Introduction to Farmer Field Schools

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Farmer Field Schools: the latest development fashion?

- These days everything is:
- Mainstreamed.
- Cross-cutting
- Participatory
- And
- Every training linked to agriculture has become a **Farmer Field School**

Models of Agricultural Extension

- **Technology Transfer**: delivers specific recommendations & packages to farmers: CA, commodity based (crop marketing boards, outgrower schemes), Training and Visit (T&V), university and research station "outreach" programs, seed company demo plots.
- **Demand-led (Advisory Services)**: consultants & specialist NGOs respond to farmers enquiries for technical advice on specific topics. Government interest in "outsourcing" extension services: organic certification, processing, crop protection.
- **Human Resource Development** : colleges and universities, evening classes, outreach and adult education services. Top-down teaching, but students are expected to make their own decisions about how to use the knowledge they acquire – and have paid for/ actively chosen the service.
- **Farmer-led:** experiential learning and exchange of local knowledge.
- farmer-to-farmer exchanges. **Farmer Field Schools (FFS),** Participatory Technology Development (PTD), Participatory Variety Selection (PVS), Participatory Plant Breeding (PPB)/ Client Orientated Plant Breeding.
- "*Tools in the Toolbox*": All methods have their uses so choose the most appropriate "tool" for the situation. It does not automatically have to be FFSs, as some NGOs believe.

History

- FFS was developed in Indonesia to promote IPM in rice to control rice brown plant hopper.
- In FFS, extension staff became “facilitators” who assisted men and women farmers to merge local indigenous knowledge with modern scientific rice ecological knowledge
- Indonesia US$150 million in pesticide subsidies
- FFS was a much cheaper option!

Basics

- Field Schools assume that farmers already have a wealth of experience and knowledge.
- But: farmers do not know all the answers and have misconceptions and bad habits.
- Field Schools are oriented to providing basic agro-ecological knowledge and skills.
- FFS lasts for an entire crop season. FFS may last longer than 1 season but never less than 1 season. the cycle may be “seed to seed” or “egg to egg”.
- Allows all aspects of the subject to be covered, in parallel with what is happening in the FFS member’s field: rice transplanting in the FFS takes place at the same time as farmers are transplanting their own crops
- A maize FFS will take 3-4 months, composting takes between 6 months and a year, Citrus production will take many years, vegetables can be done in 2 months.
- Once a cycle is completed, the farmers discuss what they learned, what is good and bad, what they are worried about, what else they need to learn and what they will adopt.
- Field Schools are 90% practical and carried out in the field.
- farmers can carry out studies without personal risk allowing them to take management decisions that they might not otherwise attempt on their own farm.
- Farmers collect and analyse data.
- Extension worker has to take a back-seat and let farmers lead.

A risk-free environment

- The FFS methodology provides a safe environment for farmers to try out new techniques without having to risk parts of their livelihoods - a common reason for farmers refusing to adopt new techniques.
- When they have seen the benefits of adopting new techniques they are more likely to implement them in their own fields.
- As individuals, trying something new is often socially inappropriate (e.g. reducing sprays, cover crops),
- With group support, trying something new becomes acceptable.

Groups

- Suitable group: farmers used to working together.
- Shared common interest (Common Interest Groups, AFA): vegetable producers, rice growers, poultry keepers, dairy farmers.
- Explain the concept of the FFS to the group. Let them decide whether they want to do it or not.
- Devote as much time as is needed for this step as it is necessary to get their *informed* consent.
- 25 farmers is roughly the number that can comfortably work together with one facilitator.
- 25 are sub-divided into groups of five persons so that all members can better participate in field observations, analysis, discussion, and presentations.

Mixed or Gender Specific Groups?

- Evidence from Kenyan FFS showed that:
- In ♀ only groups, women learnt faster.
- But
- In mixed groups men shared more of the work at home.
- Often women are afraid to talk in front of men.
- But:
- In FFS women can become confident at speaking in mixed groups.
- Ask the women which they prefer.
- What are you trying to achieve?

Targeting the Poor

- Many NGOs want to target the poorest of the poor; but in FFS it's not always simple.
- The poorest may not have land, do not have time to attend meetings, have no decent clothes to wear to meetings, are not members of the common interest groups, may be from marginalised castes, religions or ethnic groups.
- Should landless people be in FFS?
- Landless people with small plots of land by their homes (kitchen gardens), or those with flat roofs / verandas etc can still grow vegetables; keep bees, chickens or stall-fed goats etc, so it is appropriate to include them in a FFS.
- Inclusion: Try to convince Common Interest Groups to include the poorest
- or
- Create separate FFS for the extreme poor.

If I hear it, I forget it.

If I see it, I remember it

If I discover it, I own it for life

Trainers

- Farmers are naturally sceptical - they learn slowly from an outsider but they know each other already, and understand each other's lives.
- The most effective way of engaging learning among farmers is to get them to teach each other.
- Every FFS trainer should have basic technical and practical skills, and should be interested in researching new ideas.
- Well trained farmers are often better facilitators as they are more practical, have the respect of the community and know local conditions better.
- Every FFS trainer should have group oriented training skills.
- The trainer should not "Teach" but …
- When a question is raised, bounce the question back to the group and ask for opinions, stories and experiences that could answer the question.
- A confident trainer can say "*I don't know – does anyone here know the answer?"* or "*I don't know – I'll go back to the office and do some research*".
- Research problems (text books, internet, Concern's own staff, professional networks) and once you have identified a possible solution, try it out on the research plot.
- At no point in time should you indicate that your way is better. Until you have tried it, you don't know if your way is better, and you want the farmers to decide themselves which techniques to adopt.

How not to run a FFS!

Site Selection

- The field is the core of the Field School.
- Provides farmers a way of testing a new method themselves before applying it to their own fields.
- Allows for more interesting research topics such as defoliation simulations in which leaves are removed, which the farmer would never do on her own field.
- Size: depends on the crop but about about 1,000 m^2.
- Build a simple shelter for discussions.
- The Field Schools are always held in the community where farmers live.
- Site must be easy to reach and free of risks for female participants.
- The extension officer travels to the site on the day of the Field School.
- Site must be representative of the soils of the area. The land should be neither significantly worse or better than the norm in the area .

Site Selection

- Private land or government land?
- Some villages have communal lands that can be used for free.
- the plot is maintained by the group, not by the facilitator, and is not a typical NGO “demo-plot”.
- If the FFS land is privately owned, the owner should get a significant amount of the benefits from the FFS.
- If the FFS land is communally owned, the harvest can be shared among the school participants and other community members.
- But remember that the FFS plot does not provide much harvest, for example if you are trialling techniques that do not work well for the local area.

Demo Plots

- NGOs & seed companies love demo plots!
- But I am sceptical.
- Demo plots are very different to the conditions on a farmer's own farm.
- Demo plots usually demonstrate that an NGO has lots of money – and farmers know this already!
- Demo plots are more suitable for training technical staff: extension workers and Lead Farmers.
- Demo plots are good for impressing the politicians and donors!

Agro-Ecosystems Analysis (AESA)

- Agro-ecosystems Analysis (AESA) is a fundamental part of the FFS methodology
- AESA = observation of the interaction between a crop/Livestock and other biotic and abiotic factors co-existing in the field.
- Involves regular (usually weekly) observations of the crop.
- Participants work in sub groups of 4 or 5, and learn how to make and record detailed observations including:
- Growth stage of the crop
- Insect pest and beneficial numbers and weeds and disease levels.
- Weeds and disease levels
- Weather conditions
- Soil condition
- Overall plant health.
- The farmers then take management decisions based on these observations.
- An important aspect of FFS is helping and encouraging farmers conduct their own experiments, to test out ecological crop management methods.

AESA Weekly Record Sheet

NAME OF FFS:	
AESA NO: *GROUP NO:* *PLOT NO:* *PROBLEM ADDRESSED:*	*DATE:* *WEEK NO:*

GENERAL INFORMATION	PARAMETERS
Variety: *Date planted:* *Age of crop:* *Spacing:* *Fertilizer:* *Weather:* *Time of observation:* *Plant population:* *Germination %*	*Length of leaves;* *Width of leaves:* *No of leaves:* *No of diseased leaves:* *No of dead leaves:* *Length of plant:* *No of pods:*

INSECT PEST	PLANT DRAWING	NATURAL ENEMIES
Pest observed:		*Natural enemies observed:*

OBSERVATIONS	RECOMMENDATIONS
Soil moisture: *Diseases:* *Insect pests:* *Plant health:* *Deficiency:* *Weeds:* *Predators:*	*What management practices should be applied*

Curriculum

- Well before the start of the season the group should decide on the crop and the key topics.
- Start with a focus group discussion to discuss the general issues / problems that the group experience in their farming. Some issues will immediately become clear.
- Identify which issues can be addressed by skill transfer.
- If they are literate this is a simple step, but can take longer if they are not literate – engage them to try drawing what they want to learn, or symbolising in other ways.
- Farmers will have a long list of things they want to learn, but you won't be able to address them all simultaneously.

- Collect the topics together and remove the ones that are specific to only one person. Deal with these outside the FFS.
- With the remaining list, rank them using stones in a matrix in terms of importance.
- This is your ‘curriculum’, and you address them in order.
- Trainer does background research on the topics, designs lesson plans, handouts, collects training materials.
- Save time and look for “off the shelf” manuals! ask them what they want to learn, prioritise the topics, and deliver the modules (Concern is developing these).

Curriculum: Basic science

- Introduce basic crop and animal science through field observations, season-long research studies, hands-on activities, linked to the problem being researched.
- When farmers have this basic knowledge they are better clients for extension and research systems because they have more specific questions and demands.
- they should be able to protect themselves from dubious information...

Curriculum: Basic science

- Role of Major and minor nutrients
- Nutrient cycles
- Water cycle
- Photosynthesis
- Insect lifecycles.

Curriculum cont.

- Field preparation.
- Selection of planting materials and potentially suitable varieties.
- Planting.
- Spacing.
- Weeding
- Fertilisers
- Insect pests and insect friends.
- Weed control.
- Intercropping.
- Flowering
- Lodging
- Harvesting
- Cooking
- Tasting
- Storage

Field Experiments

- Farmers are hands-on people, and probably don't like classroom training.
- Some of the farmers may be illiterate.
- Limit lectures: try to design practical activities and hands-on work.
- **Participatory Variety Selection**: challenges with new varieties.
- Examples of field experiments:
- **Cassava**: planting angle, single or double, number of nodes, plant cuttings vertical or at an angle?
- **Groundnuts**: vary spacings. wide spacing = higher yield, close spacing = reduced aphids = less rosette disease.
- **Sweet potatoes** on mounds, ridges or beds?
- Different intercrops/ relay crops.
- **Crop storage**: Put maize into glass jars and treat with red soil, rice husk ash, tradition herbs, recommended insecticides, etc.

Poultry Farmers in Uganda

- **Problem**: Commercial feeds too expensive.
- **Experiment**: test the production of feeds from local resources
- Water snails, banana skins, cassava peelings, sweet potato vines, kitchen waste…
- Each chicken fed a different mixture.
- Weighted every week

Field School Schedule

- Roll call
- Review of previous activities
- Briefing on days activities
- Recording of weekly crop conditions / AESA .
- processing and presentation to larger groups by sub groups for decision making.
- Lesson for the day and field work/ practicals
- Any special topics (HIV, gender)
- Review of day's activities
- Planning for next session
- Announcements
- Roll-call

Participatory Variety Selection (PVS)

- New varieties are bred on research farms.
- Excellent yields on research farms but disappointing performance when grown by smallholder farmers.
- Research farms = Sheraton Hotel for crops!
- Land prepared on time with tractors, planted on time, correct spacing, fertiliser applications, irrigated, mono-crop, prompt pest control ….
- Real farm: planted late, broadcast, intercropped, few or no inputs, weeded late, bird and insect damage…

Participatory Variety Selection (PVS)

- In the FFS farmers can compare new varieties with other commercial varieties and their traditional varieties under “real” conditions.
- Avoid testing too many varieties at once (3-4 is ideal).
- Replicate and Randomise the plots.
- Plots should not be too small (edge effects, random effects).
- Only change 1 variable at a time!
- Design a good data collection system and collect data at each stage of the cycle

FFS Experiment: Reduce incidence of Newcastle disease in chicken.

What is wrong with this experiment?

FFS Chicken

- Purchased 20 chicken
- Birds vaccinated against Newcastle disease.
- Booster vaccination after 3 weeks/ 3 months/ six months.
- Chicks confined/housed up to 8 weeks of aged.
- Mature birds housed for ½ day and night.
- Supplementary feeds given and water.
- Routine deworming done.

vs.

Farmers' traditional practice

- Local birds
- No vaccination done
- Free range.
- No proper housing
- No supplementary feeds given.
- No deworming done.

Example from an FFS manual for Kenya

Participatory Variety Selection in a Ugandan FFS

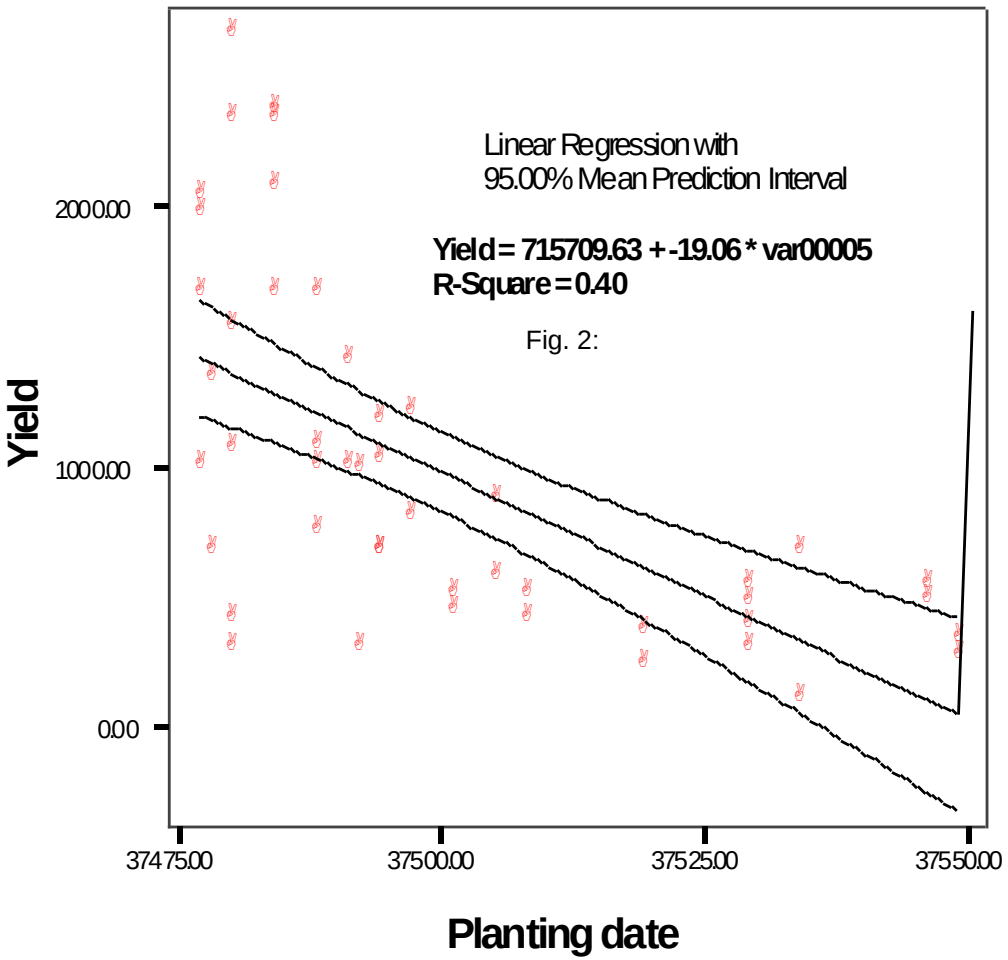
Bean variety trials

Maize planted to separate the plots.

Farmers taking records

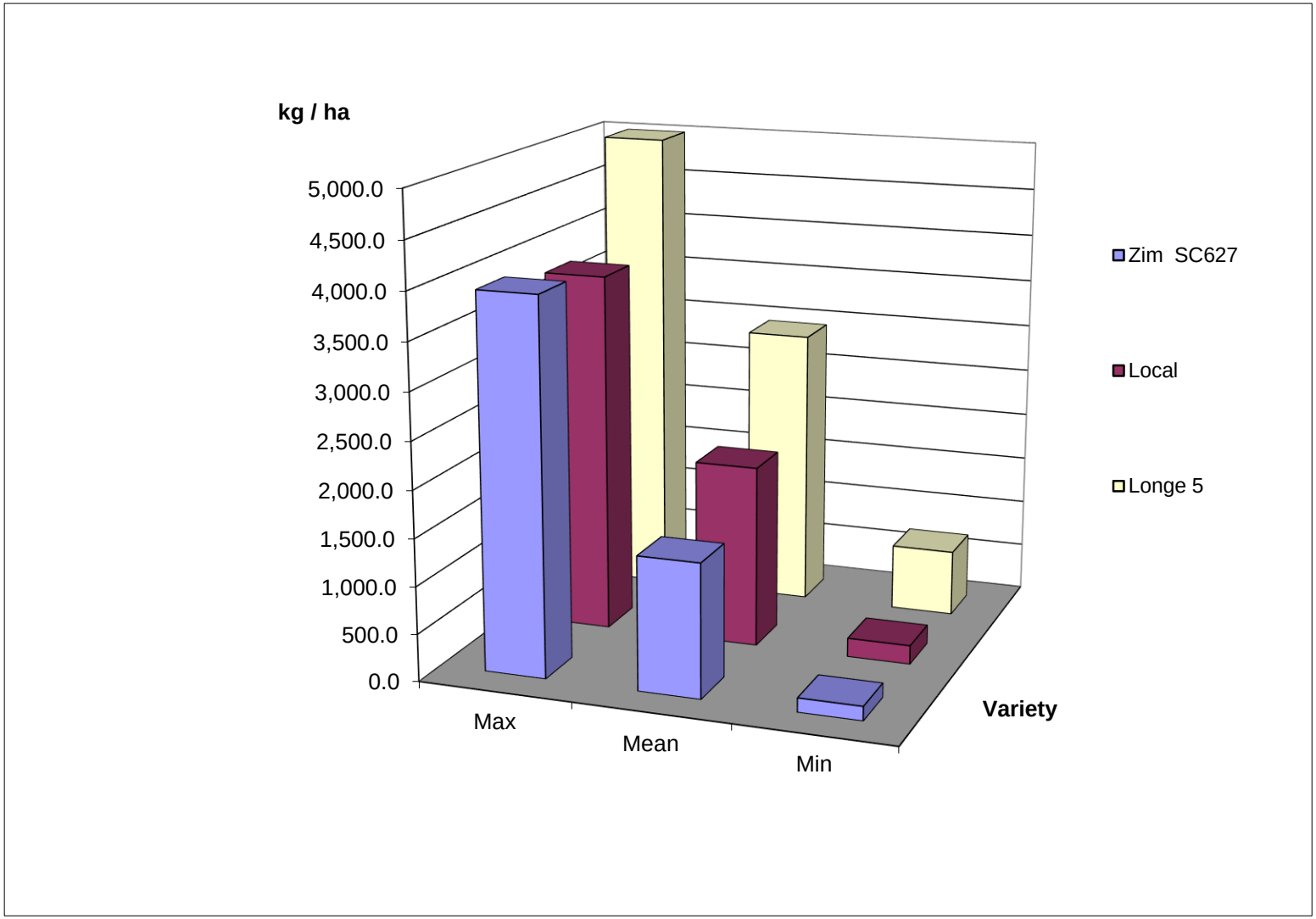
Late Blight Resistant Irish Potatoes varieties

Bean FFS, Uganda: The effect of planting date on bean yield (dates in MS Excel date format).



Maize FFS, PVS trials, Uganda

Maize: Zimbabwe Hybrid (SC627), Longe 5 (QPM), local landrace



Ownership of the harvest

- No farmer is going to be happy to devote a considerable amount of time to something without getting something back.
- The harvests from the FFS belong to the participants and they should decide how to use it.
- There may be extra harvest for the owner(s) of the land.
- Nobody should walk away empty-handed except the facilitator.
- In Tz the harvest from the FFS plots was used to feed the sick, elderly and orphans.
- … but in the DRC the farmers refused to do this.

Field days

- During the period of running the FFS the rest of the farming community is invited to share what the group has learned in the FFS.
- 1or 2 per season
- Farmers run the field day.

Evaluation and Certification

- All Field Schools include field based pre- and post-tests for the participants.
- Farmers with high attendance rates and who master the field skill tests are awarded graduation certificates.
- For many farmers, the Field School is the first time that they have graduated from any school or received a certificate in recognition of their farming skills, a point of great pride to many families.

Follow-up

- All Field Schools normally have at least one follow-up season,
- Follow-up options:
- monthly support sessions for farmers to discuss their own problems in implementing IPM.
- farmers running a complete Field School for other farmers.
- Farmers repeat the Field School process for one more season to verify findings.
- Farmers repeat the process of the Field School on a new crop.
- Some FFS become associations, people's organisations, and clubs that are officially or un-officially organised and carry on studying as a group.
- The facilitator usually becomes less central in the process if he/she has done a good job, more often providing some technical backstopping and stimulation for the group.

Group Dynamics/Team Building.

- Not my subject – and I'm sceptical of the value of the standard NGO / FFS approach.
- Distracts from the core role of the FFS.
- Opportunity cost for FFS members.
- but lots of NGO literature on capacity building:
  - Leadership
  - Record taking
  - communication skills building,
  - problem solving,

Are FFS designed to be sustained?

- Originally the FFS itself is not meant to be sustained
- FFS were designed to be time-bound with a built-in exit strategy: Graduation.
- Introduction of savings and loans etc has extended life of some FFS – but is this relevant?
- FFS based on existing Farmers Associations, Common Interest Groups, commodity groups, coops, will be sustainable.

Rice FFS in Sierra Leone

9 rice varieties in PVS trials

Controversies

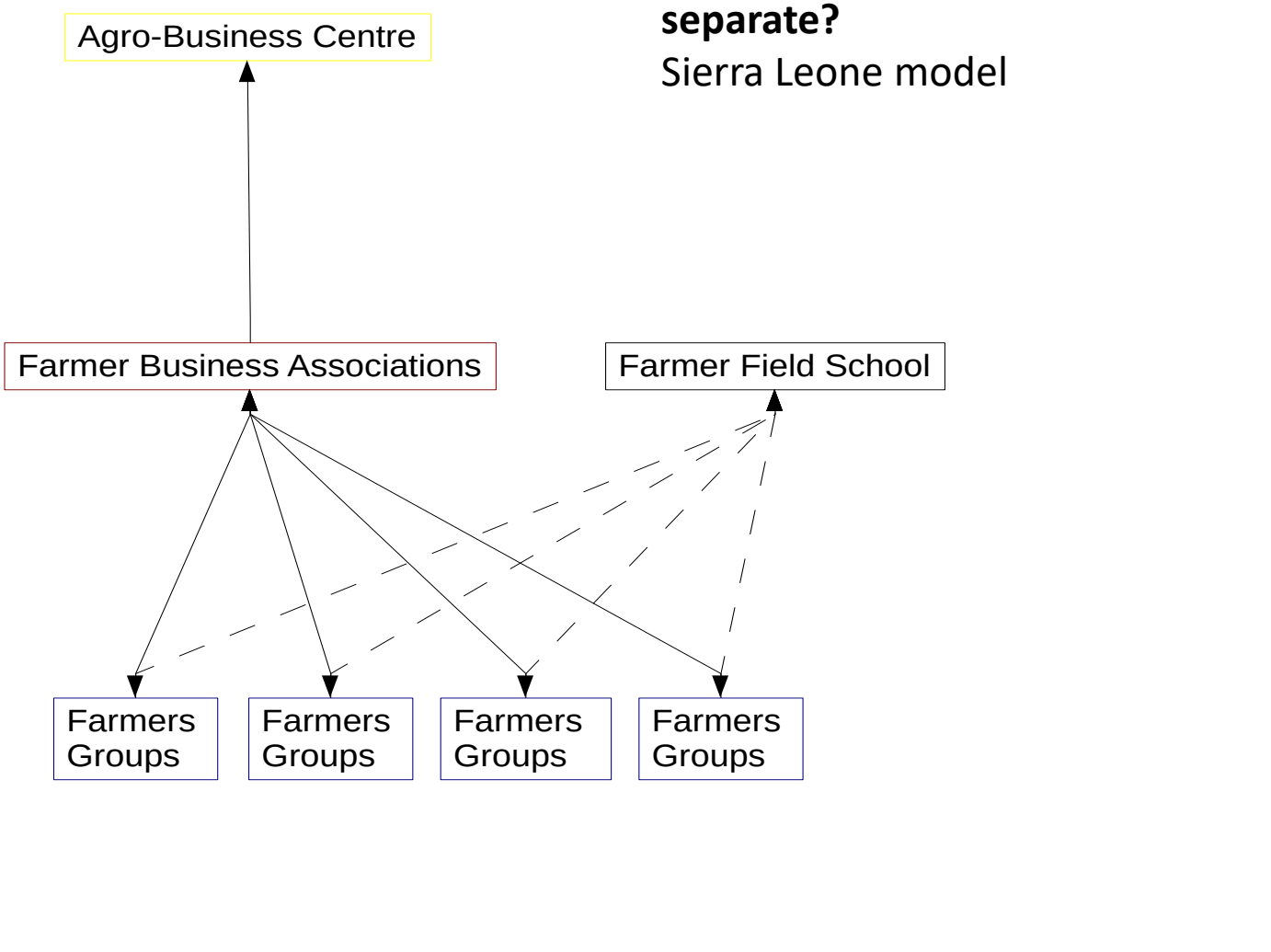
- **Farmer-led** or **Extension-led**?
- The majority of FFS are very much extension-led – no examples I am aware of within Concern of farmer-led FFS.
- Should FFS go into business?
- Sierra Leone National FFS policy: turn FFS into coops.

FFS: a Process - not a Goal

- Farmer Field Schools are a method to provide farmers with a learning environment .
- The process is in the hands of the farmers and the results are unpredictable.
- Because the results are unpredictable FFS does not fit easily with log frame indicators: FFS does not guarantee "*x% increase in crop yields*".
- This is a problem for results based projects/ funding.
- Ideally the farmers should be able to choose any topic for the FFS:
- What happens to the project if:
- Farmers choose tobacco or quat/ mira/ mirungi/ *Cather edulis*?
- Farmers are not interested in agriculture and ask for adult literacy or handicrafts?

Keep FFS and Business Structures separate?

Sierra Leone model



What are weaknesses of FFS?

- Variation among extension staff. Most existing extension staff over 35 yrs old were trained under T&V and are not familiar with FFS.
- Staff must be retrained in facilitation skills that merge local knowledge, external science-based knowledge and client demand.
- Costs: FFSs can be expensive or low-cost, depending on who implements them and how they are conducted.
- Despite FFS attracting mostly women farmers, participation by the poorest is often low.
- Some NGOs use “food for training” to FFS encourage attendance. Is this a bribe?
- Better option: **unconditional cash transfers** to poor farmers. All poor farmers get a stipend regardless of their FFS attendance.

Financing

- Biggest problem for FFS is financing after end of NGO support.
- Transport and extension worker salaries are the biggest costs in any extension programme.
- A World Bank-type programme is usually expensive: high allowances, transportation, several layers of supervision (US$30-50 per farmer/ season).
- When the FFS is carried out by local organisations and farmer facilitators, initial start-up costs may be moderate, but the running costs will be much lower (US$1-20 per farmer/season).
- Methods of self-financing FFS.
- Commercial plot in the group study field. The produce is sold and the funds are kept by the FFS group to cover their costs and the costs of the facilitator.
- Group-based savings and lending help groups of poor farmers accumulate funds to support FFS programme.
- Funding grant from government (outsourcing extension services)
- NGO sources

Angola Model

- Hierarchy of FFS: Village FFS supported by Central FFS (FELP Angola model).
- NGO/ partner staff train Contact/ Lead Farmers at the Central FFS.
- Contact Farmers then run their own village FFS.
- Supervision and monitoring by NGO staff.
- Farmer Field School Foundation, www.farmerfieldschool.info

FFS in Angola (FELP)

- Lead Farmers trained at a central FFS.
- Land for central FFS provided by the government
- Lead Farmers run the FFS in each village.
- Land for village FFS provided by a farmer (private land).
- Central FFS used to multiply seeds for the village FFS.
- Angolan FFS sites had to be checked by de-miners first☹.

Central FFS

Village FFS