (PTD). The trainees of Pwani University agreed to establish two enterprises per group for their experimentation trials. One crop enterprise and one livestock enterprise were selected as part of their season-long “seed to seed” and “egg to egg”

training. The PTD took place at the Pwani University farm.

A one-acre (about 4000 m<sup>2</sup>) plot was identified within the University premises for the crop enterprise and one poultry house for the livestock enterprise. It was agreed that the entire group of Facilitators would be involved in the livestock enterprise, but each subgroup would identify and conduct their unique crop enterprises. The crops selected were maize, cassava, green grams, peanuts and watermelon. The university farm PTD choice was informed by the experimental plot establishment, otherwise known as “ground working” exercise carried out in the outreach sites to address some of the knowledge gaps.

Back at the FFS outreach sites, participants honed their production skills and even learned about non-agricultural topics such as gender norms, HIV/AIDs, reproductive health, and financial management. On the technical side, each group utilized a small grant to facilitate the culture of *farming as a business*. From the comparative experiments and trials carried out, each group developed a proposal to commercialize their products by scaling up one of the successful technologies/enterprises learnt.

At the end of the learning season, a field day was organized to showcase what the FFS groups and members had learnt and experienced. The occasion was attended by high-ranking officials from the Kilifi County Government and an FAO team. The field day was attended by all five FFS groups and attracted a crowd of 530 community members and officials.

The season-long training culminated with a graduation ceremony of the 15 Pwani University staff as FFS Master Trainers and the 122 farmers from the five outreach groups held near the University.

## VALIDATION

The FFS approach has been tested as unique for creating viable farmer groups that can express and solve their day to day field problems and build sustainable farmer institutions to address farmers’ needs and concerns.<sup>4</sup>

In the Eastern African case, over 60 professors, practitioners and students from several universities, as well as experts from FAO, the International Institute of Rural Reconstruction (IIRR), the African Forum for Agricultural Advisory Services (AFAAS) and other partner institutions convened on 22 and 25 September 2020 to discuss and validate the pathways and the methodologies that are applied to integrate FFS into the curricula of extension education in the participating institutions. They reiterated that, despite its rigorous process, it was a practical and effective means to train the subsequent batches of agriculture extension agents armed with a new set of tools to reach out to farmers to facilitate knowledge uptake for increased sustainable production and productivity to reduce vulnerability, food insecurity and hunger ultimately.<sup>5</sup>

The experiences among the participating institutions presented in the virtual sharing event were similar as they described the institutionalization pathway. The need for sharing experiences and clarification of remaining doubts on the implementation process was raised as a critical issue to spur the institutionalization process in other universities. Participants in the virtual sharing event agreed to carry the institutionalization work forward within the focal countries for the project and institutions in other countries, such as Eritrea and South Sudan.

4. FAO.2010. Facilitators’ Guide for Running a Farmer Field School. <http://www.fao.org/3/a-bq668e.pdf>

5. FAO SFE Virtual meeting documentation, Sep. 2020

## FFS curriculum implementation

To successfully roll out the FFS programme in the different academic levels, Pwani University staff were involved in a one-week training of farmer facilitators to prepare the second generation FFS (FFS – Labs) that would be used for student training and learning purposes. A total of 10 farmer facilitators were trained and effected the opening of 5 FFS labs to be used for student learning purposes.

Now the University has rolled out the degree, diploma and certificate (short course) courses on FFS, where students (future facilitators) and current extension agents can learn about FFS and its application. Due to the perseverance in the institutionalization process, this has placed Pwani University on the map as the first University in the world to institutionalize FFS into its curriculum.

## IMPACT

While FFS practice in the subregion is widespread, mainstreaming FFS within national extension systems varies highly, and the integration of FFS knowledge in Institutions of Higher Learning has been minimal. Therefore, the knowledge among extension graduates has not matched the level of field FFS expertise required of them once they begin their professional careers in the field. The gap is amplified by the fact that the policy space relating to integrating FFS in Institutions of Higher Learning cuts across multiple ministries, particularly ministries of education (MoE) and ministries of agriculture (MoA). This good practice can bridge this space between MoE and MoA and Institutions of Higher Learning to enhance harmonized and systematic capacity development of the future cadre of FFS facilitators and MTs.

At the university level, Department Heads, College Deans and University Vice-Chancellors have raised their awareness of the FFS methodology through



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briefings and personal attendance of key FFS activities throughout the project. These key figures in the academic institution have played a key role in the buy-in, and now fully support their staff and lecturers to continue the institutionalization process. There has been a marked positive change in attitude and perception toward the FFS methodology at the staff and lecturer level.

The staff and lecturers learned new ways to facilitate learning and knowledge acquisition, and have committed to incorporating these new techniques into their classroom lectures and their FFS field practices with students and smallholder farmers.

The practice has enabled government officials to observe the impacts that the FFS has on farmers' daily routine and Pwani University's ability to extend its outreach into the surrounding communities.

Finally, at the community level, the institutionalization process has helped to enhance intra- and inter-community bonds. The intra-community bonds have been strengthened as members of the same community have attended the season-long, discovery-based learning cycle. Field days and graduation ceremonies have further enhanced inter-community bonds for future collaboration, knowledge sharing and socialization.

## INNOVATION

FFS groups were encouraged to follow the “learning by doing” method, allowing farmers and pastoralists to consult each other, test, negotiate and adapt or reject a given practice.

Experimental plots were vital components of the FFS implementation. Usually, the same crop or livestock species are produced and compared among four different trial versions. The first trial versions of the selected enterprise were produced under standard or culturally appropriate methods. The other three trials used various interventions to be examined and analyzed throughout the production cycle.

These different interventions applied one or many of the following variations: organic manure, a drought-resistant variety, inorganic fertilizer, mulch, or any other variant.

Throughout the season, participants conducted a weekly Agro-Ecosystem Analysis (AESA) to measure growth, record the presence of beneficial or harmful insects, weather events, and production techniques to create a log of events. At the end of the season, participants were able to recommend the productivity and profitability of each trial option based on the evidence gathered by conducting and analyzing the weekly AESA reports.



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## CONSTRAINTS

Obtaining the buy-in from respective national governments was a challenge until it was overcome through nurturing a positive working relationship.

It certainly was a challenge for the university staff and lecturers to balance their workload with the added task of implementing a field FFS group while meanwhile dealing with their ordinary duties of lecturing, researching, and attending to other university matters. This was resolved by having all participants understand the workload required to successfully carry out the project during the sensitization phase of the institutionalization pathway.

On the part of the FFS participants, especially for women-run households, many challenges constrained their participation in FFS groups and existed in their everyday lives. For example, single-led heads of households bore the burden of taking care of the children and performing all the regular housework, including fieldwork.

Another particular constraint to the process was the COVID-19 pandemic. Though most of the project activities were implemented before shutdowns, movement restrictions slowed down the implementation of FFS outreach groups.

Additionally, the experience sharing event was intended to be held in physical presence at Pwani University in Kenya for selected participants to see the results of the implementation of outreach groups and learning laboratories. However, this event was held virtually and hence sharing first-hand experiences were limited. Nonetheless, the virtual event allowed a higher rate of participation.. Finally, financial resources in the project did not afford participants in Ethiopia and Uganda to reach the highest training phase of Master Trainer level. Future resources must be sought to carry these participants forward to achieve the highest level of the institutionalization process.

## LESSONS LEARNED

The institutionalization of FFS is a worthwhile endeavour, no matter how long or challenging the process may initially take. The process answers the growing demand among national extension systems to have well trained and conversant extension agents on the FFS methodology. The institutionalization process has garnered much interest. Efforts must continue for beneficiary institutions to complete the pathway. Other institutions interested in this process should strive to create an enabling environment to begin the institutionalization pathway, whilst institutions that are unaware of the endeavour need to be purposefully targeted with awareness creation.



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## SUCCESS FACTORS

The success of the institutionalization process required an enabling environment, where the Institutions of Higher Learning were convinced of the methodology and allowed for the process to occur.

At the subregional level, there was a strong FFS community of practitioners active in sharing experiences, successes and challenges in the FFS implementation process. There was an active presence on social media and chat groups to facilitate discussion and share ideas.

At the Organization level, FAO has provided vital support to all partners and Institutions of Higher Learning involved in the FFS institutionalizing process. Strong collaboration and working ties established between the Subregional Office for Eastern Africa and FAO Headquarters were instrumental in guiding the process in an impactful manner.

The Eastern Africa FFS group is recognized for its commitment to promote and upscale FFS. This factor that will lead to further promotion and success of the methodology.



## SUSTAINABILITY

In the case of Pwani University, the process has completed successfully, and FFS is now embedded in the curriculum of its agriculture extension programme. The high interest among the staff and lecturers has ensured a degree of sustainability to continue teaching the methodology to students.

For the remaining Institutions of Higher Learning, there is a substantial interest to continue the process and complete the pathway. Projects typically serve as a catalyst within a development initiative. Hence, there is a need to envisage continuation of such a programme for Institutions of Higher Learning in Eastern Africa to pursue the institutionalization pathway.

## REPLICABILITY AND UP-SCALING

The scale-up and scale-out of the institutionalization process present immense opportunities. For example, within the three beneficiary countries of the project, there were Institutions of Higher Learning which did not participate in the project and were highly interested in institutionalizing the FFS methodology in their respective curricula.

Additionally, several countries in the subregion and beyond have expressed interest in the institutionalization process. All these are great opportunities to replicate and scale up what has been learnt at Pwani University.



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## CONCLUSION

FFS provide an interactive and participatory learning-by-doing approach that puts farmers at the forefront through hands-on and discovery-based learning. Groups of about 25-30 participants with common interests learn about improved agricultural practices through a season-long programme of selected trial options. A trained facilitator guides weekly learning sessions and takes participants through field observations and critical analyses, focusing on established real-life enterprises.

FAO works with governments and Institutions of Higher Learning across Eastern Africa to mainstream the FFS methodology into national extension systems and academic programmes. The institutionalization pathway guides the process to enhance harmonized, systematic capacity building of future cadres of FFS actors, translating to client-oriented agriculture extension service delivery.

## RELATED WEB SITE(S)

FAO website on FFS:

<http://www.fao.org/farmer-field-schools/overview/en/>

## RELATED RESOURCES THAT HAVE BEEN DEVELOPED

FAO and IIRR on FFS:

<http://www.fao.org/3/ca3605en/ca3605en.pdf>

A Shift in Global Perspective:  
Institutionalizing Farmer Field School:

<http://www.fao.org/3/a-i5113e.pdf>

Farmer Field Schools Guidance  
Document: Planning for Quality  
Programmes:

<http://www.fao.org/3/a-i5296e.pdf>

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