

Stock-taking exercise
on **Livestock Farmer
Field Schools**

EAST AND SOUTHERN AFRICA

Stock-taking exercise on **Livestock Farmer Field Schools**

EAST AND SOUTHERN AFRICA

© 2022 by the International Fund for Agricultural Development (IFAD)

The opinions expressed in this publication are those of the authors and do not necessarily represent those of IFAD. The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of IFAD concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The designations “developed” and “developing” countries are intended for statistical convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process.

All rights reserved.

Cover photo: ©IFAD/Susan Beccio

ISBN 978-92-9266-295-0

December 2022

Table of contents

Acknowledgements.....	4
Summary.....	5
1 Introduction and background.....	10
2 Sample, methodology and framework.....	13
3 Outputs, outcomes and impact of L-FFS.....	19
L-FFS outreach and targeting.....	19
Natural capital effects.....	21
Financial capital effects.....	23
Social capital effects.....	24
Human capital effects.....	25
L-FFS: A joint learning process leading to empowerment.....	25
4 Recurring challenges and enabling factors.....	27
A. Quality of L-FFS, facilitators and needs-based curriculum.....	28
B. Sufficient time.....	29
C. Scaling up, exit strategy and institutionalization.....	29
D. Complementary value chain support/activities.....	30
5 Institutionalization.....	31
Costs and benefits.....	32
FFS and FOs.....	33
The process of institutionalization of L-FFS.....	35
6 Recommendations.....	37
References and resources.....	40
Annex: Theory of change for L-FFS – reconstructed.....	42

Case studies/Country studies are available on request from IFAD/PMI:

- AROPA and DEFIS southern **Madagascar**: farmer field schools on small ruminants.
- RLEEP/SAPP **Malawi**: farmer business schools (farmer field schools that focus on the business aspects of different value chains), with support to L-FFS on dairy and beef farming; SAPP: L-FFS on goats and chickens
- RDDP **Rwanda**: L-FFS on dairy cows and production
- ASDP-L Zanzibar, **Tanzania**: L-FFS on poultry, dairy cows and dairy goats, combined with communal cowsheds or goat sheds, and support to community animal health workers and artificial insemination

Acknowledgements

The originator of this stock-taking exercise on livestock farmer field schools (L-FFS) is the Sustainable Production, Markets and Institutions Division (PMI), led by Jean-Philippe Audinet (retired), Lead Global Technical Advisor Institutions, and Antonio Rota, Lead Global Technical Specialist Livestock, co-authored with Dr Eva Jordans, IFAD Consultant. Significant inputs were received from Putso Nyathi, IFAD Agronomist, East and Southern Africa Division. Special thanks to Thouraya Triki (PMI Director) and Kathy Zissimopoulos (PMI), who provided guidance and technical inputs, and the PMI Administrative and Knowledge Management Team – Natalia Espinel Correal and Silvia Frattini – for their administrative support.

The case studies benefited from comments from and discussions with farmers' organizations, country project teams, IFAD and consultants from the Food and Agriculture Organization of the United Nations (FAO). Many thanks to the following for their contributions:

- Malawi (RLEEP and SAPP): Dixon Ngwende, Programme Coordinator FARMSE, former National Programme Coordinator RLEEP; Rex Baluwa, National Programme Coordinator SAPP; Upile Muhariwa, SAPP; Ancy Banda, Department of Animal Health and Livestock Development; Kefasi Kamoy, Department of Land Resources Conservation; James Ntupanyama, IFAD Malawi; and Benjamin Panulo, IFAD Malawi
- Rwanda (RDDP): Abdul Madjid Sindayigaya, L-FFS Specialist; Gertrude Buyu, International Technical Assistance on L-FFS, FAO, Kenya; Alban Bellinguez, IFAD consultant; Elisee Kamanzi, Country Programme Manager; and Cosmas Ntare, Project Manager, Heifer International Rwanda
- Zanzibar (ASDP-L): Yusuf Fasih Hassan, Chairman of Apex Farmer Fora Zanzibar, Mwatima Juma, IFAD Programme Officer (retired); Asha Omar Faki, former Liaison Officer SADP-L Pemba; and Khalfan Saleh, former MIVARF Coordinator Zanzibar.

The authors take full responsibility for errors, omissions and the views expressed in this report.

Summary

The farmer field schools (FFS) approach to agricultural advisory and education services has been adopted in a large number of IFAD-funded projects across Africa, but little is known about the specific application of this approach to the livestock sector. This report reviews and documents preliminary lessons learned from livestock farmer field schools (L-FFS) about dairy cows, beef cattle, goats and chickens, which have been implemented in the four IFAD-funded projects that applied this approach in Madagascar, Malawi, Rwanda and Tanzania (Zanzibar):

- **Madagascar:** Support to Farmers' Professional Organizations and Agricultural Services Project (AROPA) and Inclusive Agricultural Value Chains Development Programme (DEFIS): Fermes Ecole Paysannes (small ruminants);
- **Malawi:** Rural Livelihoods and Economic Enhancement Programme (RLEEP) farmer business schools (which are farmer schools focusing on the business aspects of different value chains), with support of FFS on dairy and beef farming; Sustainable Agricultural Production Programme (SAPP), L-FFS on goats and chickens;
- **Rwanda:** Rwanda Dairy Development Project (RDDP), L-FFS on dairy cows and production;
- **Zanzibar, Tanzania:** Agricultural Sector Development Programme – Livestock (ASDP-L), L-FSS: poultry, dairy cows and dairy goats, combined with communal cowsheds or goat sheds and support to community animal health workers and including artificial insemination.

The performance of the L-FFS approach was assessed according to four criteria:

1. Outreach and ability to target and benefit underserved groups;
2. Ability to deliver enhanced productivity in livestock raising, dairy, poultry and other activities among FFS members;
3. Social benefits in terms of group formation, collective actions and empowerment among FFS participants, both in productive activities and for processing and marketing products; and
4. Ability to promote institutionalization, with particular attention to the role of farmers' organizations (FOs).

To understand the comprehensive impact of L-FFS, an analytical framework was developed based on the framework presented by van den Berg et al. (2020) based on four types of capital (adapted from Scoones, 1998, p.7):

1. **Natural capital** – the management of natural resources, specifically access to livestock, grazing land and fodder, livestock husbandry, the resulting livestock products and productivity;

2. **Financial (economic) capital** – the capital base (cash income, savings and other economic assets), including basic infrastructure and production equipment and technologies, which are essential for the pursuit of financial security and poverty reduction;
3. **Human capital** – the livestock management skills, problem-solving skills leading to confidence, and mental capability important for the successful pursuit of different livelihood strategies;
4. **Social capital** – the social resources (networks, social relations, affiliations, associations) people draw upon when pursuing livelihood strategies aimed at poverty reduction that require coordinated actions such as collective marketing.

Overall, the stocktaking results suggest wide-ranging effects that are beneficial for farmers participating in the L-FFS in the large-scale investment programmes for agricultural development supported by IFAD in these countries. L-FFS as a successful approach for livestock development need more promotion and acknowledgement. The approach would also benefit from stronger monitoring and evaluation (M&E) and impact assessment to assess the cost–benefit ratio, and from more comprehensive institutionalization. The review also revealed that over the course of the implementation of L-FFS there were some recurring challenges, which led to the identification of recommendations to ensure that the outputs, outcomes and wider impact and development of L-FFS groups are successfully delivered.

The main findings and corresponding recommendations are summarized below.

Findings	Recommendations
CRITERION 1: Outreach and ability to target and benefit underserved groups	
Outreach	
L-FFS are a central activity for beneficiary involvement and ensure successful outreach in livestock development in the reviewed programmes. In the four countries together, L-FFS reached over 168,000 households (about 714,000 individuals).	L-FFS can also be the medium for training lead farmers as trainers, who then, in cases where funds are limited, can increase outreach further by ensuring further extension to other farmers. This increases outreach and also enhances the sustainability of the activities.
Targeting	
Across all programmes, women were successfully included in L-FFS as per design targets (women beneficiaries ranged from 47 per cent to 68 per cent depending on the project), which has led to improved livelihoods and empowerment.	L-FFS membership targeting should focus not only on gender and socio-economic categories but also on targeting youth and disabled people.

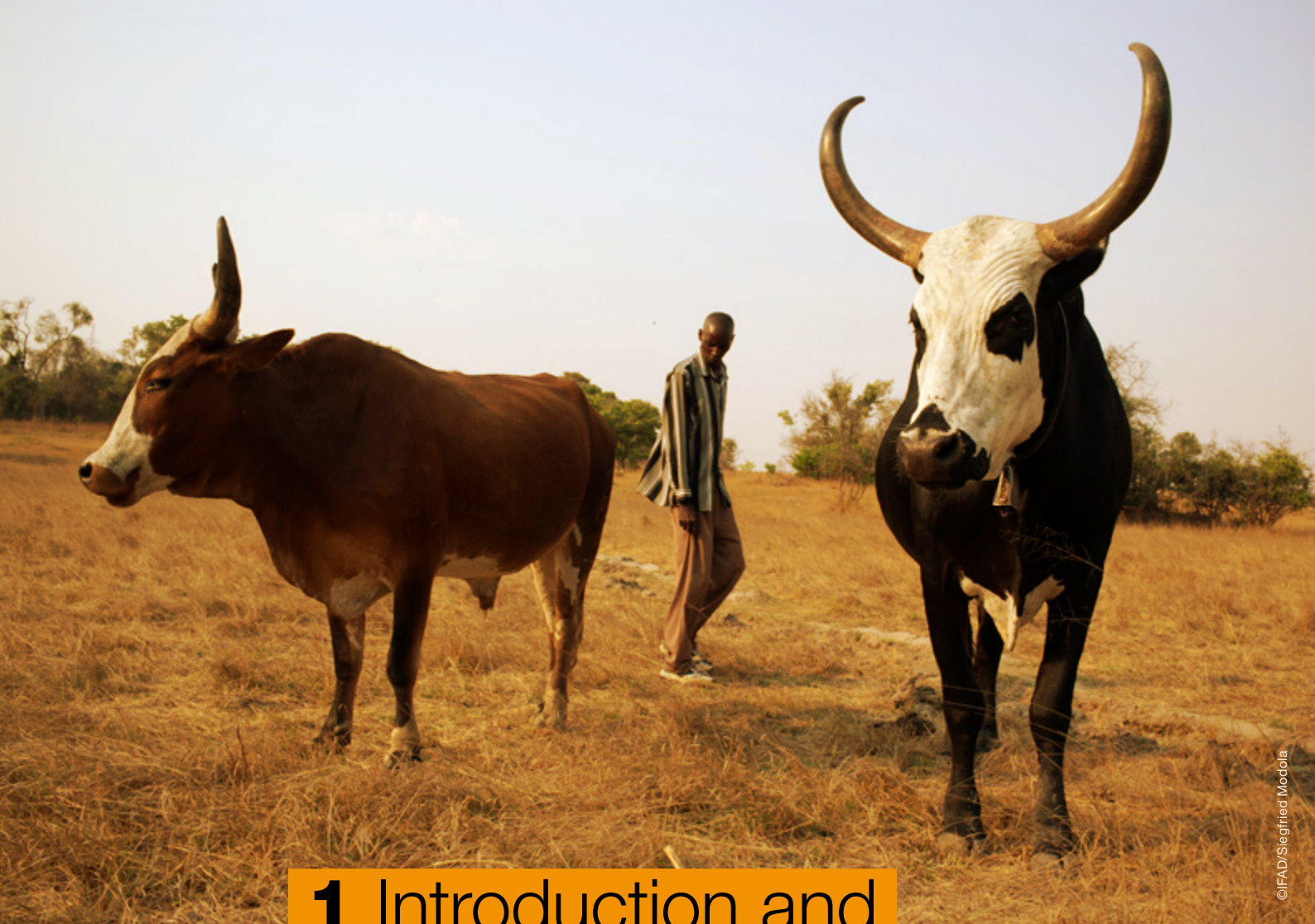
Findings	Recommendations
<p>CRITERION 2: Ability to deliver enhanced productivity in livestock raising, dairy, poultry and other activities among FFS members</p>	
<p>Outputs and outcomes</p>	
<p>Available data^a show a substantial impact on individual farmers, with increases in natural capital through livestock production and substantial additional income (ranging from US\$125 to US\$487 per year). The L-FFS lead to widespread adoption of new livestock husbandry technologies; this leads to increased productivity, leading to higher incomes.</p>	<p>Programmes need to plan for a detailed baseline measurement of livestock production and gather detailed output and outcome data during implementation in order to determine outputs and outcomes of L-FFS.</p>
<p>Sufficient time for implementation</p>	
<p>The whole L-FFS implementation process, including training of L-FFS facilitators, developing curriculum, training groups, etc., takes time, and benefits from an implementation period of 6-10 years overall.</p>	<p>It is thus important to plan L-FFS interventions over an appropriate amount of time and avoid rushing.</p>
<p>Complementary value chain support/activities</p>	
<p>L-FFS groups have proven to be the start of a broader participatory process of development and empowerment that goes beyond the initial technical livestock husbandry focus.^b L-FFS impact increases when the design involves implementing L-FFS in the context of a comprehensive value chain approach, with complementary upstream or downstream interventions.</p>	<p>Comprehensive upstream and downstream value chain development opportunities in a particular livestock value chain, including access to improved breeds, provision of veterinary services, marketing and processing of produce, should be designed and implemented alongside the L-FFS activities.</p>
<p>Access to rural finance</p>	
<p>In all four countries lack of access to rural finance appeared to be a bottleneck, due to microfinance institutions and savings and credit cooperatives lacking suitable financial products or having limited capital available, and was (partially) addressed only at later stages of the projects.</p>	<p>It would be good to plan for access to rural finance activities in a more comprehensive way at earlier stages of an L-FFS programme.</p>
<p>Quality of L-FFS, facilitation and needs-based curriculum</p>	
<p>The quality of the L-FFS, including selection and training of L-FFS facilitators and development of a needs-based curriculum, is important.</p>	<p>L-FFS should be delivered in accordance with a participatory and discovery-based approach to learning, including opportunities for farmers to experiment and observe new practices, particularly if farmers are to be empowered with lifelong skills for capacity development.</p>

Findings	Recommendations
<p>CRITERION 3: Social benefits in terms of group formation, collective actions and empowerment among FFS participants, both in productive activities and for processing and marketing products</p>	
<p>Broad impact</p>	
<p>L-FFS groups have been shown in all cases to have wider outcomes and impacts than the impact on natural capital, including human, social and financial capital. L-FFS, a joint learning process, thus lead to empowerment and transformation at personal and collective levels (personal and collective agency). Impact studies of L-FFS often face problems, mostly with attribution of effects, as L-FFS are one intervention among more inputs. There is also difficulty with finding a reliable control group, as information learned in the L-FFS tends to be shared widely with family members and neighbours, and also through provision of advisory services kick-started by L-FFS. Again, this hampers making the case.</p>	<p>Assessing these broad outcomes needs to be well covered with a range of monitoring and evaluation (M&E) indicators, especially regarding financial, human and social capital. Providing insights and quantifying all outcomes would help make the case for scaling up L-FFS, including thorough cost–benefit analysis. Detailed baseline measurement of the four types of capital (natural, human, social and financial) and gathering outcome and impact data during implementation are very important. M&E indicators need to cover aspects related to all four types of capital.</p>
<p>Communal sheds</p>	
<p>Communal cowsheds for use by a group or community were part of L-FFS activities in Rwanda and Zanzibar; social cohesion is important to make this activity successful.</p>	<p>An assessment of social cohesion needs to be made before communal cowsheds are introduced as part of L-FFS.</p>
<p>Multidisciplinary nature</p>	
<p>L-FFS tend to start out on technical livestock production issues but ultimately cover a range of business and social issues.</p>	<p>This needs to be reflected in programme staffing – but also within IFAD design and supervision teams. A multidisciplinary team needs to focus on designing or monitoring the L-FFS, such as next to animal production experts, gender and social inclusion, community empowerment, nutrition and rural finance experts. The initial needs assessment and curriculum of L-FFS also need to be broadened to consider issues such as climate change/risks/weather, farm economics (budget/assessment), natural resource management and post-harvest.</p>

Findings	Recommendations
<p>CRITERION 4: Ability to promote institutionalization, with particular attention to the role of farmers organizations (FOs)</p>	
<p>Role of FOs</p>	
<p>Implementation is facilitated and sustainability is greatly enhanced when they are linked to or combined with consultation of national FOs and formation of FO networks or apex organizations.</p>	<p>The optimal role of farmer-led FOs and the need for FOs to be established or strengthened by the project should be assessed during design and monitored regularly, and, where required, adjustments should be made. Direct involvement of national FOs in the design of the projects should be a mandatory practice.</p>
<p>Exit strategy and institutionalization</p>	
<p>As a method of rural adult education, L-FFS appear suited for large-scale programmes and gradual scaling up, provided there is a clear focus on ensuring local institutionalization.</p>	<p>There are several areas of the process of institutionalization that require more awareness and interventions, so that by the programme's end the L-FFS approach is strongly institutionalized among all stakeholders. These areas include FFS policies and planning within line ministries, allocation of human and financial resources, establishing institutional arrangements for the systematic application of the approach, adopting or developing FFS guidelines and standards with functional and iterative M&E processes, planning for integration into university and tertiary education curricula (including refresher courses and on-the-job training for extension advisers), and planning for the formation of functional FFS networks and platforms for sharing and learning.</p>

^a The four projects used different indicators to assess and report impact on production and incomes. Therefore, no average figure can be calculated. NB: the Inclusive Agricultural Value Chains Development Programme in Madagascar is still in its early days and yet to show results.

^b Details of specific approaches adopted in the four projects are available in the country studies in the appendices.



© IFAD/Siegfried Mocola

1 Introduction and background

As a response to the often top-down approach to agricultural extension, farmer field schools (FFS) were developed as a bottom-up approach to extension with a focus on participatory, experiential and reflective learning to improve the problem-solving capacity of farmers and livestock keepers (Anderson and Feder, 2007). The rationale for FFS includes the following:

- Empowering farmers with knowledge and skills;
- Making farmers experts in their own fields;
- Sharpening the farmers' ability to make critical and informed decisions;
- Raising awareness in farmers of new ways of thinking/doing and problem solving;
- Helping farmers learn how to organize themselves and their communities.

The FFS concept was originally developed by the Food and Agriculture Organization of the United Nations (FAO) to promote integrated pest management among Indonesian rice farmers in the late 1980s. Almost 30 years since its first establishment, it has spread

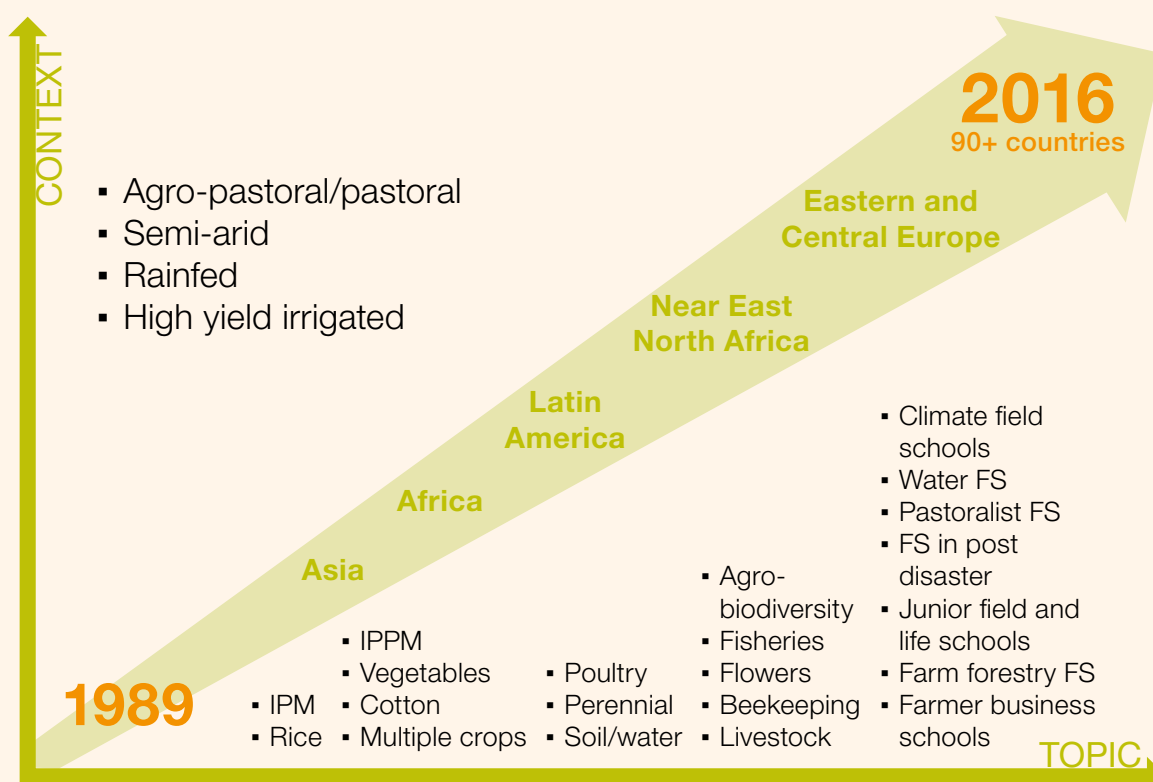
to different contexts and topics and more than 90 countries in all regions of the world. The development of FFS, which took off in Asia with integrated pest management and high yield irrigated rice, spread across other regions, contexts and topics as visualized in Figure 1.

Since their inception, FFS have been so widely adopted and locally adapted that there is no longer a single model for either their technical content or the educational format (Van den Berg and Jiggins, 2007).

Nevertheless, the most important characteristics of FFS are the following:

- Working in groups of 15-25 farmers;
- Season-long activities (following the seasons of crops or development cycles of animals);
- Regular meetings/sessions during the season;
- Learning plots/experiments to compare current practices with improved/alternative practices;
- Practical interactive facilitation, not teaching.

FIGURE 1: Evolution of the FFS approach



Note: FS, farmer school; IPM, integrated pest management; IPPM, integrated production and pest management.

Source: Farmer Field School guidance document. Planning for quality programmes, FAO, 2016.

The adaptation of the FFS approach to livestock started with poultry and dairy, and other livestock systems followed, as shown by the FFS development depicted in Figure 1. Over the years, the L-FFS approach has been applied to various livestock production systems and enterprises, including pastoralism and agropastoralism, dairying, poultry production, integrated rice–duck systems, rabbit production, pig production, bee-keeping, beef production, camel production and small ruminant production. Based on pilots with dairy FFS in Kenya in 2006, the International Livestock Research Institute prepared a detailed manual supporting the dairy L-FFS (Groeneweg et al., 2006).

In 2018, FAO prepared a guide for FFS for small-scale livestock producers. Today, L-FFS are used for livestock development throughout developing regions, and interest in using the approach is growing among governments, NGOs, the private sector and other stakeholders (FAO, 2018).

IFAD has been a great supporter of FFS and L-FFS. Yet little has been done to assess their performance and ability to serve the Fund's cross-cutting priorities. The objective of this report is to help shed some light on the performance of this approach by taking stock of IFAD's experience with FFS (and some farmer business schools [FBS], which are farmer schools focusing on the business aspects of different value chains), in the livestock sector in four projects in the East and Southern Africa region. The report documents preliminary lessons learned from this approach in large publicly funded investment programmes in the region. Good practices, failures, challenges and shortcomings are also highlighted in order to inspire people and enable them to learn from these experiences. This report complements *Stocktaking of Farmer Field Schools: Collective action, self-organization, and the role of farmers' organizations in scaling up and institutionalizing FFS* (IFAD, 2022).

The remainder of the report is organized as follows. Section 2 describes the sample of projects and the methodology. Section 3 presents the findings on outreach, targeting, outputs, outcomes and impacts. Section 4 discusses recurring challenges and the four main enabling factors/characteristics, and section 5 discusses factors affecting the institutionalization of L-FFS, including cost–benefit ratio and the role of farmers' organizations (FOs). The last section, 6, presents the main findings and corresponding recommendations.



2 Sample, methodology and framework

The sample for this review consists of four projects supported by IFAD in East and Southern Africa:

- **Madagascar:** Support to Farmers' Professional Organizations and Agricultural Services Project (AROPA) and Inclusive Agricultural Value Chains Development Programme (DEFIS): Fermes Ecole Paysannes (small ruminants);
- **Malawi:** Rural Livelihoods and Economic Enhancement Programme (RLEEP)/ FBS with support FFS on dairy and beef farming; Sustainable Agricultural Production Programme (SAPP), L-FFS on goats and chickens;
- **Rwanda:** Rwanda Dairy Development Project (RDDP), L-FFS on dairy cows and production;
- **Zanzibar, Tanzania:** Agricultural Sector Development Programme – Livestock (ASDP-L), L-FSS on poultry, dairy cows and dairy goats, combined with communal cowsheds or goat sheds and support to community animal health workers (CAHWs) and with artificial insemination (AI).

Interestingly, the four countries use different approaches to L-FFS. Indeed, in all four countries, after an initial need assessment, at national programme level L-FFS curricula were designed or adapted from existing manuals, mostly using material from FAO and the International Livestock Research Institute, and extension staff trained. Yet implementation modalities comprised a combination of guidance by extension workers and farmer facilitators. Differences were noted between the case study countries:

- **Madagascar:** L-FFS facilitators with the necessary skills were recruited by service providers (NGOs), regional FOs or unions of FOs.
- **Malawi:** In both RLEEP and SAPP, public area extension officers would form L-FFS or livestock farmer business schools (L-FBS) groups and identify among the group members a lead farmer, who would be responsible for coordinating the group and collecting data. In the case of L-FBS, scaling up was done when these lead farmers, once trained, formed their own groups and trained them in the same curriculum, which engages more people in the learning.
- **Rwanda:** Literate, practising farmers with an interest in facilitating farmer groups were selected as L-FFS facilitators. After initial training, they would start facilitating up to three groups each, under the supervision of a master trainer at district level and with support from public extension staff on specific subjects. The training of trainers and of master trainers lasted 12-15 months to cover all the learning stages from “calf to calf”,¹ including forage production. For each L-FFS facilitator this meant almost 42 days of residential training allocated according to seasons plus field coaching for trainers of trainers.
- **Zanzibar:** The first extension-led L-FFS season was led by the trained public extension worker, in this case the block extension worker, with the help of the programme district officer. A farmer facilitator with the requisite skills and expertise was selected and given further training on facilitation skills. The farmer facilitator then conducted the L-FFS sessions in the following two farmer-led seasons. The extension workers only offered guidance when needed. The whole process, shown in Figure 2, took three years.

FIGURE 2: FFS Development process in Zanzibar



In Table 1, the implementation and development of L-FFS in the four countries is summarized, including the scaling-up and exit strategy elements.

¹ From calf to calf refers to the cow's fertility and lactation cycle. Lactation starts with birth of a calf. It may take a few months to get pregnant again. The gestation period is nine months. A dry period (the cow is then not producing milk) is followed by the birth of the next calf. From calf to calf can be 12 to 15 months or longer in case of fertility problems.

TABLE 1: Implementation, scaling up and exit strategy elements

Start (years 1-2)	Midterm (years 3-4)	Last years and completion (years 5-6+)	After completion (years 7+)
Project DEFIS Madagascar (total outreach 60,000)			
2,400 FFS groups (target): year 2, 1,114 groups formed (23 per cent livestock)	Not yet implemented, as programme is in year 2 of implementation		
Project RLEEP Malawi (total members 37,625)			
<ul style="list-style-type: none"> Needs assessment Training of public extension workers 	Extension-led and lead farmer-led FBS/FFS on crops and livestock	2,147 groups (30 per cent livestock) including dairy and FBS/FFS on beef through public-private producer partnership in last two years	<ul style="list-style-type: none"> Joint marketing Milk bulking groups, CAHWs and AI associations continue to provide agricultural services Pass-on calves continuing
SAPP Malawi (total outreach 203,687)			
<ul style="list-style-type: none"> Training of public extension workers Focus on crop FFS, good agricultural practice and conservation agriculture 	Extension-led FFS/FBS and lead farmers for further outreach	<ul style="list-style-type: none"> FFS groups (996), livestock pass-on groups (1,859), FBS (611) 47 per cent of lead farmers provide services to farmers outside their group 139 groups in livestock business through grants (1/3 of grants) 	<i>Planned exit strategy:</i> <ul style="list-style-type: none"> Lead farmers continue to provide services, continue as a network at district level Sustainable joint farmer businesses Continued pass-on system for goats and chickens
RDDP Rwanda (total FFS members 61,450)			
Needs assessment, training of master trainer and L-FFS facilitators (515), start first batch of L-FFS (977 groups)	First batch of L-FFS (1,268 groups)	First and second batches graduated and started joint business activities	<i>Planned exit strategy:</i> <ul style="list-style-type: none"> L-FFS groups (2,650) continue to meet, with joint marketing and business activities, and also functioning as savings/credit associations L-FFS facilitators continue to provide services, form a network at district level and facilitate new L-FFS groups (government funded)
	Training of new L-FFS facilitators (250)	Most facilitators (765) start third batch of FFS (1,132 groups)	
	Second batch of FFS (250 groups)		
	Increased focus on livestock pass-on groups (goats and chickens)		

Start (years 1-2)	Midterm (years 3-4)	Last years and completion (years 5-6+)	After completion (years 7+)
ASDP-L Zanzibar (total FFS members 41,069)			
Training of public extension workers and needs assessment; first batch (256 groups) extension led	<ul style="list-style-type: none"> ▪ Farmer-led first batch and extension-led next batches of FFS groups ▪ Training of first batch of farmer facilitators (399) and CAHWs (222) 	Farmer-led FFS groups (1,500) Farmer-led spillover groups (692)	<ul style="list-style-type: none"> ▪ 99.5 per cent of FFS groups (1,500 + 692 spillover) operational ▪ Joint marketing ▪ Pass-on calves, chickens and goats ▪ 5 per cent of farmer facilitators continue to provide services ▪ Most CAHWs provide services and CAHWs organizations opened veterinary pharmacies

Data collection methods included:

- a desk review of all documentation available for the four projects/countries under review;
- interviews with IFAD staff and project staff concerned;
- interviews with farmers' organizations engaged in IFAD projects; and
- interviews with FFS resource people in FAO and other organizations.

For the purpose of this review, an analytical framework was developed, based on the framework presented by van den Berg et al. (2020), which orders effects as outputs, outcomes and impact of the L-FFS.

These effects are arranged in four quadrants according to four types of capital (adapted from Scoones, 1989, p. 7) in Figure 3:

- **Natural capital** – the management of natural resources, specifically access to livestock, grazing land and fodder, livestock husbandry, the resulting livestock products and productivity.
- **Financial (economic) capital** – the capital base (cash income, savings and other economic assets), including basic infrastructure and production equipment and technologies, which are essential for the pursuit of financial security and poverty reduction.
- **Human capital** – the livestock management skills, problem-solving skills leading to confidence, and mental capability important for the successful pursuit of different livelihood strategies.
- **Social capital** – the social resources (networks, social relations, affiliations, associations) upon which people draw when pursuing livelihood strategies aimed at poverty reduction that require coordinated actions such as collective marketing.

The division into four types of capital is useful for understanding the comprehensive impact of L-FFS, while at the same time the causal pathways are a **combination of advancements in each domain**. For example, improved animal health is contingent upon animal health management skills learned in the natural domain, but is at the same time influenced by skills and confidence in the human domain, collective action in the social domain and profits in the financial domain.

FIGURE 3: Analytical framework of the L-FFS



Source: Adapted from van den Berg et al., 2020.

Based on this framework, the performance of the L-FFS approach was assessed in terms of:

- outreach and targeting;
- enhanced productivity in livestock raising, dairy, poultry and other activities among FFS members;
- social effects in terms of group formation, collective actions and empowerment among FFS participants, both in productive activities and for processing and marketing products; and
- ability to promote institutionalization, with particular attention to the role of FOs.



©IFAD/Enoch Kavindete Jr

3 Outputs, outcomes and impact of L-FFS

Each country case study indicated the outputs, outcomes and impact on the L-FFS groups. L-FFS (and FBS) were implemented in conjunction with other project activities supporting the livestock value chains, which reinforced the outcomes and impact. Given this, the noted results cannot solely be attributed to the FFS/FBS methodology used, although this methodology appeared very central to realizing the results. Since the project in Madagascar, DEFIS, is in year 2 of implementation, data on outcomes and impact are not yet available. Although there are differences between the countries and in each livestock activity, some general patterns can be deduced.

L-FFS OUTREACH AND TARGETING

In the four programmes reviewed, FFS are a central activity for beneficiary involvement and outreach. Actual outreach reached over 400,000 households (corresponding to about 1.7 million individuals). Of the FFS groups in question, 42 per cent were focused on L-FFS. Table 2 presents the number of FFS groups (both crops and livestock), benefiting households and outreach in the four countries.

TABLE 2: Outreach of FFS groups

Country/Project	FFS groups	Total beneficiary households	Outreach (individuals)
Madagascar DEFIS	2,400 (target) 1,114 (achieved, 23% livestock)	60,000 FFS (260,000 advisory services)	300,000 (1,500,000)
Malawi RLEEP	2,147 (30% livestock)	37,625	166,883
Malawi SAPP	996 FFS (10% livestock), 611 FBS	203,687	916,591
Rwanda RDDP	2,650 (target) 1,518 (achieved, 100% dairy)	61,450	264,235
Zanzibar ASDP-L	1,500 (42% livestock)	41,069	229,986
Total	10,304 FFS/FBS	403,831	1,877,695
	L-FFS: 42%	169,609	718,541

TABLE 3: Targeting in terms of poverty and gender in L-FFS

Country/Project	Socio-economic/poverty	Women
Madagascar, DEFIS	✓	Target is at least 30% of households headed by women or young people (data on achievement not yet available)
Malawi, RLEEP	✓	57% (target was 50%)
Malawi, SAPP	✓	57% (target was 50%)
Rwanda, RDDP	✓	42% (target was 50%)
Zanzibar, ASDP-L	✓	68% (target was 40%)

All programmes reviewed included socio-economic or poverty criteria for the selection of participants in FFS. All L-FFS are mixed male/female groups and women's participation is generally high; women constitute more than half of participants, with the exception of RDDP, where they constitute 42 per cent. Their participation has an important empowering impact, as for example in Zanzibar.

Youth targets were not set in most programmes, and data are not widely available (in Rwanda, data are collected and 10 per cent of L-FFS participants are youth). Within livestock services, youth are mostly targeted to become CAHWs and AI technicians.

Zanzibar: In ASDP-L, specific targeting of women students has changed lives, families and entire communities. Although most farmers in Zanzibar are women, until recently none of them would have earned their own incomes because of cultural norms.

NATURAL CAPITAL EFFECTS

Increasing natural capital is the entry point for most L-FFS. This has led to a range of outputs and results that have an effect on an increase in natural capital, including the adoption of improved agricultural technologies, improved fodder availability, improved animal health, improved animal genetics through AI, increased and better-quality production, and increased access to manure. Some examples include the following:

- across all countries a high level of adoption of improved agricultural technologies (e.g. in Malawi up to 70 per cent of L-FFS alumni adopted the technologies promoted in the schools);
- increased and improved fodder availability;
- improved animal health, through preventive animal health care (practised by 65 of farmers in Zanzibar, and around 90 per cent of farmers in Rwanda) and training of CAHWs;
- reduced animal mortality (in Malawi mortality of dairy animals reduced by 95 per cent);
- improved animal genetics, through improved breeds, pass-on systems, cross-breeding and AI, and trained AI technicians;
- increased milk production (67 per cent in Zanzibar; in Malawi raised from 5 litres to 12-15 litres per dairy animal per day) and volume of total milk sold (in Rwanda an increase of 75 per cent for L-FFS members);
- reduced level of milk rejection due to training on mastitis prevention (reduced by 90 per cent in Malawi);
- increased egg production (150-300 per cent in Zanzibar) and improved chickens;
- goat and beef fattening – better health, increased weight and quicker growth;

- increased access to manure, leading to increased yields of crops (in Malawi five goats bring in 665 kg of manure per year, with reported maize yields increased from 140 per cent to 260 per cent after application in fields compared with yields before manure application); and
- climate-smart agriculture practices successfully integrated into some L-FFS curricula (Rwanda RDDP and Malawi SAPP); for example, in Rwanda rainwater harvesting is a climate-smart agriculture technology promoted and adopted widely.

In all countries, “pass-on” of livestock offspring to other beneficiaries was introduced, in dairy typically the first female calf.

Rwanda: RDDP has formed 2,169 L-FFS groups, which reach 55,703 farmers and farm assistants. RDDP has documented achievements related to production and milk supply through an intermediary outcome survey and a specific L-FFS impact assessment, both published in 2022. Results show that milk production has increased significantly, from 4.5 to 7.9 litres per day, thus on average by 75 per cent, for L-FFS members. Milk quality has improved through testing and awareness campaigns on mastitis, which have led to a reduction of prevalence from about 50 per cent previously to 20-25 per cent depending on regions. This has led to the average amount of milk rejected per farmer being reduced by 45 per cent. This has translated into US\$0.66 per day per farmer.

Change in average milk produced per farmer per day
(Litres)

	Before L-FFS	After L-FFS	Change
Produced	4.5	7.9	+3.4
Rejected	1.1	0.6	+0.5
Consumed	2.4	2.4	-
Net	1.0	4.9	+3.9

In addition, milk supply overall has increased, as 75 per cent of targeted households now sell milk, a 60 per cent increase against 47 per cent at baseline. The total volume of milk sold in the country increased by 38 per cent (which includes many districts where the project has not been implemented).

Malawi: In SAPP, the pass-on system is as follows:

- For goats, a group of 15 farmers is formed. Each farmer receives five goats – four nannies and one billy – and is expected to pass on the same number of goats. One secondary group of 15 farmers is formed at the same time and its members are the recipients of the pass-on goats.
- For chickens, a primary group of 15 farmers is formed and receives 10 chickens each: one cock and nine hens. Two secondary groups of 15 farmers each are formed to receive the pass-on pullets and cockerels.
- The secondary groups also benefit from training before they receive the animals, and monitor the performance of the first group closely, as this will be the source of their animals. Through this accountability mechanism, the National Programme Coordinator SAPP stated that “not a single project animal has gone missing”.

FINANCIAL CAPITAL EFFECTS

Across the programmes reviewed, L-FFs membership led to an increase in financial capital, evident from increases in income and assets, increases in prices for livestock products and consequent profits, and group saving schemes increasing access to small loans. Examples include the following.

- Increased net household income and assets: In Rwanda, net income increased by 77 per cent. In Zanzibar, 64 per cent of FFS group members were able to renovate/improve their dwellings and to acquire productive assets such as motor transport, land and processing machines. In Malawi, dairy farmers increased their income by US\$1,804 per household over the project period, around US\$451 per year. No data yet for Madagascar.
- Higher prices for livestock products through collective marketing: In Zanzibar, farmers managed to negotiate a 33 per cent increase on the farm-gate price, from 900 to 1,200 Tanzanian shillings per litre. In Malawi, the milk price increased from 80 Malawian kwacha in 2012 to 160 in 2016.
- Increase in profit from livestock activities and increased crop yields through use of manure: In Zanzibar, returns on livestock revenue from both livestock assets and products were 66 per cent higher compared to before ASDP-L started.
- Group saving schemes and consequent small loans enabling diversification of income, through both on-farm and off-farm income-generating activities: In Rwanda, in 2021 data indicated that groups saved on average US\$684, whereas before they did not have any group savings.
- Increased uptake of livestock insurance: It reached around 11 per cent of FFS members in Rwanda.

SOCIAL CAPITAL EFFECTS

Across the programmes reviewed, L-FFS membership led to increased social capital within the groups, which led to collective marketing, registration as formal groups or cooperatives and group business activities. Examples include the following.

- **Collective marketing of milk:** In several L-FFS groups, collective milk marketing activities had started. Almost 100 per cent of dairy farmers in Zanzibar had collective contracts with dairy processors. In Rwanda, 12 per cent of L-FFS groups have started a milk aggregation business.
- **Registration as cooperatives or associations, or functioning as informal market groups:** In all countries, most L-FFS groups have done so. In Malawi, 13 cooperatives, 2 associations and 2,146 market groups were formed through RLEEP.
- **Group business activities in the livestock value chain:** These mainly involved selling milk or producing and selling fodder seeds or saplings: Additional activities included producing mineral blocks for supplementary cow feed, and selling animal feeds or veterinary drugs. Other groups started income generating activities outside the dairy value chain such as bee-keeping, running banana plantations or managing a forest area. In Malawi, 36 per cent of Village Challenge Fund group business grants approved are given to L-FFS groups.
- **Communal/Group cowsheds:** Cowsheds for use by a group or community have been constructed in Rwanda and Zanzibar. In Zanzibar this was an outcome of the L-FFS discovery process, and was a success, but in Rwanda, where it was part of the design, it was less effective owing to weak social cohesion in the villages concerned and lack of land for fodder production.

Rwanda: Illustrating these social effects, in RDDP in Huye District, three L-FFS groups were formed close to each other, and they registered together as a cooperative. They started selling milk in a small shop in the village and later bought land, on which RDDP built a milk collection point. Currently they sell 390 litres a day to a nearby school, the health clinic and the police post (out of the 1,000 litres per day their cows produce). They also produce fodder saplings and mushrooms, and took a joint loan from a savings and credit cooperative society, for a pig and a small shed for each member, with a payback period of seven months. The repayment was deducted from their group savings.

HUMAN CAPITAL EFFECTS

Across the programmes reviewed, L-FFS membership led to increased human capital for the group members, noticeably improved quality of life, better human nutrition, increased personal agency and greater self-confidence. Examples include the following.

- Improved quality of life, due to a higher income from livestock sales and additional business activities: In Zanzibar, FFS members are, on average, 31 per cent more likely to move out of poverty than the control group.
- Improved human nutrition through increased income, through more access to milk, eggs or meat, and through knowledge, as it is part of the L-FFS curriculum: In Zanzibar, 58 per cent of all programme beneficiaries reported having three meals a day whereas they had two before the programme intervention. In Rwanda, a 13 per cent increase in milk consumption was reported. In Malawi (RLEEP), 46 per cent of beneficiary households reported consuming three meals a day, compared with 30 per cent among control households.
- Personal agency: The learning that takes place in the L-FFS increases skills and confidence, and the group cohesion and joint activities also contribute to a sense of empowerment, particularly for women and youth.
- Increased confidence and ability to make decisions and think critically: In Zanzibar, many women who attended FFS are managing their own money, leading meetings and teaching men how to farm. Many of them feel more confident to express themselves in public and are more involved in decision-making in the family.

L-FFS: A JOINT LEARNING PROCESS LEADING TO EMPOWERMENT

It can be concluded that the collective discovery learning process in which L-FFS participants are involved enables them to address animal husbandry challenges successfully, especially in the context of climate change. This has led to tangible outputs, outcomes and impacts in terms of natural and financial capital.

Moreover, the L-FFS approach has followed a step-by-step gradual approach, or evolution, whereby groups progressively move from an initial focus on basic capacity-building for livestock production to an approach that builds human and social capital. The increased personal and collective agency is evident from personal and group empowerment that goes beyond livestock production during and after completion of their FFS cycle. This has in most cases led to private livestock service provision, such as CAHWs and AI specialists. In many cases it has also resulted in saving and credit groups, collective marketing and business development (IFAD strategic objective 2), and, more widely, social responsibility and well-being. Although country cases differ, an estimate is that in at least 75 per cent of the L-FFS groups there was some form of private livestock service provision and/or joint action on collective marketing and business.

We can conclude that three country case studies (Malawi, Rwanda and Zanzibar) indicate that L-FFS, a joint learning process, leads directly to increased natural and financial capital, and in the process also to an increase in social and human capital. As yet there are no data available on outcomes in Madagascar. In Malawi, Rwanda and Tanzania it then led to empowerment: a transformation at both personal and collective levels (increased personal and collective agency). This empowerment pathway is illustrated in Figure 4.

In the annex, a theory of change for L-FFS is presented. This theory of change is based on a synthesis of the four country experiences.

FIGURE 4: The empowerment pathway



Source: Adapted from Friis-Hansen and Duveskog, 2011.



4 Recurring challenges and enabling factors

Over the course of the implementation of L-FFS in the four countries, there were some recurring challenges for which the programmes needed to find solutions. These challenges related to the following factors.

- **Quality of L-FFS, facilitators and the curriculum:** Intensive capacity-building is needed to develop a strong foundation of FFS skills at national and district levels, and among farmer facilitators.
- **Time requirements:** The whole process of capacity-building at different levels, organizing the L-FFS and supporting the participants' capacity development and graduation from the L-FFS should not be underestimated. This takes on average three years.
- **Scaling up, exit strategy and institutionalization:** The process of scaling up during programme implementation and afterwards, and the exit strategy need careful planning from the start, which links to a strategy for institutionalization.

- **Complementary value chain support:** In order for farmers to apply what they learn in the L-FFS and benefit from this, additional value chain support is required in terms of inputs, services and marketing support.

As such, these issues are in fact the four main enabling factors to realize the outputs, outcome and impact and to support the empowerment pathway: the wider impact and development of L-FFS groups. In order to ensure a broad impact and support the development of L-FFS, the following aspects need to be included in design and implementation.

A. QUALITY OF L-FFS, FACILITATORS AND NEEDS-BASED CURRICULUM

- **Strong foundation:** It is evident that L-FFS programmes benefit if they can build on prior or existing FFS initiatives in a country. Prior experiences that helped to build a foundation include, for example, in Zanzibar the FFS on integrated production and pest management, in Rwanda the Twigire Muhinzi approach and Heifer International's values-based holistic community development approach, in Malawi the FFS extension approach adopted by the Ministry of Agriculture and in Madagascar the FFS experience.
- **Implementation capacity:** Experience of and familiarity with the FFS approach and the presence of FFS master trainers in a country enhances the implementation of L-FFS, even if the FFS experience is mostly in crops. If implementation capacity does not exist in a country, training of FFS master trainers is a necessary starting point at both national and programme levels, as is subsequent training of district or area staff involved in implementation.
- **Farmer facilitators:** The selection and intensive training of selected farmer facilitators or lead farmers in FFS ensures locally based implementation capacity. Farmer facilitators can facilitate up to three FFS groups at a time, with the guidance of master trainers and public extension workers. After the graduation of these groups, farmer facilitators can form new groups during the programme, but also after programme completion as a form of scaling up. In all countries, these farmer facilitators then continue to provide local advisory services under their own steam (formation of spill-over groups in Zanzibar, provision of paid services to other farmers by farmer facilitators or CAHWs in all countries, formation of cooperative of facilitators in Rwanda).
- **Adaptation to local context:** There are many adaptations of the FFS approach to local contexts, but the basic principle – active experimentation and learning by doing – is an essential element. The four country examples indicate that the FFS approach of learning by doing can be used effectively in livestock development programmes.
- **Expanded needs-based curriculum:** L-FFS are a constructive start to bring together livestock farmers and address animal husbandry issues. Incorporating wider issues in the curriculum based on needs assessment, such as financial literacy, business development, social responsibility, gender, youth and health nutrition, has proven to help groups to further innovate and work on addressing broader issues and initiatives beyond livestock keeping.

- **Crop–livestock integration:** All programmes reviewed, except RDDP in Rwanda, also (or primarily) support crop FFS, and often the same farming households participate in both crop and livestock FFS. Focus on and support for crop–livestock integration, such as the wider use of crop residues as fodder and the use of manure for crops, increases production impact. In Zanzibar, the integration of livestock and crop FFS was the focus of the additional financing.

B. SUFFICIENT TIME

- **Implementation of L-FFS takes several years:** A typical “technical” L-FFS cycle would be around 12-18 months, for example in dairy farming from calf to calf. A farmer facilitator would be able to facilitate on their own after going through all steps in the curriculum, but would continue to need and benefit from support by extension workers. The process of graduation and evolution can start during the initial L-FFS cycle, but in most programmes takes longer to develop and thrive, at least three years. Most of the programmes reviewed had a duration of 10 years, which enabled L-FFS groups to be formed in multiple batches over several years. This also enabled support for the development of L-FFS groups after their graduation from the technical L-FFS cycle, for example the support to collective marketing and crop–livestock integration in ASDP-L (Zanzibar) and the business and marketing activities in RLEEP and SAPP (Malawi) and RDDP (Rwanda).
- **Implementation in batches:** Lesson learned from first batches can help improve implementation in later batches, supporting the evolution of the approach over time.

C. SCALING UP, EXIT STRATEGY AND INSTITUTIONALIZATION

- **Inclusion in agricultural extension policy:** In Malawi, the FBS approach has been officially adopted across the country by public extension services and public development programmes and is included in the agricultural extension policy. FFS are a less integral part, but the lead farmer approach is officially recognized, and in practice combined with FFS. Crop FFS are also included in Rwanda’s agricultural extension policy (Twigire Muhinzi). In Zanzibar, FFS and group-based agricultural extension approaches have not yet formally been included in the agricultural extension policy, but in practice have become the norm, and extension workers are routinely trained in the approach.
- **Funding:** Funding in the context of large-scale investment programmes, such as from IFAD, helps the L-FFS approach to be piloted, fine-tuned, scaled up and spread widely. Within the context of matching grants and public–private producer partnerships, the private sector can also contribute to the approach. Funding support from governments’ own budgets is still limited, which could explain why the approach is not often officially included in agricultural extension policy.

- **Local advisory services:** Governments predominantly support L-FFS through local extension workers, who train farmer facilitators or lead farmers in all countries. Through this process, L-FFS groups benefit after project completion from permanent local advisory services by farmers for farmers (such as CAHWs or AI technicians), but a closer link between L-FFS groups, local advisory service providers and the extension workers is also built during implementation.
- **FOs/apex organizations:** L-FFS are set up and strengthened as grassroots-level FOs, in some cases with support from FOs. Thus, either existing FOs are actively involved in the implementation of L-FFS (e.g. in DEFIS in Madagascar), or FOs are formed or strengthened in the process of and as a result of the FFS approach, whereby both general FOs are developed (such as district farmer forums in Zanzibar) and also commodity-specific organizations are set up or strengthened (i.e. milk-bulking groups in Malawi and dairy cooperatives in Rwanda).

D. COMPLEMENTARY VALUE CHAIN SUPPORT/ACTIVITIES

- **Group saving and credit schemes:** Setting up saving and credit schemes within or close to the L-FFS groups helps to create cohesion, and they serve as a reserve fund, for example to pay for veterinary drugs, and also an emergency fund (e.g. during the COVID-19 lockdown in Rwanda). It also enables small business investments, or tapping into available grants and rural finance.
- **Support for value chain development:** This proves to have the advantage that the overall programme is already geared towards addressing issues along the whole value chain, including downstream and upstream, such as access to inputs, AI, creation of market linkages, public-private producer partnership arrangements and access to rural finance (examples are RLEEP/Transforming Agriculture through Diversification and Entrepreneurship in Malawi and RDDP in Rwanda). This enables L-FFS groups to address their needs by tapping into these support services along the value chain.
- **Link to private sector:** Participants can access markets through linkages with private processors, who can also organize farmer groups and L-FFS sessions. For example, in RLEEP, Malawi, the processor Nyama World facilitated 110 L-FFS groups (5,500 farmers) in the beef value chain through a grant from the Agricultural Commercialisation Fund of RLEEP.
- **Access to finance:** The evolution of groups and business development in some programmes (i.e. RLEEP, ASDP-L) was hampered by the lack of access to rural finance for investments. In RDDP, matching grants provision enables investment in dairy businesses and climate-smart production. In SAPP, the Village Challenge Fund was set up after the midterm review to enable L-FFS groups or members to develop livestock businesses.



©IFAD/Susan Beccio

5 Institutionalization

“Institutionalisation is the process by which new ideas and practices are adopted by individuals and organizations and become part of the ‘norm’. Institutionalisation of a new approach involves change and development within the targeted organisations”
(Sutherland, 2001, quoted in Jonfa and Waters-Bayer, 2005).

Institutionalization is thus more than a policy or intention, more than a strategy or plan, and more than an activity or method. The process of institutionalization is complex and long-term. It requires change in individuals and, through them, changes in institutions such as FOs, the private sector and government agencies. On the part of institutions, this requires a change in organizational policy and a deliberate strategy to support FBS/FFS, to build human capacity to apply the approach, to allocate funds towards it, to develop mechanisms that encourage people to apply it and to modify organizational structures so as to accommodate increased participation.

Factors influencing institutionalization include insights into the costs and benefits of L-FFS approach, the role of FOs and the institutionalization process itself.

COSTS AND BENEFITS

Fleischer, Waibel and Walter-Echols (2004) distinguish four types of costs involved in transforming an extension programme into a participatory, learning-based approach, such as FFS:

- (a) the base costs of the existing system (salaries, overheads);
- (b) start-up costs (training of trainers, consultants);
- (c) recurrent costs (FFS costs, incentives, allowances);
- (d) opportunity costs (cost of farmer participation).

This review assesses the average costs for a livestock farmer field school per participant. The figures are presented in Table 4. The costs included in the table are mostly the start-up costs (b) and recurrent costs (c) combined, and do not include the base costs (a) and opportunity costs (d). One could argue that base costs such as salaries and overheads are always there, no matter which extension approach is used. Including opportunity costs (d) would be relevant in a situation where farmers would need to forgo other lucrative income-generating activities or paid employment to be able to participate in FFS, but this is not the case in the four countries in question.

In Table 4, the FFS costs per participant per whole FFS cycle that comprise both the start-up and recurrent costs² are set next to the estimated annual increase in income of a participant.

TABLE 4: L-FFS costs and increase in income

Country/Project	Average costs of L-FFS/ L-FBS per alumnus for one cycle (US\$)	Increase in income for a farming household (US\$)
Malawi RLEEP	102 per lead farmer; 17 per group member ^a	1,804 per household over project period according to Project Completion Report – on average three to four years
Malawi SAPP		124.40 per year (based on goats and chickens sold, not counting value of eggs and own consumption)
Madagascar DEFIS	No data yet	No data yet
Rwanda RDDP	79.00	200 (one dairy cow per year)
Zanzibar ASDP-L	85.40	486.76 (one dairy cow per year)
On average	88.80	

^a Amount based on Transforming Agriculture through Diversification and Entrepreneurship design.

² The costs have been calculated by taking the total amount spent on start-up, training of trainers and running of L-FFS divided by total number of farmers participating/alumni. They do not include the costs of additional value chain support.

The average of US\$88.80 for start-up costs and recurrent costs is in line with documented FFS costs in Indonesia (US\$62) and the Philippines (US\$48) (Quizon, Feder and Murgai, 2001). Recurrent costs tend to cluster around US\$8–US\$10 (Röling et al., 2000).

Rwanda: In RDDP, a cost–benefit analysis shows the following.

Even though there are some additional costs for feeding, deworming, vaccinations and spraying against ticks, it is evident that the annual income per farmer from increased milk production is higher in one year than the total FFS investment per person. L-FFS members also jointly engage in business activities that bring in additional income.

The comparison with the annual increase in income indicates that the FFS investment per participant results in an income increase for the farmer that is higher in **one year** than the total FFS investment per person. However, the actual costs per farmer are in fact higher, as on top of these L-FFS specific costs projects have invested in complementary value chain support, such as increased access to animals (through starter stock), animal health improvements, matching grants, support to marketing infrastructure (such as milk-bulking centres) or other financial support. All these investments together have contributed to the increase in income. Nevertheless, the FFS have been shown to be crucial in realizing the improved incomes through the acquisition of skills and individual empowerment leading to actual application of the improved animal husbandry practices.

The development of the FFS into business and marketing groups and their collective empowerment further contributed to increased income, as well as sustaining it over time. The ultimate return on investment will thus be much higher, as this calculation does not take into account the incremental impact over years to come, the additional business income derived from group activities or the scaling up and spill-over to other farmers, for example through advisory services to other farmers and continuing pass-on gifts of female livestock offspring.

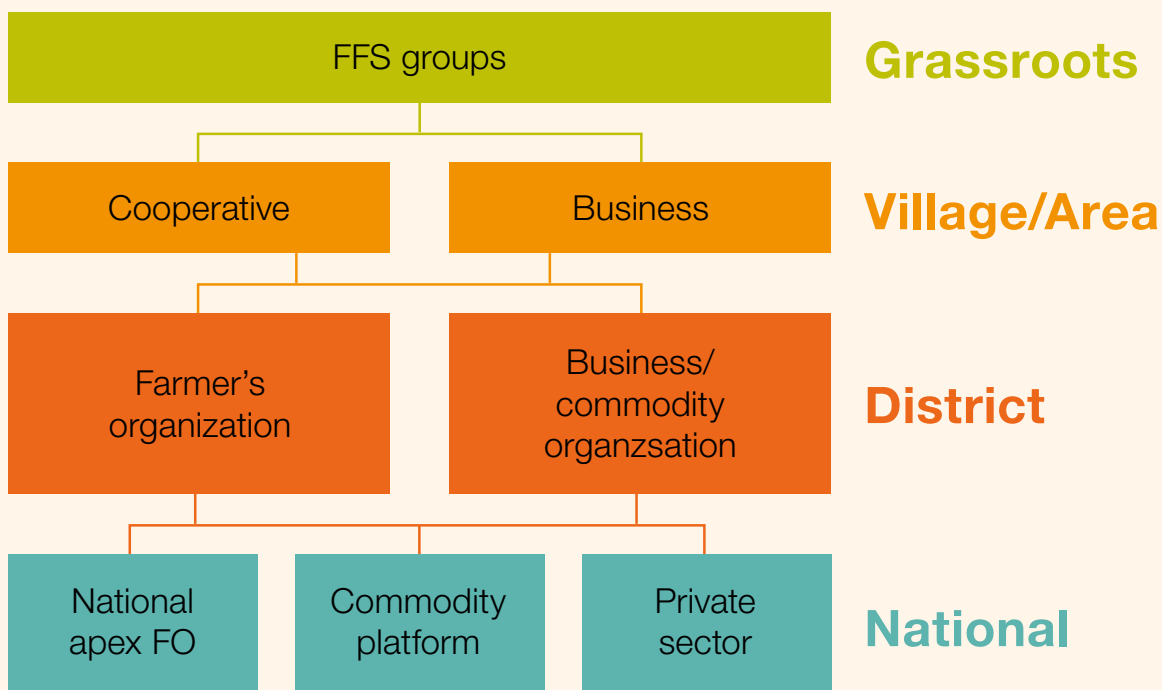
Conducting a more thorough cost–benefit analysis, taking into account the broad impact of L-FFS, is important in order to estimate the cost–benefit ratio of the L-FFS approach compared with a traditional livestock extension approach.

FFS AND FOS

It is noted that the collective discovery learning process in which FFS participants are involved enables them collectively to address new and different challenges they face after the completion of their FFS cycle, including in terms of market access and business development. In addition, existing or emerging organizations of livestock producers offer avenues for the institutionalization of FFS, beyond the completion of the IFAD-funded projects.

FOs are seen to play a key role in the L-FFS implementation and are also established and strengthened as a result of the FFS approach. This is especially noticeable in the evolution of L-FFS groups towards business and marketing activities and the mobilization of farmer representation at district and national levels. FFS groups function as newly established FOs at grassroots level, with many continuing to function after the project's end (e.g. 99.5 per cent of FFS groups in Zanzibar continued to function). FFS groups can link to, be supported by or form FOs at village level, such as cooperatives or business groups, as well as FOs at district and national levels. This is highlighted in Figure 4.

FIGURE 4: FOs and FFS – linkages and support, bottom-up and top-down



Madagascar: This is the only country where national FOs, such as the Madagascar Farmers Coalition, Madagascar Farmers Confederation and Syndicate of Farmer Organizations, and regional FOs are actively engaged in facilitating FFS groups in the context of an IFAD-funded programme (DEFIS). In fact, the network of family farm advisers provides support for (i) the structuring of farmer associations, (ii) the formulation of requests and (iii) the organization of production. Regarding production, this support has enabled RFOs to contract with DEFIS for the organization of production by grassroots producers and to a lesser extent for marketing through the establishment of FFSs, technical support, group product aggregation and the search for partnerships with processors and market operators.

In the four countries, either existing FOs are actively involved in the implementation of L-FFS (such as in DEFIS, Madagascar), or more commonly, FOs are formed or strengthened as part of the FFS approach. Generic FOs (e.g. the district farmer forums in Zanzibar) are formed or strengthened and also business or commodity specific groups (e.g. milk-bulking groups in Malawi, dairy cooperatives and districts dairy platforms in Rwanda and the beef platform in Malawi) are formed. FFS and FOs can also be closely linked to and supported by the private sector, often processors.

In addition, FOs of FFS facilitators or local advisory service providers are being established. In Malawi, Rwanda and Zanzibar, farmer facilitators have formed apex organizations or cooperatives. On average, most of the farmer or FFS facilitators join these apex organizations. In Malawi and Zanzibar, most CAHWs and AI technicians have formed organizations to coordinate their activities, continue to help each other and learn together as well as pool resources to buy veterinary drugs, or in the case of Zanzibar even open veterinary pharmacies and animal feed stores.

A potential risk with FOs created by governmental projects is that they could disappear after project completion or that they compete with – and weaken – pre-existing farmer-led FOs, because they are politically favoured and used by the government. It was noted that the FOs emerging from and strengthened by the government-backed FFS interventions benefit from representation, from grassroots to higher levels, and during implementation develop constructive linkages to local government, line ministries and the private sector. One of their former leaders indicated that in Zanzibar the farmer-led national FO MVIWATA was no longer very active. Instead, its members joined the newly established district farmer forums, which were directly linked to the FFS groups and have a close relationship to district councils and the Ministry of Agriculture. The leadership experience they had gained in being active in the farmer-led FO has helped these leaders of district farmer forums, and consequently strengthened the forums. In Rwanda, national FOs such as IMBARAGA, INGABO and NCCR, and in Malawi NASFAM, were not actively engaged with the FFS implementation.

THE PROCESS OF INSTITUTIONALIZATION OF L-FFS

An assessment in the four countries of key characteristics of institutionalization of the FFS approach (FAO, 2019) indicates the following.

Overall mostly present:

- Committed individuals, organizations and political players: In all four countries a group of people committed to FFS is present, including master trainers and apex organizations of facilitators, CAHWs and AI technicians. However, this does not include existing apex FOs except in Madagascar.
- Self-sustained FFS groups in which the culture of learning becomes the norm: In all four countries, groups continue to meet and learn together.

Somewhat present:

- Incorporation into policies and planning with clear strategies and incentives: They are partially incorporated in some countries, such as FBS in Malawi and crop FFS in Rwanda.
- Allocated human and financial resources with clear roles and responsibilities: Resources are available mostly in the context of IFAD programmes, or support from other development partners.
- Established institutional arrangements for the systematic application of the approach: These are mostly in the context of IFAD programmes, or support from other development partners.
- Developed FFS guidelines and standards with functional and iterative M&E processes: Guidelines and curricula are present; standards and M&E are still mostly in development.
- Optimized capacities of individuals, organizations and the enabling environment: Capacity-building is ongoing.

Not yet widely present:

- Integration into university and tertiary education curricula including refresher courses and on-the-job training for extension advisers: This is not yet systematically done. In Malawi and Zanzibar, extension officers are trained in the approach.
- Functional FFS networks and platforms for sharing and learning: These are not yet widely present. Networks have been formed in Zanzibar through district farmer forums and apex organizations; in Malawi and Rwanda, legally registered commodity platforms or trusts are more common platforms that engage with the L-FFS groups.

This analysis shows that across the four countries the characteristics of committed individuals, organizations and political actors and self-sustained FFS groups are mostly present. This includes the lead farmers, L-FFS facilitators or farmer facilitators at farmers' level, who continue to provide advisory services and also form the link to extension services or government agencies. L-FFS groups continue the learning and mutual support, such as pass-on gifts.

There is scope to strengthen the institutionalization by focusing on the other characteristics, for example as an integral part of the programme's exit strategy.



6 Recommendations

Within IFAD funded programmes, experiences with L-FFS in East and Southern Africa have proven their potential to increase the relevance and effectiveness of investment programmes in the following ways.

- Directly reach target groups by aggregating smallholders in L-FFS groups and support activities alleviating rural poverty.
- Improve the relevance of projects by understanding smallholders' needs and priorities in terms of crops and livestock, and rural and agricultural development in a given area.
- Reinforce the impact of IFAD interventions, support the creation of important economies of scale upstream and downstream, and expand smallholder control over value-adding segments of livestock value chains, thus improving their livelihoods.
- Embed IFAD-supported projects in a sustainable approach by empowering FOs and developing local advisory services by and for poor rural farmers.

However, the L-FFS approach as implemented and developed in IFAD programmes in the four countries needs more promotion and acknowledgement as well as stronger institutionalization.

This stocktake of L-FFS leads to the following recommendations for increasing impact and ensuring broader institutionalization.

Recommendations

CRITERION 1:

Outreach and ability to target and benefit underserved groups

Outreach: L-FFS can be the medium for training lead farmers as trainers, who can increase outreach further by ensuring further extension to other farmers. This increases outreach and also enhances the sustainability of the activities.

Targeting: L-FFS membership targeting should focus not only on gender and socio-economic categories but also on targeting youth and disabled people.

CRITERION 2:

Ability to deliver enhanced productivity in livestock raising, dairy, poultry and other activities among FFS members

Outputs and outcomes: Programmes need to plan for a detailed baseline measurement of livestock production and gather detailed output and outcome data during implementation in order to determine outputs and outcomes of L-FFS.

Sufficient time for implementation: It is important to plan L-FFS interventions over an appropriate amount of time and avoid rushing.

Complementary value chain support/activities: Comprehensive upstream and downstream value chain development opportunities in a particular livestock value chain, including access to improved breeds, provision of veterinary services, marketing and processing of produce, should be designed and implemented alongside the L-FFS activities.

Access to rural finance: It would be good to plan for access to rural finance activities in a more comprehensive way at earlier stages of an L-FFS programme, including suitable financial products and increased capital available at microfinance institutions and savings and credit cooperative societies.

Quality of L-FFS, facilitation and needs-based curriculum: L-FFS should be delivered in accordance with a participatory and discovery-based approach to learning, including opportunities for farmers to experiment and observe new practices, particularly if farmers are to be empowered with lifelong skills for capacity development.

Recommendations

CRITERION 3:**Social benefits in terms of group formation, collective actions and empowerment among FFS participants, both in productive activities and for processing and marketing products**

Broad impact: Assessing broad outcomes needs to be well covered with a range of M&E indicators, especially regarding financial, human and social capital. Providing insights and quantifying all outcomes would help make the case for scaling up L-FFS, including thorough cost-benefit analysis. Detailed baseline measurement of the four capitals (natural, human, social and financial) and gathering outcome and impact data during implementation are very important. M&E indicators thus need to cover aspects related to all four types of capital.

Communal sheds: An assessment of social cohesion needs to be made before communal cowsheds are introduced as part of L-FFS.

Multidisciplinary nature: This needs to be reflected in programme staffing – but also within IFAD design and supervision teams a multidisciplinary team needs to focus on designing or monitoring the L-FFS, such as next to animal production experts, gender and social inclusion, community empowerment, nutrition and rural finance experts. The initial needs assessment and curriculum of L-FFS also need to be broadened to consider issues such as climate change/risks/weather, farm economics, natural resource management and post-harvest.

CRITERION 4:**Ability to promote institutionalization, with particular attention to the role of FOs**

Role of FOs: The optimal role of farmer-led FOs and the need for FOs to be established or strengthened by the project should be assessed during design and monitored regularly, and, where required, adjustments should be made. Direct involvement of national FOs in the design of the projects should be a mandatory practice.

Exit strategy and institutionalization: There are several areas of the process of institutionalization that require more awareness and interventions, so that by the programme's end the L-FFS approach is strongly institutionalized among all stakeholders. These areas include FFS policies and planning within line ministries, allocation of human and financial resources, establishing institutional arrangements for the systematic application of the approach, adopting or developing FFS guidelines and standards with functional and iterative M&E processes, planning for integration into university and tertiary education curricula (including refresher courses and on-the-job training for extension advisers), and planning for the formation of functional FFS networks and platforms for sharing and learning.

References and resources

- Anderson, J. R. and Feder, G. 2007. "Agricultural extension", in R. Evenson and P. Pingali (editors). *Handbook of Agricultural Economics*, Vol. 3, Elsevier, pp. 2343-2378. <https://www.elsevier.com/books/handbook-of-agricultural-economics/evenson/978-0-444-51873-6>.
- FAO. 2016. *Farmer Field School Guidance Document: Planning for quality programmes*, Rome, FAO, <http://www.fao.org/3/a-i5296e.pdf>.
- FAO. 2017. *Enabling Institutionalization of the Farmer Field School Approach: Policy brief*, Rome, FAO, <http://www.fao.org/3/a-i8260e.pdf>.
- FAO. 2018. *Farmer Field Schools for Small-scale Livestock Producers: A guide for decision makers on improving livelihoods*, FAO Animal Production and Health Guidelines No. 20, Rome, FAO, <http://www.fao.org/3/I8655EN/i8655en.pdf>.
- FAO. 2019. *Farmers Taking the Lead: Thirty years of farmer field schools*, Rome, FAO, <http://www.fao.org/3/ca5131en/ca5131en.pdf>.
- Fleischer, G., Waibel, H. and Walter-Echols, G. 2004. "Egypt: How much does it cost to introduce participatory extension approaches in public extension services?", in W. Rivera and G. Alex (editors), *Demand-driven Approaches to Agriculture Extension: Case studies of international initiatives*, Agriculture and Rural Development Discussion Paper 10, Washington, DC: The World Bank, pp. 40-49.
- Friis-Hansen, E. (editor). 2004. *Farmer Empowerment: Experiences, lessons learned and ways forward*, Volume 1: Technical papers, Copenhagen, Danida.
- Friis-Hansen, E. and Duveskog, D. 2011. "The empowerment route to well-being: An analysis of farmer field schools in East Africa", *World Development*, Vol. 40, No. 2, pp. 414-427.
- IFAD. 2016. *Engaging with Farmers' Organizations for More Effective Smallholder Development: How to do note*, Rome, IFAD, <https://www.ifad.org/en/web/knowledge/publication/asset/40309991>.
- IFAD. 2016. *Strategic Framework 2016-2025: Enabling inclusive and sustainable rural transformation*, Rome, IFAD, <https://www.ifad.org/en/web/knowledge/publication/asset/39369820>.
- IFAD (2022) Stocktaking of Farmer Field Schools: Collective action, self-organization, and the role of farmers' organizations in scaling up and institutionalizing FFS. ISBN 978-92-9266-207-3, <https://www.ifad.org/en/web/knowledge/-/stocktaking-of-farmer-field-schools>.
- Groeneweg, K., Buyu, G., Romney, D. and Minjauw, B. 2006. *Livestock Farmer Field Schools: Guidelines for facilitation and technical manual*, Nairobi, International Livestock Research Centre, https://cgspace.cgiar.org/bitstream/handle/10568/68589/Livestock_farmer.pdf?sequence=1&isAllowed=y.

- Jonfa, E. and Waters-Bayer, A. 2005. *Unlocking Farmers' Potential: Institutionalizing farmer participatory research and extension in Southern Ethiopia*, Project Experience Series, No. 2, Addis Ababa. <https://www.farmafrica.org/downloads/resources/PE%202.%20Unlocking%20Farmers%20Potential.pdf>.
- Narayan, D. 2005. *Measuring Empowerment: Cross-disciplinary perspectives*, Washington, DC, The World Bank.
- Quizon, J., Feder, G. and Murgai, R. 2001. "Fiscal sustainability of agricultural extension: The case of the farmer field school approach", *Journal of International Agricultural and Extension Education*, Vol. 8, pp. 13-24.
- Röling, N., Foley, S., Markie, J., Pimbert, M., Salazar, R. and Piao, Y. 2000. *FAO Inter-country Programme for Community IPM in Asia: Phase IV mid-term review 2000*, Rome, FAO.
- Scoones, I. (1998) *Sustainable Rural Livelihoods: A Framework for Analysis*, IDS Working Paper 72, Brighton: Institute of Development Studies (IDS). <https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/3390>.
- Sutherland, A. 2000. "Challenges in institutionalising farmer participatory research (in the context of a more participatory agricultural research and extension system)", paper prepared for the Second Farmer Participatory Research Forum, 29 June to 1 July 2000, Awassa, Ethiopia.
- Van den Berg, H. and Jiggins, J. 2007. "Investing in farmers: The impacts of farmer field schools in relation to integrated pest management", *World Development*, Vol. 35, No. 4, pp. 663-686.
- Van den Berg, H., Phillips, S., Dicke, M. and Fredrix, M. 2020. "Impacts of farmer field schools in the human, social, natural and financial domain: A qualitative review", *Food Security*, Vol 12, pp. 1443-1459, <https://doi.org/10.1007/s12571-020-01046-7>.

Annex: Theory of change for L-FFS – reconstructed

Key assumptions

Social conditions allow for full participation of men and women and youth farmers in programme activities

Inputs

- L-FFS: based on participatory needs assessment
- Mainstreaming gender and youth in L-FFS
- Strong focus on quality issues in FFS (facilitation skills, experimental learning cycle)
- Access to improved breeds and veterinary services
- Improving access to fodder and focus on climate change resilience
- Support to establishing and strengthening FOs
- Identify market potential and create market linkages
- Access to rural finance

Outputs

- L-FFS curricula developed
- Capacity of L-FFS facilitators, lead farmers developed
- Capacity development of line ministries staff (to support L-FFS and development of FOs)
- L-FFS groups formed and trained (in batches)
- Farmers improve skills, adopt technologies and address needs
- FOs established and/or strengthened

▪ Sector policies support or develop towards integrated and participatory extension services for livestock and crops
 ▪ Line ministries support FFS and local advisory services as an appropriate approach for agricultural extension
 ▪ Line ministries provide agreed inputs (sufficient and qualified staff, financial commitment)

Key assumptions

Key enablers

- Quality of L-FFS and needs based, broad, curriculum
- Institutionalization: Joint efforts by line ministries, local advisory services and FOs



Outcomes

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Human capital</p> <ul style="list-style-type: none"> ▪ Improved skills ▪ Improved quality of life ▪ Improved human nutrition ▪ Increased confidence and personal agency <p>Natural capital</p> <ul style="list-style-type: none"> ▪ Improved animal health ▪ Improved animal genetics ▪ Increased livestock production (milk, eggs, beef, goats) ▪ Climate change resilience | <p>Social capital</p> <ul style="list-style-type: none"> ▪ Increased social agency and responsibility (pass-on) ▪ Collective marketing ▪ Group businesses ▪ Communal livestock sheds <p>Financial capital</p> <ul style="list-style-type: none"> ▪ Increased HH income ▪ Increased profits (also from crops and business) ▪ Increased access to finance and insurance |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Key assumptions

Market conditions will facilitate income improvements and improved returns to labour in livestock keeping



Impact

- **Personal and group empowerment**
- **Improved sustainable and inclusive livelihoods**



- Sufficient time to address broader issues and allow for evolving of L-FFS groups
- Complementary support to value chain: Access to inputs + finance, involvement of private sector and market linkages

Key enablers








The business environment will continue to develop and be conducive for livestock development

Key assumptions



International Fund for Agricultural Development
Via Paolo di Dono, 44 - 00142 Rome, Italy
Tel: +39 06 54591 - Fax: +39 06 5043463
Email: ifad@ifad.org
www.ifad.org

-  facebook.com/ifad
-  instagram.com/ifad_org
-  linkedin.com/company/ifad
-  twitter.com/ifad
-  youtube.com/user/ifadTV

