

# **Annex 3: Literature Study**

# List of Abbreviations

ADDA	Agricultural Development Denmark Asia
AMEF	Agriculture-Man-Ecology Foundation
CBO	Community-based organisation
FAO	Food and Agriculture Organisation of the United Nations
FFS	Farmer Field Schools
G.A.P.	Good Agricultural Practices
GM	Gross Margin
ICM	Integrated Crop Management
IFAD	International Fund for Agricultural Development
IFOAM	International Federation of Organic Agriculture Movements
IPM	Integrated Pest Management
IPPM	Integrated Production and Pest Management
NGO	Non-governmental organisation
RFLDC	Regional Fisheries and Livestock Development Component
SHABGE	Strengthening Household Access to Bari Gardening Extension
ToF	Training of Facilitators
ToT	Training of Trainers

## Introduction

In this annex is presented a number of experiences, ‘solutions’ and lessons learned from other relevant Farmer Field School (FFS) interventions from outside and within Bangladesh in relation to four main topics (see below):

- mainstreaming and sustainability;
- marketing, value chain and farmers organisations;
- FFS costs, benefits and evaluation methods; and
- suitability of the FFS approach for non-rice IPM topics and resource poor rural populations.

Information has been obtained from published (scientific papers, books) and un-published sources (mission reports, annual reports), from internet searches and from informal, personal information from FFS practitioners.

### **A. Mainstreaming and sustainability<sup>1</sup> of the FFS approach, methodologies, activities and developments.**

The FFS approach and used methodologies were developed 25 years ago related to Integrated Pest Management (IPM) interventions in rice in Asia. Most of the IPM-FFS programmes were financed by international donors (e.g. USA, Australia and several individual European countries), directly or indirectly with funds channelled through international organisations (e.g. the Food and Agriculture Organisation of the United Nations (FAO), Regional Agricultural Development Banks, the International Fund for Agricultural Development (IFAD), EU, United Nations Development Programme (UNDP), the World Bank) and co-financed by the receiving countries. Many of the IPM-FFS interventions were executed with technical assistance from FAO, for which the ‘Global IPM Facilities’ within FAO were established<sup>2</sup>.

The interventions were designed to assist local governments to ‘start-up’ FFS implementations and assist in the expansion. The support consisted of capacity development of local institutions in management, organisation and implementation (training of staff, training of FFS facilitators and curriculum development) and initially running the FFS in the field.

Gradually, the donor-funded projects and programmes have come to a close and a key challenge has been the transfer of responsibilities to the ‘counterpart’ at the end of the intervention period. The counterpart not only includes government institutions (ministries, research and educational institutions) but also civil society (non-governmental organisations (NGOs), Farmer Unions), local organisations, farmers or community organisations (e.g. CBOs, FFS

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<sup>1</sup> The content of this section is compiled from a number of publications describing the history and development of FFS over the past 30 years, including: Bartlett, 2005; Braun et al, 2006; Braun & Duveskog, 2008; Dilts, 2001; Pontius et al, 2002; and Luther et al, 2005.

<sup>2</sup> As a result, the FFS approach (and methodology) whereby FAO was involved is sometimes referred to as the ‘FAO-FFS’ to distinguish it from other FFS-like methodologies.

Networks) and private sector actors (e.g. producers and cooperatives). The transfer has aimed at guaranteeing continuity and further development of the interventions.

Capacity development of institutions, organisations and people involved therefore has been, and still is, crucial for the development, expansion and sustainability of the FFS approach and the methodologies applied.

### ***Organisation and coordination: the role of a national FFS programme***

During the regional FAO-IPM programmes in Asia in the 1990ies, national IPM programmes were established to implement the programme activities at national level, but also to facilitate the introduction and expansion of the IPM-FFS approach, and to support interventions funded by other donors<sup>3</sup>. However, implementation was generally their main task, and coordination was more a matter of allowing other (smaller) interventions to ‘hook-on’ and make use of the established capacity (e.g. participation of NGO staff in Training of Trainers (ToT) as was the case in Cambodia<sup>4</sup>). In several of the member countries, active national IPM programmes still exists<sup>5</sup>, including in Bangladesh, but their role has been reduced after completion of the FAO implemented programmes<sup>6</sup>. The sustainability of a well functioning, strong national programme can be directly linked to the official support from the government and inspiring personalities in the organisation<sup>7</sup>.

As the FFS approach was developed in an IPM context, most national IPM programmes are linked to a crop/plant protection service or a general, production related, Department of Agriculture<sup>8</sup>. This has seriously hampered the introduction of the approach for more holistic, not pest management related purposes and has even resulted in situations where Agricultural Extension Departments/Services, national IPM programmes and NGOs developed different FFS approaches, or at least different methodologies, bearing the same name<sup>9</sup>. Still, even after national IPM programmes broadened their scope to include also non-IPM-FFS interventions, the resistance from non-IPM, or non-agricultural production related organisations, remains against the perceived inflexibility of the IPM or Integrated Crop Management (ICM) curriculum.

After the termination of the national level IPM programmes and the increase of FFS interventions implemented by NGOs or local institutions, the need for coordination at national,

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<sup>3</sup> In some countries, national programmes were never established and the lead for further development and expansion was taken by the main donor and its local counterpart institution (e.g. government department, research institution or NGO – e.g. World Education and the Ministry of Education in Thailand) (Bartlett 2005).

<sup>4</sup> Personal observation, Alida Laurens (evaluation team member).

<sup>5</sup> Website Vegetable IPM Programme in Asia: <http://www.vegetableipmasia.org/index.html>

<sup>6</sup> The Philippines and Pakistan still have very active and well functioning national programmes while Cambodia and Vietnam have slimmed down the activities of their national programmes.

<sup>7</sup> Bartlett 2005.

<sup>8</sup> In Bangladesh the IPM-FFS interventions were implemented within the Department of Agricultural Extension (DAE), as the Plant Protection Service is part of DAE.

<sup>9</sup> Examples can be found from Vietnam (Government Extension Service) and India (NGOs). Also the FFS as implemented by CARE in their projects in Bangladesh were fundamental deviations from the FAO developed FFS (Bartlett 2002).

as well as at lower levels, has become increasingly important. Not only for an optimal expansion of the FFS interventions country-wide but also for maintaining the quality of the FFS approach (to keep the ‘non-negotiable elements’ in the applied FFS methodologies), for exchange of experiences and innovations, for curriculum development, for training, for optimal funds and manpower distribution, for donor coordination and as institutional memory and data bank of past and ongoing interventions. A national level coordination institution also has a responsibility for development and maintenance of uniformity in evaluation and impact assessment methodologies. The coordination could involve any governmental or non-governmental organisation engaged in FFS interventions.

The coordination is not limited to national level but extends to lower, district level in order to make optimal use of the local knowledge, experience and training capacity. Qualified facilitators can render their services to any FFS intervention, which can make use not only of their skills as FFS facilitators but also of their knowledge of and experience in the local communities. This coordination will also benefit the monitoring and evaluation process, enabling different organisations to share their data and bring uniformity in the data collection.

***Implementation and scaling-up of FFS interventions: the role of local institutions (NGOs, farmer organisations etc.)***

In most countries the implementation of FFS interventions has been ‘decentralised’, and taken on by local authorities, NGOs, farmer or community organisations and even the private sector (e.g. cooperative producers unions). In countries like Indonesia, Cambodia, Vietnam Thailand, Pakistan and India local NGOs have become increasingly more involved in the field implementation (running the FFS), but also in the development of target group relevant curricula and training of local FFS facilitators. Often these NGOs closely collaborate with government institutions. After having been a forerunner with the prominent involvement of CARE until five years ago, Bangladesh has at the moment only limited involvement of NGOs in FFS activities.

Transfer of responsibility and capacity to local communities has been the backbone of the FAO Community IPM Programme in Asia, which supported the establishment of local farmer organisations capable of own FFS implementation. In East Africa this process has over the past 10 years been shaped with the establishment of FFS Networks; in Vietnam the Farmer Union takes responsibility for FFS implementation at local level, including the training of the facilitators<sup>10</sup>. The farmer organisations receive funds from outside sources (donors, government) or generate their own funds through contributions of members or own income generating activities. Facilitators are either staff or member of the organisation or are contracted by the organisation.

In East Africa the FFS networks are important vehicles in the expansion of the FFS<sup>11</sup>. They could be compared with the Union Farmer Associations (UNFAs) as initiated by the Agriculture Extension Component (AEC) in Bangladesh: a number of FFS farmer groups from a restricted geographical area form a network with the objectives to continue activities generated

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<sup>10</sup> Information provided by ADDA, Hanoi.

<sup>11</sup> Okoth et al, 2006; Braun, Okot et al, 2007; Braun & Duveskog, 2008.

by the FFS process, to build local institutions for FFS implementation, to continue with farmer-led FFS, to start marketing activities and to benefit from becoming a larger voice in articulating their demands (economy of scale). With donor or self-generated funds the FFS Networks support other farmer groups in the area to start a FFS and assist them with contracting qualified facilitators. New FFS networks will be established in new areas. The local networks are associated at national (Kenyan, Ugandan or Tanzanian) level and at East African level. The networks organise exchange visits, refresher training, workshops and seminars together with research institutes and universities (e.g. on the development of participatory monitoring and evaluation). The East African FFS Network has become one of the main partners in the regional FAO and IFAD FFS interventions.

The legal structure of the farmer organisations depends on legal requirements and permissible alternatives in a country, but is considered important for recognition, safeguarding members' rights and vital for arbitration purposes, in particular where financial responsibilities and transactions are involved. It is also mostly a requirement to obtain funds from donors to implement activities.

In some countries international NGOs have financed FFS interventions through their national partners, who have sometimes transferred actual implementation to local partners. CARE in Bangladesh is an example. Although most NGOs do pay serious attention to proper training of their FFS facilitators, there is a risk for reduction of the quality of the FFS if the NGOs make use of local partner-NGOs with staff with no or limited experience and training in FFS<sup>12</sup>.

### ***Capacity building and maintenance: training of FFS trainers and facilitators***

For effective implementation of FFS, facilitators at different levels need to be trained. For this reason FFS interventions organised, and still organise, ToT and Training of Facilitators (ToF)<sup>13</sup> implemented by the project/programme staff (Master Trainers), supplemented by external resource persons if required. As projects/programmes close down the experienced Master Trainers tend to be moved to other, new projects, what may be beneficial for the new project (e.g. the CARE Bangladesh Master Trainers were incorporated in the Regional Fisheries and Livestock Development Component – RFLDC) but whereby their skills as trainers may be underutilised. Or, by lack of new projects/programmes, they may be no longer involved in FFS related trainings at all.

There are several options to optimise the ToT training and retain the developed Master Trainer capacity:

- The national FFS programme has a 'Training Team' of highly qualified Master Trainers and organises regular ToT courses for programmes/projects or 'mixed' groups (e.g. participants of several smaller NGOs). This aims to guarantee quality training in a common

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<sup>12</sup> Internet exchange between members of the Global FFS forum.

<sup>13</sup> ToT: for Departmental and NGO staff, not directly involved in regular FFS implementation but as supervisor or coordinator, ToF: training of the FFS implementers (Farmer Trainers and Local Facilitators).

FFS approach. The content of the ToT could be developed together with the 'clients'. This was implemented in Cambodia during the time of the Danida FFS interventions<sup>14</sup>.

- An educational institution offers Season-Long FFS ToT courses on a regular base. This could be either an agricultural or educational college or a university, but with a general FFS curriculum. If offered as a separate module in the institution, the ToT course could as well be offered to regular students as part of their education (meaning that the future DAE staff has already gone through a FFS ToT during their schooling) and as special course for NGOs and other institutions. The staff (Master Trainers) of these institutions could also be involved in Season-Long ToF courses at the location (outside the college/university). An example of such development is the Vietnamese North-Vietnam College of Agriculture and Rural Development in Xuan Mai, that developed a Season-Long ToT for training for FFS facilitators from Farmer Unions (with the assistance of Agricultural Development Denmark Asia (ADDA – Danish NGO) but are also open for other organisations<sup>15</sup>.
- The services of a FFS trainers association are used: they are hired for the full organisation and implementation of the ToT or ToF. In several countries (e.g. Indonesia, Cambodia<sup>16</sup>, Nepal, India, Pakistan and countries in East Africa)<sup>17</sup> FFS Trainers and Facilitators have established independent NGOs rendering FFS facilitation services as well as follow-up and ToF/ToT courses. In this scenario is it important that there is a good coordination between the FFS trainers associations, the national FFS programme and implementing partners on curriculum and quality. FFS trainers associations have also been used to start and support FFS interventions in other countries (e.g. Field Alliance in several Asian countries and in Rwanda was the first ever IPM-FFS ToT in 2009 facilitated by Master Trainers from Tanzania<sup>18</sup>).
- The farmer organisation/network maintains a team of local FFS facilitators, either on contract or as free-lance, and take responsibility for their basic Season-Long Learning courses and regular refresher courses (not only organisational but also financially) as well as for facilitating the exchange with FFS facilitators from other organisations or networks. Examples are documented from East Africa<sup>19</sup>.

### ***Funding of FFS interventions; alternatives to government and donor support: (semi) self-financed FFS<sup>20</sup>***

The expansion of FFS interventions in East Africa is partly or entirely financed from funds generated by the farmers themselves. The self-financing model was first piloted during the 2001-02 growing season by Integrated Production and Pest Management (IPPM) facilitators

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<sup>14</sup> Personal observation, Alida Laurence (evaluation team member).

<sup>15</sup> Information provided by ADDA, Hanoi; personal observation, Alida Laurence (evaluation team member).

<sup>16</sup> In Cambodia, establishment of a Trainers Association was part of the exit strategy of the FFS project. The NGO, ATSA, still exists. <http://www.atsacambodia.org/>

<sup>17</sup> Bartlett, 2005a; Braun and Duveskog, 2008.

<sup>18</sup> Personal observation, Alida Laurence (evaluation team member).

<sup>19</sup> Okoth et al, 2006; Brain and Duveskog, 2008.

<sup>20</sup> Braun et al., 2006; Braun et al., 2007; Braun and Duveskog, 2008; Okoth et al., 2006; CIP-UPWARD, 2003.

in the IFAD supported IPPM-FFS programme in Uganda, Kenya and in Zimbabwe. Groups initially receive a grant of USD 4-500 for running a FFS of 30 sessions over two seasons. Additional expenses are covered by proceeds of income generating activities of the group. The grant has to be repaid, either from the proceeds from the activities or from a share of the benefit made by the participants after FFS completion. Generally the grants are repaid after 2–3 successive seasons. This grant system is channelled through the FFS networks. The repaid grant, sometimes with interest, is used to start FFS with other groups (an educational revolving fund). Initially grants may be provided by donors (in East Africa, IFAD has been a strong supporter), but when FFS networks are well established the grants will be fully covered from own income: subscription fees; interest on revolving funds; bulk sales; registration fees; penalties; donations; shares from FFS members; profit from sale and farm inputs; and commercial activities.

In Sri Lanka, a large NGO has charged FFS farmers the equivalent of USD 20, to be paid at the end of the four-month course, after they would have harvested and sold their rice crop. In Chile, farmers are cost-sharing for agricultural services provided by a private consultancy firm. The poorer farmers receive vouchers from the government so that they can buy services<sup>21</sup>.

## **B. Marketing, value chain and farmer organisation: the potentials of FFS**

As successful FFS interventions will generally lead to an increased production, both in quantity and quality, many FFS graduates face problems with marketing their produce, especially where local markets are not well developed or dominated by a few traders. In many countries the potential for common marketing activities has been an important reason for establishing FFS Farmer Clubs and Associations.

Group marketing success depends on a number of requirements<sup>22</sup>:

- quality product;
- quantity: a well planned production of uniform produce;
- commitment of the producers;
- management and marketing skills of the group; and
- a strong and well functioning group or association, willing to invest time, energy and capital into development.

In Asia and Africa, but also elsewhere, FFS graduate groups have requested, and received, training on marketing related skills as follow-up activities and have successfully entered into business. There are also several examples of FFS groups that have started additional storage and processing activities (e.g. fruit juices, yoghurt, sweet potato chips and flour).

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<sup>21</sup> Bartlett, 2005b.

<sup>22</sup> Braun and Duveskog, 2008.



The FFS farmer clubs of East Africa make use of the FFS networks to improve their bargaining position with traders and customers (e.g. a Ugandan FFS network supplies the local World Food Programme office with maize for food aid)<sup>23</sup>.

Marketing is mainly focussing on the local market: FFS farmers produce comparative high quality for a competitive price or a niche product. 'Pesticide free' vegetables are a common market product for FFS groups in many countries (e.g. Cambodian farmers sell their chemical free rice and vegetables to tourist hotels or as 'health food' on local markets)<sup>24</sup>.

Most FFS associations are not able to export their produce. An opportunity lies in the **organic value chain** where the FFS approach is intensively used to enable the farmers to produce according to the strict internationally set conditions to obtain organic certification. Organic production is a concept that the producers need to understand and master thoroughly: it is more than 'production without chemicals'. The Season-Long holistic FFS approach is very well suited and applied to assist the farmers in the learning process<sup>25</sup>. In e.g. the Philippines, Cambodia, India and Thailand, FFS has been implemented on organic rice production methods, sometimes in combination with the System of Rice Intensification<sup>26</sup>. The FFS and the follow-up activities also included storage, processing and management skills required for obtaining official certification. Other crops for which FFS have been deliberately used are organic cotton (e.g. India and Pakistan<sup>27</sup>), cashew (e.g. Cambodia and Tanzania)<sup>28</sup>, chilli (Cambodia<sup>29</sup>) and cocoa (Sierra Leone<sup>30</sup>).

The advantage of FFS farmer groups or associations in the organic production chain is not only their understanding of the organic concepts, the quality and the adherence to the rules, but also that they are able to obtain a 'group certification'. The International Federation of Organic Agriculture Movements (IFOAM) established internal control systems for group certification<sup>31</sup>. An interesting example comes from Cambodia where a number of Danida FFS trained farmer groups established an Organic Rice Producers Association and, with additional training and support from a local NGO, prepared for certification, thereby joining forces with farmer groups from other projects (GTZ and Oxfam Quebec)<sup>32</sup>.

Besides, or in addition to, organic certification, FFS associations do often qualify for a 'Fair Trade label'. Notwithstanding that Fair Trade is often combined with organic products, organisations can also accept FFS groups producing non-organic commodities. Well function-

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<sup>23</sup> Okoth et al, 2003; Okoth et al, 2006; and Braun and Duveskog, 2008.

<sup>24</sup> 'Country brief Cambodia: IPPC Summary of Country Report Cambodia' (FAO, 2004).

<sup>25</sup> Scialabba and Hattam, 2002.

<sup>26</sup> Beban, 2008; Scialabba and Hattam, 2002; Quintal et al. 2007; FAO 2004.

<sup>27</sup> Raj et al, 2005; Mancini, 2006; Better Cotton Initiative ([www.bettercotton.org](http://www.bettercotton.org))

<sup>28</sup> Srer Khmer Cambodia (<http://srekhmer-cambodia.org/>); Masasi High Quality Farmers' Products Tanzania (<http://masasi-farmers.webs.com/>).

<sup>29</sup> Website vegetable IPM programme ([www.vegetableipmasia.org](http://www.vegetableipmasia.org)).

<sup>30</sup> FAO website (<http://www.fao.org/organicag/organicexports/oe-countries-products/oe-sierra-leone/en/>).

<sup>31</sup> IFOAM website ([http://www.ifoam.org/about\\_ifoam/standards/ics.html](http://www.ifoam.org/about_ifoam/standards/ics.html)).

<sup>32</sup> 'Country brief Cambodia' (FAO, 2004).

ing FFS groups easily comply with the social, democratic and transparency requirements for obtaining a Fair Trade label<sup>33</sup>.

FFS farmers will also have the skills to comply with the procedures connected with GLOBALG.A.P. (G.A.P: Good Agricultural Practices)<sup>34</sup> a common standard for farm management practice created in the late 1990s by several European supermarket chains and their major suppliers. It is now the world's most widely implemented, non-organic, farm certification scheme. Most importers of agricultural products now demand evidence of GLOBAL G.A.P. certification as a prerequisite for doing business. Training on G.A.P. is incorporated into FFS for producers' education<sup>35</sup>.

Crucial for all these communal marketing and access to markets opportunities is the existence of a strong organisation with capable and properly trained 'management'. In East Africa, FAO and IFAD provide (or finance) these trainings. In the case of organic production in India, an international Fair Trade organisation assisted.

## C. Costs, benefits and evaluation methods

A specific aspect related to project/programme evaluation is the cost-benefit analysis. This is, as it appears, in practice a rather complex matter, originating from the notion that FFS should be regarded as a form of public investment in farmer education to tackle rural poverty rather than a 'transfer of technology' methodology. In the attempts to come up with 'figures' there is enormous unclarity and disputes on what to consider and include as costs, what as benefits, and how to quantify them. Comparison with other 'extension' approaches is even more complicated as the objectives of the other approaches are generally not identical and therefore not comparable.

The cost-benefit calculation issue in relation to FFS interventions is not new and recent. Several publications and international workshops and seminars have addressed this topic and the discussions are still ongoing. Often the discussion is linked with the general discussion on which methodologies are useful for FFS evaluation. And, as most of the FFS interventions have been related to IPM, most publications are focussing on agricultural crop production<sup>36</sup>.

### *Costs of FFS*

The costs of FFS is generally expressed as costs per FFS graduate, or per FFS graduate household, but there is no standardised methodology for calculation, nor is there consensus

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<sup>33</sup> Better Cotton Initiative ([www.bettercotton.org](http://www.bettercotton.org)); Scialabba and Hattam, 2002; Quintal et al., 2007; Braun and Duveskog, 2008.

<sup>34</sup> Previously known as EurepG.A.P., which focussed on European importers. However, also other countries developed G.A.P. standards (AESANG.A.P., CHINAG.A.P.). All have been brought together under GLOBALG.A.P. (<http://www.globalgap.org/>).

<sup>35</sup> IPPC Country report Cambodia; FAO, 2004 (Cambodia and Thailand); FAO, 2010.

<sup>36</sup> Several publications relate to this topic. The most important used for this chapter are: Van den Berg, 2004; Van den Berg and Jiggins, 2007; Fleischer et al., 2001; Muilerman and David, 2011; Braun and Duveskog, 2008; Bartlett, 2005a; Braun et al, 2006; Ooi et al, 2005; and CIP-UPWARD, 2003.

on which cost elements to include in the calculations. In general, a distinction is made between:

- **base costs:** operational cost of the executing organisation (e.g. staff costs, vehicles, accommodation and programme monitoring);
- **start up (and maintenance) costs** (e.g. training of trainers, curricula and training aids development, general community identification, baseline surveys and needs assessment);
- **recurrent costs** (implementation and supervision of the schools, Field Days and follow-up activities).

Comparing costs of one FFS intervention with another is interesting but difficult, as there is no uniformity amongst projects/programmes in allocation of the costs over the different categories. E.g. costs for community identification and needs assessment can be posted under base costs or, alternatively, under recurrent costs, if it is associated with individual FFS. Costs of consultants can be considered base costs or start-up costs, depending on the task of the consultant (general support or specific training assignment). Costs for FFS facilitators and supervision is sometimes included in the base costs, if the staff involved is permanently employed by the organisation; or only the extra allowances are included in the recurrent costs. Field Day costs are sometimes budgeted separate from the FFS costs; follow-up costs, such as support of farmer clubs or associations, are either included in the individual FFS budgets or presented as a separate activity.

The level of costs also depends on the development stage: **pilot, up-scaling or consolidation:** the **base costs** will be high in the pilot phase, especially if a new organisation has to be established or an existing one strengthened. In cases where a programme/project makes use of already existing FFS 'infrastructure' (organisation, human capacity) these costs can be substantially lower, even in a pilot phase. The **start-up costs** will be high during the pilot phase when human capacity needs to be developed through ToT courses, often with assistance of national or international consultants. The actual costs will also depend on availability of suitable local consultants and the required level and intensity of the training. **Recurrent costs** also decline over the project duration due to more efficient management, more farmer-led FFS, more experienced FFS facilitators (requiring less intensive supervision), reduced financial incentives for the trainers (related to the use of farmer facilitators) or abolishing (or reduction of) incentives paid to participants. In addition, scaling-up can reduce the costs of inputs as a result of potential bulk purchases.

Further on, the value attributed to the costs is highly dependent on the topic (crop), the socio-economic conditions in the country and the geographical 'density' of FFS<sup>37</sup>. This will affect the costs of inputs, salaries and allowances, transport costs etc. Finally, it is noted that reports referring to FFS costs are not consistent in their content, obscuring comparison even more:

- costs that are **generally included** in reports are the recurrent costs, but not always all (e.g. Field Days, fees of permanent staff);

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<sup>37</sup> If FFS is thinly distributed over a geographical area, this will require more travel and also limit the number of FFS the facilitator is able to implement.

- costs that are **sometimes included** in reports are the start-up/maintenance costs (with or without costs of external consultants); and
- costs that are **rarely included** in reports are the base costs and international costs.

Existing cost estimates range from USD 10-35/household, depending on the crop, the number of FFS sessions, the phase of the programme/project and whether start-up and supervision costs are included. As data refer to different years, and as most results have been converted to USD at the moment of the report, changes in conversion rates may obscure the comparison. Table 1 shows the costs compiled for FFS interventions in Bangladesh.

**Table 1: Costs of FFS per participant or participant household (converted into USD)\***

	Rice IPM	Vegetable IPM	Cotton IPM Pilot phase	General crop production, or several topics (including ICM)
Bangladesh (2000) different projects <sup>38</sup>	14-16 <sup>39</sup> 10-13 <sup>40</sup>	16		
Bangladesh Strengthening Household Access to Bari Gardening Extension (SHABGE) Project, DFID <sup>41</sup>				25-30
Bangladesh Cotton IPM <sup>42</sup>			26	
Bangladesh AEC				21-65 <sup>43</sup>
Bangladesh RFLDC				19-27 <sup>44</sup>

*Note: 'Recurrent costs', deviations are indicated in footnotes.*

The recurrent costs for a FFS are largely determined by the costs of the trainers/facilitators (salaries and transport) and for the training venue (shed, mat, school field). The costs of a 15 sessions FFS in Vietnam<sup>45</sup> consist for 35% of allowances and transport of Farmer Trainers; 34% are venue costs (shed, mats, study field and maintenance study field); 14% is spend on training materials (leaflets, stationary); and 12 % on supervision (incl. transport). The FAO evaluation report of 2000<sup>46</sup> reports the facilitator honoraria to be 17.5% of the total costs for

<sup>38</sup> Report Evaluation Mission of IPM Projects in Bangladesh, FAO, 2000.

<sup>39</sup> Including facilitator costs.

<sup>40</sup> Excluding facilitator costs.

<sup>41</sup> Bartlett, 2002.

<sup>42</sup> Van den Berg and Jiggins, 2007.

<sup>43</sup> AEC: USD 21 = FFS + supervision. USD 60 = including all component costs.

<sup>44</sup> RLFDC: USD 19 Noakhali and USD 20 Barisal = FFS + supervision. USD 27 in Noakhali = including costs of Season-Long Learning; District and Upazila level coordination and monitoring; and costs of 23 motorbikes for staff.

<sup>45</sup> Personal comment, Mr. Bjorn Jensen (ADDA).

<sup>46</sup> Report Evaluation Mission of IPM Projects in Bangladesh (FAO, 2000).

the DAE projects. In Cambodia the costs for the facilitators were 20% of the FFS budget in the scaling-up phase<sup>47</sup>.

Cost reductions during the scaling-up and consolidation phase are generally achieved by making more use of local farmer facilitators, who receive limited fees and do not require transport costs (in Kenya a reduction of 50% for farmer-led FFS compared to extension-led FFS was reported<sup>48</sup>) and by the participants/community providing the venue costs (use of own shed or existing meeting place, use of the school field free of charge, maintenance of the school field either as communal activity, or from the (extra) income from the school field). Noteworthy is the reduction of recurrent costs due to substantially lower costs required for supervision of FFS facilitators. In the International Institute of Tropical Agriculture's Sustainable Tree Crop Project in West Africa, lower costs required for supervision of experienced (three years) FFS facilitators led to a reduction of more than a fifth of the implementation costs<sup>49</sup>.

### ***Benefits from FFS***

The calculation and comparison of benefits from FFS is even more challenging than the cost calculation. Since the FFS is an educational approach and not a simple, straightforward transfer of technology method with activities and implications at different level, the benefits are many-fold:

- economic;
- social;
- health;
- educational;
- environmental; and
- organisational.

The benefits can further be allocated to different stakeholders:

- individual FFS participants;
- the participating households (including non-participating members)
- local community;
- implementing institutions;
- individual staff of the institutions;
- society as a whole; and
- the environment.

Many of the benefits will be an indirect and/or long-term effect of the FFS and are difficult to 'measure'. Some of the FFS outputs though will have clear-cut indicators (e.g. increased yield, reduced pesticide use, increased income). However, quantification of even those indicators is challenging; attributing the increases/reductions to participation in FFS is difficult (as

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<sup>47</sup> Personal observation, Alida Laurence (evaluation team member).

<sup>48</sup> FAO, 2003.

<sup>49</sup> Mulierman and David, 2011.

FFS participants are not isolated from their social and economic environment) and giving them a monetary value troublesome.

### ***Cost-benefit analysis of FFS and evaluation methods***

The development and application of appropriate evaluation and impact assessment methodologies is important and at the same time very difficult. Which methodologies to use and how to interpret the results has been a matter of concern of many FFS and other rural extension interventions. If participants are not well defined and selected before the start of the FFS, and when results of the interventions are being influenced by other external developments, it becomes challenging to design and apply a comprehensive and simple methodology that can be used in the wide arena of FFS.

In addition to the above mentioned problems related to which benefits, and which indicators to include, there is the problem of how the measurable ones can be assessed to conclude that the results can be reliably attributed to the FFS intervention. The impact assessment is further on complicated by the fact that the FFS approach is meant to be a learning process with benefits to increase and impact to be expected over a period of time, during which the FFS participants and society will change.

Several international institution (e.g. World Bank) and universities (e.g. Institute of Development and Agricultural Economics of the Leibniz University of Hannover) have published on the issue of evaluation methodology and this was also the topics of the International Learning Workshop on FFS held in Yogyakarta in 2002<sup>50</sup> and an International Workshop on 'Impact Assessment of Farmer Field Schools' in Garbsen, Germany in 2004<sup>51</sup>. Both workshops were with contributions from 'practitioners' from the field. The input of the FAO-EU IPM Programme for Cotton in Asia should be specially mentioned<sup>52</sup>; as a result of the lessons learned from previous IPM-FFS programmes, this programme was designed with a 'strong' evaluation and impact assessment element to ensure proper set-up and implementation of the designed methodology throughout the programme. Even then, the practical execution of the methodology still resulted in sometimes unreliable data and inconsistent results.

So far the most commonly used evaluation method is the 'Double Delta' or 'Double Difference' approach, applied in the FAO Vegetable IPM Programme and the FAO-EU Cotton IPM Programme<sup>53</sup>. The 'Double Delta' or 'Double Difference' method compares the situation of both the FFS participants and a control group of non-participants before and after the intervention. Changes over time are then evaluated by comparing each group with itself over the period of time (longitudinal) or with each other at the given time (lateral).

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<sup>50</sup> CIP-UPWARD, 2003a and 2003b.

<sup>51</sup> Anon. 2004.

<sup>52</sup> Ooi et al, 2005.

<sup>53</sup> FAO Global IPM Facility, 2008. This Guidance Document: "Introduction to the 'Double Delta' Approach", was prepared by University of Hannover, in close consultation FAO Global IPM Facility and is available from the FAO Regional Vegetable IPM Programme in Asia website:

<http://www.vegetableipmasia.org/docs/IA%20Guidance%20on%20Double%20Delta.pdf>

In FFS interventions generally three groups are included in the evaluation:

- FFS participants;
- a control group (people who are not expected to be exposed to FFS over the anticipated period of time); and
- people in the neighbourhood of the FFS participants, who will not participate in the FFS themselves, but may be exposed to information and knowledge disseminated in the FFS, either directly (as ‘onlooker’) or indirectly through contact with FFS participants.

The last group is added as to assess the diffusion effect of the FFS in the community.

A particular challenge is to ensure that the FFS participants and the control group are comparable<sup>54</sup>. As FFS participation is voluntary, there is a tendency that FFS farmers are more eager to learn, innovative and ready to apply their newly acquired skills and knowledge. Collecting baseline data in the community before participants have been selected could compensate for this flaw, but reduces the opportunity to follow the changes of the specific group of FFS participants if the sample size is limited.

Finding suitable control groups is also for FFS evaluations reported to be problematic<sup>55</sup>. In situations where FFS is expanding, fewer locations will be available where the population has not been exposed to FFS issues. Or, the non-exposed villages are not agro-ecological and/or socio-economic comparable with the FFS villages. Further on, initially suitable control villages may be incorporated in FFS activities a few years later, after which their ‘control’ status will be eliminated.

#### *Participatory evaluation methods*

Several authors mention that many evaluation results and evaluation methods designed, are generally for the benefit of the donors or implementing organisations and less so for the participants. In their opinion, evaluation by the participants themselves is equally relevant; the participants should be able to evaluate by themselves what the impact of the FFS is/has been on their livelihood, skills and future development opportunities. Strengthening the analytic and evaluation skills of the participants is one of the key-elements of the FFS approach<sup>56</sup>.

Van den Berg and Jiggins (2007) support the need for involvement of farmers in evaluation. They identified three levels on evaluation: **external evaluation**, **self-evaluation by a programme/project** and **self-evaluation by farmers**, each having their own merits and disadvantages. They observe a trend toward a greater appreciation of self-evaluation but emphasise that internal evaluations need to be balanced with external ones.

There have been several initiatives to involve the target groups in evaluations as well as in the monitoring of the implementation of FFS. The FFS networks in East Africa have designed

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<sup>54</sup> Ooi et al, 2005; Van den Berg and Jiggins, 2007; FAO Global IPM Facility, 2008; Braun et al, 2006.

<sup>55</sup> FAO Global IPM Facility, 2008.

<sup>56</sup> Braun et al., 2006; Jiggins, 2003; Van den Berg and Jiggins, 2007; Mancini, 2006.

participatory methods with the assistance of local universities and research institutes in workshops and trainings<sup>57</sup>. The FAO Community IPM Programme addressed this topic extensively, and several publications discuss new approaches in participatory self-evaluation methods, some specifically related to FFS<sup>58</sup>. Both publications mention that using participatory methods will be instrumental to reveal cultural, social and economic impacts which are generally not obtained in the 'formal' evaluations. The Danida IPM Farmer Training Project in Cambodia piloted a participatory system, making use of the results from the Community IPM programme. For an effective application, a thorough training of the Master Trainers and the FFS facilitators was provided. Unfortunately, successful implementation was cut short by the termination of the project<sup>59</sup>.

Suitable methods could be solicited from NGOs, who are generally well experienced in development of participatory monitoring and evaluation methodologies. Introduction of a appropriate, easy to implement but adequate methods takes time and intensive involvement of the target group in the development.

#### *Costs-benefits of IPM-FFS programmes*

In the evaluation of FFS programmes/projects the focus is mainly on analysis at the household level. Broader socio-economic analysis is to a large extent ignored, as being too complicated and beyond the capacity of the project/programme.

Comprehensive data on cost-benefit analysis are rare. Most reports limit the benefit calculations to changes in quantity of yield and input (pesticide and fertilizer) use, mostly in percentages and/or to (economic) change in income or profit<sup>60</sup>. Attempts have been made to estimate a value to improved health, as a result of reduced pesticide use<sup>61</sup>.

To calculate the cost-benefit of FFS, the costs of the FFS per participant are generally compared with the average change in profit of the FFS participants<sup>62</sup> over one, or a few years, after completion of the FFS. Based on available data it can be concluded that the costs of the IPM-FFS programmes evaluated were recovered by the increased production of the FFS graduates after 1-3 seasons<sup>63</sup>. The period very much depends on the initial level of production and competency of the FFS graduates, the product, the value of the products, the access to the market and the socio-economic context of the FFS.

The following example may be illustrative of a cost-benefit analysis for a programme implemented in different countries. It is based on the results of the FAO-EU IPM Programme for

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<sup>57</sup> Groeneweg et al, 2004.

<sup>58</sup> Jiggings, 2003; Mancini, 2006.

<sup>59</sup> Various reports from the IPM Farmer Training Project Cambodia; personal observation, Alida Laurens (evaluation team member).

<sup>60</sup> Van den Berg, 2004; Fleischer et al, 1999.

<sup>61</sup> Ooi et al, 2005.

<sup>62</sup> After correction for change in profit obtained by the control group.

<sup>63</sup> Van den Berg, 2004; Van den Berg and Jiggings, 2007.



Cotton in Asia, implemented in six countries in Southeast Asia between 2000 and 2005<sup>64</sup>. This programme included a strong monitoring and evaluation component to address the issue of problematic benefit assessment. Although aware of the many benefits involved the evaluation did only include the easy to measure benefit of ‘increased farmer income’ (productivity benefit) and ‘improved farmer health’ to quantify the programme benefits and make a cost-benefit analysis.

**Box 1: Example of cost-benefit calculation based on the results of the FAO-EU IPM Programme for Cotton in Asia**

For the ‘increased farmer income’ the Gross Margin (GM<sup>65</sup>) per hectare, per household and per country was calculated. The benefits varied from country to country, depending on farm size, number of farmers practicing etc. The average GM increase per household was USD 171; in Pakistan the increase in GM was USD 574/household, while in Bangladesh the GM declined relative to those in the control villages (-USD 13/household) (but not relatively to the untrained farmers in the same village)<sup>66</sup>. For estimating of the ‘improved farmer health’, data based on documented relationship between reduction in pesticide costs and health costs were used and the average programme benefit was calculated to be USD 21/household.

Including the GM and ‘health’ indicators the total annual benefit per household across the countries ranged from -USD 9/household to USD 581/household, with an overall average of USD 192. Using recurrent costs of the FFS for some of the individual countries<sup>67</sup> the benefit-cost ratio could be calculated: for Vietnam it was  $40/18 = 2.2$  and for India  $137/24 = 5.7$ . For Bangladesh the costs were USD 28 but the benefits were negative (see above).

Based on the assumption that the benefits would start only one year after the start of the programme, that farmers would continue the new practices for only one year and that 20% of the participants would not change their practices, the programme calculated that the full cost of the five year project reached its ‘pay-off’ moment in the last, fifth year. After six years the benefit-cost ratio was 1.06 and the Financial Internal Rate of Return (FIRR)<sup>68</sup> was 16%. The programme also calculated the benefits based on assumptions that farmers continue for more than one year and that there is some benefit to other farmers as a result of diffusion. After three years the FIRR had gone up to 36% (or 28% if health benefits were not considered). Although the calculations presented in the document are based on, rather conservative, assumptions, it does show that the programme ‘broke even’ within five years and that the farmers had a substantial increase of income. As the calculations were based on only two of the benefits it can be assumed that the total ‘economic’ benefit pay-off period will have been reached earlier.

<sup>64</sup> Ooi, et al, 2005.

<sup>65</sup> The GM is the difference between crop revenue and the sum of all variable costs, including costs of pesticide, plant regulator, fertilizer, seed, labour and irrigation.

<sup>66</sup> The main reason for this unexpected outcome was an increase in yields of 16% in control villages.

<sup>67</sup> Provided in Van den Berg and Jiggins, 2007.

<sup>68</sup> FIRR is an indicator to measure the financial return on investment of an income generation project.

## **D. Suitability of the FFS approach for non-rice IPM topics and resource poor rural populations<sup>69</sup>**

The FFS approach was developed in the Philippines as early as 1980 in relation to IPM in irrigated rice. In 1982 the FAO became involved in the expansion through the FAO Inter-Country Programme for Integrated Pest Management in Rice in South and Southeast Asia. The approach got a boost after the approach proved to be effective in tackling serious outbreaks of brown planthopper in Indonesia.

FFS have spread over all continents and the focus of the FFS moved from primarily rice IPM to IPM in many other field, vegetable and tree crops. It moved from a single constraint (pest management) to an emphasis on the multiple dimensions of crop management (mixed farming/cropping systems with crops, vegetables, poultry, animals and fish). FFS is also widely used in developing organic agriculture. For all topics appropriate FFS curricula have been developed.

The above mentioned expansions are all directly 'production' related, but FFS also expanded to resource management issues (soil fertility management, land and water management, groundwater management, conservation agriculture, land degradation, agro-forestry, food security, nutrition, fishing and biodiversity) and to topics more related to the socio-cultural dimensions of community life (e.g. integrated vector management (malaria), community forestry, health and HIV/AIDS (through Farmer Life Schools), Junior Farmer Field and Life School, FFSs for illiterates and advocacy). This may be seen as the natural progression of FFS and is the result of the involvement of the target groups in the evolution of the content and the approach.

However, FFS is not a universal panacea for development, nor is it a substitute for more familiar technology-centred approaches to rural development. FFS support an educational approach that emphasizes experiential learning, action research and critical thinking, to enable farmers to take the lead in local adaptation of practices, whereby locally available 'technologies' play an important role and hands-on experience is essential. FFS is still best suited for problems and opportunities requiring site-specific decisions or management practices and for issues that require changes in behaviour within the farm enterprise, household, and community that can be improved only through development of location dependent knowledge. FFS is a mean for providing farmers with concepts and skills which they can use to discover and create knowledge.

FFS is not a channel for sending messages to farmers. For transfer of simple production improvement methods, not requiring a behavioural change, the intensive FFS learning process would not be necessary, or at least be 'over the top'. There are instances in which 'technology transfer' is useful and for such issues, non-FFS methods, such as radio, TV and community

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<sup>69</sup> The content of this section is based mainly on the following publications: Pontius et al, 2002; Braun et al, 2006; Braun and Duveskog, 2008; Castillo, 2003; Röling, 2003; Bartlett, 2002 and 2004; Van den Berg and Jiggins, 2007; Van den Berg, 2004; and Gallagher et al, 2006.

meetings are often more appropriate and cost effective. These extension methods and the FFS should be considered complementary and the most appropriate approach should be carefully selected.

The above illustrates that FFS is widely applicable and has many strong features, but also that it is not a blue-print approach and that the strength lies in the opportunity and need for local adaptations.

### ***Use of FFS for empowerment of resource poor farmers***

The FFS learning process builds self-confidence (particularly for women), encourages group control of the process and builds group and management skills. The FFS is also a means to enable vulnerable farmers to create their own cohesive economic empowerment groups that are capable to venture into collective, commercially-oriented endeavours and ability to interact with service providers and market intermediaries.

Further, the FFS helps in strengthening civil society or social capital at village level. This happens when FFS mobilises interest in a community, especially among those who do not belong to the 'official' class of the community. Farmers gain voice and are taken more seriously as part of the decision making process<sup>70</sup>.

Especially the above mentioned 'secondary'<sup>71</sup> properties of group development and empowerment have attracted organisations, especially NGOs, to adopt the FFS as their mode of action<sup>72</sup>. However, this has sometimes resulted in the use of short-cuts or 'pick and choose' sub-aspects of the FFS 'package', which had led to reduced quality of FFS and consequently not, or only partially, to achieving of the empowerment objectives<sup>73</sup>.

One of the best documented and evaluated examples of the use of the FFS approach for improvement of livelihood, income and empowerment of resource poor farmers, in particular women, are the CARE-Bangladesh activities between 1993 and 2004: Local Initiatives for Farmer's Training (LIFT); New Options for Pest Management (NOPEST), INTERFISH and SHABGE. Especially the evaluation of the SHABGE project, as reported by Bartlett in 2002, and the report of 2004 on the use of the FFS approach for 'empowerment' objectives by the same author are informative and useful in relation to the use of FFS in ASPS II<sup>74</sup>.

The SHABGE project worked with resource poor women addressing a wide variety of (homestead) crops and activities over an extensive period of time (30 months or more) and had a strong 'empowerment' objective. The project implemented FFS which – following adaptations in a number of other CARE projects – was quite different from the original 'FAO approach' and is referred to in the reports as the 'SHABGE-FFS'. Bartlett concluded that the

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<sup>70</sup> Duveskog, 2010; Braun and Duveskog, 2008.

<sup>71</sup> They were not designed as primary objective of the FFS approach.

<sup>72</sup> Bartlett, 2004; Röling, 2003.

<sup>73</sup> Braun and Duveskog, 2008; Bartlett, 2004; Röling, 2003

<sup>74</sup> The content of this section is based mainly on the following references: Bartlett, 2002 and 2004.

learning process had been diluted to allow the curriculum to encompass a wide range of crops and technologies, and to satisfy the targets given in the project.

The SHABGE project resulted in the adoption of a wide range of innovations that were, according to Bartlett, undoubtedly beneficial, but they did not generate an understanding of underlying scientific principles, nor were they fostering systematic experimentation among the targeted women. The women were, over an extensive period of time adopting a large number of improved practices, many of them very beneficial and appropriate. However, the evaluator was of the impression that they missed out on the ‘experiential learning process’; the participants were engaged in ‘learning by doing’, but not in generation of scientific knowledge and the development of problem solving skills: they became skilled ‘adopters’ but did not become ‘experts’ and ‘adapters’. Bartlett concluded that the SHABGE approach was a half-way compromise between breadth and depth, between the need for transfer of technology objectives of the project and the experiential learning objectives of the FFS. Consequently, the SHABGE-FFS could not be expected to produce the same educational outcomes that have been experienced elsewhere with the use of FFS.

The CARE projects had a prominent ‘empowerment’ objective for which different routes were used: the ‘social capital route to empowerment’, the ‘financial route to empowerment’ and, referring to the experiential learning cycle, ‘the human capital route to empowerment’. The latter consisting of: *Experiential learning* → *Critical thinking* → *Self-reliant decision making* → *Empowered farmers*. Bartlett concluded that the generation of empowerment was more due to the accumulation of the ‘social capital route’ and the ‘financial route’ than to the ‘human capital route’, which he considered poorly developed.

Although concluding that the implementation of the SHABGE-FFS approach missed some of the strength of the ‘general’ FFS, Bartlett did appreciate the achievements and recognised the potentials of the SHABGE-FFS also for effective ‘human capital development’. He proposed to re-design the FFS in a way that allowed an acceptable compromise to be made between quantity and quality, the phased FFS, as presented in Table 2<sup>75</sup> below.

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<sup>75</sup> Annex 6 of Bartlett 2002.

**Table 2: Phased FFS as proposed by Bartlett (2002)**

Phase	Strategy	Duration <sup>76</sup> (months)	Frequency (days)	Outcome
FFS Primary School	Horticultural extension	0-12	14	Technology transfer, improved production and income
FFS Secondary School	Experiential learning	13-18	7	Enhanced scientific knowledge and problem solving skills
FFS High School	Social development	19-30	21-30	Group strengthening, networking (and selected topics)
Post-Graduate FFS	Self directed	30+	??	To be determined by the members of the group

This adaptation enables the resource and experience poor participants to get introduced to the FFS approach while addressing their, rather basic, immediate needs during the first year. In the second class they are sufficiently 'experienced' in their own activities to really benefit from the experiential learning methodology and further developments will come in the successive seasons<sup>77</sup>.

### ***FFS and gender/women***

The FFS approach has had a considerable effect on the empowerment of rural women<sup>78</sup>. As the FFS methodologies are specifically designed to be applicable, for participants with low or no education, including functional illiterates, the approach is suitable to address rural poor women<sup>79</sup>.

Women are encouraged to actively participate in FFS interventions, even if the topic is not their prime occupation. E.g.: in the FAO-EU Cotton IPM Project women constituted 20% of the participants even though cotton is considered a men's crop<sup>80</sup>. But once joined, the FFS women had been active and even more intensively involved than men (in terms of attended FFS sessions). They had been active participants in discussions with the review team, they appeared to have mastered the knowledge and skills learned at FFS, they started implementa-

<sup>76</sup> The time allocated fitted to the SHABGE applied schedule.

<sup>77</sup> This 'phased' FFS is also applicable for more experienced farmers, like the rice producers of AEC; they would start in the Secondary School.

<sup>78</sup> Duveskog, 2010; Braun and Duveskog, 2008; Braun et al, 2006; Bartlett, 2002 and 2004.

<sup>79</sup> Pontius et al, 2002.

<sup>80</sup> In Bangladesh the female participation even increased from 18% to 26% in 3<sup>rd</sup> year.

tion of FFS skills in other crops and gained confidence and strengthened their status in society and their contribution to family decision-making<sup>81</sup>.

Women have also been involved in ‘men’s crops in the absence of the husband, as was the case with the tomato FFS in Fayoum, Egypt<sup>82</sup> and in Vietnam<sup>83</sup>. Women have reported to gain greater benefits from FFS participation than men<sup>84</sup>. But, in FFS the women are empowered because they are farmers, not because they are women.<sup>85</sup>

Low participation of women is generally attributed to male dominance in extension systems (leading to selection of male participants); cultural taboos (difficulty for women to participate equally in activities outside home); timing of the meetings and difficulties for women to attend Season-Long ToFs. There are, however, more reasons beside religion and culture that may warrant separate FFS (e.g. different level of education, different interests, different resources, different work schedules etc.). Organising women only FFS has been a solution for many project in Muslim and non-Muslim countries: (e.g. the Women Open Schools in Pakistan and women-only FFS in: i) the EU-FAO Cotton IPM Programme in India and Bangladesh<sup>86</sup>; ii) the Egyptian Fayoum FFS Project; iii) the CARE projects in Bangladesh<sup>87</sup>; iv) IPM projects in Nepal<sup>88</sup>; and v) the Agriculture-Man-Ecology Foundation (AMEF)<sup>89</sup> projects in India).

Generally these all-women FFS are facilitated by female extension agents, if available<sup>90</sup>. Several other reports mention that increasing the numbers of female extension agents help to increase the participation of women<sup>91</sup>.

### ***FFS and social inclusion***

FFS has also been purposely used to address the needs of the lowest casts and ethnic minorities, mostly the poorest and marginal farmers, in several countries. An Indian NGO (AMEF)<sup>92</sup> implemented FFS for livelihood improvement amongst poor and marginal farmers, most of them belonging to the lowest casts. Participation by women was low, except for one all-women FFS. Women belonging to the lower castes stated that FFS timings clashed

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<sup>81</sup> FAO, 2004.

<sup>82</sup> Various reports from the Fayoum Horticultural Development Project; personal observation, Alida Laurence (evaluation team member).

<sup>83</sup> Braun et al, 2006.

<sup>84</sup> Davis et al, 2010; FAO, 2009.

<sup>85</sup> Bartlett, 2004. The Horticultural Development Project in Fayoum specifically addressed, and selected, the female participants as tomato-vegetable farmer (personal observation, Alida Laurence (evaluation team member).

<sup>86</sup> FAO, 2004.

<sup>87</sup> Bartlett, 2002 and 2004.

<sup>88</sup> FAO, 2000.

<sup>89</sup> FAO, 2008.

<sup>90</sup> The Fayoum Horticultural Development Project, which implemented FFS on vegetable production for female farmers between 1998 and 2000, had only female facilitators, who continued with facilitating female only groups in the above mentioned FFS project.

<sup>91</sup> Braun et al, 2006.

<sup>92</sup> FAO, 2004; Mancini, 2007.

with their household works and women belonging to the upper castes said that it was not conventional for them to go out and participate in such activity as the men are responsible for agriculture in their families.

Tangible efforts were made to work with villages and groups of the lowest casts and it appeared that the AMEF Project was more innovative and pro-active on issues of social equity than on gender. One FFS group, comprised only by Scheduled Caste members, raised a nursery with the revolving funds and earned income for the group as a whole which was subsequently distributed as loans to the members of the FFS for several purposes.

In Vietnam, the Nationwide Vietnamese Farmer Union conducted, with the assistance of the Danish NGO ADDA<sup>93</sup>, FFS focusing on the ethnic minorities living in the north, which also means the poorest part of the Vietnamese population.

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<sup>93</sup> ADDA, no date.