



Case study reports: Belgium CS2



AgriDemo-F2F has received funding from
the European Union's Horizon 2020
Research and innovation program under
grant agreement No 728061

1. Background

Programme

The demonstration was an outcome of the operational group guided by Inagro on Controlled Traffic Farming (CTF) in organic farming. Inagro, a research and advisory centre in the West of Flanders, took the initiative for the Operational Group. Advisers from INAGRO have had several talks about CTF with individual farmers and machinery suppliers in recent years. In 2016, INAGRO implemented CTF on its own organic research farm. The formation of an Operational Group was the natural next step for the group to make.

Benefits of CTF have been proven in research and practice in recent years: controlled traffic lanes prevent soil structure damage and soil compaction in the seedbed between the tracks. This results in optimal growing conditions for soil-life and roots and better water storage capacity of soils. CTF also benefits mechanical weed control as fields are earlier accessible and there are no tracks in the seedbed. While these benefits are favourable for organic farming practices, lock-ins make the implementation on farm level not so easy and especially the feasibility for medium sized farms is questioned. In the Netherlands, several arable organic farmers successfully apply permanent CTF. In Belgium, this is not the case yet, but some farmers got inspired and are interested. They are at the base of this Operational Group.

The experiences of 4 cases in this operational group and current knowledge is synthesised in a report to inspire other colleagues and will be disseminated by means of a demonstration moment, some networking meetings and publications in written or digital agricultural press. As a main outcome, this project should make CTF more accessible and common in Flemish (organic) agriculture. This demonstration is an outcome of this operational group.

Funding and Governance

The Operational group is supported by the EU Rural Development Programme and the Flemish government. Participants also pay a small contribution themselves.

Since November 2015, professional users of crop protection products have to obtain a 'fyto license'. To extend this license automatically, the users have to attend a certain amount of training sessions. This demonstration counted as one of these training sessions, so attendees could register if they needed to follow the session for their 'fyto license'.

Actors and networks

About a 100 farmers, researchers and advisers attended this demonstration, organised by INAGRO and supported by the operational group in organic farming they are leading. The main target group were organic and non-organic farmers, to spread the knowledge on organic possibilities in weeding. This was a one-off demonstration.

Event Farm and location

The demonstration was organised on a farm situated in the western part of Flanders. In the past, the farm had mainly pig production activities, but has now converted to organic farming, and main activities are now arable farming and agro tourism. The farmer cooperates with his son, who has an organic dairy farm nearby. This demonstration was the first of its kind to be organised on this farm (organised by an experimental research centre), but the farm has previous experience with open farm days.

Event date: June 2018

2. Method

In line with the Methodological Guidelines, three main data sources are used: a background document and interviews at Programme and Farm level to analyse structural and functional characteristics, and event tools and surveys to analyse event level participation and learning, as follows:

1. A background document for every case study was completed by the AgriDemo-F2F partner who carried out the case study.
2. Interviews with representatives of Programme (Level 1) and Farm level interviews with demonstrators/hosts (Level 2) to reveal how the functional and structural characteristics enable learning. Analysis is reported in Sections 3 and 4. Data is sourced from interviews with 1 Programme member and the host farmer, who were interviewed in June 2018 (not on the same date as the event). The analysis followed 5 themes: (1) Coordinating effective recruitment of host farmers and participants, (2) Developing and coordinating appropriate interaction approaches, (3) Planning, designing and conducting appropriate demonstration processes, (4) Enabling learning appropriate to purpose, audience, context, (5) Follow-up activities.
3. Event tools and surveys (Level 3) to reveal peer to peer learning processes. Event details and analysis is reported in Section 5. This data is sourced from 26 pre and 20 post demonstration surveys for participants, 1 pre and post demonstrator survey, a post demonstration host farmer interview and an event observation tool completed by an observing researcher. This data is mainly used for the analysis of learning processes and learning outcomes related to the specific event and overall comments on the effectiveness of the event.

Finally, partners reviewed the case study reports to prepare their workshops with different stakeholders related to the case studies. These workshops aimed at validating the data presented in the case study reports. For the Belgian and Dutch cases, a workshop was held on the 9th of November.

3. Structural characteristics

T1: Programme/network level

1. The main organisations involved in the demonstration activities and their roles

Inagro

Inagro, a research and advisory centre in the West of Flanders, is the main initiator and organiser of the case study demonstrations. As a research institute they apply and run several projects in which they involve their advisory board and/or the operational groups they guide. The specific demonstration was an outcome of such a cooperation with an operational group, through which they promote Controlled Traffic Farming (CTF). CTF processes were first implemented on Inagro organic research farm and thereafter the operational group have been formed.

The projects' that Inagro run, usually determine the overall demonstration topic. Topics are mainly decided by Inagro's advisory board, in which farmers are represented as well as Inagro's staff who are experienced in the field. This allows for demonstration topics to coordinate to current needs and interests. Decisions are usually made in an annual or biannual meeting where farmers and additional/supporting people also take part.

Inagro has an active role concerning demo advertisement and participants' engagement using information newsletters. Inagro also requests some kind of feedback and evaluation in a verbal and informal way, through related questions and discussions. Inagro also publishes and offers some kind of follow-up materials after demos to the participants, such as flyers and brochures. Thus, Inagro plans, designs and organises these demonstration activities. The host farmers and other partners also contribute to these processes. Sometimes they also invite demonstrators from the supply chain. This was the case in the specific demonstration event.

Q: How is the programme/network managed? A: The way I see it as head of the division, I'm a central figure in this whole system. We also have a technical advisory board, in which farmers are represented. They guide the programme with us. This demonstration day was also organised as part of the operational group. (Programme interviewee)

Q: Are participants targeted in demo recruitment? A: Always. Now we aimed not to specific, farmers from every sector were welcome, because it's also relevant for them. It was made known through our newsletter (from Inagro). Sometimes we focus more on for example smaller groups of organic farmers only. (Programme interviewee)

Q: How are demonstration topics selected? A: Yes, well we have the advisory board, we have the operational groups, also when the Flemish government spreads calls for projects, and then we look if we have something that fits. So these are some triggers from practice to process and put in a proposal for a call. And then it 'starts its own life'. So actually it's both bottom-up and top-down. (Programme interviewee)

Q: Do you request feedback from demo participants? A: Yes. Well not enough actually. Now I didn't do it because I was busy with other stuff and you were walking around with your forms. So I'm very curious what feedback you guys are getting. We also did it before by spreading a feedback form, but that didn't give us much to work with. Usually I do it verbally in informal settings, but of course that doesn't give a global idea. (Programme interviewee)

Q: Do you evaluate the demonstration activities overall? A: No. Not structurally, sometimes we ask some stakeholder what they thought from an activity. But for example it is not the case that we evaluate with the advisory board at the end of the year how all projects have been, we don't do that no. (Programme interviewee)

Q: Are follow-up materials made available to participants after demos? A: Yes. Flyers and brochures yes, they all know our website.

Q: What materials are provided during demonstrations? A: Inagro provided leaflets and stuff like that (Host farmer)

Q: How are the demo activities on the farm managed? A: Inagro asked me and I said yes. They did most of the organisation, I just opened up my farm, a barn for drinks afterwards and prepared a piece of the field for the machines to show the weeding. (Host farmer)

Q: Who are the main people involved in the demonstration activities and what are their roles? A: well the organiser from Inagro who did the talking, and invited the machine demonstrators. There were some other people from inagro to assist with the registration and the drinks afterwards and they put arrows on the street. Me I just presented myself and the farm, and opened up my farm and field. (Host farmer)

Q: Are participants (farmers, advisers, researchers etc.) involved in the overall development of the demonstrations? A: Yes. It was organised in dialogue between me and the organiser from inagro and the machine builders; I believe participation from farmers is important, but this demo was good I think. Everybody could see something useful for his or her farm. Sometimes I think there are too many 'public servants' during the demo's, they make a nice daytrip out of it, because they get paid to be there... So it should stay focused on farmers, demonstrations. (Host farmer)

Q: How do you identify/select relevant topics that will interest farmers? R: Yes, actually, the operational group is the result of an interest we experienced from the farmers. The operational group exists because of the need for information about weed control. So this was actually obvious. Within Inagro, these things get decided. Partly by the advisory board, but also from other people working at Inagro, what do we experience when we go out in the fields? And in that way we decide what we are able to do this year and what are current issues? Hanne: So are there farmers involved in this advisory board or how this that work?

It's an annual meeting, or 2 times a year, with mostly farmers, with some supporting people. (Programme interviewee)

The operational group

As already mentioned Inagro formed and guides an operational group and through this collaboration the Controlled Traffic Farming CTF are promoted. The operational group consists of 10 farmers and is active since 2 years. The operational group contributes to the adaption of the topics to farmer's interests. Finally the operational group members' sometimes involve other businesses/farmers in relation to the issues promoted through the demonstrations and in that way they contribute to the post-demo engagement of participants.

Our farmer who hosted this demo, he was part of an operational group of 10 farmers who were searching to optimise. The machines are all expensive. They were looking how they could maybe organise them together to buy a machine. I think our farmer was one of the more curious ones. I think the farmer who hosted didn't expect the organisation to be involve so many farmers on his field, but in the end he looked positive on this experience I think. (Programme interviewee)

Q: How do you identify/select relevant topics that will interest farmers? A: Yes, actually, the operational group is the result of an interest we experienced from the farmers. The operational group exists because of the need for information about weed control. So this was actually obvious. Within Inagro, these things get decided. Partly by the advisory board, but also from other people working at Inagro, what do we experience when we go out in the fields? And in that way we decide what we are able to do this year and what are current issues? Hanne: So are there farmers involved in this advisory board or how this that work?

It's an annual meeting, or 2 times a year, with mostly farmers, with some supporting people. (Programme interviewee)

Q: Do you - at the programme level - continue to engage participants after the demonstrations? A: Yes. Yes, it happens that the operational group moves on with other business. It happens when we

organise a demo, we look at the farmers that are present, if we still need a demo field for example, we go talk to some farmers who show interest. It is not structural, but we do talk about that during demo's yes. So yes that happens. (Programme interviewee)

Q: What are the funding arrangements for your demo activities? How do these impact on the lifespan of the farm demo? R: This demo day was part of an operational group, so this is funded by the Flemish government and the European Union, and a little part by Inagro. The operational groups exist for 2 years. Most other projects involving demonstration also take about 2 years, which is somewhat mainstream. (Programme interviewee)

The host farmer

Host farmers seem to be involved in the development of the overall demonstration programme through their representatives at Inagro's advisory board or if they are regularly part of the operational groups that Inagro cooperate. The specific event's host farmer stated that he/s was not involved in the overall development of demos at the programme / network level (Host farmer). As already mentioned, Inagro is the main initiator and organiser of the case study demonstrations. According to the Programme interviewee host farmers are sometimes involved in the development of the individual demonstration activities, mainly by providing their farms and through consultation/discussion which always takes place before a demo event. In the specific case study, the Host farmer simply provided its farm's facilities and prepared a part of the field for the machinery demonstration.

Q: How are the demo activities on the farm managed? A: Inagro asked me and I said yes. They did most of the organisation, I just opened up my farm, a barn for drinks afterwards and prepared a piece of the field for the machines to show the weeding. (Host farmer)

Q: Who are the main people involved in the demonstration activities and what are their roles? A: Well the organiser from Inagro who did the talking, and invited the machine demonstrators. There were some other people from inagro to assist with the registration and the drinks afterwards and they put arrows on the street. Me I just presented myself and the farm, and opened up my farm and field. (Host farmer)

Q: Are host farmers involved in the development of the individual demonstration activities? A: Always. It could be more, but of course it's their farm so we can't work without a dialogue with him. (Programme interviewee)

Q: Are you involved in the overall development of demos at the prog / network level? A: No. They contacted me this one time and I said yes. (Host farmer)

Q: Are host farmers involved in the development of the overall demonstration programme? A: Sometimes. Through the advisory board 1 or 2 times a year where farmers can have their say. Or since they are regularly part of the operational groups, they are involved somehow. (Programme interviewee)

Q: Are participants (farmers, advisers, researchers etc.) involved in the overall development of the demonstrations? A: Yes. It was organised in dialogue between me and the organiser from inagro and the machine builders; I believe participation from farmers is important, but this demo was good I think. Everybody could see something useful for his or her farm. Sometimes I think there are too many 'public servants' during the demo's, they make a nice daytrip out of it, because they get paid to be there... So it should stay focused on farmers, demonstrations. (Host farmer)

Audience/type of participants

The intended audience of the demonstrations according to the Programme interviewee and the Host farmer are mainly active farmers (conventional/organic) of the horticulture, vegetable production, cattle and livestock farming sectors. Sometimes demos' participants are further engaged if they are interested and fit

with the overall demonstration goals. In most cases mainly farmers as well as researchers from ILVO or INAGRO or from other schools typically attend the demonstrations activities organised by Inagro.

Q: Who is your intended audience? Yes, of course the active farmer and horticulturist. R: About supply chain and sales market. We are mostly active in horticulture, vegetable production, cattle and livestock farming. Actually that is pretty broad yes. (Programme interviewee)

Q: Who is your intended audience: (not relevant since it's the first time since they turned organic a couple years ago, and it's organised by external organisation; but 'farmers', conventional and organic, could be a relevant answer) (Host farmer)

Q: Do you - at the programme level - continue to engage participants after the demonstrations? R: Yes. Yes, it happens that the operational group moves on with other business. It happens when we organise a demo, we look at the farmers that are present, if we still need a demo field for example, and we go talk to some farmers who show interest. It is not structural, but we do talk about that during demo's yes. So yes that happens. (Programme interviewee)

Q: Who typically attends your demonstrations activities? A: most of them are farmers, and there are also some researchers from ILVO or INAGRO or from another school. I think about 4/5 are farmers. (Host farmer)

Machinery suppliers

As stated earlier, Inagro sometimes invites for cooperation machine demonstrators from the supply chain. In those cases these machinery suppliers are involved in the overall development of the demonstrations.

Q: Are participants (farmers, advisers, researchers etc.) involved in the overall development of the demonstrations? R: Yes. It was organised in dialogue between me and the organiser from inagro and the machine builders; I believe participation from farmers is important, but this demo was good I think. Everybody could see something useful for his or her farm. Sometimes I think there are too many 'public servants' during the demo's, they make a nice daytrip out of it, because they get paid to be there... So it should stay focused on farmers, demonstrations. (Host farmer)

Inagro, a research and advisory centre in the West of Flanders, took the initiative for the Operational Group. Advisers from INAGRO have had several talks about CTF with individual farmers and machinery suppliers in recent years. (Background info).

2. Networks

Inagro is a well-connected research centre with other knowledge exchange organisations, such as several agricultural organisations, processing actors, supply chain actors, advisory entities, ILVO etc.

the specific event's demo farm is part of a programme /network guided and run by Inagro (the operational group is considered as a network). The Host farmer also seems to be well connected to several organisations. He holds an elected role in Boerenbond, he is member of the provincial chamber for agriculture and chairman in the environmental board of his town. Finally, he has stated that he is pretty well connected with Inagro who organised the demonstration event on his farm.

Q: To what extent is the network/programme connected to other networks/programmes in your country or even internationally? R: Well, we are connected with agricultural organisations, processing actors, supply chain, advisory, ILVO, so we are pretty close to the field. The network is really important. (Programme interviewee)

Q: To what extent is the demo farm connected to other demo farms and/or other knowledge exchange organisations? A: I'm part of Boerenbond and I have connections within Inagro (organiser of the case study demo), I was chairman for 20 years there, but 2 years ago I passed it on. Now I am

still a board member there. I'm also in the provincial chamber for agriculture and I am chairman in the environmental board of my town. (Host farmer)

Q: Is your demonstration farm part of a programme or wider network (e.g. LEAF)? A: Yes. Inagro. (Host farmer)

3. Resources, finances and incentives

The demonstrations organised in the frame of the cooperation between Inagro and the operational group are mainly funded by the EU Rural Development Programme and the Flemish government, while Inagro also pays a small contribution to hold demo days. Moreover Inagro offers a small but decent compensation to farmers to host demonstration activities in order to compensate for their time devotion and possible field "damages".

Q: What are the funding arrangements for your demo activities? R: How do these impact on the lifespan of the farm demo? This demo day was part of an operational group, so this is funded by the Flemish government and the European Union, and a little part by Inagro. The operational groups exist for 2 years. Most other projects involving demonstration also take about 2 years, which is somewhat mainstream. (Programme interviewee)

Q: Do you offer any incentives to farmers to host demonstration activities? R: Yes. We try to provide a decent compensation. Because there's always some damage to a demo field and they have to put time in the organisation. It's definitely not a big compensation. If it's a small group who comes to the farm, it might not always be necessary, but in this case I believe it definitely was. (Programme interviewee)

Q: What are the funding arrangements for your demo activities? R: How do these impact on the lifespan of the farm demo? I got some compensation from Inagro. It was a onetime thing for now. (Host farmer)

4. Goals / objectives

Inagro intend through the organisation of demonstration activities to diffuse research results and knowledge to farmers, with a focus on organic farmers. This helps organic farming move forward but also make conventional farming more sustainable. The specific event has been organised in order to show possibilities of mechanical weeding to a wide audience (conventional and organic farmers).

My goal coming from Inagro is practice research to advisory. To give more knowledge to the farmers. I think in short this is the goal of Inagro. I focus on the organic farmers. Providing farmers with knowledge on organic agriculture. Helping organic agriculture moving forward and enhancing. Weed control is a big part of that. And also yes, from my experience in organic cultivation, aiding to develop conventional farming towards more sustainable farming. (Programme interviewee)

T2: Farm (event) level

The event took place in June, 2018. The farm is situated in the western part of Flanders. In the past, the farm had mainly pig production activities, but has now converted to organic farming, and main activities are arable farming and agritourism. The farmer cooperates with his son, who has an organic dairy farm nearby (Poster).

1. Actors' role

Attendees

Approximately 80-100 participants attended the demo event; 26 of them were interviewed (Observation tool). Nine out of ten participants (89%) worked in the local area (Pre demonstration survey participant). The vast majority (89%) of those interviewed were (organic and conventional) farmers with the rest being researchers, teachers and advisers. (Pre demonstration survey). Six out of 10 (58 %) participants felt actively

or very actively involved during the whole demonstration process (Post participant's survey). According to the available data participants did not seem to have any specific role during the demonstration.

Adviser and Demonstrators

The actual demo event was in the hand of the Inagro adviser. He made a short introduction, and guided the tour to on-field demonstration of some 8 machines in the field. The adviser guided the demonstration of the different machines by explaining them and showing the difference between them. He then introduced the (companies') demonstrators and let the demonstrators speak one by one on their machines. (Observation tool). The adviser also acted as a facilitator; however during the tour participants did not engage into any guided discussion.

Host farmer

The host farmer did not have any active role during the demonstration event. He provided the field and an empty shed for a drink afterwards, but didn't talk in front of the audience apart of a few minutes of introducing himself and his farm. The host farmer has limited experience in hosting demonstrations in his farm (Observation tool).

Q: Who are the main people involved in the demonstration activities and what are their roles? A: Well the organiser from Inagro who did the talking, and invited the machine demonstrators. There were some other people from inagro to assist with the registration and the drinks afterwards and they put arrows on the street. Me I just presented myself and the farm, and opened up my farm and field. (Host farmer)

2. Practice/technology demonstrated

The main topic of the demonstration day was the mechanical weed control in maize in the frame of Controlled Traffic Farming (CTF) in organic farming context (Observation tool). The benefits of CTF have been proven in research and practice in recent years: controlled traffic lanes prevent soil structure damage and soil compaction in the seedbed between the tracks. This results in optimal growing conditions for soil-life and roots and better water storage capacity of soils. CTF also benefits mechanical weed control as fields are earlier accessible and there are no tracks in the seedbed. The specific topic was jointly decided by Inagro's researchers and the technical advisory board, consisting partly of farmers. Some eight different new types of machines for mechanical weed control have been demonstrated for the mechanical weeding in maize by the respective companies. The machines were shown on a part of the maize field of the host farmer (Observation tool).

The on-field demonstration allowed participants to see the machines in action, and evaluate them in a working context. Direct comparison between the different machines was possible (Observation tool).

3. Frequency

The specific demonstration was a one-off event because of the nature of the topic and the context (Poster).

4. Farms' infrastructures or arrangements

The Host farmer prepared a barn for drinks after the end of the demonstration.

Q: How are the demo activities on the farm managed? A: Inagro asked me and I said yes. They did most of the organisation, I just opened up my farm, a barn for drinks afterwards and prepared a piece of the field for the machines to show the weeding. (Host farmer)

5. Accessibility

Both programme and Host farmers stated that the travel time to a demo farm is an important factor that would discourage people from attending a demonstration. The travel time of participants to reach the demo

farm, ranged from 5 to 120 minutes, with an average time close to 40 minutes approximately half of participants (46%) rated their travel effort to participate as very little or little effort. Another proportion of 31% of participants rated their travel effort to participate as quite some effort. Finally 23% of participants rated their travel effort to participate as great effort or greatest possible effort (Pre demonstration survey participant). . It is not clear if the effort rate is related only to the travel distance as the effort ratings were not always proportional to the travel distance. Maybe other factors influence the effort rate i.e. participant's motivations, free time etc. (Pre demonstration survey participant).

Q: What do you think discourages people from attending demonstrations? A: If it's too far away for them maybe. Or if it's too busy on their farms. (Programme interviewee)

Q: What do you think discourages people from attending demonstrations? A: the location, if it's too far. (Host farmer)

6. Fees for participation

Participants did not have to pay a fee to attend the demonstration. Moreover, none of the participants had received any financial compensation for his attendance (Post participant's survey).

4. Functional characteristics

T1: Coordinating effective recruitment of host farmers and participants

1. Incentives

In this case, the host farmer received compensation from the network. The Programme Interviewee described the funding arrangements for the programme/network:

This demo day was part of an operational group, so this is funded by the Flemish government and the European Union, and a little part by Inagro. The operational groups exist for 2 years. (Programme Interviewee)

Funding did not extend beyond compensating hosts.

We try to provide a decent compensation. Because there's always some damage to a demo-field and they have to put time in the organisation. It's definitely not a big compensation. If it's a small group who comes to the farm, it might not always be necessary. (Programme Interviewee)

2. Motivations for host farmers

In this case, the Farmer was motivated by a strong desire to 'spread the word' for organic farmers.

I can stand up for the fact that I'm an organic farmer. It's still regarded as a little odd. It's getting better, but still. I think farmers should be more open with that, that is my main reason. Today I dare to stand up for the fact that I'm an organic farmer, before I didn't dare to stand up for that. In the past people would look at you weird. (Farmer)

According to the Programme representative, hosts – relating to this case study – were particularly motivated by a desire to assist develop/improve organic farmers. He also offered some more general motivations.

Programme Interviewee: The organic weed control techniques have developed a lot the last years. The average farmer doesn't know enough about this yet. So the demand is there and also the organic farmers are looking for the best ways, we have a lot of new organic farmers.

Interviewer: And in general, apart from this demo? Why do farmers host demonstrations?

Programme Interviewee: I think because they also are proud somehow to show what they are doing, and they want to contribute a little bit to the idea.

3. Motivations for participants

The Farmer felt the opportunity for participants to get access to expensive or innovative machinery was a key motivation.

The machines [...] the farmers can see how they work and if they want to buy it themselves or with a group of farmers. (Farmer)

The Programme Interviewee talked more broadly about motivations for participants; he noted how demonstrations were providing much needed knowledge on important developments in organic farming. He also suggested there was interest from conventional farmers due to tightening legislation.

We also have some new organic farmers who are looking how they can organise themselves, also the conventional farmers are curious (because of the stricter legislations). (Programme Interviewee)

Participants themselves stated as main motivators to attend the demonstration: information on the purchase of a new machine; to keep up to date; to know more about organic farming; to know how to combine with something that works myself; support organic farming; interest; gather knowledge for own business; use less spraying; see the machines.

4. Target audience

The target audience for the demonstration events is made up mostly of organic farmers, but this can also extend to conventional farmers and researchers, and even extends into the supply chain and sales market. Participants are invited via Inagro whose overall aim is to promote a product/chemical-free method of weed control, in line with recent tightening of legislation.

5. Advertising and recruitment

The Farmer stressed the importance of having enough advertising for demonstration events. The importance of a clear and personalised invitation was also highlighted by the Programme representative.

I believe so yes, a clear invitation, a clear programme, and somehow 'individual' meaning that it is in the specific newsletters. (Programme Interviewee)

It was also clear that exploiting or responding to gaps in knowledge – or problems faced by – burgeoning organic farmers (as well as conventional farmers concerned about legislation changes) was a good way of recruiting farmers.

T2: Appropriate demonstration and interaction approaches

1. Involving farmers in the learning process and the demonstration programme

According to the Programme Interviewee, the approach to providing demonstration activities across the network was 'Mostly top down'. Whilst the network had an 'operational group', made up – in part – of farmers who had some input into the programme design and demonstration activities, demonstration topics were decided on by the Flemish government who announce specific project calls. The operational group have some input into what projects they take on and shaping exactly how they are delivered. For this reason, the Programme Interviewee felt the approach was a mixture of bottom-up and top-down.

Yes, well we have the advisory board, we have the operational groups, also when the Flemish government spreads calls for projects, then we look if we have something that fits [...] So actually it's both bottom-up and top-down. (Programme Interviewee)

With reference to the case demonstration topic, the Programme Interviewee described the topic's inception:

Programme Interviewee: We said to the farmers, it's the photo machines. But the farmers from the group were also interested in weed control machines. So that's how the combination came up: camera controlled weed control machines.

Interviewee: Are you happy with this approach? Or would you rather do it differently?

Programme Interviewee: Well, I'm happy with how the day went yes, but let's say... for me the farmers could have been more actively engaged. But when we look at the attendance rate we had, maybe the group was too big for that.

In the case of this particular farm demonstration, the Host Farmer was not interested in leading the session, but was happy to 'open up the farm'. As a consequence it was more top-down than perhaps other demonstrations in the network.

2. Focus and Design

The Farmer and Programme Interviewee disagreed on the focus of the demonstration network. The Farmer felt their focus was '**In between**' 'Whole farm' and 'Single focussed', whereas the Programme Interviewee felt they were more '**Single focussed**'.

The Farmer also described the demonstrations design as '**A mixture**' of 'Experimental' and 'Exemplary', whereas the Programme Interviewee felt they were more '**Exemplary**'. The Programme Interviewee felt that an emphasis on the innovative and new was important, whereas the Farmer expressed a preference in a mixture of both elements.

3. Group size

The nature of this demonstration (machinery-oriented) was key to determining the optimum number. Both the Farmer and the Programme representative felt that machinery demonstrations could cater for hundreds of people (between 100-200), but they also both appreciated it was dependent on the topic and this number was unique to this kind of event.

Well that depends I think, now for machine demonstration 200 people is good, doesn't have to be more. Sometimes when you want to focus more on a practice or if you want verbal interaction, smaller groups with for example five people is better. It really depends on the topic.
(Farmer)

Interestingly, the Programme Interviewee suggested a larger number of attendees was required to attract high-calibre machinery companies to the demonstration. He also mentioned how a larger group can reduce farmers' feelings of loneliness and isolation.

The size of the group motivates the machine builders to come again a next time. And also it gives the attending farmers the feeling that they are not alone, the sense of being part of a group [...] If it had been 20 people, we could have made probably very interactive, then I would have restructured my preparations. But then maybe the farmers would have gone home and said: well I had a very nice afternoon, but I was kind of alone there. The machine builders will say: well we had a good talk with the farmers and we could have a beer together, but if I have to come from the Netherlands for that. (Programme Interviewee)

T3: Enabling learning appropriate to purpose, audience, context

1. Facilitating interaction and learning: structure, content and techniques

The Farmer in CS2 placed a strong emphasis on the inclusion of practical elements in the day.

I think you should go out on the field or in the stables. Going in and see the real practice is always better I think. Of course for hygienic reasons, that is not always possible. (Farmer)

The Farmer drew on a range of different techniques:

Demo on the field, machine demo on the field, pictures in a big meeting room is not the same I think. (Farmer)

The Programme representative suggested the structure and content 'depends on the content and the goal'.

The Farmer listed the ability of 'Participants to ask questions and talk openly' as the most important characteristics of a demonstration event. In contrast, the Programme representative suggested the most important facet was 'Good quality expert advice and technical presentations', however added, 'I believe it's depending on the theme and day'. With reference to the specific demonstration event (CS2), he noted 'the visual experience was very important, but when we talk about smaller groups – I also give them for about 10 people – then it's much more important that they can ask their questions and have the expert advice'.

2. Taking into account variation in learning

Neither the Farmer, nor Programme representative felt they took into account variation in learning styles in the demonstrations.

T4: Effective follow-up activities

1. Follow-up activities and materials

As it was the first demonstration the Farmer had undertaken, he had – by default – not had the opportunity to continue to engage with participants after events. The Programme Interviewee claimed that participants and demonstrators continued to be engaged with the programme network in an informal/ad hoc basis. Both participants noted that materials such as 'flyers and brochures' were available for participants on the website after the event.

2. Assessing impact

Given the Farmer's lack of previous demonstration experience, he was understandably unable to judge whether there had been an impact. At the Programme level, the interviewee noted how an assessment of impact was only conducted informally:

Only verbally and informally: We visit farms often, then you talk about for example, so did you buy one of the machines? But not structurally with questionnaires or something. (Programme Interviewee)

5. Event analysis: effective peer learning characteristics

Event details

	n° survey participants	adviser	baker	employee	farmer	product manager	teacher	Unknown
<i>occupations</i>	26	1	1	1	20	1	1	1
<i>working area</i>	26							
local area	22	1	1	1	17	1	1	
not local area	4				3			1
<i>gender</i>	26							
male	22	1	1		19		1	
female	4			1	1	1		1
<i>age</i>	24							
18-30	4			1	1	1	1	
31-40	4	1	1		2			
41-50	3				3			
51-60	7				6			1
60+	6				6			

T1: Learning processes

3. Communication initiation by participants

We don't believe they had a problem sharing knowledge, but the setting (about a 100 people listening to one demonstrator using a microphone) to do it wasn't supporting. They did share informally in smaller groups between the explanations of the different machines. They never were put in small groups on purpose. A little time was made for questions when the questions came up as pressing, but there were almost no questions asked in front of the whole group. It felt like only the demonstrator was talking the whole time.

	participant answers				
	strongly disagreed	disagreed	agreed	strongly agreed	not applicable
I had the feeling that I could share my own knowledge as relevant information.	0	3/18	9/18	6/18	0
I asked at least one question during the demonstration .	12/18 yes				
I shared my own point of view at least once during the demonstration.	16/18 yes				
I felt encouraged to ask questions during the demonstration.	2/18	5/18	11/18	0	0
When there were any discussions, I felt comfortable sharing my opinion.	1/18	0	11/18	5/18	1/18

	demonstrator answers				
	strongly disagreed	disagreed	agreed	strongly agreed	not applicable
I asked participants to share some of their own background knowledge during the demo.	0	1	0	0	0
I encouraged the participants to formulate their own point of view during the demonstration.	0	1	0	0	0
I encouraged the participants to formulate questions during the demonstration.	0	1	0	0	0

4. Interactive knowledge creation

Hands-on opportunities and other multisensorial experiences

More than one hands-on activity was demonstrated very clearly since the different machines were demonstrated thoroughly. No hands-on activity could be carried out by participants. The participants could see and hear about the machines in practice on a real field. They could touch and investigate the ground after the weeding machines had passed by.

Discussion opportunities and negotiating conflicting points of view

The adviser was talking most of the time, but he didn't facilitate guided discussion. He did answer a few questions during his explanation about the different machines. Informal discussion was possible at the end.

There was no intention to foster any open discussion, because this was mainly not feasible with such a big group. There was no elaboration or further explanation on shared critical points of view, even if this happened scarcely. Again, there were too many participants, so this wasn't possible in the big group. We believe that they discussed critical points of view amongst each other afterwards over a drink.

	participant answers				
	strongly disagreed	disagreed	agreed	strongly agreed	not applicable
In my opinion, there were interesting discussions during the demonstration.	1/18	2/18	10/18	5/18	0
If participants didn't agree with each other during discussions, somebody (demonstrator/other participant) tried to reach a consensus between them.	1/17	4/17	8/17	2/17	2/17

	demonstrator answers				
	strongly disagreed	disagreed	agreed	strongly agreed	not applicable
In my opinion, there were interesting discussions during the demonstration.	0	0	1	0	0
If participants didn't agree with each other during discussions , somebody (me or somebody else) tried to reach consensus between them.	0	0	0	0	1

5. Engagement during the event

Participants all seem to know each other well, but are not close friends. Even though it was a big group, a lot of smaller groups were formed, talking together informally. Even though he is originally from the neighbourhood, the demonstrator acts more distant then open. Afterwards during the drinks he was quite open for an informal talk.

	participant answers				
	strongly disagreed	disagreed	agreed	strongly agreed	not applicable
I felt actively involved during the whole demonstration process.	0	7/20	10/20	3/20	0
I felt like the demonstration increased my ability to rely on myself as a farmer.	1/20	4/20	13/20	1/20	1/20
I could relate well to other participants (because they have an agricultural background similar to mine).	0/20	6/20	7/20	5/20	2/20
A lot of the other participants are part of the same farmer network as me.	0	3/18	11/18	3/18	1/18
I felt like I could trust the knowledge of (most of) the other participants .	0	3/18	12/18	3/18	0
The demonstration felt like an informal activity to me.	1/18	2/18	9/18	6/18	0
I thought the host farm was comparable enough to my own farm .	5/18	5/18	7/18	0	1/18
I had the feeling the demonstrator was like one of us .	0	4/18	11/18	3/18	0
I had the feeling I could trust the demonstrators knowledge .	0	1/18	9/18	8/19	0
I got along very well with the demonstrator .	0	1/18	9/18	6/18	2/18

	demonstrator answers				
	strongly disagreed	disagreed	agreed	strongly agreed	not applicable
Were participants (farmers, advisers, researchers etc.) involved in the overall development of this demonstration? If yes, how?	only a small percentage, through being involved in the operational group. It was also a joint				
Most of the participants were well known to me .	0	1	0	0	0
A lot of the participants are part of the same network as me .	0	0	1	0	0
The demonstration felt like an informal activity to me.	0	0	1	0	0
I think the host farm was well suited for this demo.	0	0	0	1	0
I got along well with the participants.	0	0	1	0	0

T2: Learning outcomes

Explained knowledge was sufficiently understandable. Very monotonous, but in depth and informative. There was no focus on trying out practical skills. Common methods or ways of thinking on farming were questioned and alternatives were shortly elaborated on in group. The main topic of the demo was organic (mechanical weed control), which is an alternative for pesticides for traditional farmers, but no group discussions about it. Common methods or ways of thinking on learning were not questioned.

	participant answers				
What would you ideally like to learn today?	To see the working of new machines in weed control; variety and working in machines; new possibilities weed control; what is possible today?; if the mechanical weed control works well or not; differences between machines; different ways of organic weed control; control of camera machines; feasibility				
	strongly disagreed	disagreed	agreed	strongly agreed	not applicable
The demonstration met my expectations regarding what I wanted to learn.	0	1/20	10/20	9/20	0
The demonstration exceeded my expectations.	0	9/19	8/19	2/19	0
I felt surprised at some point(s) during the demonstration.	0	5/20	10/20	5/20	0
I obtained a clearer understanding of the topic(s) demonstrated.	0	3/20	14/20	3/20	0
I have the feeling I learned something new (knowledge, skill, practice, etc.).	0	1/20	11/20	8/20	0
I thought about how I could implement some of the ideas and practices on my own farm.	0	1/20	14/20	4/20	1/20
I reflected on my own point of view at some point during the demonstration.	0	3/20	15/20	2/20	0
I learnt about the principles underlying a practice.	0	9/19	8/19	2/19	0
I thought about how we learn something new on demonstrations (e.g.: teaching methods).	0	8/19	6/19	5/19	0
I thought about why I want to learn about the topic(s) of this demonstration.	1/19	3/19	11/19	4/19	0

	demonstrator answers				
what do you intend for the participants to learn today?					
	strongly disagreed	disagreed	agreed	strongly agreed	not applicable
I think participants have learnt what I intended them to learn.	0	0	0	1	0
I tried to surprise participants with uncommon/new knowledge/new skill.	0	0	0	1	0
I felt surprised at some point(s) myself during the demonstration (e.g. by a question or discussion).	0	1	0	0	0
I obtained a clearer understanding of the topic(s) myself.	0	1	0	0	0
I have the feeling I learned something new during this demo (from participants, discussion...).	0	1	0	0	0
I reflected on my own point of view myself at some point during the demo.	1	0	0	0	0
I encouraged participants to reflect on their own point of view during this demo.	0	0	1	0	0
I encouraged participants to reflect on their own situation sometime during this demo.	0	0	1	0	0
I encouraged participants to reflect on how we learn something new on demonstrations.	1	0	0	0	0
I encouraged participants to reflect on why we are trying to learn about the topic of this demonstration	0	0	1	0	0

T3: Overall comments on the effectiveness of the event

Participants:

With an average of 3,6 on 5, participants rated the event overall as effective. Everybody would recommend the demonstration. They stated as most effective characteristics of the event: to see a variety of machines working; the practical approach; to know what is on the market; lots of interaction between the participants; instructive; that everything was possible.

Suggestions for improvement included: none; different kinds of crops; to know the price of the machines/price in relation to acreage; more machines; more put into practice.

Demonstrator:

The demonstrator reported that a lot of people showed up, and that is something that made it effective for him. He has no idea on what could be improved.

Observed main strong points of the event:

The adviser had profound background knowledge on organic farming, he was an expert in the field. The demonstration was held on a nice realistic field to show a lot of machines (+ - 8). There was room to talk afterwards for the participants.

Observed main improvements of the event:

There was no plenary discussion and not much room or support for questions from the participants. There were too many people at once to see clearly the working of the machines.

6.