GhanaVeg Training Manual

Adult Learning & Training Guide

Training of vegetable farmers in Ghana to contribute to vegetable sector development

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Background

GhanaVeg is a programme of The Embassy of the Kingdom of the Netherlands in line with the efforts towards prioritizing commercial agriculture in its 4-years Multi-Annual Strategic Plan (2014-2017).

The mission is to establish a sustainable and internationally competitive vegetable sector that contributes to inclusive economic growth in Ghana and has the capacity to continuously innovate in terms of products and services.

The objectives include improving productivity in the vegetable sector, facilitating more efficient markets, improving the business climate and further professionalize the value chain for vegetable production and consumption in Africa.

Agronomic knowledge and skills at farmer level form the basis for a well-functioning vegetable sector, especially when pursuing goals of improved yield, physical product quality and food safety. During the onset of the GhanaVeg programme it became clear that thorough agronomic knowledge, technical expertise and skills with regard to quality vegetable production at farm level are rather under developed in Ghana. Also at the level of (private) extension providers and larger farms knowledge and skills need to be improved. This concerns all aspects of vegetable production, from seedbed preparation and nursery development, to responsible pest and disease management, crop nutrition and irrigation, postharvest handling and farm management as a whole.

As a response to this observation a training of trainers program was developed, consisting of five specific agronomic modules to cover all steps in quality vegetable production:

- Improved varieties & high quality seeds
- Nursery systems, seedling production & transplanting
- Effective and responsible crop protection
- Crop nutrition, soil and water management
- Integrated crop management

The modules are very practical and developed in such a way that they can easily be used for trainings for farmers. Within GhanaVeg a minimum of 50 Master Trainers will be trained (2 groups of 25), who in turn are expected to train between 50 and 200 farmers each. In this way about 5.000 farmers are expected to receive state of the art training on all aspects of vegetable production.

In addition to the five agronomic modules a specific module on 'adult learning and participatory training' is developed to further develop the competences of the Master Trainers. Adult learning approaches built on the existing knowledge and experiences people already have and put emphasis on participatory processes, practical examples, learning by doing and peer-to-peer exchange.

This adult learning & training guide will not provide any agronomic and technical information, but provides the Master Trainer with more background information, tips & tricks, and practical tools for designing, preparing and facilitating an agronomic training for farmers. This guide is about how to deliver and transfer the agronomic and technical content to farmers in a participatory and effective training with impact to in the end contribute to vegetable sector development.

After reading this manual we hope you can improve the effectiveness of your training and have more impact at farmer level!

1   Notes to the trainer using this manual

1.1 For whom is this manual?

This manual is for both the trainees who are expected to become Master Trainers as well as qualified vegetable extension officers, enabling them to train farmer groups and successfully transfer agronomic knowledge on quality vegetable production to farmers.

Objective of this manual is to improve the quality of the trainings given to farmers in the context of GhanaVeg to further develop the vegetable sector. This will be done by addressing adult educational principles, training design, different interactive methods and facilitation skills, and with providing general tips & tricks and suggestions for further reading. Most of all we hope to convince you about the importance of an interactive, well designed and facilitated training approach attuned to your target group of farmers that reaches their head, hands and heart. How to use this manual?

This guide consists of the following sections:

- Adult learning Principles and Theories
- Training Design
- Facilitation
- Training methods toolbox

2 Adult learning Principles and Theories

In this section we will explain what we mean by adult learning and why interactive teaching is important. We introduce some learning theories and models, we explore group dynamics, different learning styles, and the three learning outcomes you need to look at in your training: knowledge, skills and attitude. Lastly we discuss barriers and condition for learning.

2.1 Adult learning

Learning is the central element in a training. We see learning as "the accumulation of knowledge & skills and the ability to constantly improve the effectiveness of action". In the context of GhanaVeg, learning is focussed on improving horticultural knowledge and practices. So learning involves applying lessons learned about horticulture into future actions. In this way farmers can continuously improve the quality of their horticultural work by looking at past successes and mistakes

> We see learning as "the accumulation of knowledge & skills and the ability to constantly improve the effectiveness of action".

and finding out how to improve their farming and working practices. Learning can be done by studying, practicing, being taught, sharing experiences, or by experiencing something new. Learning is seen within the wider concept of capacity development where capacity is the ability of people, organizations and society as a whole to manage their affairs successfully (OECD/DAC, 2006).

We are working with adults and therefore three assumptions are of importance in relation to learning:

1. Adults learn at their own pace, learn all the time (not only in an educational setting), and learn mostly from peers if they consider an issue or topic relevant : They have developed self-knowledge and need self-motivation to change; they want both to receive and to share their own knowledge and experience; they have strong personal dignity and should be treated with respect;
2. Adults are not empty vessels: They have a lot of experience throughout their life and in their working practices; They build on the existing experiences and knowledge they already have, hence they may also learn different things from information presented to them than was intended depending on their motivation, the learning climate and the learning methods;
3. The role of the facilitator differs from a traditional teacher's role: Adults are stimulated by sharing their own experiences, engaging in dialogue with their peers, and actively participating in the search for causes and solutions; facilitation is an important part of training adults

It is essential to work with the intrinsic motivation of people by building on their existing knowledge and connecting to their problems. As a trainer you want to focus on ways and means to address their problems.

People are constantly learning from experiences in their work and life, but we see a training as an opportunity to accelerate the learning process and to take stock of recent experiences. A training is enabling people to dedicate some time to learning in a conducive environment together with a group of people with similar backgrounds. The training can be seen as a laboratory for experimentation and gaining new insights in a safe and
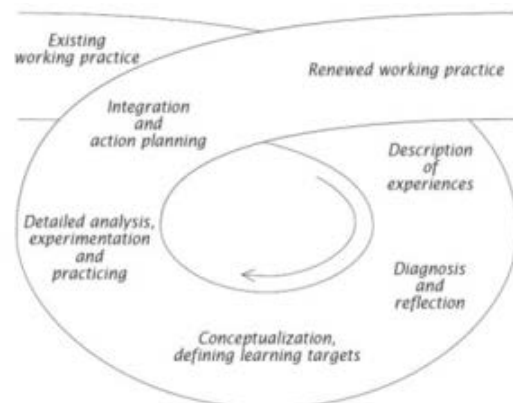
trusted environment. Generating this trust so participants are willing to be open about problems and failures, and see them as opportunities for learning to do a better job, is key.

You are going to **train adult farmers**, who are involved in producing vegetables in Ghana. You are training them on various topics ranging from why and how to use improved varieties and high quality seeds, best practices on seedling production, effective and responsible crop protection, nutrient and water management, etc. Most topics will not be completely new to them – they might be a farmer already for many years! So appreciating their existing knowledge is very important to keep them motivated, drawing in their experience, asking for their questions, opinions or issues around horticulture and combining that with the information from your own modules. In this way you will provide a training in such a way that your participants become better at what they are already doing: vegetable production.

> Adults like to build on their existing experience and need self-motivation to change.

2.2 Participatory learning and interactive teaching

In this manual we have already made a statement that knowledge transfer alone is not enough, and that adults learn mostly from peers if they consider an issue or topic relevant. It is very important that participants are making sense of new information by integrating new knowledge into their existing knowledge, exchanging experiences with others and discuss their challenges and questions with their peers. People engage with one another to help find the answers. In a training the role of the trainer / facilitator is to facilitat this process. Participants like to discuss with other participants questions like: "I struggle with this, do you recognise that problem? How do you deal with it? And what do *you* struggle with?"

The starting point should be that farmers have a rich knowledge base and experience of making a living in the horticultural sector with all it complexities and challenges and are able to come up with appropriate solutions to problems. The role of the trainer is to facilitating an interactive learning process and to create an enabling environment where this process can take place. As a trainer you have knowledge, skills and expertise to offer and share in the training but you are not there as the expert with all the answers. So the focus and responsibility shifts a bit from the teacher to the learner: there is a joint responsibility to meet the learning objectives. It should be clear to the participants that their experiences and knowledge is as important and that they can actively remind the trainer to work on their learning objectives and not go of-track. It means a pro-active attitude as participant, and acknowledgement and stimulation by the trainer. It is helpful to shortly discuss this 'principle' at the start of a training and explain what you expect from your participants: to take an active role and have ownership in the learning process. To

> What we expect from you as participant:
> • Active participation
> • Contributing to lively discussions
> • Developing feasible action plans
> • Providing valuable feedback
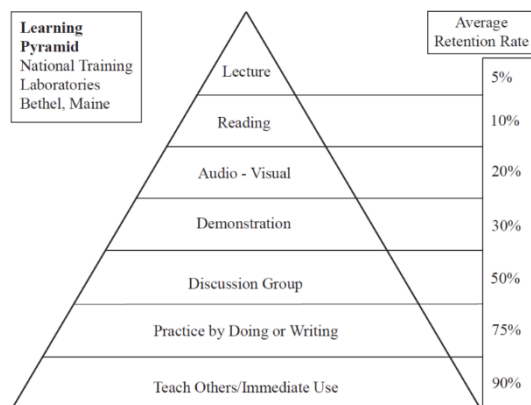
stimulate this you can even delegate some responsibilities and roles to the participants.

Research done by Bethel and Maine from the National Training Laboratories reflects the average retention rate and, although there is a bit of discussion about this model and it's accuracy, the general point is clear: if you only give a lecture or presentation, the retention rate is very low! So interaction, active participation and involvement of learners is very important for the effectiveness of your training.

Learning Pyramid National Training Laboratories Bethel, Maine	Average Retention Rate
Lecture	5%
Reading	10%
Audio - Visual	20%
Demonstration	30%
Discussion Group	50%
Practice by Doing or Writing	75%
Teach Others/Immediate Use	90%

2.3 Experiential learning cycle (Kolb)

There are many different learning theories but one that builds on the notion that people learn from experiences and create new knowledge based on practice is the Experiential Learning theory. In this section this theory is explained and it can be used as a base when designing learning activities and how to make the learning into a thought-out process. Building upon earlier work from John Dewey and Kurt Levin, the American educational theorist David Kolb argues that "learning is the process whereby knowledge is created through the transformation of experience" (1984: 38).

(1) having an experience

(2) reviewing experience observe/reflect

(3) concluding from experience conceptualising

(4) planning the next stages trying out

Kolb presented a cyclical model of learning, consisting of four phases:

1. Concrete experience ("DO")
2. Reflective observation ("REFLECT")
3. Abstract conceptualization ("THINK")
4. Active experimentation ("PLAN")
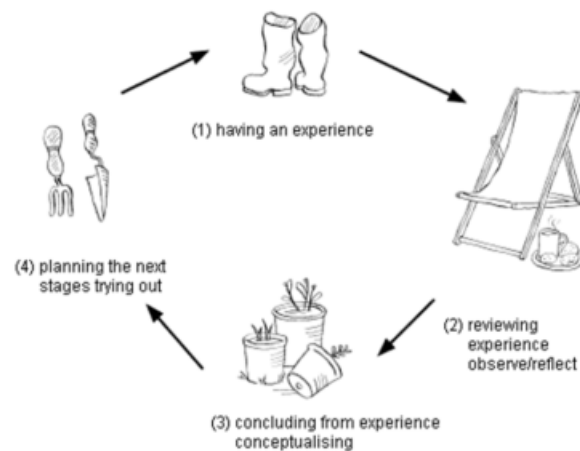
One may start the process at any stage. Kolb's learning cycle shows how through exploration, reflection and analysis (zooming-in) experiences are translated into concepts and new perspectives (zooming-out), which then are used as guides for active experimentation for a next experience (Kolb, 1984). It is important to try and address all the four phases when you address a topic.

> Try to cover all four phases: do, reflect, think and plan.

- Experience: description of current practices and experiences (what happens?)
- Reflection: diagnosis and reflection on experiences (why?)
- Conceptualisation: Provide new information and concepts based on reflection (so what?)
- Experimentation & Planning: putting new knowledge into practice and make plans how to use it (now what?)
- Experience: practices are changed, new experiences are gained, circle starts again (what happens?)

So for example when you facilitate a session around seed quality it is important to make a mix of content and theory input (stage 3) with for example an assignment where the farmers make a plan to try out a new practice on their field (stage 4), then to actually do an experiment (selecting seeds using the criteria that were told, stage 1), and then to do a reflection or analysis assignment and learn from the experience (stage 2). In this example the learning process started with the abstract conceptualisation but

another example is that participants come in with their experience 'from the field' (stage 1). For example they have experienced problems with mildew in their tomato's. In the training you take a moment to reflect and analyse their current practice and problems. Why did they experience more mildew? You can analyse and reflect on their farming practice, the weather conditions, etc.(stage 2). Then you provide information and new ideas and some theory, for example about how mildew develops, why it occurs, what you can do about it, etc.(stage 3). And finally with the new knowledge and ideas the farmers can make a plan to experiment with

a new practice. For example they can decide to apply some new IPM technique (stage 4). And then they apply this in their own field or collectively you experiment in a demo field, to have a new experience (stage 1). You can continue the cycle by again reflecting (2) on this new experience in terms of crop performance, look for new additional information (3) to inform and improve their practice again, make an even better plan (4) and again have an experience (1) in the field – another cycle of learning is completed etc.

Again: You can start from any of the four phases in the cycle, but it is important to cover all 4 phases and not get stuck in only one phase, e.g. if you only give presentations and provide farmers with new information it is unlikely they will remember it all and even more unlikely they can apply it.....!

This is one way to understand learning. We believe experiental learning is a concept that fits with training farmers because in the end the goal is that farmerscan improve their practices. The retention rate is much higher when participants have also experienced and applied new ideas and practices.

Source: Kolb (1984)

> Tell me and I will forget
> Show me and I may remember
> Involve me and I will understand
> (Confucius)

2.4 Four stages of Competence Learning

The Four Stages of Competence Learning provides a model for understanding how participants learn new competences. It suggests that individuals are initially unaware of how little they know, or unconscious of their incompetence. Through exposure or confrontation, the incompetence is being recognised: the learner becomes conscious of her/his inability to do something, and this can be somewhat uncomfortable. In the third phase, through learning and practice, the learner can become consciously competent. Eventually through experience, the competence is internalized and unconsciously applied: the learner becomes unconscious competent. This means that as a trainer you sometimes have to help someone to 'know what they do not know', for learners to develop their competences.
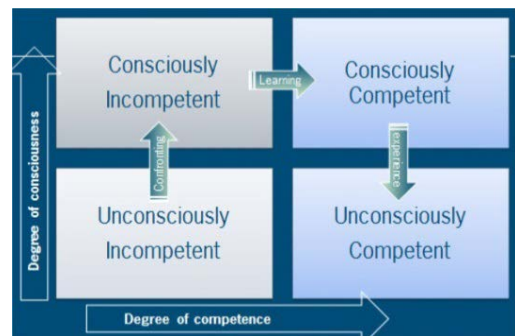
When it comes to the farmers you are training, they might be unaware of a certain incompetence, or unconscious of a certain skill they lack. For example we take a farmer who does not know that he is using an ineffective technique of sowing seeds (he[1] is unconsciously incompetent). The farmer has to become aware of his incompetence before development of the new competence or learning can begin. This happens

through exposure or confrontation, e.g. by giving a demonstration how to sow seeds, or by interaction with a 'model farmer'. The aim is to move the farmer into the 'conscious incompetence' stage by demonstrating the competence (sowing seeds), and the benefit that it will bring to his horticultural practice. Then the farmer becomes aware of the existence and relevance of the new sowing technique, and his own inability in this area. This can

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[1] For the readability we use 'he' but we could as well have used 'she'

be frustrating and the farmer might experience some resistance. But hopefully he realizes that improving his sowing technique will improve his horticultural practice. Ideally the farmer makes a commitment to learn, practice and explore the new sowing technique, in order to move to the 'conscious competence' stage. He achieves the 'conscious competence' stage when he can perform the new sowing technique reliably at will, but at first he will need to concentrate and think in order to do it right. The competence is not yet second nature or automatic. The farmers should ideally continue to practice the new sowing technique. Practice and experience are the most effective ways to move from stage 3 to stage 4. After a while the new sowing technique becomes so familiar that it enters the unconscious parts of the brain - it becomes second nature and he moves into the 'unconsciously competent' stage. The farmer might now be able to teach others about the new sowing technique.

Source: the earliest origins of the 'conscious competence' learning theory are uncertain and could be very old. Martin M Broadwell, 1969, in The Gospel Guardian, was one of the first ones to publish about this model.

2.5 Bloom's taxonomy

Bloom's Taxonomy was created in 1956 by educational psychologist Dr Benjamin Bloom in order to promote higher forms of thinking in education, such as analysing and evaluating concepts, processes, procedures, and principles, rather than just remembering facts. It is often used when designing educational-, training-, and learning processes.

Bloom divided learning into subdivisions, starting from the simplest cognitive process or behaviour to the most complex. The divisions outlined are not absolutes and there are other systems or hierarchies that have been devised, but Bloom's taxonomy is easily understood and is probably the most widely applied one in use today.

The six major categories starting from the simplest to the most complex:

1. Remember: retrieve relevant knowledge from long-term memory
2. Understand: construct meaning from instructional messages and graphic communication
3. Apply: carry out or use a procedure in a given situation
4. Analyse: break material into its consistent parts and determine how the parts relate to another and to an overall structure
5. Evaluate: make judgements based on criteria and standards
6. Create: put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure
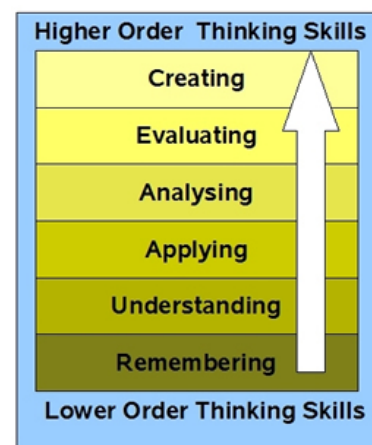
The categories can be thought of as degrees of difficulties. That is, the first ones must normally be mastered before the next one can take place.

When we talk about training farmers then the first level according to this model is for example the basic principles of good agricultural practice that farmers should be able to remember. Then the second level of learning is about constructing meaning so for example understanding what is most relevant for their own farm, understanding the benefits of good agricultural practice, etc. The third level is that farmers are able to apply new techniques on their own farm. The fourth level is their capability to analyse and understand e.g. why certain crops have grown well and other crops failed. The fifth level implies that the farmers can judge and draw conclusions about e.g. their crop management. And lastly the sixth level is about creating an improved management plan towards good agricultural practice.

It is important for farmers to go beyond quick fix solutions and develop diagnostic capacities on root causes of their problems. To do so it means in your training design you need to go beyond the level of remembering. Working on the more complex levels of analysing and evaluating requires different educational exercises. It is important to ask yourself the question: if I want to train farmers on the level

of 'analysing', what activity should I provide for the farmers to learn at this level? This could be for example a group work activity where farmers compare different practices and analyse which one works best, and get some feedback afterwards from the trainer.

The following table gives some ideas on active verbs that can be used to define the learning objectives for your training.

Active verbs developed based on Bloom's Taxonomy

Knowledge	Understand	Apply	Analyze	Evaluate	Create
define	explain	solve	analyze	reframe	design
identify	describe	apply	compare	criticize	compose
describe	interpret	illustrate	classify	evaluate	create
label	paraphrase	modify	contrast	order	plan
list	summarize	use	distinguish	appraise	combine
name	classify	calculate	infer	judge	formulate
state	compare	change	separate	support	invent
match	differentiate	choose	explain	compare	hypothesize
recognize	discuss	demonstrate	select	decide	substitute
select	distinguish	discover	categorize	discriminate	write
examine	extend	experiment	connect	recommend	compile
locate	predict	relate	differentiate	summarize	construct
memorize	associate	show	discriminate	assess	develop
quote	contrast	sketch	divide	choose	generalize
recall	convert	complete	order	convince	integrate
reproduce	demonstrate	construct	point out	defend	modify
tabulate	estimate	dramatize	prioritize	estimate	organize
tell	express	interpret	subdivide	find errors	prepare
copy	Identify	Manipulate	survey	grade	produce
discover	indicate	Paint	advertise	measure	rearrange
duplicate	Infer	Prepare	appraise	predict	rewrite
enumerate	relate	produce	Break down	rank	role-play

Adapted from Benjamin Bloom, 1956.

2.6 Group dynamics

An important thing to be aware of when designing a training especially for a new group of participants is group dynamics. When participants arrive at a training course or other learning event, they may feel insecure: What do people expect from me? What are we going to do? How is this training going to be helpful? What about the competition I feel with other farmers? Participants may know or not know other people in the training and generally stating the group is more a set of individuals or subgroups, than it is one large group. Being aware of the dynamic in the group and knowing the needs people have at different moments in time, can greatly determine the learning approach and tools/activities you chose as facilitator.

Bruce Tuckman (1965) proposed the four-stage model called Tuckman's Stages for a group. Tuckman's model states that groups move through four different stages:

1. **Forming** (pseudo-community)
    The group is not yet a group, but set of individuals. There is a lot of communication but not always effective. People explore the cost-benefit of becoming a member of the group (feeling interdependency and urgency). The participants are generally nice to each other and they get used to the group. There is a need to get an idea of the goal, process and ground-rules of collaboration.
2. **Storming** (divergence, conflict & chaos)
    Member of the group strive for a position and challenge each other. This can be shown by pursuit of individuality, personal agendas, hostility, mistrust, resistance to group

pressure. Intra group conflict can arise, lack of unity, increase of frictions, arguments. If successfully handled this stage leads to new and more realistic setting of objectives, procedures and norms, and better relationships as a result.

3. **Norming** (alignment, confidence, commitment)
    People have to give up something, acceptance towards each other, alignment. They are developing group cohesion, roles/responsibilities, norms and practices are established. We-feeling arises, people become more authentic, group culture emerges, improved communication, collaboration for performance.

4. **Performing** (working in a group to a common goal on a highly efficient and cooperative basis)
    The group has reached full maturity and maximum productivity, is goal oriented, people take up roles and tasks, and group activities are completed. The group energy is channelled into identified tasks with open and creative communication, roles become flexible and functional, new insights and solutions begin to emerge.

Tuckman later added a fifth stage for the dissolution of a group called adjourning (or mourning). This model refers to the overall pattern of the group, but of course individuals within a group work in different ways. If distrust persists, a group may never even get to the norming stage.
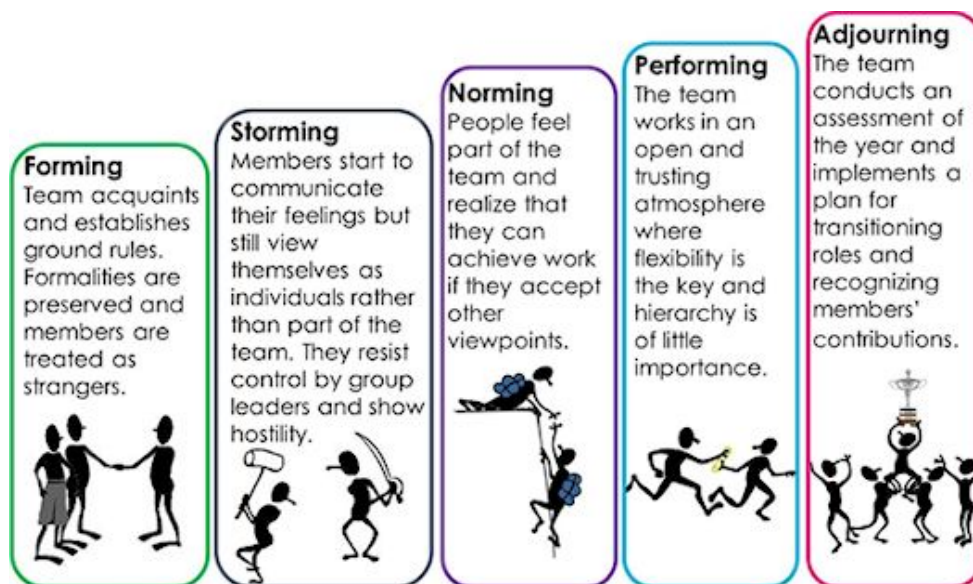
Group dynamics are even more important for team-work and groups that have to perform a task. But for training purpose it is also highly relevant. Some tips for trainers based on this theory:

- At the start of a training participants are more dependent so it helps to take them along and give them an idea of the goal, process and ground-rules of collaboration. You also need to invest in the group, built trust and connections.
- Don't scare away if there is a bit of friction and arguments in the group. This may be a healthy and normal stage the group moves through (storming) towards a more mature stage. You can think about puberty, as a metaphor.
- When you recognise that the group is in the norming stage, a group culture emerges, improved communication, collaboration for performance, then the dependency on the trainer decreases and you can ask more for their input and active participation. You can delegate some responsibilities to the group.
- When the group arrives at full maturity and maximum productivity, when people take up roles and tasks, you can delegate more and foster initiative taken by participants. In this way the dependency on the trainer will also decrease, which is very good towards the end of a training.
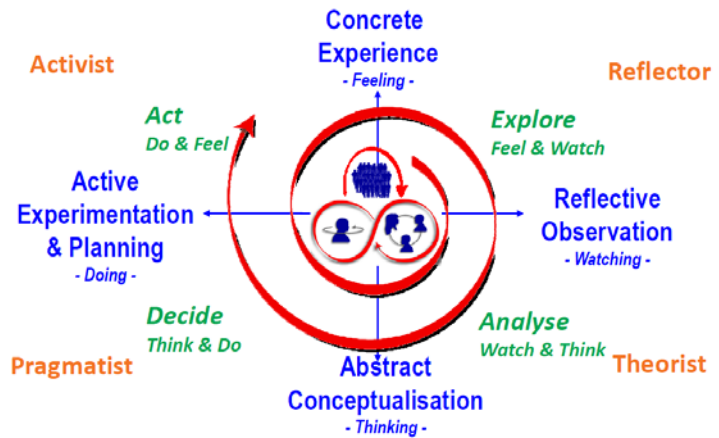
Adapted from Bruce Tuckman, 1965.

2.7 Learning styles

Another thing to consider when designing your training is that participants can have different preferred ways of learning, i.e. **learning styles**. Each farmer you will train is unique, has different experiences and learns in a different way. It means that some people learn best by doing, others prefer to reflect and observe, some people like to study books and others just want to listen or watch. Some people like to learn in a group, other rather learn individuality. Therefore it is important to have a mix of training methods to stimulate people in different ways and address different learning needs.

One way to distinguish between learning styles is based on the experiential learning cycle (see section 2.3): participants feel more comfortable at a certain stage of the learning cycle. Linked to the four stages are four learning styles named: activist, refelctor, theorist and pragmatist.

The next table describes the four main archetypal styles and also their resistance to learning.

Learning style	Description	Resistance to learning
Activist 'I'll try anything once'	Activists learn by doing. They need to get their hands dirty, to feel, do, experience. They have an open-minded approach to learning, and involve themselves fully and without bias in new experiences.	Impatient, talkative 'OK, let's just do it, we will see how it works out' Or they can disconnect
Pragmatist 'If it works, it's good'	Pragmatists need to be able to see how to put the learning into practice in the real world. They only find abstract concepts and games to be useful when they can see a way to put the ideas into action in their own lives. They are experimenters, trying out new ideas, theories, and techniques to see if they work.	Little emotions 'in practice it does not work like that' or 'Can I get an example?
Reflector 'I need time to think about it'	Reflectors learn by observing and thinking about what happened. They may avoid leaping in, and prefer to watch from the side-lines. They tend to stand back and view experiences from a number of different perspectives while collecting data; they take time to work towards an appropriate conclusion.	Not very active More thinking than doing 'why do you do that like this?'
Theorist 'If it's logical it's good'	Theorists like to understand the theory behind the actions. They need models, concepts, and facts in order to engage in the learning process. They prefer to analyse and synthesise, drawing new information into a systematic and logical theory.	Not really focused on people nor practical application 'do you have this information on paper? Is it always the case that...?'

Usually in a group, all four learning styles are present, so again: it is important to have a mix of training methods to stimulate people in different ways and address different learning needs. There are also other theories and models about learning styles so if you want you can explore more.

Based on Peter Honey and Alan Mumford who adapted Kolb's experiential learning mode, 1997.

2.8 Learning outcome typology

Learning outcomes can be classified into three types of outcomes: knowledge, skills and attitude. Knowledge is the more intellectual cognitive part – knowing what is available (e.g. what seeds have the best quality, when to sow them). But then the farmers need the Skills to apply or implement this knowledge (e.g. doing a seed analysis and proper selection, apply new sowing techniques.) But last but not least we need to address the Attitude – the mind-set, why farmers do what they do (e.g. seeing the importance of improving vegetable production, having the motivation to do experiments, the willingness to change). Together these three domains contribute to the ability of the farmer to improve the vegetable production and marketing.

> Apart from giving new **knowledge** and developing new **skills**, you also need to think about the **attitude** of the horticultural farmers.

Learning outcomes are important because they can be used to develop instructional strategies and generate learning objectives.

During a training there is a need for:

- Transferring information to increase the knowledge of the participants on horticultural practices.
- Developing new skills to change their practice so this means that they get the chance during the training to do exercises, where they can practice those new skills, or that you provide them with very practical ideas on how to do experiments on their own fields (e.g. new techniques to check plants for pests and diseases).
- Change in attitude, maybe the most important and most difficult one. Are the farmers going to change their way of working? Without them changing their behaviour, there will not be the impact you may aim for. So what drives their behaviour? What do they need, in order to change their attitude, their mind-set? What can you do in the training to make sure that farmers become more critical, more motivated, more curious, or more careful? Elements that can help to work with the attitude of your participants include facilitating discussions or debates with them, showing observable differences at the field, using convincing arguments, often including price indications, exposure to new information and facts, exercises where they discover themselves and explore for example the danger of a pesticide, calculating new business models, etc.
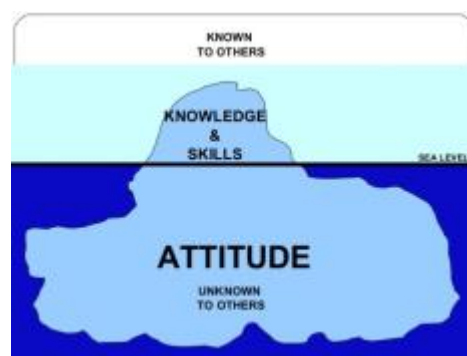
In the end participants need to develop new abilities in order to incorporate all the learning in their daily work / life.

Knowledge	Skills	Attitude
- farmers can explain the limitations of the current seed system correctly - farmers understand the advantages of the new sowing technique - farmers know what to pay attention to when buying seed	- farmers are able to prepare the soil with the right nutrient inputs - farmers are able to do a cost-benefit analysis for the new seed variety - farmers design and implement a field experiment and analyse the results	- farmers agree that business as usual is not a good option - farmers belief that the new sowing technique has many advantages. - farmers see the importance of doing field experiments to test the new seed variety

The next table can be used for inspiration of action verbs for each learning domain.

Knowledge	Skills	Attitude
- understand - identify - describe - state - categorize - distinguish - formulate - report - explain	- demonstrate - calculate - install - design - analyse - build - assess - facilitate - are able to..	- judge - justify - accept - challenge - advocate - cooperate - question - value - are willing to..

2.9 Barriers and conditions for learning

In a learning process it is important to recognize the barriers and conditions for learning.

On a very practical level there are some basic needs that need to be fulfilled: food, sleep, physical wellbeing, etc. If there is a problem with these basic needs they create barriers to learning. When participants are hungry they cannot concentrate on the learning. When you do a field demonstration and the sun is very bright and hot, then people will also loose attention. The same applies for cold, noise, etc. In addition when the tone of voice of someone speaking is very low, it takes a lot of effort for the listeners and after some time people give up and loose motivation. Participants need to feel physically comfortable to focus their attention to the learning process.

Also emotional aspects can create barriers to learning. Conflicts or competition within the group can disturb the emotional safety for learning. But also something personal that happened outside the group, something that brings your mind to what has happened within your family or a problem with a dear friend. One way to acknowledge this as trainer, is to say: 'disturbances take precedence'. You invite people to share anything they feel which is disturbing them in the learning process at the start of the training. And by sharing it with the group some practical issues can immediately be resolved, and the more emotional issues can be acknowledging by the group which in most cases can increase the feeling of connection and helps the person who shared to be more present in the training.

Other barriers to learning include power differences, for example participants resist new ideas because their chief, or their retailer told them to do it in a certain way. And the difficulty of unlearning is another one. Sometimes people are stuck in their old habits, or believe in old tradition (this is how my grandfather also did it…). Furthermore norms, privileges and taboos can hinder learning, for example participants may think: "it's different for us", or "in Europe there are different rules and standards", or "we never talk about our financial problems". And lastly there can be a barrier in learning because of information disorders, for example farmers get different information about the dangers of pesticides from the salesman.

But as much as we want to take away the resistance to learning, there will always be some resistance amongst participants. It is important not to fall into the trap of always wanting to please your participants. Sometimes the trainer also has to bear with the resistance, live with it, work with it or work through it. As long as it serves the overall purpose of the training…..

Learning is very much about change, in the end. People changing their behaviour, their point of view, their horticultural practice. But, in the light of barriers to learning, remember the following:

> Having spoken doesn't mean you are being heard.
> Being heard doesn't mean you are being understood.
> Being understood doesn't mean people have agreed.
> Having agreed doesn't mean it is going to be implemented.

In addition we can say that learning is stimulated or is helped by:

- Motivation of the participants, addressing people's questions and needs
- Creativity and interaction: opening up to new ways of learning, different from 'school'
- Active participation and listening, involving participants and engaging them
- Critical reflection and linking to the experiences of your participants
- A good learning environment with the right physical conditions as well as safety and trust
- Positive feedback to participants, stimulating and appreciating their active contribution
- Cultural appropriateness
- Exchange of experiences between participants
- Diversity of methods addressing different learning styles
- Sensitivity for group dynamics
- Improving access to education, information, infrastructure, the right equipment
- Motivating future perspective & goal, and learning activities that are related to the goal
- Enabling environment for follow-up activities (which also support the change/application of new abilities)

3   Training Design

In this section we will provide you with the steps to take when designing an training. First of all it is important what is your vision for the training and what you want to reach with providing a training. Then you will need to consider and understand the target group for you training and their needs, From there on you will start designing you training in more detail. We call this 'Backward Design' because you start thinking about the desired end results and only then you think 'backward' and ask yourself: Where are we now, what are the needs of my target group, and what should happen to get to the overall objective and vision? You plan the learning experiences and instructions with the end result in mind. The different steps you need to take when designing a training are:

1. What is your vision? What change do you foresee for the farmers?
2. What is your target group? What are their needs?
3. What are the overall learning objectives?
4. What will be the main topics/content you want to cover? How will you sequence the content and build a logical flow into the overall programme
5. What are the specific learning objectives for each topic, how to offer a mix of Knowledge, Skills & Attitude?
6. How will you monitor and evaluate the learning process and outcomes?
7. Building a detailed session plan: what training methods and media will be used?
8. What other organisational issues do you need arrange, to facilitate and manage the training?

I this section each step is explained in more detail.
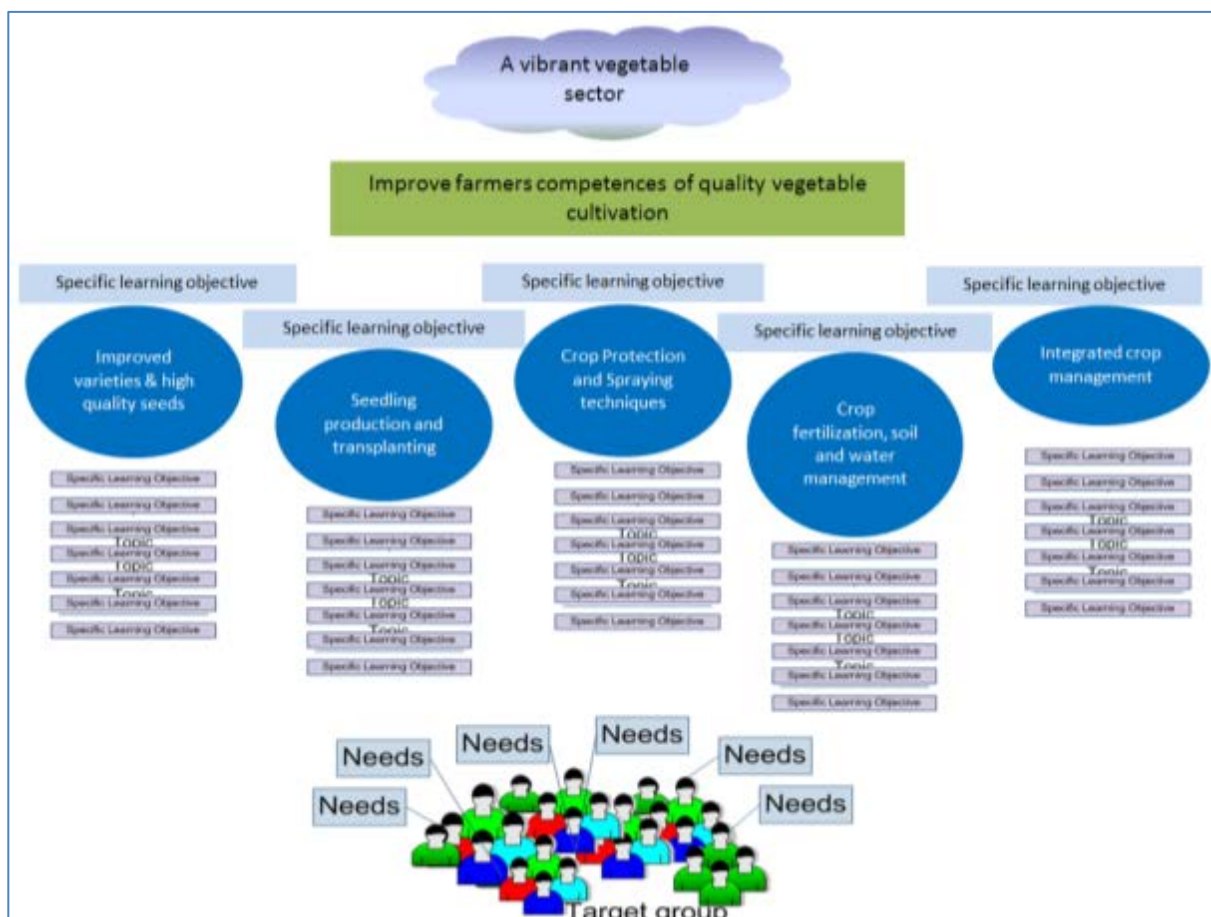
3.1 Vision

In the context of the GhanaVeg programme the vision is: A vibrant commercial vegetable sector. So all the trainings that are developed in this context should contribute to this.

3.2 Training needs assessment

The starting point for the training is understanding the context and learning needs of the learners – why train 200 farmers. For what reason? What do you know about the learners, the farmers? The vision of the GhanaVeg programme is to contribute to a vibrant commercial vegetable sector and training farmers to improve their competences of quality vegetable production is one of the strategies to achieve this. Analysis of the characteristics of potential participants of the trainings and their learning needs provide the basis for the development of the training. Doing a training/learning need assessment, within the context of the current situation (present), is key in addressing the problems and needs of the participants.

Before joining your training participants often ask the question: what is in it for me? Or what do I miss if I am not there? Who else is there? Answering these kind of questions can be done after you have done a good training needs assessment, and the information also helps you to communicate with the farmers who will participate in your training.

When it comes to the horticultural sector, maybe you have observed there is a problem with soil fertility. But through a training needs assessment you can find out:

- Is it a matter of lack of individual knowledge and skills of the farmers?
- Is part of the problem that there is no tradition of fertilizer use?
- Is it a matter of not being able to afford or obtain fertilizer?
- Is it that fertilizer application is an investment with heightened risk in the case of drought?
- Are other contextual factors contributing to this situation?

There are different ways to do a training needs assessment, for example:

- Informal conversations or interviews: it is important to have some key questions in the back of your mind but you can use a semi-structured or unstructured way of addressing the questions. The disadvantage is that it takes a lot of time to ask many individuals
- Surveys or Pre-tests: this is a more structured form of gathering information and even assessing the level of competences. Disadvantage is that participants might feel judged, or the assessment creates a level of stress and demotivates them to participate in your training (feeling of back to school?).
- Observations: very important additional source of information. You can look at the crop performance, pests and diseases, but also at the farmers practice (e.g. is the farmers wearing the right protective gear when spraying), etc. The disadvantage is that observations alone is not enough, you cannot always draw the right conclusions or understand the causes of the problems so you need to combine this methods with some interaction with the farmers.
- Online forums or questionnaire: this can be a relative easy or efficient way to gather information but the disadvantages include the limited access to internet and also a barrier farmers might feel in answering questions before they actually know you or before the programme has started.
- Focus groups or workshops or Matrix & ranking exercise: a nice way to get the priorities of the group and speak to many people at the same time, and also to start building the group.

But disadvantages include that it is already quite a bit of work to organise this, and the output may be influenced by the most dominant people in the group.

- Conversations with other stakeholders: You can also address your questions to for example a representative of the farmers' organisation, or an extension agent, or a research organisation, or inspection body, etc. They can give you their perspective on the problems they see.

Questions you may want to address in a training needs assessment:

- What are the characteristics of the farmers, and what is their current practice?
- Why do you assume the farmers want to participate in your training, what is their motivation?
- What are their problems? Which problems can you solve with training?
- What do they need to get out of the training? What is the capacity gap? Is it the technical knowledge they lack? Is it practical skills they need to develop? Or is there a need for attitude change (for example a resistance to change their traditional farming practice into a more modern way of farming?) And if so: why? (risk management, economic incentives, lack of resources, etc.).
- Organisational issues: how many participants will you get, age, gender, language, etc.
- What is the prior experience of trainees with (part of) subject?

Be aware that by talking with the farmers you might not get all the topics for your training design because people do not know what they do not know. So as an expert in the field of horticultural production you have your own priorities and may also want to put some topics on the training agenda to make people aware of certain things, or to expose them to new technologies, or share innovations.

Problems of farmers in crop protection

- They have limited skills in identifying disease/pest
- They have limited understanding how to select the right pesticide
- Current mode of operation is a problem, using chemicals that no longer work (expired/resistant)
- Wrong chemical application (which, when, dosage, etc.)
- Limited (knowledge about) access to chemicals
- they don't know they are doing the wrong practice (e.g. resistance)
- they don't understand the labels
- Too much focus on the trade name, no knowledge on active ingredient
- Farmers need to improve their standards for export
- MRL & standards: limited market access, and wrong pre-harvest interval
- Health problems
- Lack of knowledge on safety measure
- Lack of developing an overall IPM strategy
- Limited awareness of pollution to the environment
- Dependency on other farmers for information
- Farmers don't know their potential, they could increase their yield

Output from training in Ghana, April 2017

3.3 Overall learning objectives

From the vision and the needs assessment you can develop the overall learning objective of the training.

Learning objectives describe the intended results of the training, they should not be used to describe the content or activity to be covered. What do you want your farmers to be able to remember, understand or do differently after participating in your training programme? The overall learning objectives help to develop well-structured content and ensure it is really targeted.

For example for a training on crop protection, the overall learning objectives could be:

By the end of this training, farmers:

- Can identify the most important diseases and pests and take appropriate measures for control and prevention
- Are able to use pesticides responsibly and effectively
- Are able to adopt IPM principles in crop production

## 3.4 Main topics of the training – the content

When you have established the overall learning objectives, you need to think of the main topics (content) you want to cover. For example, for a training on crop protection: Which main topics do you (at least) want to cover? It is often tempting to make a long list but see if you can also priorities. There is always the dilemma to touch upon many topics quickly, or to address fewer topics in more detail.

For a training on crop protection the following topics could be part of your list:

- Diseases and pest identification
- Crop protection and IPM principles
- Selection and use of pesticides
- Spraying techniques
- Health hazards
- Resistance
- Etc.

The next question is: How will you sequence the content of your training? It is good to first think about the content building blocks of your training module and a logical flow: the main topics and sub-topics you want to cover How much time do you have, a 2 days training or a three weeks training? This will define the overall time-frame.

A very practical way to develop an overall programme is by working with different coloured post-its with each colour referring to a certain type of session. For example green is for content sessions, pink for practical application sessions and yellow for standard sessions (introduction, reflection, evaluation, etc.). Write on post-its the name of the content and activity of the different sessions and place them in a logical flow in your time frame. After doing so you can divide roles & responsibilities as well (in case you work in a team with more than one trainer).
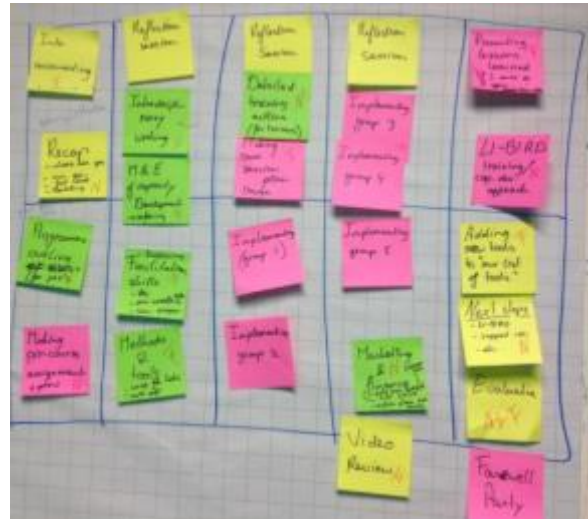
But essentially it is about developing the agenda, the outline of the programme. After the brought outline you can zoom-in and make a detailed session plans

For example:

Day 1 (8:00 am-2:00pm)	Day 2 (8:00am-2:00Pm)
Introduction	Reflection
Crop diseases and pests	Developing IPM principles for farmers
Pests identification assignment	Health hazards associated with pesticides usage
Break	*Break*
Pesticides label reading (identification and techniques)	Application techniques (Field work) General farm management practices
Feedback	
	Evaluation

Or in some more level of detail a programme overview can look like this:

Day 1	Day 2
Opening & introduction Training design: developing a detailed session plan	Agronomy session: Transplant raising
Break	Break
Feedback on session plans Introduction to role play session	November Field Event: Develop demo protocols (4 groups)
Lunch	Lunch
Preparation role play & role play performance	November Field Event: Preparing demo training plan
Break	Break
Role play performance (cont.) Feedback & reflection on role play Recap of adult learning & closing remarks	Feedback & reflection on demo training plan Evaluation Closing Remarks
Closure	Closure

3.5 Specific learning objectives

Once you have identified the main topics you want to address in your training, you need to specify the specific learning objectives for each topic. What do you want your participants to be able to remember, understand or do differently? What skills or competencies do you want them to learn, develop, expand or improve? In what type of learning do you want them to engage? For example recalling definitions and remembering specific content, or applying what they have learned on their own field? Applying procedures, solving problems or something else?

Addressing these questions and developing specific learning objectives will help you to develop well-structured content and ensure it is really targeted, it helps you to guide the learner in the learning process and clarify expectations from the onset; and it helps to establish your evaluation framework.

"If you do not know where you want to go, you easily end up where you do not want to be" (R.F. Mager)

When you develop the specific learning objectives try to use action verbs (see table with examples on page 10), and try to cover all three learning outcome domains as mentioned before: Knowledge, Skills & Attitude (see page 14).

Also remember Blooms Taxonomy and the increasing level of complexity from remembering to creating, and think about which levels you want to address in your training. Try to go beyond the level of remembering / recalling information (knowledge).

The more specific you are, the more it will help you in the detailed training design. You can formulate learning objectives more general, like for example: "participants will have improved skills in identifying pest and disease", but as stated before it would be better if you make it more specific, for example: "participants will be able to (at least) identify the 7 most important pests and the 5 most important diseases". The second example gives you more guidance in your detailed training design, the results you want to get and what to evaluate or assess after the training. Here are some examples:

Specific learning objectives for **Health Hazards -** After the training farmers are:	Specific learning objectives for **IPM principles -** Farmers will be able to:
- Aware of the dangers of using pesticides and the impact on their health (both the person spraying but also 'others'). - know and understand the 5 golden rules why they should use PPE - know the ways of disposing empty pesticide bottles/containers and why it is important (avoidance of environmental pollution & drinking water pollution?)	- State the 5 IPM principles (preventive, cultural, monitoring, non-chemical, chemical) - explain the importance of IPM principles - Determine the extent of pest and disease infestation on a farm (threshold) - Accept and adopt the practice of crop rotation - Justify the use of chemicals on the farm
Specific learning objectives for **Selection of appropriate pesticides -** By the end of the training farmers:	Specific learning objectives for **Pest and disease identification -** After the training farmers are able to:
- Can identify 3 major pests and appropriate (least harmful, specific, alternating) pesticides used to control them (specify which pests) - are able to develop a spaying schedule (including spot-application) - are able to prevent pest resistance - are able to distinguish between trade name and active ingredients - are motivated to read labels and act accordingly (without supervision) - Understand the risks involved in the use of chemicals - Know the PHI of pesticides and when to apply	- identify at least 5 major pest and diseases on cabbage and lettuce - understand the different stages of the life cycle of the pest (egg, larva, insects, etc.) - assess the extent of pest and diseases damage on cabbage and lettuce crop (threshold)

3.6 Monitoring and evaluation of learning

As part of your training design process, it is important to obtain feedback for improvement of the training programme, for planning adequate support and follow-up actions, and for accountability purpose.

There are different moments and different methods to evaluate your training.

When	Why	How
Before training	- To match objectives with needs of participants Done by training coordinator	- Pre-course assignment - needs assessment (see page 17, 18)
During training	- To create and maintain a good learning climate - To improve the learning process (feedback) - To involve participants in steering of the course - To get feedback on training material, learning methods, trainers content etc. Done by participants and trainers (both can evaluate)	- Energy meter (ask how is energy, people put hand in the air: high or medium, low) - Mood meter (smiley's) - Evaluation wheel - Open discussion / questions on flipchart - Discussing with group representatives
End of the training	- To get feedback on organisation and implementation of the course - To assess learning outcomes Done by participants, trainers, training coordinator	- Online survey - Written evaluation (both scoring and open questions) - Evaluation wheel (with stickers or physical, see image below) - 'talking stick' (one round of everybody sharing their point) - Images reflecting their evaluation point - Writing on flipcharts tops and tips - One-Minute Evaluation: At the end of the session, distribute small pieces of paper to each person. Ask participants to jot down: One high point of the workshop, and one low point of the workshop - Writing a letter/post card to yourself
Sometime after the training	- To evaluate impacts on performance on job - To determine cost-effectiveness - To give individual follow-up - To determine requirements for additional follow-up and institutional support Done by training coordinator, supervisor, trainees, clients	Tools are more difficult and context specific! - Qualitative assessment through interviews - Qualitative research - Mailing group / email to group of participants - On farm observation

3.7 Developing a detailed programme

First you have made a broad outline of your training programme and then it is time to build a detailed session plan. In the detailed programme you include the training methods and media you will use and how to make sure your learning objectives are reached. For example in a session on IPM principles: how will you make sure farmers will be able to state the 5 IPM principles (preventive, cultural, monitoring, non-chemical, chemical) and also are able to explain the importance of IPM principles?

It means that you need to plan all the details needed to implement an effective training session which is meeting your learning objectives, having in mind what the learner should be able to do after the session.

A format which can be helpful to make a detailed session plan is like this:

<table>
<tr><td colspan="6">Session plan</td></tr>
<tr><td colspan="4">Session title: Soil fertilisation</td><td colspan="2">Duration: 3 hours</td></tr>
<tr><td colspan="6">Target group: farmers from specific region/commodity/group</td></tr>
<tr><td colspan="6">Session learning objectives:
• participants can explain what is soil fertilisation and why it is important
• participants analyse where they stand with their own farm and how they could improve</td></tr>
<tr><td>Time</td><td>Topic</td><td>Learning objective</td><td>Methods and process outline</td><td>Trainer</td><td>Remarks / materials</td></tr>
<tr><td>8.30</td><td>prep</td><td></td><td>Trainer prepares room and checks materials (toolbox, seating arrangements, drinks, etc.)</td><td>Tim</td><td>Printed materials from the module and pens, etc.</td></tr>
<tr><td>9.00</td><td>welcome</td><td>People feel connected and at ease, start building a network</td><td>Introduction round using an object to introduce why you are here
Explain context of the training and learning objectives for today</td><td>Maria</td><td>Different objects, people can choose one</td></tr>
<tr><td>9.20</td><td>Intro to soil fertilisation.</td><td>People can list the three main aspects of soil fertilisation and can explain why it is important to invest in your soil</td><td>Start by asking who is already familiar, and/or who is already doing soil fertilisation? Ask for their motivation why?

Presentation and demonstration.</td><td>Tim</td><td>Posters</td></tr>
<tr><td>9.40</td><td>Checklist</td><td>People analyse where they stand with their own farm and how they could improve</td><td>Let the participants form duo's and give them a list with example questions (using images) covering three categories (Major must, Minor must, Recommendation – represented by three colours). Together they can go through the list and discuss the current status on their farm.</td><td>Maria</td><td>Example list</td></tr>
<tr><td>Etc.</td><td>Etc.</td><td>Etc.</td><td>Etc.</td><td></td><td></td></tr>
</table>

Using the experiential learning cycle as basis for the design

The length of your session depends on the time available and the objectives you have set. So it can vary between for example 1,5 hour or 3 hours. After 1,5 hours peoples concentration will go down and it might be a good idea to plan for a (coffee/tea) break.

The model to remember when designing your training is the Kolb Experiential learning cycle. This cycle actually gives you different entry point in how to design your training session and how to move with your participants through the content. You don't always have to start with a presentation! Often we start with a presentation and explanation of the topic (conceptualisation), then you give the participants an assignment (experience), and then you facilitate a reflection and feedback session.
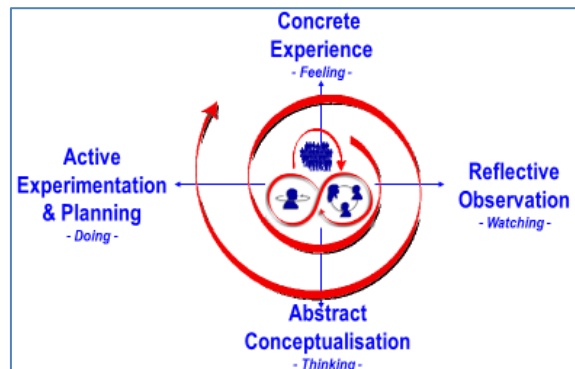
Another option can be to start with reflective observation: first you ask for examples and compare; what is good soil management? Thereafter you draw joint conclusions and give some input on the topic through a presentation (conceptualisation). Next you ask participants to develop a checklist or action plan and lastly they develop/design their own (experimentation).

Another possibility is to start from the Experimentation phase: first you give a checklist and let them experiment, then you compare results (reflect), then you discuss the need and add some theory (conceptualisation).

Last but not least you can also start with a concrete Experience: first you let participants do a concrete assignment: design, role play, etc. Secondly you reflect and compare results/differences (reflection). Then you draw conclusions and add insights from theory (conceptualisation), and lastly you ask them to improve their results by suing the tips and lessons learned (experimentation). The 'activist' in your group will prefer this approach!

When designing the detailed session plans, ask yourself the following questions:

- Is this method most effective in realizing the objective of this training event/session?
- Is this method applicable with the resources available and does it match the participant needs?
- Do I feel confident working with this method?

Even if you develop a detailed plan and think about possible scenarios yet in the end your training will never exactly go according to plan. But it does help you to be very well prepared and adjust your training to the situation at hand!

Developing specific training material for farmers

To support the learning and facilitation during training it is good to have learning material that is developed in line with the training objectives, the content and the learning activities. The level and background of participants should be taken into consideration when developing the material, for example if the farmers can read. One of the easiest and also effective ways is to use pictures and other illustrations/visuals to complement written and spoken instructions, for example in the form of posters, hand-outs, or in a training manual. This can increase attention, comprehension, and make it easier to

recall the message and information. Locally developed illustrations are often easier for low-literacy participants to interpret, it is therefore an idea (if possible) to employ a local artist to develop relevant and locally appropriate illustrations and cartoons or to use, or make photos from the area.

Next to the use of visuals, learning materials can be a collection of for example plant materials, insects, soil samples, pesticide labels, pots to show differences, similarities and for the participants to feel and observe.

Materials should, if text based, be easy-to-read be illustrated with visuals and highlight the most important messages and content. If material will be used for self-study, it can also include short assignments and questions which the participants can do before the next session. E-learning training and material and using mobile phones for information sharing can also support the face-to-face training sessions. This might require more efforts in developing the material and it should be possible for the participants to use.

It is advisable to test and peer-review the material before it is used and distributed on a large scale. Then you have the chance to adapt and improve it and be sure that the level is good and that the illustrations and examples are understood by the target group.

3.8 Practicalities

As a last step for preparing a training, it is important to consider the practicalities, e.g. important logistical preparations and decisions to be made before the training starts. Your detailed session plan will provide with the information need for these preparations..

Selecting the group of participants

When making the training design you have most likely already thought about the target group of the training. When starting to prepare the logistical arrangements for the training it is good to think a bit more about this selection by considering: is it the right number of participants (in relation to training activities, group dynamics and number of trainers)?, are the participants the relevant people (the ones in need of learning about this topic)?, is it the right combination of people with similar level of understanding? Hopefully you also get some further answers when doing a training needs assessment which can help you in making some choices.

Registration and certificates

Registration for the training is a way to keep a record of the persons who participated in the training. The basic information you need is about who is attending the training, where they are from, and how they can be contacted. The record is also useful for contacting people in regard to follow-up activities in the future.

To make the participants feel that they have accomplished something of significance, you can choose to prepare a certificate for each participant that confirms his/her achievement and attendance. When handing

out the certificates you can have a ceremony which marks the end of the training. Depending on the duration, type of training and content you need to see if an official certificate is appropriate.

Informing the participants

Informing the participants on time about what, when, where, and how in relation to the upcoming training is really important and gives a first impression about what the participants can expect. Depending on the target group, you need to decide on what is a good way to inform the participants about the content, the schedule, the location, food, transport and activities. If things are changing, it is also important to inform the participants about the changes, and to be open for questions about the training. Before the training starts you are already building the relationship with the participants and good communication is therefore key.

Season and timing

When training farmers on a certain crop, a certain technique or on a certain growth phase you need to have the season and timing in mind. This is especially important if you want to do field activities during the training. Therefore plan the date/timing of the training in relation to the specific content and activities of your design. For example, if the training is about pesticide use and spraying techniques, it could be better to time this training to just before the farmers will start spraying their crops. If you know that this is too late because they have at this point already bought the pesticides, perhaps the first training moment should be earlier. It is advisable that the knowledge and skills the farmers practice during the training can be applied in the near future.

When using a demonstration field for your training you need to plan the design, the location, planting material, equipment, implementation and management in advance to be able to time the training. It is also good to think of a back-up activity if the field cannot be accessed or is not managed as planned.

Training venue and seating arrangements

When choosing a venue think about what activities you want to do there and how big the training room(s) needs to be, if it is close to the field, how the participants will safely reach and operate within the venue, whether there is electricity (if required), whether you can stick up posters and flip charts on the walls and move the tables and chairs around, and whether food and drinks can be accommodated. If the venue is at the field, make sure there is shadow or sunshade. It is ideal if the venue can be within, or close to the participants' community. If possible in the context, you can ask one of the participating farmers to do the trainings at his/her field and if you have more training moments you can circulate to others farms. However, this is only possible if there is trust, agreements and if it is appropriate for the learning activities. If you want to visit fields or other locations during the training, you also need to plan the transport, possible guide, and be clear about the objective of the visit.


One of the last things to think about with the preparations of the venue is the seating arrangements. How the participants are seated defines how the participants interact with each other and with you as a trainer. You can therefore decide if you want to put the chairs in a u-shape, classroom style, in small seating groups or as a theatre setting etc. You can of course change the seating depending on the different sessions that you have planned for. Sometimes it is good to take away the tables and place the chairs in for example a circle for more in-depth discussion when the participants need to listen to each other. The seating arrangement also depends on the size of the group and the possibilities at the venue.

4   Facilitation

In the first place this manual is developed for trainers. But what does it mean to be a trainer educating adults? Sometimes you will find yourself in the role of teacher, but it is also very important to understand your role as a facilitator and the skills you need to possess.

4.1 Role of the trainer

The **role of Master trainer** differs from a traditional teacher's role. Some of you might be used to a more formal teaching role, giving a lecture in front of the group, or being an extension advisor and talking to farmers individually, giving them the 'expert knowledge'. But now you are also trained to take the role of facilitator enabling that interactive learning can take place. In this role you will ask people to share, to interact, with the aim to foster good group dynamics and create an inspiring learning environment.
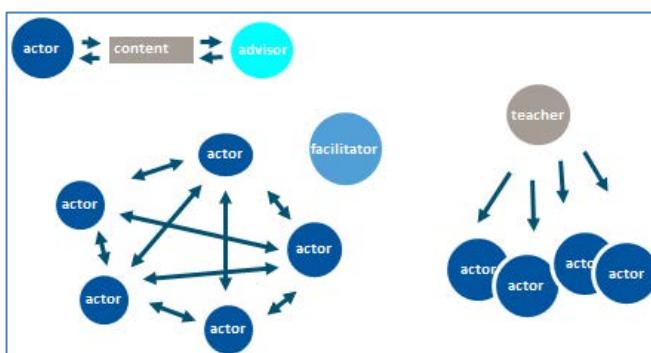
See if you can alternate between the role of advisor, teacher and facilitator.

In the role of trainer, you will depending on the training context most likely alternate between being an advisor, teacher and facilitator. We now want to focus a bit deeper on the facilitation skills that can help you to give a good training, where interaction and peer-learning is important to make the learning effective.

Facilitation comes from the French word 'facile', which means 'easy'; to make easy, to enable, to help participants learn in an efficient and effective way. So in its broadest sense, facilitation is about creating and holding the space in which interaction and learning can take place. It is a special role which demands certain skills and attributes. The capacity to enhance relationships (group activities), enhance interaction (stimulating, safe atmosphere, creating trust), encourage participants in their learning, balance and structure communication, enhance mutual understanding (underlying questions and values) and fostering shared commitment. Sometimes it may include some conflict management as well.

Facilitation is 'to make easy, to enable', to help participants learn in an efficient and effective way

But very practically it also includes management of the time, breaks, energy, and logistics.

Again it is important to think about how you can facilitate interaction in a group. Here are some general guidelines:

Group size	Participation of people
2 – 3	All people will talk

4 – 5	Most people will talk
6 - 8	The most dominant/senior people will talk, some people will be silent
9 - 20	Few people will talk, most people will listen
20+	Few will talk, only some brave ones…?

4.2 Essential skills

To be a good trainer you both need content & process related skills.

Some **essential skills** of a facilitator / Master Trainer include:

1) Listening: the first skill needed is the ability to listen carefully; picking out both positive aspects and problems, difficulties, tensions, and needs. We often make judgments more than we try to understand: Imagine how much better communications would be if listeners tried to understand first, before they tried to evaluate what someone is saying. So listen to learn, and learn to listen. "We have two ears and one mouth so that we can listen twice as much as we speak."

2) Observation: the ability to pick up information and feelings about the situation (the feelings from non-verbal cues).

3) Empathy, sensitivity: to be able to see problems as seen through the eyes of the participants, to be able to detect and understand their feelings, ideas, values.

4) Encouragement: building confidence in the participant by affirming the positive aspects of the work done/behaviour performed, showing appreciation for time and commitment given and by helping them to recognize their learning objectives, thinking out alternative ways of doing things.

5) Helpful questioning: sympathetic questioning that enables the participants to understand the causes of problems, to think through the consequences of certain types of actions, etc.

6) Summarizing/structuring: to be able to summarize information generated by the participants and picking out main problems, sorting out main possibilities and developing concepts and simple models together with the participants.

7) Timing: a sense of timing when to encourage, when to challenge, when to ask questions, when to give suggestions, when to give support, when to summarize, and when to give a break, etc.

8) Flexibility/planning: to be able to create an atmosphere of flexibility, creativity and experimentation, and to act upon it oneself, (in combination with a good preparation), insight in how to develop the learning process, how to use time efficiently, how to organize learning situations in a good sequence without losing focus.

9) Openness/self-reflection: to be open to feedback from the participants about the way we work and to take time to examine our own attitudes, values and ideas.

10) Managing group dynamics: to be aware of the different phases of group development, and to be able to make effective interventions

11) Giving honest feedback: being mindful when observing participants and having the capacities and courage to give them both positive and constructive feedback.

12) Dealing with resistance: Being aware of the resistance, where it comes from and work with it! This means you don't always give in but understand the needs and take a wise decision.

13) Practice what you preach: facilitators are often seen as a role model inspiring their participants by their way of working.

14) Clear instructions for assignment: being very clear in your explanation about the goal of the assignment, the procedure, the time and the output you expect.

15) Facilitating the debriefing: being able to debrief after an activity and facilitate through the different phases of the learning cycle of Kolb, asking carefully selected reflection questions.

If you can't explain it **simply**, you don't understand it well enough.
– Albert Einstein
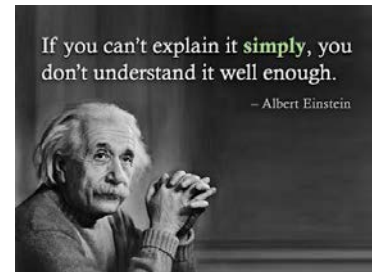
Some general tips for trainers when it comes to content & process skills and tasks:

Process:
- Take into account adult learning principles
- Apply experiential learning cycle (effective learning)
- Accommodate for different learning styles
- Apply different types of learning: knowledge, skills, attitudes
- Take on different trainer roles: advisor, teacher, facilitator
- Active listening skills
- Accommodate for active and participatory learning
- Accommodate for a safe and conducive learning environment
- Provide positive & constructive feedback
- Summarizing / debriefing / structuring information
- Reflection skills
- Flexibility during training
- Managing group dynamics & processes
- Energy management

Content:
- Master technical agronomic principles
- Presenting the technical content clearly, understandable and attuned to your audience
- Ensure uptake of technical knowledge & skills
- Designing and plan an effective training (based on the needs)
- Conduct a needs assessment
- Designing appropriate (practical) exercises & assignments
- Formulate learning objectives
- Evaluate trainings

4.3 Micro skills

There are a number of important micro-skills related to how you communicate to a group, which are very important. These micro-skills can help you to facilitate fruitful group discussions. In this next section we will give some explanation and some examples for each micro-skills.

A) Paraphrasing:

Use your own words to say what you think the speaker said. If the statement is long, summarize it, or paraphrase it from the negative 'them', to the positive 'us'. When completed, look for the speakers reaction .

- *"It sounds like what you are saying….."*
- *"So what you are saying is…."*
- *"You said nobody takes responsibility. So you wish that everybody is motivated?"*

B) Gathering ideas & encouraging

Describe the issue at hand precisely, ask participants to suspend judgment, and shortly name important issues. Reward people for their active participation.

- *"Who else has an idea?"*
- *"A lot of men have been talking, let's hear from some women"*
- *"Let's hear from someone who hasn't spoken for a while"*
- Ask the participants to *"buzzzz"* before answering
- *"Can you say more about that?"*

C) Balancing

The direction of a discussion often follows the lead set by the first few people who speak. Silence does not necessarily mean consent… The facilitator should try to balance this and offer assistance for other opinions.

- *"First think about this questions for one minute individually"*
- *"Okay, now we know the opinions/ideas of three people, does anyone else have different opinions/ideas?"*
- *"Does everyone else agree with this?"*
- *"Are there other ways of looking at this?"*
- *"So, we have heard x and y point of view, is there a third way of looking at this?"*

D) Intentional silence

A short pause of a few seconds can be very helpful. It gives people time to think and reflect on what has said. Five seconds of silence can see longer than it really is. Stay focused on the participants with eye contact and body language. Just stay relaxed and pay attention.

- *"Let's take a minute of silence to think what this means to each of us."*

Of course there are many different styles in facilitation and it is important to develop your own personal style. In the end facilitation is a balancing act!

4.4 How to start your training

The start of a training is very important: in the beginning you set the tone and create the atmosphere – so make sure you generate the right energy! You can do this in your own way but think about it carefully, because it may influence the quality of the rest of the training. Some suggestions on what you can do at the start of this training:

- Be on time and prepare the room or outdoor training setting in the field, create an inviting atmosphere when participants arrive
- Give a warm welcome. Be open and honest about the reason for your visit and how the participants and the entire community will benefit. Share with them why this topic is important to you and any (personal) stories you have about horticulture
- Connecting meeting and greeting (introduction games, learning names, icebreakers)
- Introduce the context and objective (s) of the training
- The specific learning goals (in general or specifically today)
- The programme and timing (in general or specifically today)
- Optional: Learning principles / way of working and a learning contract / ground rules (e.g. mobile phones on silent mode, questions during presentation or afterwards, respect each other's questions, etc.)
- Optional: start with something catchy or surprising to get the attention (picture, statement, challenging question)

You can start by welcoming everyone, thanking them that they found the time to attend this training, a short 'getting-to-know-each other' exercise. You can also ask a few simple questions to break the ice and get acquainted with the group, e.g.:

- Has anyone attended a training or workshop on horticulture before?
- What kind of topics (related to horticulture) would you like to talk about today? What are the questions or issues you struggle with?
- Is there anything else you like to say before we start the training?

Building trust is very important to successfully deliver the message. Participants should have trust in you in order to take to heart the information and advice you are giving them. But they should also feel safe enough to express their questions, doubts and problems. Some tips to help you build trust are:

- Introduce yourself as a person who wants to share ánd learn, not as a person who knows everything and has only come to teach or inform others
- Listen carefully to the participants and give them the opportunity to talk;
- Try not to judge, but appreciate every question ("that is an interesting question / thank you for your questions / very good question, I am sure more people have this on their mind…")
- Act on facts, not on assumptions (e.g. check farmers level of knowledge on horticulture, don't assume they don't know)
- Be self-reflective; critically evaluate your own performance as trainer, and ask for feedback from colleagues and participants
- Acknowledge when you are wrong, we all make mistakes
- Use a sense of humour; humour can make your training more effective, people will enjoy the learning process
- Be flexible and address questions from participants, but keep your focus on the task: to train farmers in vegetable production

4.5 How to end your training - transferability

Harvesting after the training, what do people gain, what is their 'yield' at the end of the training? Already during your training but definitely towards the end of the training it is important to give some time for participants to think about what they will do with what they learned. Because: "If you keep on doing what you always did, you will get what you always got".

Will the farmers go back to their normal routines? Or will you give them some time at the end of the training to make an action plan or think about how they can use what they learned.

> *If you keep on doing what you always did, you will get what you always got*

Repetition helps the brain to keep track and make sense of new information. You can facilitate this by summarizing the key issues yourself, but you can also ask participants do to so, or to come up with the most important things they take home from this training.

Sometimes it helps to give participants a small object to remind them of the training (can be a useful tool for horticultural production, e.g. to measure the ph level in the soil). Or ask them to write down or draw a top ten list of things they want to remember, or three things they want to put into action.

Another way is to send people something a while after the training, as a reminder. You could ask them to write a letter / postcard to themselves at the end of the training which you will send to them after a couple of weeks/month. Or plan a follow-up visit to the farmer to have a conversation about the training application.

Developing a personal action plan (in a appropriate way) is another possibility. And making the action plan 'SMART' can also help:

- **S**pecific – what are you going to do (differently)?
- **M**easurable – How do you know something changed?
- **A**cceptable – Will other people support your actions?
- **R**ealistic - is it doable? Not too ambitious?
- **T**ime – when will you do it?

Another (quicker) way of closing a training and thinking about next steps is by using the 'talking stick': A talking stick (or any object) is passed from one person to the next, around the circle and only the person with the talking stick can talk, the others listen. You can ask the group for example: Please share in one sentence: 'the most important thing (lesson learned) you take home from this workshop' or: one concrete step you will take after this training', or 'your feelings at the end of this workshop summarized in one word' and then give the talking stick to the first person.

You can also ask farmers to discuss in small groups the following questions:

- What is your key learning from today?
- What are you going to apply immediately?
- What is your next step to be taken?
- What support do you need?

5   Training methods – your toolbox

What learning experiences and instructions will enable participants to achieve the desired learning objectives and results? How can you trigger the participants in the beginning and hold their attention? How can you equip participants with the necessary experiences, knowledge, tools and know how? And how can you organize feedback on the performance of the participants? There are numerous tools and methods available. The trick is to find the right tool for the right purpose. Always carefully think about what you are trying to achieve in your session, and what kind of dynamic do you want to create (serious, concentrated or joyful and fun? challenging or safe?)

> The trick is to find the right tool for the right purpose

Overall it is good to facilitate in an interactive, participatory manner because adults like to be involved and share and built on their own experience. Furthermore it will increase the impact of your training because then people remember most.
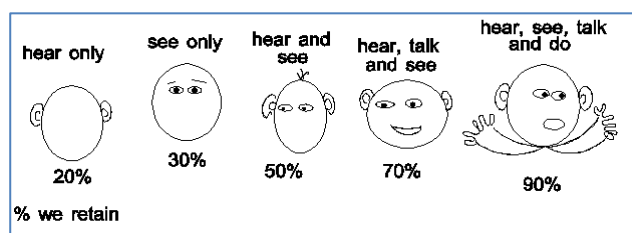
Giving a presentation where participants are just listening is not bad in itself. But there are different questions you may want to ask after your presentation to stimulate some active involvement on the topic and critical discussion or practical application.

Furthermore you can increase the motivation of your participants by choosing the right tools and methods.

Do you include elements of competition? Is the training challenging enough? Is it fun? Be careful that you don't hinder the learning and decrease the trust and sharing.

Some examples of methods:
- Intro with object
- Taking position + ranking
- Plenary inventory/discussion
- (PowerPoint/Poster) presentation
- Card technique and clustering
- Rich picture
- Group work assignments
- Learning journal
- Video clip
- Using a metaphor for reflection
- Carousel
- Giving feedback to each other in team
- Game
- Making a (learning style) test
- Brainstorm
- Mood meter
- Hand-out
- Personal assessment/evaluation wheel
- Plenary presentation of group work
- Recap
- Using metaphor
- Role play or simulation
- Field visit or excursion
- Developing a checklist
- Interactive explanation, built it up (with visuals)

Try also to make it personal: Show something of yourself, share your personal experiences (without taking too much time) and give personal attention to the different participants and connect. Because everything you give attention grows….

And make sure there is some action in your training. Ask questions (that stimulates the brain), put people into movement physically, (do a dilemma walk, or do an energizer. Get people out of their chairs! See for a lot of examples the following guide: 100 Ways to Energise Groups.

And lastly use creativity: Be creative with your methods and materials. You can give people different options or assignments, and participant can

choose the assignment that they find most helpful/useful. Include some surprises, or surprising ways of working. And you can look at the most recent trends in education, e.g. using mobiles phones, or (if internet is available) social media or Youtube (e.g. TED talks).

The important message is that you try to cater for different needs, use different type of methods but in the end choose the methods that fit the purpose of your training.

Develop your own personal toolbox!

You will find a list of methods for inspiration. Please add your own favourite methods and develop in this way your 'personal toolbox'!

Additionally the more practical things like **availability of facilities, time and budget** define or constrain which methods can be used. Time may be a limiting factor so you might have to compromise on the diversity of methods or look for 'quick' alternatives. Instead of a field excursion you may want to use a short video to demonstrate a new technique, or the use of innovative equipment. Or when time is lacking you may skip a group assignment and instead have a brief discussion on the topic by posing a question at the end of each session. If there is budget available, then you could develop a specific new tool for this trainings (e.g. stop-motion video animation).

And lastly the training methods have to match with your own skills, experience and preference as facilitator. Choose the methods you feel comfortable with and where you can use your own qualities. For example if you are very knowledgeable on Integrated Pest Management (IPM), you may choose to give an extensive lecture and use many examples from your own experience, but if you are less knowledgeable on IPM, you may provide more examples from literature and use more interactive methods to draw in the experience from your participants and stimulate the sharing of knowledge.

CDI has developed a portal where you can find 60 tools that have been described: http://www.mspguide.org/tools-and-methods. Furthermore in our trainings we work often with reflection tools at the start of a day to reflect and facilitate learning and 'sense-making' of the previous day input. At the end of this manual you will find more inspiration and recommended resources.

In addition we have also developed a booklet with Reflection Methods. These methods are specifically meant for reflection, drawing out lessons learned, sense-making and future application. but can also be a source of inspiration when it comes to training methods and they can be adapted for your own purpose. You can find this booklet under tool 56, with video examples and some formats. Please have a look at: http://www.mspguide.org/tool/reflection

Additional resources:

The following booklets are useful resources to learn more about training and facilitation. You can follow the hyperlink by clicking on the picture and find the resources online.
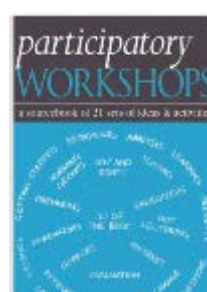
Some interesting websites:

Capacity.org: www.capacity.org

Capacity.org is a resource portal for the practice of capacity development and the home of Capacity.org journal, published two to three times a year. Building on the topics covered in the journal, this website aims to facilitate access to a broad range of related online resources that practitioners can draw on for their own work. Links to ongoing discussions and communities of practice are offered as well.

CDI MSP Portal: http://www.mspguide.org

This portal is part of a platform from the Centre for Development Innovation, part of Wageningen University and Research Centre. The purpose of the platform is to enable practitioners to collaborate and share knowledge, experiences and strategies on Multi-Stakeholder Processes. There are a lot of tips and tools available.

CDRA: http://www.cdra.org.za

The Community Development Resource Association (CDRA) is a civil society organisation, established in 1987, based in Cape Town, South Africa. CDRA is a centre for organisational innovation and developmental practice. It fosters and promotes innovative organisational forms and practices that seek to transform power towards a just world characterised by freedom, inclusion and sufficiency.

FAO Capacity Development Learning Modules: http://www.fao.org/capacitydevelopment/en

Capacity Development is at the heart of FAO's mandate. The Capacity Development Portal contributes to FAO's vision of strengthening the national capacities of its Member Countries to achieve their own goals in the areas of food security and agricultural development. Through its learning resources and learning services, the Portal addresses the needs of individuals in rural communities, in organizations and institutions, and at policy level.

Salto Toolbox for learning: https://www.salto-youth.net/tools/toolbox

This toolbox is created to help you find and share useful training Tools, the Toolbox for training is an online catalogue you can browse through freely or even contribute to!

Tools and Tips for Trainers: Training Techniques: http://www.nfsmi.org/ResourceOverview.aspx?ID=369

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World Bank (2009) Gender and Agriculture Sourcebook

Appendix 1   Example of Session Plan

Different trainers have developed different form and formats to develop their detailed session plans. Here you find an additional format which was used for horticultural trainings.

Perishability of horticultural produce :

Time	Contents of the training	Training methods	Training aids
10 min	Introduction: - Inventory / prior knowledge. - Objectives + working procedure. - Motivation.	Group discussion	White-board or flip-chart + markers
70 min	Contents: - Different factors influencing product quality. - Photosynthesis and respiration. - Absolute and Relative Humidity. - Importance of ethylene in postharvest practices.	Group discussion Lecture	White-board or flip-chart + markers
10 min	Wrap-up / evaluation: Summarize what has been done. Any questions ? Objectives achieved ? Hand-outs.	Group discussion	White-board or flip-chart + markers

The influence of pre-harvest conditions on postharvest quality :

| Time	Contents of the training	Training methods	Training aids
10 min 50 min	Introduction: - Inventory / prior knowledge. - Objectives + working procedure. - Motivation. Contents: - What are pre-harvest conditions?	Group discussion	White-board or flip-chart + markers
	- Influence of the following factors on quality:	Group discussion	
	❖ Environmental factors ❖ Pests and diseases ❖ Variety selection ❖ Cultural practices	Lecture	Laptop + beamer PP-presentation
10 min	Wrap-up / evaluation: Summarize what has been done. Any questions? Objectives achieved? Hand-outs.	Group discussion	White-board or flip-chart + markers

Appendix 2   Gender sensitivity

Of course gender is a dimension we should not overlook and designing and delivering a training. Do you work with a male-dominated group? Or a female-dominated group? Or in other words: Are you working with a minority group? Before we dice into the gender dynamics in training settings, let's first define what we mean by gender.

"Gender is the social attributes and opportunities associated with being male and female, and the relationships between men and women (and boys and girls). Sex is determined biologically; gender is determined by society, so may differ among societies and over time." (source: Mulema, A.A., Snyder, K.A., Ravichandran, T. and Becon, M. 2015.) Gender mainstreaming is about making the concerns and experiences of women and men integral to the design, implementation, monitoring and evaluation of programs / trainings, and ensuring equality of opportunity. And lastly women empowerment: is a process through which women, who are currently denied the ability to make strategic life choices, are enabled to take advantage of equality of opportunity.

The percentage of women in agriculture is in many places in the world higher than that of men (ILO 2006). But female farmers are often undercapitalized, produce under inefficient conditions, and are often invisible in agricultural value chains (Dr. Sachs 2012, Pennsylvania State University).

Important gender issues include: access to land, access to credit and access to education.

Percentage of women and men in agriculture

(Source: ILO, 2006)
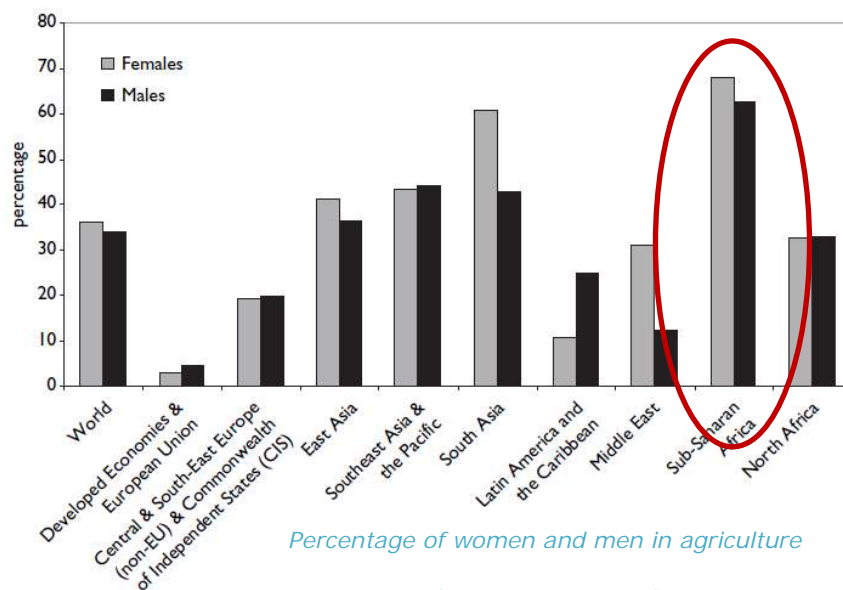
So, although women can play a central role in horticulture and family well-being, they often own few resources and are unable to make decisions over their use. As a result, interventions targeting smallholder farmers frequently fail to address women's needs. If trainings are well designed and facilitated it can provide opportunities for women to voice their needs, and find solutions to the problems they face. But it is not enough merely to invite women to attend the training.

Involving women fully in your training means understanding the situation of women (and men) before you design and start your training (situational/gender analysis), ensuring that men and women prioritize issues separately before trying to find joint solutions (and perhaps pursuing separate initiatives if no joint priority can be agreed), ensuring that women's voices are heard, and employing skilled facilitators who are sensitive to women's issues.

Some constrains that women might face:

- often women are expected to be quiet, respectful and deferential. These ingrained ideas limit active discussion and debate
- With heavy workloads, women may not have the time to participate

- If women do not get a chance to speak, their voices may not be heard, and their views ignored. They may be reluctant to express their views in front of men or people they see as powerful. Small group discussions, games and participatory video can be ways to make the voice of women being heard. Also be mindful about the venue/meeting place for your training: is that convenient for the women to attend? And the visuals you use in your training: do you use only pictures and illustrations of men?

Female empowerment through Farmer Field Schools seems to have potential, hence is a long-term process. In addition, women empowerment in this regard requires more than increased knowledge only as obtained through Farmer Field Schools. Farmer Field Schools can be seen as a participatory tool to incorporate women in horticultural practices, but good gender sensitization is needed. (Seminar proceedings 'Opportunities for women's empowerment through value addition in agri-food chains', CDI 2012).

For more information and further reading, please also look at:

- Agri-Profocus (2012), Gender in Value Chains, Practical toolkit to integrate a gender perspective in agricultural value chain development

- Carr (2008), Men's Crops and Women's Crops: The Importance of Gender to the Understanding of Agricultural and Development Outcomes, in: World Development

- Kabeer (1996), Reversed Realities, Gender hierarchies in development thought

- Laven and Pyburn (2012), Challenging Chains to Change; Gender equity in agricultural chain development, KIT, Agri-Profocus and IIRR

Box 1. Example questions to ask in a gender analysis

- What activities do women and men, boys and girls do in horticulture?
- Where do they carry them out?
- How much of their day is spent doing these activities?
- Who owns or controls the most important production resources?
- Who makes decisions about resource use?
- Do men and women participate differently in horticultural affairs?
- What roles do they have in the wider community?
- What are the norms and beliefs that support the existing roles?

Tools to capture this information include activity profiles, 24-hour activity, access and control

profiles, seasonal calendars and social relations frameworks. (ILRI, 2015)

- Mayoux (2008), Making the strongest link; a practical guide to mainstreaming gender analysis in value chain development, ILO

- World Bank (2009) Gender and Agriculture Sourcebook

Appendix 3   Learning from Farmer Field Schools

In general, Farmer Field Schools (FFS) consist of groups of people with a common interest, who get together on a regular basis to study the "how and why" of a particular topic – in this case horticulture. The FFS are particularly adapted to field studies, where specific hands-on management skills and conceptual understanding is required (based on non-formal adult education principles). Elements that commonly appear in successful FFS programmes are:

The group. A group of people with a common interest form the core of the FFS. The group may be mixed with men and women together, or separated, depending on culture and topic. The FFS tends to strengthen existing groups or may lead to the formation of new groups. Some FFS groups do not continue after the study period. The FFS is not developed with the intention of creating a long-term organisation.

The field. FFSs are about practical, hands-on topics. The field is the teacher, and provides most of the training materials like plants, pests, soil particles and real problems. Any new "language" learned in the course of study can be applied directly to real objects, and local names can be used and agreed on. Farmers are usually much more comfortable in field situations than in classrooms. In most cases, communities can provide a study site with a shaded area for follow-up discussions.

The facilitator. Each FFS needs a technically competent facilitator to lead members through the hands-on exercises, as well as a didactically trained facilitator understanding adult learning principles. There is little formal lecturing. Most FFS do invite subject matter specialists that offer specialised knowledge and explain certain concepts. In many programmes, a key objective is to move towards farmer facilitators, because they are often better facilitators than outside extension staff - they know the community and its members, speak a similar language, are recognised by members as colleagues, and know the area well. The quality of the facilitator is decisive for success. Facilitation skills include well developed social skills to be able to manage the process at different levels well.

The curriculum. The FFS curriculum follows the natural cycle of its subject, so for horticulture the focus is on the soil preparation, crop growth, and marketing. This approach allows all aspects of the subject to be covered, in parallel with what is happening in the FFS member's field. For example, tomato pruning in the FFS takes place at the same time as farmers are pruning their own crops - the lessons learned can be applied directly. All activities are based on experiential (learning-by-doing), participatory, hands-on work. This builds on adult learning theory and practice as mentioned before (section 1.2). Characteristics of the FFS learning process include creating awareness of ecological principles, and self-discovery learning. Each activity has a procedure for action, observation and reflection, analysis and conclusions, and finally decision making and planning for a next action. The emphasis is not only on "how" but also on "why". Experience has shown that structured, hands-on activities provide a sound basis for continued innovation and local adaptation, after the FFS itself has been completed. It is also one of the main reasons that farmer facilitators can easily run FFSs - once they know how to facilitate an activity, the outcomes become obvious from the exercise itself.

Activities are often season-long experiments (although for soil fertility trials this period might be several seasons). Other activities in the curriculum include 30-120 minutes for specific topics. Icebreakers, energisers, and team/organisation building exercises are also included in each session. The curriculum of

many FFSs is combined with other topics. In Kenya, for example, the FFSs follow a one-year cycle including cash crops, but also special topics on nutrition, HIV/AIDS, water sanitation and even literacy.

The programme leader. Most FFS programmes exist within a larger programme. It is essential to have a good programme leader who can support the training of facilitators, get materials organised for the field, solve problems in participatory ways and nurture field staff facilitators. This person needs to keep a close watch on the FFSs for potential technical or human problems. They are also the person likely to be responsible for monitoring and evaluation. The programme leader must be a good leader and an empowering person. He or she is the key to successful programme development and needs support and training to develop the necessary skills.

Strengths. The development of FFS has shown a number of observable strengths, which include:

- High impact in the way of learning among farmers who appreciate the approach;
- Strengthening the cohesion of pre-existing groups, providing a platform for possible capital accumulation (for a group as a whole as well as among its individual members);
- Increasing the confidence of group members (including women) to discuss in a public forum, present information to the group and interact with others outside the group on aspects of the group's operations;
- Diffusion effect through the support given to field school graduates to function as farmer facilitators, beginning work with new groups in their locality (especially when the participants of a FFS are regarded as representatives of a community);
- Farmers may become better and more active experimenters themselves
- FFS help farmers to make better use of the available resources;
- FFS can be a platform for participatory forms of farming technology development;
- Field Schools have increased farmers' appreciation that technical learning has a value.

Weaknesses. The FFS approach has also a number of weaknesses and gaps to its' implementation, which need attention if principles of the FFS approach are being used:

- Narrow scope of Field Schools. Crop growth can be a good entry point for many of the Schools, but others areas of farmer demand need to be explored as well, especially in the area of marketing, and savings and credit;
- Costing and Financing. Often Field Schools are highly dependent on Government or donor budgetary support. There is a need to strengthen internal financing so that large-scale extension programmes can be implemented.
- Responding to growing farmer demand. Farmer demand for Field Schools can increase rapidly, and farmer facilitation of the FFS groups appears to offer a promising way to facilitate up-scaling. The approach is based on providing one week's training in facilitation skills to farmers who have been a member of a Field School themselves. Farmers have shown to be keen to become a facilitator, as it enhances their social status;
- Impact monitoring. One area in which FFS have to invest is in monitoring and evaluation of the inputs, outputs and impact. More emphasis needs to be given to developing a good monitoring system.

Final word. Farmer Field Schools are not difficult or mysterious. They are meant to empower through education on skills and concepts (how's and why's) and therefore require an empowering environment. The basis for a successful FFS starts with the programme's culture of operation - from a good programme leader and good facilitators, to transparent budgets and open management. FFSs are not difficult to set up if there is a commitment to, and faith in farmers' and facilitators' ability to learn locally and apply learning to local problems themselves. Very important here is to align with existing extension services and start a participatory process with other relevant institutions, and to let them make the shift towards a fundamentally different approach in extension and learning, in such a way that they have the feeling that they invented the change themselves. References used and for further reading can be found at the end of this manual.

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