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IFPRI Discussion Paper 01256

March 2013

Filling the Learning Gap in Program Implementation Using Participatory Monitoring and Evaluation

Lessons from Farmer Field Schools in Zanzibar

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PARTNERS AND CONTRIBUTORS

IFPRI gratefully acknowledges the generous unrestricted funding from Australia, Canada, China, Denmark, Finland, France, Germany, India, Ireland, Italy, Japan, the Netherlands, Norway, the Philippines, South Africa, Sweden, Switzerland, the United Kingdom, the United States, and the World Bank.

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ABSTRACT

This study is motivated by the idea that even though participatory monitoring and evaluation (PM&E) is widely accepted as a tool to manage development programs to be effective, its application is widely constrained by its high start-up resource requirements in terms of both finance and time. However, this paper argues that after the initial investment is made, the payback from using PM&E is much higher both in terms of grassroots-level learning, empowerment, and capacity building and in terms of higher-level strategic decision making which enhances impact. This is demonstrated using field-level experience of implementing PM&E in farmer field schools (FFSs) under the Agricultural Services Support Program and Agricultural Sector Development Program–Livestock (ASSP/ASDP-L) program in Zanzibar, Tanzania. After describing the major steps followed in designing and implementing a PM&E for FFSs, the major lessons learned and challenges faced in the process are discussed. The study found out that PM&E has enabled the tracking of technology uptake and reasons behind adoption and nonadoption of technologies through detailed data collection. This informed and improved decision making at a higher level to design feasible methods to scale up adoption at other FFSs and to devise solutions for nonadoption. The need for incentives to undertake PM&E was found to be one of the major challenges of implementation, among others.

Keywords: farmer field school, participatory monitoring and evaluation, technology uptake, technology adoption

ACKNOWLEDGMENTS

The issues presented in this paper are not the effort of the authors alone. Therefore, we would like to acknowledge and thank the Agricultural Services Support Program and Agricultural Sector Development Program–Livestock (ASSP/ASDP-L) participatory planning and monitoring system design and implementation team, who enabled this to happen. First and foremost we would like to recognize and acknowledge the effort of Mine Pabari, who took the lead in designing the participatory monitoring and evaluation tools and manual. Sylvester Dickson Baguma participated in the design and pilot testing of the data collection tools. We would like to thank him for the resourcefulness and enthusiasm in the work. The work couldn't have been possible without the unreserved technical as well as logistical support we received from ASSP/ASDP-L agricultural service facilitation team, more specifically, from Zaki Khamis, Khalfan Masoud Saleh, Zainab Saleh, Mtingwa Ramadhan, Vuai Yahya Lada, and Andreas Mbinga. Therefore, we would like recognize and appreciate this.

Last but not least, we would also like to thank our colleagues Cecile Kusters and Simone van Vugt from the Centre for Development Innovation, Wageningen University, for their guidance and encouragement.

ABBREVIATIONS AND ACRONYMS

ASDP-L	Agricultural Sector Development Program–Livestock
ASSP	Agricultural Services Support Program
ASFT	Agricultural Service Facilitation Team
FEG	farmer extension group
FFS	farmer field school
FRG	farmer research group
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IPM	integrated pest management
M&E	monitoring and evaluation
PDO	program development officer
PM&E	participatory monitoring and evaluation
SMIP	Strengthening Management for Impact Program

1. INTRODUCTION

The importance of agriculture in reducing hunger and poverty in most developing countries remains paramount and will continue to for years to come (Haggblade et al. 2010). This is because 75 percent of the world's poor live in rural areas and in developing countries the agricultural sector employs about 40 percent of workers and contributes more than 20 percent to their gross domestic product (ILO 2004). Although agriculture has the potential for transforming a country's economy (Pinstrup-Andersen and Shimokawa 2006), it is not contributing as much as it could due to poor performance. On the other hand, the agricultural development programs that were initiated to improve this situation were not, in most cases, effectively achieving their desired results for many reasons, one of which is effective management (Coleman 1992). One of the emerging management tools that is increasingly being used in development programs is monitoring and evaluation.

Monitoring and evaluation (M&E) is important to collect information about the progress of development programs that inform program management whether implementation is going as planned or redesigning or readjustment measures are needed considering the emergent circumstances. Information collected through M&E can be used to learn from past experiences and improve performance, operations, and strategic decisions (Woodhill 2006). In addition, M&E is increasingly being used for accountability and transparency (Woodhill 2006; Estrella et al. 2000; Carlsson and Engel 2002). However, dissatisfaction is common in the way information is gathered, processed, analyzed, and used in conventional M&E. This is because of its "numerical and indicator driven approaches," which don't focus on individual, group, and organizational learning (Woodhill 2006, 1). As a result, interest in participatory monitoring and evaluation (PM&E) has increased (Estrella et al. 2000).

Estrella et al. (2000) discuss the major factors for the growing interest in PM&E. These include the shift in management focus toward performance-based accountability, with greater emphasis placed on achieving results and objectives beyond financial reporting; and the growing scarcity of funds, leading to a demand for greater accountability and demonstrated impact or success. In addition, the shift toward decentralization and devolution of central government responsibilities and authority to lower levels of government is another major driving factor to using PM&E, which necessitates new forms of oversight to ensure transparency, to improve support of constituency-responsive initiatives, and to enable stronger capacities and experiences of nongovernmental and community-based organizations as decision makers and implementers in the development process.

In addition to measuring and judging performance (results and outcomes), which is common in conventional M&E, PM&E is unique in that it empowers "boundary partners"¹ and creates an enabling environment for learning not only to collect data but also to process it (from deciding what to monitor to analysis and reporting) and use it for learning and decision making (Estrella et al. 2000; Mureithi et al. 2002; Woodhill 2006). Groeneweg and Chavez-Tafur (2003) state that PM&E is useful to ensure ownership and engagement, learn from experiences, improve decisionmaking, and link key stakeholders.

PM&E is used for impact assessment, project assessment and planning, organizational strengthening, understanding and negotiation of stakeholders' perceptions, and increased public accountability (Estrella and Gaventa 1998). Moreover, when used as a management tool it can assist stakeholders involved in the implementation of an intervention to analyze, make sense, and critically reflect on their experiences and plan future action (Campilan 1997). Similarly, Compos and Coupal (1996) stated that the main function of PM&E is to provide key stakeholders with information that will help them to assess whether the intended project objectives are met and to what extent project resources are used to fulfill these objectives. This being the general use of PM&E, it is practiced as follows: Data generated at the grassroots level are passed to the implementing agency. At this level, data from different

¹ Earl, Carden, and Smutylo (2001) define *boundary partners* as those individuals, groups, or organizations with whom the program interacts directly and with whom the program can anticipate some opportunities for influence.

sites are collated and reported to the next higher level. This process is repeated until it reaches the final destination of information flow, which in most cases is national policymakers and donors.

It is important that the data generated at the micro level by the rural community be used for higher-level purposes in designing national- and macro level management strategies and policies (McArthur 1997). If the information or the learning remains at lower level, benefiting only a small number of people without being scaled up to benefit a large number of people, its relevance and efficiency could be questionable because the benefit–cost ratio of generating the data will be high and likely not accepted by policymakers.

This paper is motivated by the idea that even though PM&E is widely accepted as an effective tool to manage development programs, its application is widely constrained by its high start-up resource requirements in terms of both finance and time. However, we argue that after the initial investment is done, the payback from using PM&E is much higher both in terms of grassroots-level learning, empowerment, and capacity building and in terms of higher-level strategic decision making. We use farmer field schools (FFSs), a “new extension approach” (Rasheed and Hall 2004, 2), to show that when PM&E is used as a management tool in FFSs it brings about an effective implementation of the FFS to achieve its objectives. To demonstrate this, we use the Agricultural Services Support Program and Agricultural Sector Development Program–Livestock (ASSP/ASDP-L) program in Zanzibar as a case study.

This paper is organized as follows: Section 2 describes PM&E in the context of FFSs. Section 3 gives a detailed description of the ASSP/ASDP-L program as a case study and describes the process of designing and implementing the PM&E in detail. The section also explains how the information gathered through PM&E is used. Section 4 outlines the major lessons learned and challenges faced in every step (from designing to implementation) of the PM&E system. Section 5 concludes.

2. PARTICIPATORY MONITORING AND EVALUATION IN FARMER FIELD SCHOOLS

Before going into detail on the link between participatory monitoring and evaluation (PM&E) and the need for the use of PM&E in farmer field schools (FFSs), a brief summary on the evolution of the FFS is in order. The FFS extension approach, which is an empowerment and participatory approach, is based on experimentation, learning, and adaptation to prevailing circumstances. It is a decentralized adult (farmer) education approach, fused with an experiential learning framework. It is a practice-oriented approach intended to make farmers who will be able to manage their farm like experts (Dilts 2001) in “managing the ecology of their fields—bringing better yields, fewer problems, increased profits and less risk to their health and environment” (Braun and Duveskog 2010, 3).

During its early formative days, the FFS approach emerged as a result of problems associated with the hazards of excessive agrochemical use, and therefore it focused on educating farmers about the complex ecological principles in their agro ecosystems (Ooi and Kenmore 2005). Currently, FFS has expanded to address issues such as HIV/AIDS, democracy, and community forestry by different organizations (Bojić-Bultrini et al. 2009). The basic components that practitioners would like to see in FFS include ownership, empowerment, group discovery learning, a systems approach, lifelong learning, self-help, and self-propulsion (CIP-UPWARD 2003). The adult learning that occurs in the FFS is based on the principles of Kolb’s experiential learning. Kolb (1984, 38) defines learning as “the process whereby knowledge is created through the transformation of experience.” Furthermore, the learning cycle, Kolb and Fry (1975) concept and the underlying four elements of learning—namely, concrete experience, observation and reflection, formation of abstract concepts, and testing in new situations—has influenced the learning approach followed in FFS (Smith 2001).

When the FFS approach was initially developed, it focused on building the day-to-day operational capability as well as the overall decision making skill of farmers in the agronomic and ecological factors of rice farming. More specifically, the learning was organized around four focus areas: growing a healthy crop, conserving natural enemies that prey on insect pests, observing fields regularly, and recognizing farmers as integrated pest management (IPM) experts (Pontius, Dilts, and Bartlett 2002). As a result, farmers were given the opportunity to experiment and practice their ideas regarding rice agronomic management issues. This was equivalent to the concrete experience in Kolb’s cycle. In addition, they were learning how to see what is happening in the rice field by observing the field regularly. The observation is based on the collection and analysis of field data (Pontius, Dilts, and Bartlett 2002). This could be equated to both the second and third steps of Kolb’s learning cycle: observation and reflection, and the formation of abstract concepts. The last step of Kolb’s learning cycle, testing in new situations, relates to what is expected from the FFS alumni; that is, not only to apply IPM principles in their fields but also to master the processes so that they help others learn and apply IPM principles. Because learning in this manner was found to be a key to the success of FFS, Kenmore (1996) mentioned that the approach helped farmers to become systematic, well-rounded, and innovative and also to make decisions based on thorough observation.

The learning that occurred in the FFS was organized mainly to allow learning at the level of the individual farmer and help them to manage their farms better. However, another part of learning deals with program² or organizational effectiveness. This part helps program implementers to understand to what extent the planned activities (in this case, those that would be carried out by the FFS groups based on the curriculum) have been carried out; to what extent these activities have brought about immediate, intermediate, and ultimate results; and the reasons why and why not. In the FFS, with the focus of learning at the individual level, this part is not addressed systematically. For example, when FFS is being implemented as one extension approach in a community, though the immediate objective is to improve

² Program is used here in a broad sense to cover a range of operations from individual projects to any kind goal-oriented organized entity.

the productivity of the members of the FFS, the more far-reaching objective is to learn from the successes of these FFSs and to bring about similar changes in the wider rural community that has similar socioeconomic and agro ecological characteristics. Ultimately then, this will bring about an improvement of individual members' productivity that then translates into a higher-level livelihood change. However, these changes—from individual effectiveness to organizational effectiveness, or translation of individual productivity to livelihood³ improvement—require a systematic way of learning and improving. Therefore, the key questions that need to be considered to broaden the impact of FFS beyond the micro level are as follows: How can the learning that is mainly on improving productivity through FFS be scaled up to lead to improvement in livelihood? How can this individual learning be made to translate into organizational and programmatic learning at the meso level that helps in strategic managerial decisions? How can the learning that has occurred at the FFS level be processed and used for overall program effectiveness that implements FFS as one activity at both the micro- and meso scale? How can this learning that has occurred at the FFS level be aggregated and used to guide the path toward an overall impact of a program (up to the macro level)?

Using PM&E as one management tool while planning and implementing FFSs promotes transfer of learning from the FFS level (as a result of curriculum-based regular training) to the program implementers level, which improves operational and strategic decisions. Figure 2.1 illustrates the kind and flow of information that circulates between FFS target beneficiaries (micro level), program implementers (meso level), and program enablers (macro level). If program implementers (meso level) learn about what is happening at the micro level of the FFS through the data generated by PM&E, they will be better informed in making decisions. In addition, program implementers will be able to translate the activity-level learning and experience into improving income and ultimately livelihood of the target stakeholders. This is because PM&E enables the collection, analysis, and use of data that relate to how and why learning is working. For example, IPM–FFSs could lead to knowledge and skill about IPM (output), improvement in income and ultimate impact of the program on the target group. Furthermore, feedback also goes back, or down, from the macro (higher-level decision makers including sectoral ministries and donors) to the meso (program implementers and implementing departments in agriculture and rural development) and the micro (individual/farmer groups). PM&E supports the meso level to respond to challenges faced by the lower level of the structure (micro level) when implementing any intervention (which in this study is FFS implementation). Furthermore, since the data collection and analysis are based on the widely used evaluation criteria—namely, efficiency, effectiveness, sustainability, relevance, and impact—the process helps to generate useful knowledge about the management of FFS and about the sources of and improvement options to the frequently mentioned problem of fiscal unsustainability of FFS (Quizon et al. 2001).

³ Chambers and Conway (1992) define *livelihoods* as the capabilities, assets (stores, resources, claims, and access), and activities required for a means of living.

Figure 2.1—Learning and information flow in farmer field schools implementing participatory monitoring and evaluation

Source: Authors creation.

Notes: FFS = farmer field school; MoA = ministry of agriculture; PM&E = participatory monitoring and evaluation.

However, the way the FFS is currently being implemented, it does not allow for this kind of information flow mechanism. As a result, a gap in the approach needs to be addressed, especially because the approach is used not only to bring about improved knowledge and skill but also as part of a rural development strategy implemented to bring about livelihood change in a rural community. The tool that could help in filling this gap is PM&E. The next section discusses how the design and implementation of PM&E filled this learning gap using FFS in Zanzibar, Tanzania.

3. PARTICIPATORY MONITORING AND EVALUATION DESIGN AND IMPLEMENTATION IN THE CASE STUDY PROGRAM

In this section we describe the Agricultural Services Support Program and Agricultural Sector Development Program–Livestock (ASSP/ASDP-L) in which farmer field school (FFS) is established and illustrate the steps followed to design the participatory monitoring and evaluation (PM&E) system in the context of FFS in Zanzibar, Tanzania. In addition, the actual implementation of the PM&E system in the FFS sites is explained.

Case Study Description: ASSP/ASDP-L in Zanzibar

The case study is based on the development and implementation of a participatory monitoring and evaluation system for ASSP/ASDP-L in Zanzibar. The participatory monitoring and evaluation system was developed in 2009 as part of the Strengthening Management for Impact Program (SMIP), a four-year (2006–2010) regional program funded by the International Fund for Agricultural Development (IFAD) that worked with pro-poor initiatives in eastern and southern Africa to build capacity to better “manage toward impact”⁴ under the International Food Policy Research Institute (IFPRI). The ASSP and the ASDP-L are complementary programs financed by IFAD. Both programs will last for 15 years (2005–2020) and are implemented in two phases in all nine rural districts of Zanzibar (IFAD 2004).

The objectives of the ASSP are to improve the livelihood of the poorest farmers, strengthen the capacity of farming communities, enhance delivery of agricultural development services to smallholders, improve marketing infrastructure and marketing systems for agricultural products, and strengthen national and local government institutions to provide services to the farmers. To address these objectives, the program implemented the following main components: farmer empowerment; strengthening support services for research and extension; and program coordination, monitoring and evaluation, and quality control.

The objectives of the ASDP-L are to improve the livelihood of the poorest agropastoralists and pastoralists, strengthen the capacity of livestock communities, enhance the delivery of livestock development services to smallholders, improve marketing infrastructure and marketing systems for livestock products, and strengthen national and local government institutions to provide services to the livestock subsector. The program has five main components: empowerment; technical support to livestock development; health and water development; support to policy dialogue, legal and regulatory frameworks, and institutions; and program management.

Farmer empowerment is a common component for both programs. Under this component ASSP/ASDP-L is implementing activities that increase the number of FFSs that holistically include all aspects of natural resource management and soil fertility, which help to empower farmers, and impart knowledge that is informed by experiential learning principles. Previously, before the inception of the program, there used to be FFSs working on integrated pest management (IPM). The new FFSs were established to work more generally with crop, livestock, forestry, and fishery production and processing, postharvest losses, declining soil fertility and land degradation, among other issues. Therefore, FFSs, together with farmer-to-farmer training and the use of farmer research groups (FRGs) and farmer extension groups (FEGs) were used as the main extension approaches. Up to 2010, a total of 217 FFSs were established for different agriculture-related enterprises.

⁴ Managing for Impact is a holistic approach to managing development initiatives. It integrates a diverse range of existing processes, methodologies, and tools that will help to address common challenges of development effectiveness. The approach has developed a four-pillar framework that a certain program or project is supposed to have in order to move toward impact (see Kusters and McGregor 2010 for details).

Process of Designing the PM&E System

Below we describe the process followed in designing the participatory monitoring and evaluation system in ASSP/ASDP-L. This includes the preparation phase, with the PM&E planning workshop, developing monitoring tools that were used in data collection, pilot testing, and training the FFS facilitators on implementation of PM&E; and the implementation phase, with data gathering, computer-based data entry and analysis training, process and responsibility of data collation and analysis, procedures in handling quantitative and qualitative data, and communication and reporting procedures. Each of these steps is described in detail below.

PM&E Planning Workshop

The development of the PM&E system requires outlining the program logic, determining the purpose and scope of the PM&E system, and identifying performance questions and information need (indicators). This was done both as a desk-based work and through consultation with key stakeholders in the planning workshop. The six-day planning workshop resulted in a common understanding with key stakeholders about activities and expected results (the program logic) of ASSP/ASDP-L. During the workshop, the purpose and scope required for a functioning PM&E were agreed upon. Following this, performance questions and information needed (indicators) to measure performance were identified. The participants included farmers, extension workers and FFS facilitators⁵ (private and public), researchers and Agricultural Service Facilitation Team (ASFT)⁶ (based in the main ASSP/ASDP-L coordination office), and program development officers.⁷

Developing Monitoring Tools

After the information needs or indicators were identified, the tools used to collect information regarding the indicators were developed. This was a desk-based work. The package of monitoring tools (information collection tools) included those for participation that were developed to monitor the different level of program performance, including activity, output, outcome, and impact, to be administered immediately after training in a quarterly, biannually, and annual basis (see Appendix Table A.2).

Pilot Testing

The tools were tested in one district of Pemba and two districts of Unguja islands on livestock- and crop-related FFSs. The pilot testing was carried out by FFS facilitators and ASFT members. Before going to the field for the pilot testing, they were provided with orientation about the tools and training on how to conduct the data collection. The pilot testing helped them to see how appropriate the pictorial representations were for respondents of different literacy levels (members of FFS) to indicate practices and phenomena. The pilot testing also estimated the time taken for administering each monitoring tool and the utility and validity of the tools. Using the information collected from the field, FFS facilitators, the ASFT, and SMIP facilitators revised and refined the tools. These were later translated to the local language, Swahili, and were put into one booklet for ease of handling during data collection and storage.

⁵ The FFS facilitators are either employees of the *shehia* (the lowest administration unit in Zanzibar) or private service providers working in the district.

⁶ The ASFT includes members of the Program Implementation Unit of ASSP/ASDP-L who are from both islands (Unguja and Pemba) of Zanzibar.

⁷ The program development officers are representatives of the program in the districts and coordinate district activities related to ASSP/ASDP-L.

Training on Implementation of PM&E

Following development of the participatory tools, training on implementation of the monitoring tools was conducted for the FFS facilitators who would be involved in PM&E data collection. The initial training of trainers was carried out for two districts in the classroom as well as in the field by SMIP facilitators.

Following this, the ASFT monitoring and evaluation (M&E) officers took over and continued the training for the remaining FFS facilitators working in the FFS enterprises and districts as shown in Table 3.1.

Table 3.1—Spread of the farmer field school enterprises in the nine districts of Unguja and Pemba islands, Zanzibar, 2009

Enterprise	Districts									Grand Total
	Central	Chakechake	Micheweni	Mkoani	North -A	North -B	South	West	Wete	
Beekeeping								1		1
Dairy	6		2	4	1	3		4	2	22
Finger millet									1	1
Goats		1	1		3	1	5		2	13
Maize						1				1
Cassava	5	7	2	7	3	3	4	4	5	40
Banana	2	7	4	6		2	4	5	6	34
Paddy	1				2	2		1	1	7
Poultry	6	9	11	7	14	7	6	5	7	72
Sorghum						1				1
Sweet potato			1							1
Vegetable	4		3		1	4	3	3	1	19
Yams							2	1		3
Grand Total	24	24	24	24	24	24	24	24	25	217

Source: Authors.

The process helped to build capacity in implementing the PM&E. It also brought a consensus on the implementation procedure, especially on the monitoring timetable and communication flow of the collected M&E data as described in Appendix Table A.1 and Figure 3.1, respectively.

Figure 3.1—Communication flow of the monitoring data

Source: ASSP/ASDP-L participatory monitoring and evaluation plan.

Notes: Notes: FFS = farmer field school; SMSs= subject matter specialists; PDOs= program district officers; ASFT= agriculture service facilitation team.

Implementation of the PM&E System

The PM&E system was implemented in all 217 FFSs of both islands established in the nine districts of Zanzibar. This was after all the preparatory work, including preparing the monitoring tools, translating the monitoring tools into the local language, and training of all facilitators, was completed.

Data Gathering

Two sets of documents were prepared to facilitate the data collection, compilation, analysis, critical reflection, and reporting processes: One describes all the processes mentioned above, and the other, the package of the data collection tools and guidelines on how to collect the data. The data were gathered from the FFS groups as shown in Figure 3.2.

Figure 3.2—Farmer field school enterprise groups that have implemented participatory monitoring and evaluation

Source: Authors.

Since the different FFS groups were established around different enterprises based on participants' preference and the agricultural potential of the area, the monitoring schedule (the timetable when each monitoring session was carried out) also followed the enterprise production cycle (see Appendix Table A.1). For example, for enterprises that completed their production cycle in three months, only the first quarterly monitoring, biannual, and annual monitoring were carried out. However, for others that had more than three months in their production cycle, all monitoring sessions (the specific data collection activity in each monitoring schedule) were carried out. To ensure that this was feasible with fewer burdens to the individuals involved in data collection, the data collection activity was integrated into the regular activities of the program. For example, at the end of an FFS training session, a short monitoring exercise was conducted. The data and information that emerged from this were entered directly into the FFS Diary (a booklet with all of the data collection forms) by the FFS facilitators.

Furthermore, to collect the data on the performance of the FFS in line with the theory of change of the program,⁸ data were gathered on the performance indicators mentioned in Appendix Table A.2 during the different monitoring sessions described in Appendix Table A.1. These performance indicators were selected to capture the widely accepted evaluation criteria: efficiency, effectiveness, relevance, sustainability, and impact.

Training on Computer-Based Data Entry and Analysis

This training was carried out after one round of data collection was completed so that adequate field-level data were available for the training. As a result, the participants came with the data collection diary to be used for the practical training. The participants were program district officers and ASFT M&E officers because they were responsible for data entry and analysis.

⁸ In this paper, *theory of change* is used as a way to describe the condition, precondition, and interventions that lead to a higher-level (program) goal and the relationship and interaction between them. Therefore, the theory of change of ASSP/ASDP-L is the description of the theory and practice on how and why the program achieves its overall goal. For details on theory of change, see Stein and Valters (2012).

Data Collation and Analysis

Data were collated, analyzed, and used for learning and decision making. In other words, all data were collected at the FFS group level and organized at the district level by the program development officer and then passed to ASFT.

Quantitative and Qualitative Data Management

To reduce the amount of time needed to organize and summarize the quantitative data that were gathered, a series of Excel files and spreadsheets were designed specifically for this purpose and for each different type of information. Furthermore, on a regular basis, information from the diaries was transferred to the different data entry sheets. The qualitative information gathered on various topics such as perceptions of different stakeholder groups and farmers' stories were managed with due care. The qualitative data are found to be equally relevant as the quantitative data because they explain why things are happening (or not happening) in a particular manner and provide useful insights for decision making purposes.

The qualitative information was collated and analyzed differently from the quantitative data. The perceptions and stories were collected; and common views, complaints, and recommendations were used to categorize the information. The unique and exciting stories that were thought to have potential for scaling up were recorded into videotapes and circulated for wider use to educate other farmers.

Communication and Reporting

The PM&E information collected by the different stakeholders can be used for learning and decision making only if there is a clear vision, strategy, and plan for appropriately communicating it to the stakeholders of the program. In the ASSP/ASDP-L, the PM&E findings are communicated to key stakeholder groups for accountability, decisionmaking, and knowledge sharing and learning purposes in line with the communication plan. Furthermore, one essential process that was included in the communication plan that was in line with the overall purpose and principles of the PM&E system was to give timely feedback at all levels on the information received and decisions made so that reporting is two-way, as illustrated

4. LESSONS LEARNED AND CHALLENGES

In this section vignettes of lessons learned as a result of implementing the participatory monitoring and evaluation (PM&E) are presented. The lessons learned relate to stakeholder empowerment, ease and timeliness of technology uptake, and change in program management. Furthermore, challenges faced in the implementation are also presented.

Lessons Learned

Agricultural Services Support Program and Agricultural Sector Development Program–Livestock (ASSP/ASDP-L) stakeholders, mainly farmer field school (FFS) members, showed interest in using the PM&E for their own learning and used it to improve their day-to-day operations as well as for strategic decisions they make on the fulfillment of the program objectives.

In line with this, Mbinga (2009) reported how involvement of FFS members in the different processes of PM&E, starting from designing up to using the information for learning and decision making, helped them to understand the utility of the collected data. He also noted how it made them to understand their responsibilities and their rights. Mbinga states that farmers evaluate what has been done, with what quality, and why. And when doing this they not only were looking for what should have been done by others but also assessed the activities that were planned for them to do and how much had been achieved. As a result, this made them to become active and responsible participants in the program implementation, including willingly participating in data collection for monitoring and evaluation.

During the quarterly monitoring sessions, farmers assessed the performance status of the previous quarter's FFS plan and prepared the action plan for the next quarter based on the lessons learned from the previous quarter. In line with this, the Wawi and Kwale Banana FFSs in Chake Chake district of Pemba island (Zanzibar) observed that in the first round of monitoring, their banana planting was too late. For this reason, they gave priority to planting in time for the second FFS round. The collection of data by FFS members, and specifically the use of that information not only to pass to the next channel in the information flow but also for their own learning and decision making, reduced their dependency on expert advice. This is one form of empowerment that allows FFS members to utilize the information and knowledge they generate.

Other experiences include the use of data collected for accountability and feedback. One such experience is as follows: One section of the quarterly monitoring report requires information related to inputs and other contributions that should come from the ASSP/ASDP-L and beneficiaries. The next quarterly monitoring report, when dealing with the action plan, assesses how much this action plan was performed. Based on this, FFS members started challenging the program to fulfill the pledges it had made in the previous action plan. Likewise, the program also raised similar questions to the FFS members so that they fulfill their contribution required to perform the activities based on the agreed quantity and quality (Saleh 2009).

Seeing this in line with the model described in Figure 2.1 can be considered as learning at the micro- and mesolevels. At the microlevel, FFS members use the information and learn from the data they generate to improve their actions. At the mesolevel, program implementers learn and understand how and why FFS members changed their involvement in program implementation as a result of their participation in the PM&E designing and use. Furthermore, they also learned about program performance (attainment of the responsibility by the program implementers and also FFS members) when the information collected with FFS members was communicated to them.

Other lessons learned through the implementation of PM&E in FFS are tracking of technology uptake by FFS participants and change in program management. We discuss lessons learned with respect to both of these issues below.

Tracking Technology Uptake: Lessons Learned on the Field

Part of the biannual monitoring tool collected data on the use and usefulness of the knowledge and information passed in the FFS sessions. It also collected data on reasons for adoption or nonadoption, including recommendations for improvement.

Adoption of Technologies

Through the PM&E implementation, information was recorded on the adoption of technologies introduced by FFS projects. We present one example where PM&E has helped in identifying the successful adoption of technology, and this was scaled up to a wider level. During the biannual monitoring session, while monitoring the use and usefulness of chick feed management and brooding (technology introduced by the program), it was found that farmers who raised chicks by brooder hens were faced with the early death of chicks. The deaths were experienced during the first three weeks of brooding. Through detailed discussion the real cause of these deaths was discovered—chicks raised by brooder hens were not getting enough food, as the brooder hen spilled the food when scratching, making it unavailable to her young. When this happened, the chicks became weak and unable to resist challenges such as diseases and other adverse environmental changes (Suleiman 2009). Furthermore, in making a comparative assessment, it was found that farmers who were practicing chick rearing using brooder rooms were doing far better than their counterparts, as evident in a much lower rate of chick deaths. When this information reached the ASFT, the ASFT validated the information from different sources and communicated to all poultry FFS members in other districts so that they could avoid the problem. Furthermore, the technology was incorporated in the FFS curriculum.

Nonadoption of Technologies

In contrast to the cases where successful adoption of technologies was observed, some cases were found where technologies were not immediately or successfully adopted. PM&E made it possible to identify these cases and the reasons behind the failure of adoption. For some, solutions were found to improve the technology uptake. We depict some examples below.

The ASSP/ASDP-L program, in consultation with farmers, established vegetable FFSs in four *shehias*⁹ of the South District of Zanzibar, Tanzania, anticipating that vegetable production would be profitable. However, the result obtained after the biannual monitoring session refuted the assumption. When monitoring the use and usefulness of the lessons learned by FFS members during the biannual monitoring sessions, it became clear that the knowledge gained in the training sessions regarding vegetable production was not followed by farmers. The follow-up discussion with FFS members revealed that the problem was associated with unavailability of enough water for irrigation. The initial assumption about the amount of water that could be available underestimated what could happen when more people become involved in vegetable production. The information obtained from this monitoring session was taken up by the program and used to develop a proposal to solicit support from other programs working on water infrastructure (Khair 2009).

Another such example was during biannual monitoring on use and usefulness of the poultry FFS training given to the FFS group of Kisongoni *shehia* of Zanzibar. The monitoring revealed that most of the technologies were not adopted by farmers. A further reflection on the problem by farmers identified that Newcastle disease was the main reasons for the nonadoption. This report was compiled by the FFS facilitator and sent to the ASFT, following the procedure developed in the PM&E reporting framework. When the ASFT received the report, it studied the case and responded by sending Newcastle vaccines to the *shehia* and stocked the store of the community animal health worker with the required medicine to avoid a future epidemic (Zerfu 2009).

⁹ *Shehias* are the lowest administrative units in Zanzibar with 1,000–21,000 people.

During the biannual monitoring session in Bumbwisudi *shehia* of Zanzibar, women FFS members reported that the information regarding cassava ridging that required building a soil ridge of 1.2 m width and 45 cm height was beyond their physical capacity. As a result they showed their disinterest to adopt it. The ASSP/ASDP-L had no immediate response to the challenge but forwarded the issue to the Kizimbani research station to work on. However, while waiting for the response, they also started to study the magnitude of the problem and validate with other FFS members in other districts (Zerfu 2009).

Through PM&E the data generated at the FFS level (micro) regarding technology performance was passed to the implementing organization (mesolevel). In some of the cases, solutions were given at this level; but in other cases when the problem was found to be beyond the capacity of the implementing organization, it was referred to the macrolevel for a solution beyond the organization. Furthermore, the flow of information upward as well as feedback downward helped to attain the objectives at each level.

Change in Program Management

After an initial good start, the performance of FFSs, including attendance to the training sessions, declined. For the facilitators at the mesoscale (program implementers), the reason for this remained unknown until they conducted the training monitoring sessions using a secret ballot system. The results of the training monitoring session based on the PM&E format showed the main reason to be absence or delay of the refreshments. When the ASFT came to know this, they discussed whether to continue providing refreshments during FFS training or not. After assessing the general norm existing in the country, they decided to continue and made the delivery on time. This changed the condition and facilitated the learning process (Abdi 2009). This is an example of microlevel data passed to the mesolevel that led to action by mesolevel and again leading to an improved performance (training) at the microlevel.

Challenges

The PM&E system facilitated lesson learning to improve FFS implementation as discussed above. However, the process also encountered some challenges that require both immediate and long-term interventions. These include the need for incentives to continue with sustainability of PM&E implementation, capacity building of ASSP/ASDP-L to respond to feedback from the FFS members, and capacity building of FFS facilitators. We discuss each of these challenges in some detail.

Incentives

The FFS facilitators who participated in collecting the monitoring data are also facilitators of the FFS sessions; as a result, they consider this new task—collection of the monitoring data—to be added work to their job description. As a result they were, in most cases, not willing to do the data collection unless extra payment or incentives were provided.

The procedure that currently exists obliges the program to pay transport allowance each time a facilitator travels to the field to facilitate FFS training sessions. When the PM&E was launched, the ASSP/ASDP-L assumed that the facilitators would perform the monitoring-data collection simultaneously with the training sessions. However, in practice, this didn't happen because the PM&E data collection required facilitators to stay beyond the usual time they spend in the field. As a result, conducting the training and data collection on the same date became difficult. On the other hand, it also became a huge financial burden to the program to conduct the two sessions separately. The program is putting all efforts into convincing FFS facilitators to continue performing both activities so as to avoid incurring extra cost. The issue is not yet resolved. However, it was brought to the attention of the officials of the Ministry of Agriculture.

Capacity of the ASSP/ASDP-L

As is common in most agricultural development programs, when ASSP/ASDP-L was developed, it started with an initial list of agricultural enterprises and technologies that would be a focus for the FFS group formation. When conducting the regular participatory monitoring (quarterly or biannual) to see the adoption status of the agricultural enterprises and technologies, the information revealed both positive and negative results. Some technologies were taken up by FFS members, but others had problems. No contingency plans were in place for causes of nonadoption of the technologies and for those in which the program had no immediate solutions. No systematically designed follow-up actions were planned to allow the program to tackle such kinds of problems, nor were capacities developed to respond to these situations. In most cases, FFS members were left to find their own solutions. This is a problem that may be seen in most programs. However, in programs using PM&E, the consequence can be serious. Implementing PM&E is one way of showing a program's interest in getting feedback from program beneficiaries and improving implementation. If this feedback is not used to improve action, the program loses its trustworthiness and the whole purpose of data collection makes no sense.

Capacity of FFS Facilitators

Most of the FFS facilitators are staff members of the public extension system who have stayed in the system for a number of years. As a result they have two interrelated problems that are hindering them to effectively carry out PM&E. The first relates to their attitude toward farmers being largely informed by the pervasive linear model of technology transfer. FFS facilitators tend to view farmers as passive recipients of technology. On the contrary, PM&E requires a mindset that recognizes the wisdom of farmers and their right as well as responsibility to be actively involved at all level of the PM&E (data collection, analysis, and use) processes.

In relation to this, most FFS facilitators are used to teaching and directing farmers and lack the basic skills and motivation to engage in a facilitation mode. Groeneweg and Chavez-Tafur (2003), referring to the challenges they faced in using PM&E for the food and agriculture organization integrated pest management FFS project in Peru, note that most facilitators lack the basic facilitation skill. Therefore, most of the information collected was only quantitative and lacked in-depth qualitative information to answer questions such as why and why not.

5. CONCLUSION

Agriculture remains imperative in reducing hunger and poverty in developing countries. For this reason many agricultural development programs are under way. However, their effectiveness is constrained by lack of well-integrated management tools, among other problems. Participatory monitoring and evaluation (PM&E) has become an emerging management tool in many development programs. However, even though PM&E is widely accepted as an effective management tool, its application is widely constrained by high start-up resource requirements. We argue, however, that after the initial investment is made, the payback is much higher both in terms of grassroots-level learning, empowerment, and capacity building and in terms of higher-level strategic decision making.

The experience in Zanzibar as a result of the design and implementation of the participatory monitoring system was encouraging. The PM&E has helped the Agricultural Services Support Program and Agricultural Sector Development Program–Livestock (ASSP/ASDP-L) to use the information collected to make improvements in the day-to-day operations of the implementing program (mesolevel) and also make some strategic decisions that led to forming new partnerships with organizations and sectors (macrolevel) that have similar goals. Furthermore, it has also empowered the stakeholders that generated the data by enabling them to use the information for their own learning and decision making (microlevel).

To reap the benefits that could be accrued from the PM&E system, some of the challenges that are faced in ASSP/ASDP-L and that could also be considered as generic problems in program implementation should be addressed. The following measures are recommended to address some of the challenges in PM&E:

- Manage incentives for engaging effectively in PM&E
 - It is very important that program implementers critically review incentives and develop a system to effectively manage them.
- Build responsiveness capacity
 - ASSP/ASDP-L should build its capacity to respond to the feedback or the challenges generated by the PM&E system. The program needs to have strategies already in place to be prepared to provide feasible solutions to challenges faced at every stage of program implementation. This might call for additional funding for capacity building or putting collaborative efforts and networks in place to solicit solutions from higher-level decision makers.

APPENDIX: SUPPLEMENTARY TABLES

Table A.1—Monitoring schedule for the different enterprises

Months after FFS group establishment	FFS Enterprises											
	Vegetables	Rice	Sweet potato	Maize	Sorghum	Poultry	Cassava	Dairy	Bee-keeping	Goat	Yam	Banana
1												
2												
3												
4	First-quarter monitoring (1, 2, and 3 months)											
5												
6												
7	Second-quarter (4, 5, and 6 months) and first biannual (outcome) monitoring (1–6 months)											
8												
9												
10							Third-quarter monitoring (7, 8, and 9 months)					
11												
12												
	Annual monitoring (1–12 months)						Fourth-quarter (10, 11, and 12 months), second biannual (outcome; 7–12 months) and annual (impact) monitoring (1–12 months)					

Source: ASSP/ASDP-L participatory monitoring and evaluation plan.

Table A.2—Type of data collected and timing

NO.	MONITORING SESSION	TYPE OF DATA COLLECTED
1.	AFTER EACH TRAINING SESSION	
1.1		Training sessions
1.1.1		Participant views on mandatory/voluntary training sessions
1.1.2		Participant reflections on mandatory/voluntary training sessions
2.	QUARTERLY MONITORING	
2.1		FFS action plans
2.1.1		Developing and monitoring FFS action plans
2.1.2		Reflections on progress of action plans
2.2		Progress on service provision
2.2.1		Monitoring service provision
2.2.2		Reflections on progress of service provision
2.3		Farmers' stories—from the quarterly monitoring session
2.4		FFS facilitator views on training sessions delivered in the quarter
3.	BIANNUAL MONITORING	
3.1		Group finances
3.1.1		Information on group finances
3.1.2		Reflecting on group finances
3.2		Use and usefulness of information/knowledge provided during the FFS training sessions
3.2.1		Use of information/knowledge provided during the FFS training sessions
3.2.2		Usefulness of information/new technologies introduced in the FFS training sessions
3.2.3		Reflecting on use & usefulness of information and knowledge
3.3		Information sharing
3.3.1		Sharing information/knowledge with others
3.3.2		Reflecting on sharing of information
3.4		Research and service provision
3.4.1		FFS views on changes in research and service provisions
3.4.2		Farmers' reflections on research and service provision
3.5		Farmers' stories—from the biannual monitoring session
4.	ANNUAL MONITORING	
4.1		Changes in household income
4.2		Changes in types of household expenditure
4.3		Changes in well-being
4.4		Farmers' stories—from the annual monitoring session

Source: ASSP/ASDP-L participatory monitoring and evaluation plan.

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