

D6.1 Best practice for on-farm demonstration activities, programmes and organisations: an analysis of the interplay between key characteristics

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

Document summary

Deliverable Title: D6.1 Best practice for on-farm demonstration activities, programmes and organisations: an analysis of the interplay between key characteristics

Version: Final

Deliverable Lead: EVILVO, CCRI, ZLTO, AUA

Related Work package: Work package 6

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Reviewer(s): All partners

Communication level: Public

Grant Agreement Number: 728061

Project name: AGRIDEMO F2F

Start date of Project: January 2017

Duration: 30 Months

Project coordinator: Institute for Agricultural, Fisheries and Food Research (EVILVO).

Reference: Marchand et al. 2019 Best practice for on-farm demonstration activities, programmes and organisations: an analysis of the interplay between key characteristics. D6.1. H2020 Agridemo-F2F

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1. Introduction – Rationale of the document

The overall aim of AgriDemo-F2F (H2020 funded n°728061) is to enhance peer-to-peer learning within the commercial farming community. All research within Agridemo-F2F has been based on its analytical framework¹. In this deliverable, we build on and expand this framework based on the results of previous and present deliverable. Previous deliverables of this project have been focusing on understanding the variety of demonstration farms and events within the different European countries².

The most important result we build on are the set of key characteristics that influence the effectiveness of on farm demonstration that have been defined and grouped in seven key categories: context, goal of the demo, host farm and logistics, demonstration set-up, recruitment, learning and facilitation methods and follow-up and evaluation. An overview and their division across the seven main categories is presented in Figure 1. These characteristics can support thoughtful decision making when designing and delivering on farm demonstrations so that they are effective in terms of learning outcomes. Most of the key characteristics relate specifically to the organisation of on-farm demonstration events, while 'context' and 'goal of the demonstration' relate to the aforementioned broad understanding of on-farm demonstrations (i.e. including demonstration programmes, projects, series of demonstration events, and one-off demonstration events). Within the deliverable (D3.3-4.3), these key characteristics have been described according to their effectiveness with respect to the extent and nature of learning, as reported by participants of specific on farm demonstration events.

In this deliverable we focus on the analysis of the interplay between these key characteristics on the different levels (event, farm and organisation or programme level) to define best practice and the key points of possible interventions. During our meetings and discussion with the multi-actor project partners and the advisory board, we defined more specific research questions to guide our analysis. Together, the answers to these questions can steer best practice in on-farm demonstration.

- 1) What are the most important key characteristics at event level? Are there some standard recipes to choose from?
- 2) What are the most important key characteristics at farm level? In other words, what does it entail to be a good demonstration farm or farmer?
- 3) How does a combined set of practices related to these key characteristics influence the effectiveness of a demo event?
- 4) What about the dynamics in the context of a demo event? What role does the organisation, network or AKIS structure play?

We could address the questions based on our data set of 35 case studies. Data was collected in the form of 31 completed observation tools, 65 semi-structured interviews, 351 post on-farm demonstration surveys completed by participants, and 28 pre and post on-farm demonstration surveys completed by demonstrators. Based on the data for each case, a draft case study report was prepared. All 35 draft case study reports were validated during regional workshops in each of the partner countries.

First, **in chapter 2**, we tackled the question: what are the most important key characteristics at event level? Are there some standard recipes to choose from? Based on the participants scoring in the post surveys of a specific event and the perceived learning outcomes, we found that both group size and the variety of learning methods are important key characteristics, which determine learning outcomes. As such, group size and learning methods are used as the 'entry point' for a further descriptive qualitative and quantitative analysis at the **event level**.

¹ D2.1 The Agridemo-F2F analytical framework

² D2.3: An inventory of commercial demonstration farms in Europe; D2.4 A typology of on-farm demonstration activities; D3.3 Key structural characteristics, D4.3 Key functional characteristics leading to effective outcomes;

Key characteristics for on farm demonstrations

0. CONTEXT

- ✓ Embedding within the regional AKIS
- ✓ Type of organizer
- ✓ Type of funders
- ✓ Decision-making on the demo objective, content and set-up

1. GOAL OF THE DEMONSTRATION

- ✓ Targeted objectives
- ✓ Topic and diversity of topics
- ✓ Sustainability dimension(s)
- ✓ Degree, level, type of Innovation

2. HOST FARM & LOGISTICS

- ✓ Good access
- ✓ Suitable facilities
- ✓ Catering (Food & Drink)

- ✓ Registration
- ✓ Participants can relate to the farm

3. DEMONSTRATION SET-UP

- ✓ Group size
- ✓ Trustworthy demonstrator
- ✓ Role division
- ✓ Available time for the demo
- ✓ Available budget

- ✓ Scope of the demo
- ✓ Type of demonstration
- ✓ Composition of the group
- ✓ Group connectedness

4. RECRUITMENT

- ✓ Invitation adapted to the target audience
- ✓ Suitable period (timing & season)
- ✓ Publicity

5. LEARNING & FACILITATION METHODS

- ✓ Activities supporting (inter-)active knowledge exchange ✓ Activities supporting experiential learning
- ✓ Didactic materials
- ✓ Time management
- ✓ Plan vs. practice
- ✓ Create stimulating setting

6. FOLLOW-UP AND EVALUATION

✓ Planning ✓ Activities

- ✓ Materials
- ✓ Influence on next demo

Figure 1. Key characteristics that influence the effectiveness of on farm demonstration grouped in seven main categories

In **chapter 3**, we describe the results of a similar descriptive analysis at **farm level** and address the questions: What key characteristics are important for a demonstration farm and farmer? From the descriptive analysis at event and farm level, it was clear that some characteristics where more relevant than others. To understand how structural characteristics of on-farm demonstration events affects the perceived effectiveness of the demonstration, we performed a 2-step statistical analysis (factor analysis and multiple linear regression). With this analysis, we could answer in **chapter 4** the following question: How does a combined set of practices - related to these key characteristics – influence the effectiveness of a demo event?

Chapter 5 reports on the analysis of 60 interviews within the 35 cases to answer the questions related to the role of AKIS and the organisational arrangements. It thus disentangles the dynamics in the context of a demo focusing on the role of the **organisation**, the network in which the demo is embedded in and the AKIS structure. As a result, in this deliverable, we analyse the key characteristics and their interactions, drawing out key messages for best practices at different levels: event, farm and organisation (Figure 2). We conclude upon these key messages and best practices in **chapter 6.** Furthermore, the results are enriched with **rich stories**, these are exemplary case study stories illustrating best practices, and can be found in the boxes. The methodology of all analyses is explained with more depth in Annex 1. The cases are indicated with a code, also explained in Annex 1.

Figure 2 shows an improved Agridemo-F2F framework, it does represent the three important levels that were recognised when looking at on farm demonstration (event, farm and programme or organisational level). It encompasses the key categories of important characteristics on event and farm level and the strategies to enable at organisation level that were analysed in depth in this report. Also the learning processes are indicated³.



Figure 2. Improved Agridemo-F2F framework for on farm demonstration

³ Explained in depth within the Agridemo-F2F deliverable D5.1 State of the art report on determining effectiveness of learning processes

2. Disentangling key characteristics at event level

Analysis (see Annex 1 for a detailed methodological description) revealed two key (sub) characteristics that were particularly influential in terms of effective outcomes at the event level. In short, participants from the Agridemo case studies clearly appreciated more the demonstration events with a smaller group of participants as they scored their learning outcomes as more effective when participating in such an event. The same counts for the learning methods, participants rated their learning outcomes higher when a more diverse set of learning methods was applied during the demonstration event. As such, we took group size and learning methods as an 'entry point' for a more in-depth descriptive analysis of both the quantitative and qualitative case study data (qualitative interviews, surveys and workshop reports). We targeted the analysis towards more insights in how i) group dynamics and ii) the set of learning methods were related to learning outcomes, and to other key characteristics. Furthermore, we tried to understand whether and how group dynamics, and the variety in learning methods, determine best practices and relate to (influence or are influenced by) other key characteristics such as set-up, recruitment, etc.

2.1. Group dynamics unravelled

Group size is crucial

Group size is a crucial characteristic, both confirmed by our analysis as within literature. It can **influence how learning opportunities can be designed/developed**, as well as the type and level of learning that eventually takes place. Farmers get more out of smaller groups and ideally not more than 20 farmers should attend, otherwise it is difficult for everybody to see and hear or even more difficult for everybody to get opportunity for 'hands on' practice (Koutsouris et al. 2017⁴). It is important to understand the influence of group size on the demonstration practice and in turn the factors that combine to determine and influence group size, since these have implications for managing a successful demo event. For the descriptive analysis of our case study data, we have chosen the following numbers for group size: a large group has more than 100 participants, a medium size event has between 25 and 99 participants, and a small group consists of a maximum of 24 participants.

Although it is recognised that there is no good or bad group size, a general preference for smaller demonstrations was broadly shown by the Agridemo data, with participants from smaller demonstrations more likely to rate the demonstration as 'effective' and to say that they felt more 'actively' involved, compared to their peers who attended medium and large events. Tables 1- 3 show the relationships. In summary:

- 80.8 per cent of attendees at small events felt the demonstration was effective, compared to only 63.2 per cent of those who attended large events
- 56.9 per cent of attendees at small demonstrations felt the group size was right, compared to 32.9 per cent of their counterparts who attended large demonstration events
- 48.1 per cent of attendees at small events felt actively involved, compared to only 15.1 per cent of those who went to a large demonstration

Note: all three of these associations were significant at the 0.05 level.

Table 1. Responses to 'was the demonstration effective?' according to demonstration size¹

	Not effective <i>or</i> Neutral	Effective	Total
Large	36.8	63.2	100
Medium	25.9	74.1	100
Small	19.2	80.8	100

⁴ Check D2.1 The Agridemo-F2F analytical framework for more literature

¹The association between responses to 'was the demonstration effective?' and demonstration size is significant when p<0.05. Data sources: post event survey from participants

	Disagree	Neither agree nor disagree	Agree	Total
Large	14.6	52.4	32.9	100
Medium	29.5	33.9	36.6	100
Small	4.6	38.5	56.9	100

Table 2. Responses to 'the group size was right' according to demonstration size¹

¹The association between responses to 'group size was right' and demonstration size is significant when p<0.05. Data sources: post event survey from participants

Disagree	Neither	Agree	Total
	agree nor		
	disagree		

60.5

49.6

40.5

24.4

18.6

11.5

Large Medium

Small

Table 3. Responses to 'I felt actively involved' according to demonstration size¹

¹The association between responses to 'I felt actively involved' and demonstration size is significant when p<0.05. Data sources: post event survey from participants

100

100

100

15.1

31.9

48.1

This is reinforced by the qualitative analysis and workshops reports, which show that only in one of our cases studies, it is stated that the attendance of many participants resulted in a more effective demo (related to an event of about 350 participants). On the contrary, five workshop reports and eight case study reports clearly state that smaller groups (up to around 25 people) are more effective. This is related to explanations such as 'because this makes it easier to ask questions and gives everybody the chance to take part in group discussions.'

Analysis of the qualitative responses to the question 'What size and type of group do you find most effective, and why?' reveals a discrepancy between what a programme/network interviewee felt was the best size, and what the demonstration farmer felt was optimum. On average, programme/network interviewees felt the optimum size was around 23, whereas demonstration farmers felt the optimum number was around 19. The tendency for programme/network representatives to feel the optimum number is a little higher is likely to be linked to the 'power' and formal structure of the programme/network (who may be more accustomed to putting on large, public events). Regardless of the reasons for this difference, we recognise the need for an open dialogue between the programme/network and the demonstration/host farmer about the critical issue of group size.

Generally, participants mention less than 30 attendees as an ideal group to answer questions and create discussion or be actively involved (Table 3). However, arguably the majority of CS were addressing goals/objectives that lent themselves to smaller events. The inference is that when farmers are involved and can participate in a smaller group this can support a more interactive communication and exchange. The following quotes taken from host farmers' interviews advocate this.

"For me it's best when we all fit into one car or vehicle. Since we will be moving from plot to plot, if there is more than one vehicle then you will end up talking with some of them and not all of them. If people change car at one plot, then the conversation stops half way or starts half way. I f there's more than one car, people should stay in the same one for the whole visit" (SP3-host farmer)

"one on one or about 30. Why? Simple, more than 30 doesn't work. I already have a good voice and at school I can shout over the whole playground. But you can't do that for one hour and a half. 30 people also gives the chance to change, to stand in front, in the back, when do they take their 20 min of attention? If you would watch it closely, you would see that people change their position throughout the demonstration, they stand in front or at the back. So when they are paying attention, you get response from them. 30 people is economically interesting, cause you are telling it at 30 people at once. When you have a group of 4 or 5, it's not personal anymore like one on one, so it wouldn't matter if you add some more people to that group" (BE1- host farmer)

Whilst there is this slight difference, it is significant that *preferred averages* for group size from organisers, host farmers and participants were 'small' demonstrations according to our classification.

As a result, and although not explicitly stated by respondents, the inference is that when farmers are involved and can participate in a smaller group this can support the effectiveness of the demo event, and e.g. the interactive knowledge exchange and experiential learning.

Characteristics that influence group size and dynamics

Discussions at different settings revealed that there is no 'one size fits all' for demonstration numbers. The optimum size of the group is strongly linked to <u>the objective or goal of the demonstration activity (why</u> <u>demonstrate?</u>). As illustrated with the following example from the Belgium CS, the farmer specified how, for a machinery demonstration, a larger group is appropriate. By comparison, he recalled how a topic demanding more interaction and discussion is better suited to a smaller group size.

"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" (BE2- host farmer)

This is also strongly related **to the topic of the demo (what is demonstrated?).** This can determine the level of interest in the demo activity (i.e. if it is a niche system then the group size may be low). So estimated rates of attendance will be lower from the start of planning the event.

Another important factor that can determine group size is the **type or nature of host farm**. This has mainly to do with logistics, i.e. the farm cannot accommodate more than 30 people, safely. It needs to offer sufficient parking space. To ease the access for the participants, one can organise group transport by bus from a central location to visit a more remote host farm. Furthermore, several conditions regarding the facilities, such as furniture, toilets, audio, etc. should be taken into account when deciding on the 'right' group size. Very important is clear audio and visuals, which should be also guaranteed bigger groups. Screens, (portable) microphones and loudspeakers need to be provided. When people don't hear what is being told, the effectiveness of the demo is going down to zero.

The facilitators/demonstrators will also have a preference for group size in terms of delivering and managing the day. One CS did report how they managed large groups by splitting them up but described it as crowd control and a trade-off between attracting a large number of participants and optimising the effort of holding an event and achieving an effective demo.

<u>Recruitment</u> has a clear effect on group size (and composition) as well as other aspects of demo delivery. Communicating the goals and objectives of the event clearly was an important facet not only in the subsequent delivery of the demonstration but also before the event so as to attract the appropriate audience. The demonstration objective needs to be clear to bolster interest in the session, potential attendees need to be convinced that they will benefit. As such, one should focus on a clear invitation, a defined programme, and somehow 'individual' meaning!

Depending on the optimum group size, recruitment methods can vary i.e. if it is intended to attract a high number of participants aiming for a large demonstration event (i.e. linked to goals), the event is typically advertised more widely and through a number of different channels. Across the AgriDemo events, those attending large demonstrations were more likely to have been recruited via more formal recruitment channels (Table 4). For example, a third of participants (33.3 per cent) attending large demonstrations heard about the demonstration through their formal agricultural network, compared with just over one-fifth in the case of medium demonstrations (20.7 per cent) and small-demonstrations (22.2 per cent).

Smaller events can and should utilise more informal methods, e.g. word of mouth. It is important to tailor the recruitment/advertising of events to the desired group size. Across the AgriDemo events, those attending smaller and medium-sized demonstrations were more likely to have heard about the demonstration in a more informal way, relying on 'Other' channels to hear about the demonstration. 'Other' here typically referred to personal communication or information they had picked up from their personal networks or day-to-day activities.

"Bigger events with researchers as speakers are advertised via our member journal and newsletter some time in advance to address a wide audience. SMS and email are more effective for smaller events like field days and allow planning on a short-term basis" (AT2- host farmer)

"We run adds in the national newspapers, depending on how big the event is but the ad in the national papers would be running for one or two weeks. We may run radio adverts, we put staff, organising staff committee members will try their best to get on agricultural programmes on the radio and do an interview [...] in recent years we've put up roadside boards along motorways and that in surrounding counties so people can see these adverts on the side of the road" (IR3 – host farmer)

		Advertising/recruitment method					
Colleague Social media Local press Agricultural network		Other	Total				
Large	30.2	16.7	6.7	33.3	13.3	100	
Medium	20.7	13.5	3.6	20.7	41.4	100	
Small	21.4	8.5	6.0	22.2	41.9	100	

Table 4. Responses to 'how did you hear about the demonstration?' according to demonstration size¹

¹The association between advertising/recruitment method and demonstration size is significant when p<0.05

Although there was a tendency to advertise larger events in a more formal sense, the importance of a personalised invitation, where possible, was also clear and consistent across the majority of case studies. Whilst the use of personalised invitations was upheld as the golden standard, it is important to recognise that this is not always possible as it is very labour intensive. It therefore can be done more easily for smaller groups.

"Direct contact, phoning them, talking to them and saying are you coming, and, and if not, and maybe sort of saying the benefits of what it is, directly talking to them, it's, it's a bit of an effort, it is a lot of an effort" (IR2 – Programme Interviewee)

"We find the biggest way of getting people to come is through text messaging so they'll get a text message maybe two weeks out from an event to say there is an event, to hold the date in their diary. Then they'll get another text message probably a few days before, so maybe a week to ten days out they'll get a message and then a few days before they'll get a reminder text message"

"It is a combination of advertising in the medias, personal emails, and that their local advisor tells them about the event. So, they hear about from different places" (DK1 – Programme Interviewee)

Although we are unable to disentangle cause and effect, it is important to note, events attended by larger numbers of people, were more likely to be <u>fee paying</u> (Table 5); specifically 50 per cent of all large events required an entrance fee, compared with 23.1 per cent of medium sized events and no small events. This could suggest that fee-paying events attract more participants, owing to the fact they are more 'professional' or significant events, because of its "value for money" or "value for time spent". The participants are offered a wide variety of information and services that ask for limited effort from them. However, this could also simply reflect the more informal nature of smaller events, which by their very nature, do not require a lot of financing.

Table 5. Event size by fee-paying %

	Fees	No fees	Total
Large	50	50	100
Medium	23.1	76.9	100
Small	0	100	100

The idea that fee paying events are more attractive was a sentiment expressed by the DK1 programme interviewee:

"We are more and more looking at the commercial part of it, because "for free" is not always the best. Sometimes it is good if it costs something, 200-400 DKK. It is experienced as more exclusive. Of course, some may not come and you reduce your audience. But some may find it more exclusive. Then of course, you need to get something extra; a presentation, some extern people, something new. That is a very important part of how we develop our demos [...] developing where people walk away with a feeling of learning something new, then there must be something exclusive in it and then you can charge a user fee" (DK1 – Programme interviewee)

As such, this idea of creating a sense of 'exclusivity' through charging an event fee, can also be replicated in other ways, e.g. professional advertising, an exclusive speaker or guest.

At last, when a difficult recruitment is expected, incentives can be used to lure the farmers to the demo event, but then need to be clearly mentioned on the invitation. Examples are a national championship in an agricultural discipline, a show, a party afterwards, prices to win (e.g. bottles of wine), goodies (caps, t-shirts, ...), test samples, free soil analysis, or machine demonstrations as machine demonstrations always get attention in the agricultural sector, ...

"Get some activities that attract the farmers. With car tires, barbecue sausages and good weather we come a long way." (DK2, Farmer)

"After the field walk there was a nice lunch and a beer in the tent where people could socialise. Furthermore, attendees could win a bottle of organic whiskey produced at the host farm for their participation at the event." (DK2, Observation tool)

"One needs to work in 3 dimensions in order to attract participants: a) Offer compensation, gifts in kind, food etc.; b) Work with a local organisation/foundation to co-fund, co-advertise the demo; c) Work with producer groups to select host farmer and topics." (GR1, Programme interviewee 1)

Group composition and connectedness

Closely related to group size, group composition and connectedness can have an impact on the effectiveness of the demo event.

The target group (for whom do we demonstrate?) should relate to the goal or objective of the demo, and as such target groups are identified during the planning and recruitment phase. Some target groups might be broad in scope (all agricultural actors) and others more specific by sector (dairy farmer, organic farmer) for example. Furthermore, organisers can focus on a specific province, or target a nationwide audience. The recruitment and advertising approaches need to target the intended audience.

"In my experience the most effective way is dependent of the target group. For the network event, it was target invitations to some people. For the network event it was a lot of advertising in local newspapers and billboards" (NL2- Programme interviewee)

Demonstrations can be appropriate for a broad group of farmers and other actors, or tailored to specific groups and aim to be more inclusive. Some topics and organisations have particular groups (innovators, new entries) or minority groups, e.g. young farmers or women farmers. "Our main audience is farmers, foresters, that could be horticulture, growing in arable [...] something that we've out a lot of focus on in this programme and we're also working with students. We want to be as inclusive as possible, so we want to encourage young farmers into the industry [...] and [...] also getting women into agriculture as well. They play a vital role in the business, which is very often overlooked and they play a fundamental role in the success of any business [...] We have been running bespoke meetings for women in agriculture" (UK3-Programme interviewee)

Recruitment approaches therefore are important in shaping the composition of the group. Group composition is linked to group connectedness. A group of participants can differ regarding age, gender, occupations, expertise, interest, commitment, openness, etc. Group characteristics that seem to favour <u>trust</u> amongst participants are like-minded participants, participants that perceive each other as equal and similar interest in the topic. On the other hand, the combination of different types of actors can be beneficial to spark discussions and networking, to become familiar with other opinions and to be able to look at the same problems together but from different angels.

"Announcement of the event through diverse channels brought a mixture of attendees, encompassing farmers and students, and professors of agriculture. This created a good starting point for discussion among participants." (ES1 – Programme interviewee)

"Only interested farmers as attendees made the demonstration more effective." (AT1, demonstrator)

Managing group size

First of all, registration should be easy and fluid. When dealing with big groups, this is mostly done through the use of a registration desk and an automatically registration system, while with small groups a more personal approach is recommended. In big groups, nametags and participants' lists might be useful, as not all participants will know each other, and it can lower the barriers to address people.

Smaller groups are more easy to manage (e.g., time management) in activities. When a large number of people have to move to another location on the farm, this takes more time compared to a small group. In addition, for breaks, lunch or dinner, a big group needs more time, place and budget for organising this in a fluent way. A practical solution to create the same advantages with bigger groups is to divide the large group in smaller groups to improve the exchanges between the participants and the demonstrator. For example, during an Agridemo case in France, participants were invited to visit the farm at three times: 9.30 am, 10.30 am and 2.30 pm. Each group of participants (between 20 to 40 participants) was led by the host farmers or an adviser. Or the group might be divided over different sites. Bigger events often combine several topics by providing multiple stands on the host location. Each stand should then be manned by a demonstrator who can explain what is shown and be able to answer questions. The latter also diminishes the burden for the hosts regarding the preparation of the accommodation and logistics, and regarding the control for unguided movement of people around the farm.

"If they have questions to ask, they will be able to ask them, whereas when a group is too big, what happens is that there are multiple smaller groups that form themselves." (FR1, Farmer)

This might have some financial implications and/or require some more staff and should thus be taken into account. This extra budget can be achieved through collaborations with sponsors etc. They are often more eager to offer financial support when big numbers of participants are expected.

In some CS a combination of small and large events are held in a complementary way during the season. In the Farming Connect CS, the small events are run by the farmer himself who leads a farm walk often of a small local group who are interested in a specific topic, following a kitchen table discussion. This is complemented with an annual project dissemination event on the farm organised by FC, which attracts large number of farmers (who are grouped into sub groups). This is a good example of how group size is managed to fulfil different objectives and how role division is organised.

Inspiration for organising small events

Throughout the Agridemo cases, the small events, typically assaulted with discussion groups, field walks, and defined here with 1-24 attendees, displayed some unique characteristics. The 'Pen Portraits' (box 1 and 2) are taken from exemplar small demonstration events: AT2 and FR3, as well as UK1, ESP2, ESP3 and IRL1, all of which scored a maximum on the effectiveness criteria ("How effective did you find the demonstration?"). The following characteristics/elements were prominent and consistent amongst these 'effective' demonstrations:

- Personal invites
- (Informal) opportunities for participants to have an input into the demo
- The opportunity to do something physical or as a minimum, see something in person
- Accounting for variation in learning
- Room for personal experiences of participants to come through, e.g. time allocated for discussion and exchange
- Participants ask questions is rated highly

Inspiration for organising medium size and large events

Throughout the Agridemo cases, the medium size and large events, typically Open Farm Days, Machinery demonstrations, ... and participants numbers between 20-100 or > 100, displayed some unique characteristics. The 'Pen Portraits' (Box 3 and 4) are taken from exemplar medium and large demonstration events, all of which scored highly on the effectiveness criteria ("How effective did you find the demonstration?"). NL1 (a medium event) scored 2.7 and AT1 (large) also scored 2.7. The following characteristics/elements were prominent and consistent amongst these 'effective' demonstrations:

- A well-established event that has a good reputation
- Economies of scale: budget is often higher
- Recruitment less targeted
- A clear structure and plan for the day : A good balance of presentations and active segments, dividing larger groups into subgroups and coffee breaks/time for socialising
- Relevant topics, often in response to participant demand
- Efforts to engage participants beyond the specific demonstration event
- 2 successful large events were tied to a specific outcome or wider programme; in the case of NL1, participants (mainly students) were there as part of their University course. In AT1, farmers attended as part of their competency certification.

Conclusions

- The optimum size of the group is strongly linked to the objective or goal of the demonstration activity.
- A general preference for smaller demonstrations with participants from smaller demonstrations more likely to rate the demonstration as 'effective', compared to their peers who attended medium and large events
- There is link between group dynamics and learning methods small groups make it easier to ask questions and give everybody the chance to take part in group discussions
- Recruitment determines group dynamics
 - $\circ \quad$ the target group will relate to the goal or objective of the demo
 - there were significant differences between how participants were recruited for different sized demonstrations
- Events attended by larger numbers of people, were more likely to be fee paying
- Med-large events in our CS were tied to a specific outcome or wider programme

Box 1: AT2 SMALL

The demonstration farm is located in Absdorf in Lower Austria. The farmer stopped ploughing 25 years ago, and converted his farm (80ha arable land, 10ha grassland) to organic cultivation in 2006. In 2010 A co-founded VERMIGRAND Naturprodukte GmbH. The research on his farm focuses on composting using earthworms, soil-health and agroforestry.

The specific event, occurred in19 of July 2018, in collaboration with the advisory service of BioAustria (post survey demonstrator interview). The event was designed within the framework of a scientific project (pre survey demonstrator interview). Its duration was 4 hours (from 15.00 to 19.00).

In general, the host farmer holds one-off events at his farm, but depending on the topic, a series of events can be also organised. Overall, 20 to 30 events are organised at his farm per year (Farmer).

The main network actors were BOKU (University of Natural Resources and Life Sciences, Vienna), FiBL Austria (Research Institute of Organic Agriculture), farmers, Bio Austria (umbrella organisation for organic farmers), the host farmer and AGES. **The host farmer mentioned a strong interaction between all these actors.**

Best practice

- The responsibility of advertising and recruitment fell to the progrmame/organisers. This
 meant a more professional approach. It was typically done via email and the importance of a
 personal approach to smaller events was stressed; "SMS and email are more effective for
 smaller events like field days and allow planning on a short-term basis" (Programme
 Interviewee 1, AT2)
- informally open to input from hosts and participants. He described a 'multi-stage process' that involved multiple stakeholders to agree on potential topics.
- The Farm and Programme level interviews revealed the importance of 'doing' and 'seeing' as part of a varied day.

Looking in a soil pit is always part of our events, sometimes we also have machinery exhibitions. They are very effective for attracting participants' attention. (Farmer)

A technical presentation in combination with a field walk, no matter in which order, is a good solution. Presenting some outlandish issues is effective too. (Programme Interviewee 1)

The Farmer talked in detail of how he adapted his approach to fit different learning styles and levels of prior knowledge. By using prior knowledge of the group, he adapted his presentations according to their skills and backgrounds.

In case of many newcomers in the field of organic agriculture we try to present more basic information [...]. The breaks in between the presentations as well as the discussions after the event are used for question time for those participants that are on a lower knowledge level. (Programme Interviewee 2)

A range of follow-up materials were available. These included basic materials such as brochures, but more complex and specialists' results – particularly regarding the research project – were available on request.

Yes, to some extent but only upon request, for example if participants ask for special results regarding some scientific study that I have mentioned. Information is provided per email. (Farmer)

Box 2: FR3 SMALL

This group of to 12 dairy farmers localised in the north east of Britany close to Fougères meet regularly in an Agroecological group coordinates by the Regional Chamber of Agriculture.

This group exchanges on technical solutions to turn their conventional dairy farming system into a grassland and/or organic dairy system. The farm which support this case study is a conventional dairy farms: 1 young farmer, 50ha (32 ha grassland, 11 ha maize, 7ha barley), 390 000 l of milk with 55 cows and 25 heifers. He tries to produce milk with the maximum of grazing. The farm is located at Landéan.

Invitations with an RSVP were sent out to dairy farmers who belong to the programme group. The invites contained details about the event and what subjects would be covered.

Often it's for... [For dairy farmers who belong to the group] Yeah [So who is in charge of invitations and facilitating and how is everything coordinated?] Oftentimes, as I said, we refer to the yearly planning, the facilitators let us know about upcoming meetings on that day at this hour, either by email or post. There's a sort of an invitation containing the theme, subjects that will be talked about, the place and the time. Then you answer: participating or not, and this is how it's done. (Farmer)

Both the Farmer and the Programme Interviewee describes the nature of interactions as 'entirely bottom-up'. Both felt it was important to construct the demos around farmers' experience and personal stories. The Programme Interviewee added that this seemed to be an effective way for farmers to learn.

According to the Programme Interviewee, host farmers were always involved in individual demonstrations. It seems the host farmers play a very active role, from choosing the topic and with whom they want to present, to providing the introductions and training on the day.

the Programme interviewee felt it was always important to make time for participants to contribute, even when there is an expert speaker present.

Yeah, it depends a lot on the topic, this is why I, yeah... but then during a typical event really focused on one topic... let's say... where there's a speaker, even when there's an expert speaker we still try to have... some time to... ideal situation is not to only have contribution, but also time to practice, show examples, to work, in sub-groups or things like this. (Programme Interviewee)

The Farmer cited 'participants ask questions and talk openly' as the most important technique for engaging participants, but gave no justification for this choice. The Programme Interviewee cited 'Problem solving - farmers feel they know how to solve a problem' as the most important, because it allowed farmers to really understand the topic and apply it to their own situation.

It allows themselves to really comprehend the topic. And then, for example, and through exercise, they manage to extrapolate to their own case. (Programme Interviewee)

The Farmer felt that different learning styles were accommodated for through the varied structure of the demonstration days.

There's a (meeting) room, it can also be meetings outside, a visit... outside of the group, for example in the month of May with the CETA we went to visit a micro-AD site in the Manche (department) for example, so yeah, it's varied. But the most often we stay still in a meeting room and then we visit the farm but otherwise it can change too. (Farmer)

Box 3: NL1 (MEDIUM)

The 'Practice centre for precision farming' is organised by ZLTO (The Southern Agriculture and Horticulture Organisation) which represents the interests of entrepreneurs working in green areas.

The demonstration activities organised are partly funded by regional development fund and also by partners funds to which partners contribute. The primary goals of this Practice Centre is to accelerate the adoption and application of precision farming in the Netherlands. To achieve this, they provide demonstrations and test precision techniques in practice, alongside a commercial arable farm.

The demonstration event took place on Vandenborne farm, an average sized 500ha, very innovative commercial arable farm in the southern part of the Netherlands. The farm is considered as innovative and as a pioneer in precision farming. The two owners are supported by three full time employees.

Attendees were a group that followed the same courses at University who intended to be future farmers. The host-farmer was the demonstrator and lead person at the event. At the first part of the demonstration (presentation), the visitors listened to the host farm. After the presentation the host farmer guided a tour of the farm. During the tour, the visitors listened to the demonstrator and had opportunities to touch the machinery and touch/smell potatoes.

The event lasted around 3 hours in total, with 1.5 hours for storytelling and a further 1.5 hours for showing machines and practices. There was time built in for coffee breaks. Half the participants were local, whilst the other half claimed to have gone to 'great effort' to travel there.

Participants had to pay a fee to attend. Only a minority received compensation for this cost.

The farmer relied on word of mouth to spread the message of an event. The quality and longstanding reputation of the event meant that the event had enough interest.

"Give good demos, the word spreads itself" (NL1 Farmer)

The Programme Interviewee noted that by finding topics that needed to be demonstrated, that will attract an audience. The Farmer reiterated the importance of understanding what the audience want to hear about:

"We answer requests from visitors ... I ask what they want to hear" (Farmer)

Host farmers are involved in deciding the subject to be covered by a demonstration, as well as the planning of the event. The Programme Interviewee emphasised the ongoing relationship between the host farmers and the network programme. They indicated that the host farmers have a leading role in establishing the subject of a demonstration: members inform the Programme of what they are interested in, and a demonstration is developed around this.

The general structure for a demonstration day consisted of a mixture of presenting information and a tour of the farm, within which there was a discussion. This format allowed the host farmer to encourage participants to ask and answer questions, so as to be actively engaged throughout the day.

Start with coffee, then introduction, if needed the visitors, introduction on the subject, coffee break, farm visit/looking at machines/crops/experiments and discuss on the way, wrap up. Challenge them to ask and answer questions. (Farmer)

The demonstration was thought to be very interactive with various materials being used to aid the demonstration. Even the presentations drew on a vast amount of practical experience condensed in simple terms. Demonstrating real sensors and machines, or looking at the difference between plants, offers a visual understanding of techniques or technology being discussed. There was significant space for discussion. The farmer and programme interviewees claimed to take into consideration variation in learning preferences when delivering a demonstration. This was largely relating to the goals of different groups of farmer, mainly in reference to their ages and what their priorities in farm management might therefore be.

The farmer and network claimed to keep in contact with the 'core participants'. They are particularly active on social media, e.g. Twitter and use this to maintain contact.

Box 4: AT1 (LARGE)

The demonstration was run by the agricultural chamber, the advisory for soil and water protection, companies, AGES, the demo farmer and media channels. The farm itself is located in Upper Austria and is well-connected to agricultural organisations. They are an established demonstration farm that works closely with AGEs on experiments and tests. In 2017, 800 people had already visited the farm.

The overall number of attendees was 350 – making it the second largest demonstration across all of our case studies. The demonstration was divided into 10 different fieldwalks which offered the opportunities to utilise some hands-on tools (testing nitrate levels in water) and some multisensory activities (e.g. touching and looking at crops and their roots) were available for participants. In cooperation with agricultural companies, machines were exhibted and tested on the farmers' fields. A key characteristic of this demonstration was the organisation of smaller groups and the integration of appex organisations and bodies who were supporting/facilitating the activities. According to the farmer, participants were actively involved in the demonstration design and development.

Participants' ideas are included in the demo set-up. Results from an event in autumn for example are discussed with farmers, advisers and researchers. Their suggestions are taken into account for the follow-up event in spring. (Farmer)

The discussion was described as lively once it started, although it was curtailed by heavy rain.

The farmer was an experienced demonstration host; he expressed a genuine interest in what the audience want to know. The farmer was compensated but had a sincere motivation to transfer 'curiosity and interest to others'. The farmer felt participants took a lot from the events because of the independence of his advice (i.e. not trying to seel participants something or make money from them).

There was no specific recruitment plan or method of advertising; the event was open to anyone. The farmer relied on word-of-mouth in the most part to advertise the events, but the means of advertising were broad and varied.

Perhaps the standout feature of the event – and one of the reasons it was deemed so effective – is that it was **tied to a specific outcome**. Farmers attended the event as a means of achieving their certificate of competence (a type of advanced training). With such a specific goal/objective in mind, attendees were able to deem the event efficient.

By virtue of the number of attendees, the demonstration was clearly structured; with plenty of scope fo participants to ask questions and talk openly. Although the farmer recognised his efforts to consider participants' perspectives was not walways possible owing to the number of attendees.

The resources used on the day e.g. PowerPoint and any data utilised are made available on the information desk for participants to take home. These iteams were "precise printed materials" with links to electronic versions of follow-up documents.

2.2. Knowledge exchange and peer learning

Variation in activities increases effectiveness

Throughout the CS in Agridemo, we found evidence that a set of different learning activities is related to the effectiveness of a demo event. We first checked the number of different learning activities that were deployed across the case study demonstrations; often different learning activities were deployed alongside another. Over half of demonstrations involved 4-5 different 'learning activities' (Table 6).

Table 6.	Number	of	different	learning	activities
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	percentage
Low (1-2 different activities)	18.8
Medium (3 different activities)	18.8
High (4-5 different activities)	56.3

Then, we checked how participants rated the effectiveness of demo events in relation to the number of different learning activities present. Results revealed that the number of learning activities was positively associated with effectiveness rating by the participants. Only a third of the participants of demo events with a low number of activities (1-2 activities) scored the effectiveness of the demo as high. By comparison, exactly half of demonstrations with a high number of activities (4-5) scored highest on the effectiveness rating (Table 7).

Table 7. Effectiveness associated with the number of activities during a demo

	Lower effectiveness	Higher effectiveness	Total
Low (1-2 different activities)	66.7	33.3	100
Medium (3 different activities)	60.0	40.0	100
High (4-5 different activities)	50.0	50.0	100

As outlined in Figure 3, discussion and a 'Question and Answer' session were the most commonly deployed, present in 28 out of the 33 case study demonstrations. Note the more 'physical' examples were less frequently utilised in demonstrations, with 'hands-on experiences' such as trying out a particular machine or bit of kit, occurring in less than half of the demonstrations.



Figure 3. Learning activities present during CS

Box 5 FR1 illustrates how a combination of activities are used and shows how these are selected to be appropriate to the theme or topic of the demo event. Here combining visualisation with technical information is seen as important. This was backed up by comments from other countries where they recognise that demos have to suit different learning styles, for example AT2, FR3, IR1 (Box 6). Typical types of learners are (Figure 4): 1) Auditory learners prefer to hear the information. They often talk to themselves while they are studying or thinking. This can be supported by stimulating the audience to repeat the key messages out loud, e.g. by asking them questions. 2) Visual learners prefer to see information and visualise the relationships between ideas, for example in infographics, charts, schemes and colours. 3) Reading/writing learners prefer to read or write down information, in booklets or handouts. 4) Kinaesthetic (Physical) learners prefer to actually perform hands-on exercises and experiments.



Figure 4. Different types of learners and how to take them into account during a demo. (Source: https://tutoringwithatwist.ca/vark-learning-styles/)

Box 5 FR1 Innov'Action is a French national demo program, Brittany

The structure of the day varied depending of the activity, but generally the Farm Interviewee employed a combination of theory, followed by a practical example or demonstration of the subject in question. The Programme Interviewee added that the most constructive structure for a presentation was the combining of visualisation with technical information.

Well, then, it depends on the theme that we emphasize, that's the first thing. Indeed, if we talk about crops for example, well, it's true that it's good to, if we talk about weeding for example, well I think it's good to have an aspect, I would say, theoretical, but then again, we need to talk about practical, about how it's done. For animals, it's more or less the same, I give an example where we talk about dehorning, well I don't know if we have a group that says "well, we'd like to come and see, for example, how you dehorn your animals", well, it's good to talk a little bit to what we should pay attention, why we do things this way and not another, and then it passes on to action, anyway, me, there are always those two phases, you see. But here... really, the... the practice, yeah, the practical side needs to be present. (Farm Interviewee)

It is actually the visit with the technical information, during the visit. It is not "I present what I do and then after we will see". No, no, it's ... the visit and the visualisation of what is done there is constructive. (Programme Interviewee)

In terms of particular materials to aid demonstrations, the farmer cited the occasional use of a video to stimulate questions and discussion amongst participants.

Well, it's true that ... sometimes a little video like that ... it's about people, and it also allows then to have a ... a dialogue, they'll see something, they'll say "that's how you do it, why?" Well then, yeah, it's.... (Farm Interviewee)

The Farmer cited 'good quality expert advice' as the most important element of a demonstration because there is always more to learn and continuous training is important for farmers throughout their career. Conversely, the Programme Interviewee cited 'Participants ask questions and talk openly' as the most important because the point of the day is to have a discussion about the farmer's practices, not to have a monologue.

Well, the principle is that it's the testimony of the farmer so it's not a monologue, it's really, as I said earlier, defending his project, defend his choices. And discuss the practices. (Programme Interviewee)

Box 6 IR1 Workman's Farm Walk is one of a series of 12 annual organic farm walks

Both the Farmer and the Programme interviewee emphasised the importance of having a practical demonstration. Although, as the Programme interviewee commented, this can take a lot of planning and requires a consideration of health and safety. The Farmer added that mixing demonstrations with technical information creates a balance of teaching styles, which means they are able to accommodate more people. The Farmer described the farm walk as combining the discussion with the tour of the farm, rather than discussing the topics and then seeing the farm.

I think a balance because some people like to get technical and some people like to get a demonstration so it's to suit your audience and how they like to learn. We would structure it in that the farm walk is actually a walk and we would have a number of designated stops and designated topics so we'd be looking at concentrating on moving so we would actually walk the farm and cover the topics rather than showing crops, and showing animals, and discussing the various aspects as we walk around the farm walk route. (Farmer)

Well to have it as practical as possible. They go down very very well. For instance, you could have a demonstration of weeding the crop; you could have a demonstration of weighing of cattle. It has to be visual. That would take a lot of planning. We could have to maybe pre weigh cattle, take photographs, but them in the booklet, show before and afterwards. Health and safety is very important in terms of working with machinery as well. Once the farmer is involved there and a facilitator or adviser to run that event; that's the main thing. (Programme interviewee)

Interactive and hands-on activities are key

The importance of interactive activities such as hands-on experiences emerged strongly in the thematic analysis of the interview transcripts. Even the simple act of relocating outside and seeing things (as opposed to actually trying them out in a formal/planned activity), was also highly-regarded by interviewees. There was a good degree of consensus around **the importance of 'seeing' and even 'doing' things**. As the Programme Interviewee from the UK2 case commented, it can be as simple as 'kicking a tyre' or 'feeling some dirt'; this is, he suggests, reflected in the fact farmers are typically practical people. We note how *even* when the topic does not lend itself particularly well to something 'fun and interactive', the farmer still suggests the importance of getting the participants to *do* something.

"It's a mix of a little bit of theory but <u>importantly getting out</u> ... I think if they can get out and kick a tyre or feel some dirt, that's their life, they're practical people, ultimately. Even if it's a financial one, I've done a meeting on banking, you can give them a financial exercise to work out - as long as they're doing something, that's OK. " (UK2 – programme interviewee)

This sentiment was reiterated across other interviews.

"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." (BE2- host farmer)

"The most effective way are presentations followed by farm walk. In the presentation you could explain something but in a farm walk people can see things with their own eyes." (NL2 – host farmer)

"Looking in a soil pit is always part of our events, sometimes we also have machinery exhibitions. They are very effective for attracting participants' attention." (AT2 – host farmer)

Table 8 shows that the number of times themes were referred to by the interviewees. Whilst it confirms the above analysis showing that getting outside and seeing things are mentioned the most, and technical presentations and machinery and technology less so, this can be indicative of the distribution of case studies topics, and it is important to understand that methods are selected for their appropriateness to topics.

Table 8. Thematic analysis: reference count of mentioned activities

	References
Get outside	33
Seeing things	22
Time for discussions	18
Doing things	14
Technical presentations	10
Machinery and technology	7
Food	6
Shocking or important results	4

As in Case study FR3 (Box 6), IR1 the farmer interviewee cited 'Participants ask questions and talk openly', as the most important ways of engaging participants, especially if there are specific questions that the participants want answered, as this helps the farmer to feel the day was really worthwhile.

"I just put myself in the role of somebody that's coming to a walk. Many people would have a specific question. We all have questions and I think that over the two hours, you get a lot of information and you won't retain it all but if you come with a specific question then the topic is dealt with and you get your question answered and I think that you'd feel good coming from the walk and it's a good experience." (FR3-Farmer)

Whereas the Programme interviewee cited 'Visualisation techniques, or other multi-sensorial experiences' as the most important, because 'People need to be able to see things'. The Programme interviewee seemed to feel strongly that the visual element to the day was central to learning and engagement.

"They see the farmer, they see the grass, they look around, they're listening. Two things about a farm walk; people need to be able to listen and hear and it has to be farmer led. I suppose that's why visualisation techniques and something practical and something tactile. It's looking at clover, it's looking at crops to see a live demonstration." (FR3-Programme interviewee)

Indeed being able to ask questions was judged to be a good indicator of an effective demo.

In GR1 for example for assessment of whether a demo has been effective the Programme Interviewee selected 'Participants ask questions and talk openly' as the most important outcome saying that:

"The most important thing/parameter is farmers to engage and express freely what they think/see (both positive and negative comments and questions are useful). Nothing works well if participants do not feel open to interact." (GR1- Programme Interviewee 1)

As the above quotes illustrate, the importance of the inclusion of interactive activities is a key factor in the design of demonstrations. As evident in Table 9, effectiveness is positively associated (at the statistically significant level) with participation in an interactive experience during the demonstration event. In a similar vein, so was feeling actively involved in the demonstration (Table 10).

Table 9. Responses to 'I participated in an interactive experience during the demo' and participants' effectiveness rating of the demonstration

	Not effective or neutral	Effective	Total
Yes – interactive experience	18.5	81.5	100
No – no interactive experience	28.5	71.5	100
N/A	40.7	59.3	100

¹The association is significant when p<0.05. Data sources: post event survey from participants

Table 10. Responses to 'I felt actively involved' and participants' effectiveness rating of the demonstration

	Not effective or neutral	Effective	Total
Disagree	51.8	48.2	100
Neither agree nor disagree	31.8	68.2	100
Agree	3.7	96.3	100

¹The association is significant when p<0.05. Data sources: post event survey from participants

Disconcertingly, only 38.2 per cent of participants claimed they were involved in an interactive activity at the demonstration. Given this link between interactive activity and effectiveness, a key recommendation for best practice is to increase the number of interactive activities offered as part of demonstrations (where operationally possible and appropriate to the topic). Offer a wide range of experiences and look for ways to surprise participants.

Table 11. Responses to 'I participated in an interactive experience during the demo'

	Percentage
Yes	38.2
No	46.4
N/A	8.3

Data sources: post event survey from participants

However, where the demo is very technical, hands-on or interactive methods are not always appropriate or possible. In the ES2 case (Box 7), the farmer interviewed cited 'Good quality expert advice and technical presentations' as the most important tool. However, seeing the innovation in situ in operation is regarded as important, also the opportunity to ask questions.

As a result, increasing the number of interactive methods or hands-on activities is strongly related to the topic and goal of the demo. Furthermore, it depends also on other factors such as time in the season or available time for the demo event. While on the other hand, when having a demo with a high number of different activities, time management and didactic materials are crucial.

Box 7 ES2 The Reboredo farm (pig meat production) demonstrates the AUTOFARM system

The structure of the day consisted of a tour of the office where the air conditioning system was held, and an explanation of how it works, followed by a tour of the production hall to demonstrate the results of the system. There was also an opportunity to look at resources outside of the production building, such as the water tank and silage storage. The focus appeared to be on presenting the whole farm system in situ.

I explain the system and how it works at the office where we have the system ... [So they can see the control panels ...] Yes, yes, where they can ... [How you make your decisions ...] How I perform, and then in the production hall we can see the results. [So, at the beginning you give a little explanation of your system at the office and then ...] Yes, even some resources we can see outside the building different silage, external environment, the level of the water tank and so on, and then we see in situ, inside the farm in the production environment. [So inside you can see the results of the system] (Farmer)

Exactly, it is what I have told in the previous answer. That they (participants) can see all in situ; that it is not a laboratory; that it is a real farm environment and that they can see it working. Then, they can observe how these animals are and their welfare conditions and the air conditioning which is properly adapted to the environment. (Farmer)

No supplementary materials were provided to participants.

The Farmer cited 'Good quality expert advice & technical presentations' as the most important tool for engaging participants because this was the best way to resolve any doubts that were raised. The farmer did add that there was a balance to be achieved here, and that it was best to avoid getting too technical.

Yes, I believe, that to explain technically the product without entering issues which can be too technical, logically, to interact with a farmer. And then, well, that every doubt or question they raise, I can resolve them. (Farmer)

Focus on peer learning

Another characteristic that was associated with effectiveness was the relationship between attendees and their farming peers. Participants who felt they could relate to other participants were also more likely to find the demonstration effective. What makes farmers relatable to another needs further investigation (it could relate to a number of factors such as age, farm type, approach, norms and values); when this is better understood, it may be possible to target invitations to groups of groups of farmers who may be more likely to connect to each other, e.g. specific sector livestock farmers or young farmers.

	Not effective or neutral	Effective	Total
Disagree	27.5	72.5	100
Neither agree nor disagree	33.6	66.4	100
Agree	17.5	82.5	100

 Table 12. Responses to 'I could relate well to other participants' and effectiveness rating of the demonstration

¹The association is significant when p<0.05. Data sources: post event survey from participants

The role of trust – specifically being able to trust the knowledge of other participants – is positively associated with the effectiveness rating of the demonstration. It suggests there may be room for 'trust building activities' in the form of icebreakers or other similar activities to boost trust.

Table 13. Responses to 'I felt like I could trust the knowledge of (most of) the other participants' and effectiveness rating of the demonstration.

	Not effective or neutral	Effective	Total
Disagree	34.2	65.8	100
Neither agree nor disagree	32.5	67.5	100
Agree	14.5	85.5	100

¹The association is significant when p<0.05. Data sources: post event survey from participants

The importance of trust also emerged in the host farmer and programme interviews. **Farmer-to-farmer interaction** was regarded as most effective type of interaction (out of four options, see below) amongst 59.3 per cent of farmer and programme interviewees.

Table 14. Most effectiveness of type of interaction according to the participants

	Percent
Advisor-to-farmer	23.7
Researcher-to-farmer	6.8
Farmer-to-farmer	59.3
Farmer-to-researcher or advisor	10.2

Data sources: post event survey from participants

Interviewees justified this by describing the farmer-to-farmer relationship as unique.

"The interaction farmer-to-farmer is the most effective because farmers mostly trust in another farmer. In case of researcher-to-farmer, the fears of contacts as well as communication problems are too big and sometimes there is need for an additional intermediary. This also depends on the practice experience of the researcher." (AT1 – Programme interviewee)

"There is a great trust between farmers." (SW3- Programme interviewee)

The feeling that the demonstrator (usually the farmer host) was like any one of the farmers was also associated with demonstration effectiveness. Where the demonstrators were regarded as 'one of them', the demonstration was more likely to be rated as effective (Table 15). This is plausible, but more analysis is needed here to understand what makes a host farmer relatable to their peers. Is it their farm size or type, or is it more about personality or even general approach to business? By understanding what makes a farmer relatable, this can be used in the early stages of demonstration organisation such as recruitment and advertising events, i.e. the 'relatable (and therefore attractive) characteristics' of the host could be advertised as part of the recruitment campaign.

This finding should also guide the recruitment of host farmers, acting as a reminder that they should – as far as possible – be relatable to their peers in that area or field. Talking about the network of monitor farms he belongs to, the host farmer in the UK2 case claimed:

"I think there are some that feel that for whatever reason, they can't relate to the monitor farm - and there will always be some I guess - but we always try and pick a monitor farmer who we think will be representative of the area but obviously we are not going to please everybody." (UK2 – Programme Interviewee) **Table 15.** Responses (in %) to 'I had the feeling the demonstrator was like one of us' and effectiveness rating of the demonstration

	Not effective or neutral	Effective	Total
Disagree	33.9	66.1	100
Neither agree nor disagree	32.8	67.2	100
Agree	13.6	86.4	100

¹The association is significant when p<0.05

Conclusions

- The number of learning activities was positively associated with effectiveness rating and
- Demos have to suit different learning styles
- Question and Answer sessions were the most commonly deployed in CS events while the more 'physical' examples were less frequently utilised
- Learning methods are selected to be appropriate to the theme or topic of the demo event.
- Getting outside was referred to the most
- Effectiveness is positively associated with participation in an interactive experience during the demonstration event, however only about third events observed used them

Based on this result, we thus suggest to offer a wide range of diverse activities. Examples may be field walks, observing practical demonstrations carried out by a demonstrator, and letting participants carry out hands-on activities. Such practical activities enhance learning and understanding, and also the interactions between participants. By adding a surprise effect to the demonstration activities, participants will more likely remember the information for a longer time.

- Participants who felt they could relate to and or trust other participants were more likely to find the demonstration effective
- Farmer-to-farmer interaction was regarded as most effective type of interaction

Offer opportunities for peer-to-peer knowledge exchange. You can increase participation in presentations and demonstrations, by e.g. actively giving participants the opportunity to share their experiences with the audience, by organising discussions with smaller numbers of participants, or by organising workshops in which active knowledge exchange is stimulated. Create opportunities for more informal knowledge exchange, by providing enough time for farmers to chat to each other, for example during lunch, drinks or workshops.

3. Disentangling key characteristics at farm level

3.1 Suitable farm

To answer the question 'Which farm and thus which farm characteristics make a farm suitable for on farm demonstration events?', we analysed farm characteristics, which are linked to effective outcomes.

Farm type and real life conditions

First of all, <u>the type of the farm</u> affects its suitability as a demo farm. We distinguish three types of farms, namely a commercial, an experimental or hybrid type of farm. A hybrid type of farm combines a commercial and experimental organisation structure. The main goal of AgriDemo-F2F is to study on-farm demonstrations at commercial farms. In that sense, a large majority of case studies (27 CS) were performed at a commercial farm, six CS took place at an experimental farm owned by a research centre or extension site and two at a hybrid type of farm.

Furthermore, a demo farm can be specified as appropriate <u>when participants or farmers perceive the host farm</u> <u>as suited for the demonstration</u>. If so, farmers can feel more comfortable to share their knowledge and expertise and learn. Table 16 shows how participant felt about the effectiveness of the demonstration in relation to their opinion on the host farm. The relation is positive and significant (p<0,001), the more they agreed the host farm operation was well suited for the demonstration, the more effective the demonstration was perceived. Furthermore, on the question of how comparable the farm was to their own, Table 17 shows that 82.8% of the participants that agreed on this statement, also scored the CS as effective (significant p=0,027).

Table 16. Responses to 'I think the host farm operation was well suited for this demonstration' and effectiveness rating of the demonstration

	Not effective	Neutral	Effective
Disagree	11,8%	41,2%	47,1%
Neither agree nor disagree	4,5%	39,8%	55,7%
Agree	2,3%	14,3%	83,4%

Data source: post event survey from participants

Table 17. Responses to 'I thought the host farm was comparable enough to my own farm' and effectiveness rating of the demonstration

	Not effective	Neutral	Effective
Disagree	6,0%	19,0%	75,0%
Neither agree nor disagree	3,2%	31,9%	64,9%
Agree	1,1%	16,1%	82,8%

Data source: post event survey from participants

In addition, the qualitative data indicate that real-life conditions and comparable conditions to a farmers' every practices is important to learn. If innovations are demonstrated within the boundaries of a farmer's everyday experience, the impact of a demonstration could be higher. For example, in the UK2 case, both the farmer and programme Interviewee described the network, overarching the on-farm demonstrations, as exhibiting 'a mixture' between 'Experimental' and 'Exemplary' practices. Both expressed a preference for this approach because, as the farmer expressed, it is a better reflection of the reality of the farm:

"Works for us to be honest, we're a farm not a show farm. I think a mixture works for us. Some of that is off the back of the fact we are a mixed farm, so we have livestock. And some of what we do on the arable side influences the livestock and vice-versa, that's why it's more of a whole farm approach." (UK2 -farmer)

In Box 8, the host farm of the case of IR2 is described as an example of a best practice regarding suitability. However, there are exceptions. A specific CS in Belgium on "Ferme de Froidefontaine" (<u>http://www.froidefontaine.be/</u>) - a cooperation of different types of enterprises (farmers, processors, chefs, craftsmen, ...) working together on 45 ha and make ecological products within the agro-ecological and organic philosophy – is an atypical farm, and thus not a host farm similar to the farms of the visitors, however, also this can provide inspiration to the farmers and increase reflection on current practices.

Access and facilities

Another important factor that affects suitability is **good access**. Long **travel distances or travel time** discourages participants to attend the demo. This might have an influence on the suitability of demos in more remote regions. These quotes show how demonstration aim to target local farmers.

"We initially target neighbours and near-neighbours and obviously P sends out emails and what have you to people, and hopefully ... you know we've got quite a database now, if you've been to one of our events you'll be in the database"(UK2 - farmer)

"What do you think discourages people from attending demonstrations? A: No time, wrong topic, distance. A: To far, time." (PL2 - farmer)

"Yes, most farmers are from the local area, most of them come from Castilla la Mancha. (Host farmer) Q: They come alone or in groups. R: Sometimes a couple of farmers or more come, sometimes just the one. "(SP3 - farmer)

However, some specialist demonstrations with attractive or unique topics proved to be able to attract people who live further away or even abroad.

"We once had somebody come down from Aberdeen ... to a composting field lab in Herefordshire ... she drove down all the way from Aberdeen to Hereford. And she came because there was nowhere else she could go to learn about using compost [inaudible 08:26] in cover crops so ... so it's definitely topic and then obviously you've got to do all the bits about promoting it" (UK1 - participant)

For series or recurrent demo events, often a rotation system between a couple of host sites is used, so in the course of a period a whole region is covered. However, increased frequency of demos on a farm that was already a host before could reduce the attendance in case of longer distances.

In relation to access, the location of the host farm and whether it <u>easily accessible and easy to find</u> are important factors. Such locations are preferably located near roads or footpaths or on the immediate outskirts of a village. The ability to find a location can be increased by providing road signs from the bigger roads towards the final location of the demo-event, or by providing directions for satellite navigation. Also, at the location of the demo, signs or banners can be provided to indicate what is being done and who can be contacted for further information. Further, sufficient parking space nearby is beneficial.

A best practice is group transport, which increases the access for the participants. This can be done from a central location to visit multiple demonstrations sites during one event, as this quote shows:

"The host farmer used an all-terrain vehicle to guide participants to a field trip, visiting different fields both his own ones and of his colleagues/members of the cooperative cultivating pistachios in the area. He compared differences in growing phases of fruits and health of trees/production. The farmer stopped in different fields and offered hands-on activities mainly with soils and fruits. In each stop, the whole field and its surrounding area was analysed. (SP3 - organiser)

Several conditions regarding <u>the facilities, such as furniture, toilets, audio</u>, etc. should be taken into account and can be very crucial. First, there should be rooms or spaces that provide sufficient room and furniture for the participants to easily see and hear the demonstration and discussions. These might already be there on the location or can be provided through hiring companies. If the farm does not own the spaces, organisers can search for a

nearby restaurant, pub or community building to gather the participants. Facilities only emerged as a key characteristic at the CS workshops after the demonstration events. Therefore, data was not gathered and their presence was thus not observed or questioned during the event itself.

"The farmer has made several arrangements and preparations in order to host the specific demonstration event. More specifically, he arranged a lecture room in the farm's storage room and he ordered a toilet for guests. Moreover he prepared a meal with farm's sausage products, vegetable dishes, local dishes, cakes, etc." (PL3 - farmer)

Second, when discussions and long talks are organised on the fields, it is good to provide shaded areas or shelter. Overall, the organisers should anticipate weather conditions by providing shelter (e.g., tents, a barn) for rain, wind or extreme temperatures. Often, hosts provide two types of rooms: a room for formal demo activities like lectures or discussions, and a room for informal activities such as eating, drinking, and networking. Specifically for the informal activities, nice views on the surroundings are appreciated (N). This often fits in with the combination of learning methods used.

"KRIVAJA Doo offers some arrangements when holding an event, like tents for shading and drinking water. In order to be more efficient in demo delivery, the farm is planning some improvements in the near future, by offering for instance food and transportation for potentially interested farmers." (SE1 - organiser)

"The theoretical part was followed by a short networking break with drinks and dessert prepared by the host farmer, in the same meeting room which offered a lookout in the new barn. The last part was devoted to a guided tour around the farm and the new barn during which the farmer showed the new technologies and innovations used around the farm." (BE3 - organiser)

Third, other equipment and furniture, such as toilets, tables, chairs and disability facilities should be provided (specifically when people with disabilities are expected, such as elderly people). Depending on the size of the demo and the time spend in the field, chairs and toilets may be appropriate.

Fourth, clear audio and visuals should be guaranteed, also for bigger groups. Lectures and discussions should be held away from noisy installations or machinery. Further, for bigger groups, screens, (portable) microphones and loudspeakers need to be provided. When people do not hear what is being told, the effectiveness of the demo is going down to zero. This support material should be checked in advance to guarantee they function well. To improve visibility, the demo objects can be placed in a way that they can be easily approached by visitors from several sides.

Although not significant, it seems that the type of organisation can have an influence on the degree of professionalization of the event, i.e. the degree of facilities that are present. For instance, bottom-up events (organisation mainly decided upon by the target group of participants) sometimes lack signpost or clear indicated parking spots. On the other hand, demonstrations organised top-down (organised by government, project leaders of research institutions, organisation leaders, without directly consulting the needs of the target group of farmers) often have all facilities present. For instance, the case study of FR2 provided signposts, catering, nametags and good audio and sound (Figure 5). Moreover, this event was hosted at an experimental farm without the engagement of a host farmer. Demonstrators commented that the demo farm was appropriate and well suited for the event (post event demonstrators) a view equally shared by all interviewed participants (post event participants). The structure of the event gave participants opportunities to get involved in the process, mainly though through asking questions as well with presenting their own on farm situation and point of view.





Box 8 IR2: Agroforestry host farm

The host farm of IR2 was mostly regarded upon as 'comparable to the own farm' by survey participants and rated as very suited for the demonstration. The demonstration was also rated as very effective by the participants and exemplifies our results.

The host farmer owns a 20-hectare beef and agroforestry farm in Clonakilty, County Cork. He is a pioneer part-time farmer, as the farm is the oldest agroforestry demonstration plot. The farm owns a conventional forestry land adjacent to the ALB plantation - agroforestry plot which is also used for demo activities. These different plots are used to illustrate the difference between them. Teagasc, Greenbelt and the Forest Service have regularly used the agroforestry plot for demonstration events. The demo day usually includes a farm/forest walk and a farmer's presentation that initiates an extensive discussion on multiple aspects of forestry and agroforestry.

"In the particular case of the agroforestry demo plot, I mean he's got conventional forestry and he's got agroforestry – most of the attention I suppose in recent years has been on his agroforestry plot and largely it comes down to the local personnel as to how much of that is organised. It's very much maybe a localised thing." (Programme interviewee)

"I think his farm is useful because it's set in a pastoral setting and there's other forestry and farming enterprises nearby. They can visually compare, they can see it straight in front of them and I think if there was a number of demonstration farms where this kind of integrated approach was on view it would work a lot better. Our normal forestry approach is looking at forests but we want to show it as a compliment to farming rather than competition. It is an integrated thing." (Demonstrator)

Conclusions

A demo event is preferably hosted on a commercial working farm, and at field scale. Then, it relates better to the farmer's everyday practices and more effective peer-to-peer learning can be realised when the host farm operates under similar "real life" conditions, meaning similar production systems, agricultural practices, technologies and constraints. Furthermore, collaborations between commercial companies and commercial farms allows participants to see the newest innovations within this "real life" conditions.

Demonstration on a research station can be of value to show and discuss on ongoing research or innovative techniques, particularly where the impact on the farm business and effect of context is not of primary importance. Also an event on an atypical farm van provide inspiration to farmers and increase their reflection on current practices.

The host farm should have **good and easy access** for the targeted audience. Long travel distances or travel time proved to discourage participants to attend the demo. The demo site should be easily accessible and easy to find. Several conditions regarding the **facilities**, **such as furniture**, **toilets**, **audio**, etc. should be taken into account as they can be very crucial to reach an effective demo.

3.2 Suitable farm host

A second key characteristics at farm level is the suitability of the host farmer, more specifically, the degree of involvement and (perceived) trustworthiness of the host farmer. The degree of involvement can vary and examples of farmer involvement include: providing the demo site and infrastructure; providing catering; contributing to or being in charge of the overall management of the demo; (co-)deciding the demo topic; providing content; introduction and welcome; being a demonstrator; being an expert; contributing to recruitment; and so on.

In addition, the trustworthiness of the host farmer is related to different aspects. Within our CS, we looked at trust as: the host farmers' skills, his farming experience, his training background and how the participants can relate to the host farmer.

Involvement of the host farmer

The role of the host farmer can diverse highly, their role as one of the demonstrators or as the main demonstrator is discussed. Additionally, their involvement in decision making regarding the content and the set-up of the demonstration is discussed.

Based on the qualitative data, the hypothesis is that the demonstration will be rated as more effective by the participants if the host farmer is one of the demonstrators, opposed to when the host is not involved as a demonstrator. As for example stated in some of our case studies:

One of the main features of the organic demonstration farm walk is that in the majority they are farm led. If we have three or four themes in a farm walk over 2 hours if at all possible we want the farmer at every stop because we know that farmers love listening to farmers. We will back up that farmer and we will embellish his message with some technical information. That's the most important feature of our farm walks. We would certainly like to feel that they are practical because of the fact that they're farmer lead. (IR1)

"The host farmer was also a demonstrator. At the beginning, he shared the farm's

background to the participants, and then, he guided the trip on the farm: animal production, machinery, building and the experimental part." (PL1)

"At the specific event, three high-class specialists of a major seed company acted as demonstrators. The host farmer was also demonstrator, presenting tractor's equipment. Machines controlled by a computer program and GPS have been demonstrated. At some point, the host walked beside the tractor with sprayer and the cabin was empty." (PL2)

Although the numbers indicate that 50% of the CS where indicated as effective when the host farmer was one of the demonstrators vs. 37.5% of the CS when this was not the case, we cannot confirm our hypothesis. Based on a Chi-square test, the relation between the two variables is not statistically significant (p > 0.05) (Table 19).

	Not effective	Neutral	Effective
Host farmer is one of the demonstrators	25,0%	25,0%	50,0%
Host farmer is NOT one of the demonstrators	37,5%	25,0%	37,5%

Table 18. Host farmer as one of the demonstrators related to the effectiveness of the demonstration

Data source: observation tool

In addition, the qualitative data indicate that it is highly appreciated when the host farmer is one or the main demonstrator.

"The host farmer had different roles. During the demonstration activity, he was the tour guide and answers the questions of the visitors. His wife was the organiser of the day and coordinated the ca 10 people that helped to lead the stream of people in the right direction, did the catering and entertained children." (NL2, observation tool)

"During the day my role is to explain the greenhouse and answer questions of the visitors." (NL2, Farmer)

"The host farmer was the demonstrator of the event. He guided participants to different fields, explained different development phases of the crop and offered participants, when convenient or necessary, hands-on opportunities to touch the soil (humid or dry) and the fruits (consistency and development). Finally, he used all available time to share information on production and reply to questions posed by participants." (ES3, observation tool)

Taking a closer look on how the decision-making on the content of the demonstration came about, we divided the case studies in 3 categories. These categories are top-down (9), participatory (18 cases) or bottom-up (only one case). Top-down cases include demonstrations for which the content was decided upon by the government, project leaders of research institutions, organisation leaders, without directly consulting the needs of the target group of farmers. Participatory cases are cases for which for example farmer representatives or the host farmer decides on the content of the demonstration in consultation and collaboration with the organising body. Bottom-up cases are cases for which the content is mainly decided upon by the target group of participants. We categorised the cases based on additional information gathered through google forms validating the data gathered through the interviews and surveys. These google forms were completed by the AgriDemo-F2F partner who was the most closely related to the case (observed the event and conducted the interviews). As an example of a participatory approach:

"ZLTO seeks the collaboration of host farmers who are willing to get involved actively

in the demo development. Furthermore ZLTO always involve host farmers as well as participants at the topic selection and actively pursue to keep in touch with farmers and participants needs." (NL1 - Programme interviewee)

Although results presented in figure 6 might indicate that a participatory approach might support the effectiveness of a demo event, due to low numbers in other approaches we could not test and find any significant link with the effectiveness score participants attributed to the demo. This result was similar when excluding the cases for which the approach was unknown.



Figure 6. Decision on the content of the demonstration

Regarding the decision-making on the organisation (timing, knowledge dissemination and exchange methods...) of the demonstration, we again divided the case studies in 3 categories, based on information gathered from interviews. These categories are top-down (18), participatory (7) or bottom-up (3). An example of a participatory approach:

"Participants' ideas are included in the demo set-up. Results from an event in autumn for example are discussed with farmers, advisers and researchers. Their suggestions are taken into account for the follow-up event in spring." (AT1- Farmer)

Also, here the categories did not associate significantly with the effectiveness score participants attributed to the demo. The results even indicate that the approach (top-down, participatory or bottom up) of decision making about the organisation of the demo does not influence the effectiveness of the demo (Figure 7).



Figure 7. Decision on the organisation of the demonstration

Trustworthiness of the host farmer

The public perception of the host also plays a role in the attractiveness and the effectiveness of an event to the (potential) participants. A host farmer that is recognised for being both innovative and productive can increase the potential number of participants. Further, farmers known for their ability to experiment or being a pioneer in a specific field can contribute to the attractiveness of the demo. An example case in this regard of a demonstration carried out by an experienced host farmer is presented in Box 9. Also, our interviews indicate the importance of a knowledgeable host farmer.

"The host farmer is the leader of the demonstration day organised on his farm. He is a qualified specialist in pig production, knowing very well the sector as well as his own farm operations. He implements on this farm an innovative technological project, the Autofarm application, a system of monitoring and control of agricultural operations through easy management and compression with its own hardware and software (Farmer), which has been developed by the pig farmer himself with a team of computer experts (Observation tool)." (ES2)

As such, our hypothesis is that farmers who recognise that they trust the knowledge of the host farmer as main demonstrator are more likely to rate the demonstration as effective. When only the cases with events where the host farmer was the main demonstrator are taken into account, 14 CS remain with 134 survey participants in total (AT1, AT2, BE1, ESP3, IRL1, IRL2, NL1, NL2, POL2, RS1, RS2, SW1, SW2, and UK2). For these cases, the association between responses to 'I had the feeling I could trust the knowledge of the demonstrator' and the effectiveness rate participants attributed to the demonstration is significant (p < 0.01) (Table 19; Figure 8). The survey results thus support our hypothesis.

The OiB manager expressed her believe that it is really effective when farmers meet other farmers. The reason for that it is a mutual trust between farmers. (SW3 - Case study report)

Table 19. Responses to 'I had the feeling I could trust the knowledge of the demonstrator' for CS where the host farmer was the main demonstrator, according to effectiveness rate.

	Not effective	Neutral	Effective
Disagree	28,6%	28,6%	42,9%
Neither agree nor disagree	3,9%	27,5%	68,6%
Agree	3,4%	10,2%	86,4%

Data source: post event survey from participants





Figure 8. Trust in knowledge of the demonstrator when host farmer was the main demonstrator

Often the host is known as **a dedicated farmer**, a "good" farmer who is an expert is his field, with opinions that are highly respected by his/her peers, a farmer that can bring his/her story and opens up to discuss his/her day to day practices.

"Regarding the actors as part of the structural elements, the most import aspect recognised by the participants was 'the demonstrator who is able to bring his/her own story'. We believe this refers to building up trust between the attendees and the demonstrator. (NL-BE workshop report)

Also here, the results based on participants surveys across the 14 AgriDemo-F2F cases where the host farmer was the main demonstrator suggest that there is a statistically significant (p < 0.01) positive association between perceiving the demonstrator as skilled and how effective the participants rated the demonstration (Table 20).

Table 20. Responses to 'I think the demonstrator had the right skills to carry out the demonstration' for CS where the host farmer was the main demonstrator, according to effectiveness rate

	Not effective	Neutral	Effective
Disagree	50,0%	16,7%	33,3%
Neither agree nor disagree	10,5%	31,6%	57,9%
Agree	0,0%	12,9%	87,1%
Data source: post event survey from participants

The host farmer can be chosen by the organisers because they already know him/her from previous collaborations or projects or because of his/her involvement in other demo events. Often demonstration farms are appointed by organisations for several years, during which trials are tested on the farm. It can be a "safe" option to select an experienced farmer as the demo events often require many efforts from the hosts to prepare their farm for the visitors.

"The farm has quite recently started hosting demos, a decision that was triggered by their successful participation in a yearly event (open day of agriculture days) in September 2017. Despite their limited experience, as until the specific event they had hosted less than five events, they seem to be quite interested in engaging further into demo activities. Their recent investments on a new barn as well as the adoption and use of technical innovations offer a promising starting point and motivates them to invest in hosting demo events. It might be interesting to note that they see in demos and opportunity for peer learning among farmers, but also a promising way to attract young people, and showcase how technology can co-exist with and actually improve farming activities." (BE3, Observation tool)

Moreover, although 50% of the CS that had an experienced demonstrator were rated effective compared to 25,0 % of the CS when demonstrator was not experienced, this relation was not statistically significant (Table 21).

Table 21 'Experienced demonstrator' in 14 CS where host farmer was the main demonstrator, according to effectiveness rate

	Not effective	Neutral	Effective
Demonstrator is experienced	20,0%	30,0%	50,0%
Demonstrator is not experienced	50,0%	25,0%	25,0%

Data source: pre event survey from demonstrators

Box 9 SP3: Experienced host farmer as main demonstrator, hidden from the mainstream AKIS world.

We focus on SP3 as a best practice example concerning trustworthiness of the host farmer as a demonstrator during the demo. This because the host farmer was the main demonstrator and had experience in demonstrating. He was also part of the local community and participants stated that they trusted his knowledge and he was regarded upon by them as 'one of us'. The demonstration was also rated as very effective by the participants.

The small demonstration event was designed as a guided tour on different farms in Castilla- La Mancha, close to the seats of the cooperative. The host farmer used an all-terrain vehicle to guide participants to a field trip to showcase different plots and development phases of pistachios, visiting different fields both his own ones and of the ones of his colleagues/members of the cooperative cultivating pistachios in the area. The host farmer mainly organises one-off events, unless participants are interested in joining the cooperative.

The host farmer compared differences in growing phases of fruits and health of trees/production. The farmer stopped in different fields and offered hands-on activities mainly with soils and fruits. In each stop, the whole field and its surrounding area was analysed.

The demonstration felt like a continuous conversation among participants and the farmer. Following each field stop, they engaged into questions and discussion until they reached the next field.

"The demonstrator is a real farmer with real aims to share knowledge and he has a lot of experience and field access (from other farmers)." (Participant)

The host farmer seemed very committed and a passionate "believer": he truly believes in this crop. He has a long and profound experience with difficult techniques like 'grafting'. Despite this, the self-recognition of the host farmer of his value as demonstrator seemed low.

Apart from all these strong points, planning for (a bit) bigger groups could be good. Also the publicity on the existence and availability of the demo could be more thought through. It seems that only people extremely interested could find the demo.

This demo was an amazing example of a very qualitative demo, but hidden from the mainstream AKIS world.

Conclusions

Although we could not link it to the effectiveness of the CS demo events, our results indicate that a higher degree of involvement of the host farmer is valued and appreciated by the participants. Mainly the fact that the host farmer is also one of the demonstrators guiding participants on the farm and sharing information through answering questions about his/her farming practices.

A second important characteristic is the (perceived) trustworthiness of the host farmer. A host farmer that is knowledgeable, dedicated and recognised for being innovative and productive. Furthermore, it is also important that a host farmer is skilled to guide participants on his/her farm, opens up and discusses his/her day to day practices.

4. Motivational space, structural set-up and group dynamics are key

From the descriptive analysis at event and farm level, it was clear that some characteristics where more relevant than others. To understand how structural characteristics of on-farm demonstration events affects the perceived effectiveness of the demonstration, we performed a 2-step statistical analysis (factor analysis and multiple linear regression). The analysis was based on the 345 questionnaires filled out by participants of 31 demo events in 12 EU countries after they participated in a demonstration event. Although the effectiveness of an on-farm demonstration is a multifaceted concept, we constructed a combined factor to better capture participants' assessment of demo effectiveness (Table 23). Further details on the methodology can be found in Annex 1.

Table 23: The list of variables, which formed 'general effectiveness'

"General Effectiveness"
Cronbach-a = 0,804
The demonstration met my expectations regarding what I wanted to learn.
The demonstration exceeded my expectations.
How effective did you find the demonstration for you to learn something?
I thought about how I could implement some of the ideas and practices on my own farm.
I felt like the demonstration increased my ability to rely on myself as a farmer.
I'm thinking about an action I could undertake myself, because of the demonstration.

The first step within the analysis resulted in three important factors explaining the effectiveness of a demo event. Table X offers a more detailed view of which statements were attributed to each of these factors. The first factor consists of eight items or responses from the participants (Table 24). The second factor consists of four items. The last factor includes three items.

Table 24 : The lists of statements comprising the three factors	le 24: The lists of staten	nents comprising	the three factors
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Factor 1	Factor 2	Factor 3		
Cronbach-a = 0,815	Cronbach-a = 0,703	Cronbach-a = 0,678		
If participants didn't agree with each other during discussions, somebody (demonstrator/other participant) tried to reach a consensus between them.	I think the day was well structured.	A lot of the other participants are part of the same farmer network as me.		
I had the feeling that I could share my own knowledge as relevant information.	I think the host farm operation was well suited for this demonstration.	I could relate well to other participants.		
I got along very well with the demonstrator.	I think the demonstrator had the right skills to carry out the demonstration.	I think the group consisted of an interesting mix of people.		
The demonstration felt like an informal activity to me.	The group was the right size.			
I felt encouraged to ask questions during the demonstration.				

When there were any discussions, I felt comfortable sharing my opinion.	
It was my own choice to be here.	
I had the feeling the demonstrator was like one of us.	

Motivational space

To understand better the grouping of these statements and to define a label for each factor that encompasses the statements within that factor, we indicate to which concept the statements refer to in Table 25. For the first factor, we can clearly distinguish statements that relate to the three basic psychological needs autonomy, relatedness and competence as these are detailed in the Self Determination Theory (Deci and Ryan, 1985; 2000)⁵. When satisfied, these needs support optimal functioning, personal growth and intrinsic motivation. According to SDT, satisfaction of these basic needs is required for the internalisation of externally regulated behaviours (e.g., practices that are imposed by regulations, peers, or rewards) into personally endorsed values and behavioural regulations. Therefore, we label factor 1, "Motivational space". If a demonstration event can realise a space that can satisfy these three basic needs of the participants, then the event does create a space where participants can start an internalisation process (Ryan and Deci, 2000a) of externally regulated behaviours. This internalisation process is defined as "an active, natural process in which individuals attempt to transform socially sanctioned mores or requests into personally endorsed values and self-regulations" (Deci and Ryan, 2000, p. 235). This means that participants taking part in events that create a motivational space are able to start an internalisation process of the practices shown and discussed during that event, meaning that they value the practices and might change their behaviour according to these practices.

Motivational space	Structural set-up	Group dynamics
Cronbach-a = 0,815	Cronbach-a = 0,703	Cronbach-a = 0,678
Interaction and facilitation	Structure of the day : Available time for planned activities	Group connectedness
Competence (view of participants on their competence)	Participants can relate to the farm	Group connectedness
Participants can relate to the demonstrator	Trustworthy demonstrator	Group composition
Informal interactions	Group size	
Motivating atmosphere		
Open atmosphere		
Autonomy of participants		
Participants can relate to the demonstrator		

 Table 25: The lists of concepts comprising the three factors

⁵ Deci, E.L., & Ryan, R.M. (1985) Intrinsic motivation and self-determination in human behavior. New York: Plenum.

Ryan, R.M., & Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. American Psychologist, 55, 68-78.

This result was quite surprising for us, not the result as such, but the fact that our data could reveal this since the data gathering tools and questions were not designed based on this SDT framework. Therefore, although this is a strong result, further research should confirm these findings. The question that is now raised is which concrete characteristics add to this internalisation process. Looking back to the statements included in the factor 'motivational space' (ex. "I had the feeling that I could share my own knowledge as relevant information", "The demonstration felt like an informal activity to me" and "I had the feeling the demonstrator was like one of us"), we recognise that a focus on peer-to-peer activities can be crucial here. The latter is already discussed in depth within section 2.2 of this report. Some thoughts from the case studies supporting the importance of a climate fostering peer-to-peer exchange:

"I think hearing it from the farmer themselves. It was made up of predominately a farmer audience so it was peer to peer learning and I think that made it very effective." (IR1-Demonstrator)

The demonstrator reported the willingness of farmers to talk about their farms and their willingness to share what they are finding out as factor contributing to effectiveness. (UK- case study report)

As an example of the importance of these individual questions included in the factor 'motivational space', the results based on the participants post event surveys suggest that there is a statistically significant (p < 0.01) positive association between perceiving the demonstrator as 'one of us' by the farmers and how effective those farmers rated the demonstration (Table 26).

	Not effective	Neutral	Effective
Disagree	5,1%	28,8%	66,1%
Neither agree nor disagree	5,1%	27,7%	67,2%
Agree	0,0%	13,6%	86,4%

 Table 26.
 Responses to 'I had the feeling the demonstrator was like one of us' according to effectiveness rate

Data source: post event survey from participants

Furthermore, the questions "If participants didn't agree with each other during discussions, somebody tried to reach a consensus between them.", "I felt encouraged to ask questions during the demonstration." and "When there were any discussions, I felt comfortable sharing my opinion." point in the direction of the importance of a structured, facilitated process in creating an open and friendly atmosphere during the demonstration.

"To have a professional facilitator can also be important for a good dialogue. It may also be that person who is able to pick up questions and comments from visitors, or the one who challenges or provokes in a nice and interesting manner." (DK-SW - workshop report)

However, as other characteristics can also serve the satisfaction of the basic needs, further research would be necessary to find out more insights on this.

Structural set-up

For the second factor, we see mainly structural characteristics related to the host farm and demo-set up (see Figure 1) . As a first concept, we see that the structure of the day seems to be an important factor influencing effectiveness. More specifically, we can understand this as time made available time for the planned activities, and how the demonstration was planned and kept to the foreseen schedule, or how the different activities complemented each other. Regarding this, at least seven case studies reported 'more time' as point of improvement related to the demonstration activity.

"Ideas for improvement could be to make the demonstration last for more time than 5 hours." (PL1 – case study report)

Additionally, at least eight case studies mention the overall organisation, scheduling and structure of the demonstration as an important effectiveness factor, referring to the necessity of thorough preparation, for example regarding timing.

Mentioned as an import factor influencing the effectiveness of the demo:

"The demonstrator kept the day to schedule and guided the discussion well. (UK1 - case study report)

"The participants seemed interested in the demonstration, but everything was a bit rushed, since there was very little time for each presentation. This also meant that there was very little time for questions and no time for discussion." (DK1 - case study report)

We do not go into detail on 'group size' and 'participants can relate to the farm', as these were already discussed in-depth within respectively chapter 2 and 3, we only repeat the main messages here. Firstly, group size was profoundly discussed in section 2.1 (p.8), with main conclusions being that the optimum size of the group is strongly linked to the objective or goal of the demonstration activity. Furthermore, there is a general preference for smaller demonstrations as small groups make it easier to ask questions and give everybody the chance to take part in group discussions. Secondly, participants need to be able to relate to the farm (discussed in depth in section 3.1 p28), as such a demo event is preferably hosted on a commercial working farm, and at field scale. Then, it relates better to the farmer's everyday practices and more effective peer-to-peer learning can be realised when the host farm operates under similar "real life" conditions, meaning similar production systems, agricultural practices, technologies and constraints.

A fourth and last important concept for this factor is the (perceived) trustworthiness of the demonstrator. This was already addressed in section 3.2 (p 34) with regard to the host farmer as demonstrator. Here we investigate trust related to any type of demonstrator within all the AgriDemo-F2F cases. Our hypothesis is also here with a Chi-square test positively statistically significant (p < 0.01) confirmed: participants who tend to agree on trusting the knowledge of the demonstrator, tend to rate the effectiveness of the demonstration higher (Table 27). A demonstrator that is recognised by the community of demonstration participants as knowledgeable, honest and dedicated influences the trust participants will have in his/her words, on thus possibly the impact of the demonstration. Furthermore, it is also important that a demonstrator is skilled to guide participants on the farm and opens up the discussions.

	Not effective	Neutral	Effective
Disagree	17,6%	41,2%	41,2%
Neither agree nor disagree	2,9%	36,7%	60,4%
Agree	1,2%	9,3%	89,5%

Table 27. Responses to 'I had the feeling I could trust the knowledge of the demonstrator' according to effectiveness rate.

Group dynamics

The third factor has also much to do with the group of participants, as statements are linked to group connectedness (*"I could relate well to other participants." and "A lot of the other participants are part of the same farmer network as me."*) and group composition (*"I think the group consisted of an interesting mix of people."*). The difference between these concepts and the concepts underlying the other factors is that they all have a clear focus on characteristics of other attending participants, therefor we choose the label "group dynamics". Next to the quantitative analysis of the survey answers, we also found evidence in our case study reports supporting the importance for these statements:

Mentioned as a factor contributing to effectiveness: The fact the group had met before meant participants and demonstrator could build on previous discussions and had prior knowledge. (UK 1 – case study report)

Also, announcement of the event through diverse channels brought a mixture of attenders encompassing farmers and students, and professors of agriculture. This created a good starting point for discussion among participants. (RS1 – Case study report)

The farm event was mostly an inspiring environment for networking between farmers and policy makers. (*NL2 – case study report*)

General effectiveness

The second step of the statistical analysis encompassed a multiple linear regression (more details in Annex 1) to try to understand how much each of the factors attribute to an effective demo event. This analysis⁶ revealed that the general effectiveness from the factors of motivational space, structural set-up, group dynamics, could be predicted as follows:

Model Equation: GENERAL EFFECTIVENESS = 0.274 + 0.426 * (motivational space) + 0.268 * (structural set up) + 0.172 * (group dynamics)

Furthermore, the three independent factors used in the multiple linear regression explain 47.5% of the variance of the perceived effectiveness by the participants. The coefficients in the model equation reveal that the creation of a motivational space (0.426) is the most important factor to create an effective demo event. If the three basic needs (autonomy, relatedness and competence) are addressed by the demo event, participants will more probably start to internalise the practices. Peer-to-peer learning activities and a good facilitation seem to add much to the participants' perception of these basic needs and thus an effective demo event.

This more profound statistical analysis does confirm the results from the mixed methods approach in chapter 2 and 3, where qualitative findings were complemented with descriptive statistics, to a high extent. Aspects as group dynamics, peer to peer learning, trustworthiness of the host farm and demonstrator and the fact that the host farm operates under similar real life conditions were also find to be key in the chapters 2 and 3. However, with this analysis we could uncover the importance of the satisfaction of the three basic needs to create an effective demo event. Next to peer learning activities, also good facilitation seems to be crucial. Although, we highlighted the importance of a variation of activities and the value of interactive and hands on experiences within these activities. Additionally, the structure of the day, including enough time for these planned activities, also seemed crucial.

⁶ The F-test was found significant at the 99.5% confidence level (F(3,327) = 100.605, p < .005), 2 and the multiple linear regression model summary revealed that the adjusted R² of the model is 0.475. All three variables contributed positively and statistically significantly to the prediction of the dependent variable (p < .05) meaning that at a 95% confidence level, the hypothesis that each factor makes no impact to the model is rejected. All three variables contributed positively and statistically significantly to the prediction of the dependent variable (p < .05) meaning that at a 95% confidence level, the hypothesis that each factor makes no impact to the model is rejected. All three variables contributed positively and statistically significantly to the prediction of the dependent variable (p < .05) meaning that at a 95% confidence level, the hypothesis that each factor makes no impact to the model is rejected

Within the Agridemo cases, three important factors could explain the effectiveness of a demo event for 47.5%. A first factor is **the creation of a motivational space**: if the 3 basic needs (autonomy, relatedness and competence) are addressed by the demo event, participants will more likely to internalise the practices. Peer-to-peer learning activities and a good facilitation seem to add much to the participants' perception of these basic needs and thus lead to an effective demo event.

Furthermore some **structural characteristics related to the host farm and demo-set up** seem to add much to the effectiveness of a demo event. These aspects are the structure of the day (including available time for the planned activities, time management,...), participants able to relate to the farm, a trustworthy demonstrator, as well as group size.

The third factor has much to do with the group of participants, namely **the group dynamics**, and mainly the group connectedness (participants that know each other beforehand) and group composition (interesting mix of participants).

5. The broader AKIS and organisational arrangements

5.1. Introduction

The previous sections have shown that the characteristics of demos at the farm and event level are key in influencing demo effectiveness. However, the broader approach or strategy that these methods at farm level are embedded in are also important. These broader strategies are generally steered by the organisations coordinating demo programmes and events, the objectives they pursue when delivering demos, and ultimately the AKIS context in which they sit. Figure 1 sets out the relationship between the organisations, farm and event/activity levels building on and developing further the project's analytical framework (Koutsouris et al. 2017⁷).

There are multiple characteristics at the organisational level of farm demonstrations that combine to create the enabling environment for farm demo delivery, and in turn farmer learning. As such this section analyses CS data collected at the organisation (also called programme) level and specifically asks: What is the influence of the organisational characteristics on the demo events and what best practices can be identified at this level? These characteristics can very generally be thought of as *external*/contextual – the national AKIS and its impact influence on organisation type and funding; and *internal*, characteristics such as organisational arrangements; networking, governance mechanisms for farmer involvement. However, it is often the interaction between the external and internal that determines demo delivery and outcomes. By distinguishing the various factors that influence demonstrations beyond just farm and event level methods and techniques, the Figure 9 "disentangles" these complex learning systems, extricating relevant factors for analysis and impact.

The structure of this chapter is based on this figure and continues as follows: Section 5.2 explores AKIS interactions; how demo organisations are shaped by AKIS (blue boxes), and in turn shape how demos shape the AKIS (yellow boxes). Sections 5.3- 5.5 explore how the organisational arrangements influence/ enable effective demo events with respect to the different organisation types, funding and collaborations. We also discuss here how this results in different coordination approaches. Continuing with the internal factors, Section 5.6 covers demo organisation governance and farmer involvement (green boxes). These findings are used to identify leverage points where best practice interventions can improve current AKIS and demo organisational arrangements (Chapter 6).

This analysis draws on data from 35 case studies across Europe, with 37 organisation/programme level interviews (supplemented with selected farm level interviews (27) where respondents comments are pertinent to the organisational arrangements) and 10 workshop reports.

⁷ See D2.1 The Agridemo-F2F analytical framework





5.2. AKIS interactions

National AKIS context

Demonstration programmes and activities do not operate in isolation, they are **part of a wider advisory landscape and national AKIS**. It is important to understand how the CS demo programmes are situated within this context and examine to what extent the national AKIS interacts with, steers and determines the organisational arrangements of demos, and the nature and effectiveness of demo delivery and overall impact; and in turn also demo programmes influence and contribute to the national AKIS (Figure 10). The role of the public, farmer, private sectors and NGOs in providing and funding advisory services; the extent of decentralisation and the linkages and partnerships among agents in the AKIS system, especially agricultural research and education organisations, is important to understand with respect to demo programmes. The extent to which CS demo programmes are embedded⁸ or integrated in existing structures and networks is determined by the AKIS context and the characteristics of the CS demo programme.

⁸ We understand embedding as being or becoming incorporated into existing formalised structures and working with actors.



Figure 10. Interaction between AKIS and Demo activities

Demonstrations shaped by the AKIS

In the following sections we describe, based on the CS analysis, the influence of the different AKIS types on the CS demo programmes and events. AKIS types are described according to terms and categories used by the Proakis project and other scholars (e.g. Garforth et al., 2003)⁹.

Where **CS** demos are part of programmes coordinated by one or two lead national public advisory organisations (IR, Wales, PL, AT) their strategic planning and coherence (and stability/longevity) of delivery is relatively strong.

IR1 and IR2 were described by workshop participants as centrally located in the AKIS while IR3 for example has run for 14 years supported by Teagasc. Often the advisory bodies are well integrated with research and farming subsystems. The priority goals are those of their governments i.e. to support sustainable agriculture, innovation and farm businesses, , this means their links to farmers are well established. They often have farmer representation in the programme and need to be accountable to public funders so have monitoring and feedback processes in place. There are long established organisations (with access to funding like RDP instruments which can offer some continuity (e.g. Farming Connect CS in Wales).

In Austria for example the main AKIS actors are the nine Chambers of Agriculture (COA) in the nine federal states, ÖKL (Austria's advisory board for agricultural engineering), research institutes and 9 institutes for rural training (Box 10). The respondents highlight the importance of embedding into existing networks of the COA, as well as with other exiting networks. For established National Agricultural Advisory Systems (NAAS) with an advisory service like Poland, demos operate within hierarchical and regional structures linked to research institutes, pilot/experimental farms as well as training centres for farmers, in which different trials are set up and implemented and demonstrated (Box 11). Respondents in the Polish CSs emphasised the close working relationship between farmers, research institutes and public advisory services and the value of long term personal relationships. Demos that are centrally located in the AKIS can leverage other AKIS actors and mechanisms to extend reach and impact as noted for IR2 in the workshop for Ireland. This plays out in different ways, while IR1 was able to use the links to engage a wider range of participants, IR2 was able to engage a greater proportion of farmer participants.

⁹ Garforth, C., Angell, B. and Archer, J. 2003. Fragmentation or creative diversity? Options in the provision if land management advisory services. Land Use Policy 20 (4), 323-333.

CS demo programmes involved with established Farmer Organisations (FO) like the Chambers of Agriculture (COA) in France benefit from multi-level hierarchical national and regional structures, with associated departments and actors working in them; and good connections to research institutes and to commercial actors. COA's long experience and good networks with farming industry, and their accountability to their farmers, mean that demo activities linked to them are strongly integrated/embedded in the AKIS (see Box 12). This allows them to make vertical and horizontal connections with multiple national and local networks for both promoting the demo and disseminating demo trial results more widely. Notably the CS develop with private companies although objectivity is ensured. However, the different CS in France show that demos emerge and are managed differently despite having a common AKIS context. Also, the workshop participants noted that despite the strong AKIS background, coordination between the several AKIS organisations which implement demo events at regional and national level could be improved to help clarify messages to farmers in the future.

Where CS are in **countries** where the level of public investment in advisory and demonstration programmes is low **and where AKIS are more pluralistic, largely privatised and demand-led AKIS**, demos are delivered by more diverse organisers linked through varying networks and arrangements. These are filling the gap where there is limited public provision and include: NGOs, organic bodies, levy boards, private consultants and advisory groups and often a strong commercial sector. For example, in England a number of established NGOs (SA, LEAF) provide demos, and in Sweden the OiB farmer-initiated network has well established demo activities. Sweden has a number of actors providing demos on farm but as the agricultural sector is small and there is extensive cooperation between the different parties, however in other countries with more fragmented AKIS, competition was noted as a barrier to delivering effective demos. Commercial companies are particularly active in demos in these countries.

CS in such countries with low public support however do have influential players and resources with **large private advisory organisations** like ZLTO in Netherlands or Seges funded by farmer levies in Denmark¹⁰. These respectively play an important role in delivering or partnering in delivering demonstrations as part of other programmes. For example, the organic department of Seges works with an organic extension service called ØRD (DK1) and organic department of a private local advisory service LMO (DK2). The companies exhibiting organic products who are part of the CS said at the workshop that they would like Seges to be more involved and so make the event more nationwide. They would like more activities across the agriculture industry and with other advisory companies, but this was difficult because of competition, a feature of a privatised AKIS. In DK Seges is integrated and "builds bridges between research and practical farming". and demos programmes benefit from these good linkages between advisory services and research organisations.

The AKIS in Greece is described as typically having a **highly fragmented and uncoordinated AKIS** with little public support for, or coordination of, demonstrations. Commercial/supply chain companies are very active in using demonstrations to promote their services and products. The difficulty in finding CS in Greece for Agridemo reflects this. The workshop report notes that in Greece there is neither a national policy framework nor coordination mechanisms between existing AKIS actors, the CS organisation as such develop their own initiatives and try to improve their connections. Although they are described as well organised and implemented they are still seen as marginal. The main barriers identified by the workshop participants relate mainly to the overall/national level and to the lack of relevant experiences and culture within farming communities, as well as with the aforementioned weak and fragmented AKIS context. GR1 overcomes this by strategic partnering, working with partners with a strong service record offering services to farmers and coordinating agri and rural development measures and programs. One partner, the region's Directorate of Agricultural Economics and Veterinary Services (DAEV), has been organising demonstrations for over 33 years on farmers' fields or on any other relevant facilities. DAEV employees and the Director (Agronomist and Programme interviewee 2) say they "make use of their deep knowledge and experience on the problems, constrains, needs and interests of local people, showing that long standing relationships and knowledge are not only the 'privilege' of the public/FO bodies of stronger AKIS (Box 13).

Summary

¹⁰ Project partners categorised these as advisory rather than farmer organisations although it is recognised that they could also be categorised as Farmer Organisations

The CS countries span a range of AKIS 'types'. In CS countries with a public advisory service (IR, Wales, PL, AT); a strong Farmer Organisation (FO) presence like the Chambers of Agriculture (FR) or an integrated advisory service at national level like Seges (DK), demo programmes can benefit from: stronger coordination, being embedded into existing formalised structures and networks at many spatial levels, from resources and continuity of funding, have access to research institutes, adviser support in terms of facilitation, and recognition (trust, respect) of farmers. These arrangements, with more stable structures and funding, can integrate demos into wider and longer-term campaigns of learning or support, by planning and managing follow up activities and building up knowledge and capacities, as described for the Farming Connect CS (Wales) and in BE2. As such they play a strategic role in a farmers' learning pathway (which draws on other sources over time).

Whereas where the AKIS is weaker or more fragmented, demonstration programmes are not supported or integrated to the same extent, CS demo organisers are more likely to have to forge their own links with other actors or networks in the AKIS, are more reliant on commercial partners and sponsorship for funding and may be more temporary or project based in nature. They may also be limited in geographical scope and in the ability to build up any stable networks or programme continuity. Arguably this has repercussions for staff competences and capacities as well. However, it could also be argued that where demos programmes are part of the established 'system' they might be constrained in terms of topic selection, potentially more top down, and, be 'too familiar' to farmers (as reported byTeagasc in IR) and miss out on innovative delivery methods and the creative diversity and opportunities that networking brings described by Garforth et al (2003) referring to fragmented AKIS.

This analysis shows that **AKIS provides a framework for understanding what determines demo programme organisation**, however there are clearly different social and cultural interactions at play as well. Network structure and governance are seen to be a precondition for a successful demonstration activity for embedding demos. Where AKIS are weak or fragmented, the demo organisations need to partner or exploit networks to fulfil their objectives. This is explored further in section 5.5 and illustrated in Figure 11. It is also noted that long term relationships and local knowledge are an important factor for some organisations.





Box 10 Austria: Embedding into existing networks

The main actors in AKIS Austria are the Federal Ministry, Bio Austria, nine agricultural chambers representing Austria's nine federal states, ÖKL (Austria's advisory board for agricultural engineering), research institutions, nine LFIs (rural institutes for agricultural training) and the farming population.

Network structure and Governance: a precondition for a successful demonstration activity is the embedding in a network. For the Kastenhuber CS this is network of: the agricultural chamber, the "Soil and water protection advisory", AGES with field experiments and experts. For the Grand CS this is especially FIBL (research for organic agriculture) Austria.

In Austria demos can also take advantage of other networks. There is a strong network of different working groups ("Arbeitskreise") with various topics (e.g. crop production, animal breeding, milk production) of local agricultural chambers. In those working groups farmers meet, cooperate and exchange opinions and views very closely showing each other their success stories and – in this +- protected space - less efficient management practices and failures.

A network for organic agriculture is called Bionet. This network is comprised of partners from advisory (agricultural chamber, BIO AUSTRIA), agricultural schools and research institutes (FIBL Austria, HBLFA Raumberg-Gumpenstein, University of Life Sciences, HBLFA Schönbrunn, HBLA und Federal Office for fruit production and viticulture Klosterneuburg). In close cooperation with farmers, advisors and scientists, current research results and farming experience are tested for practical suitability under Austrian site conditions. Field experiments are carried out and the results provided to a broader interested audience.

Box 11 Poland: Strong linkages and personal involvement

In Poland public services are highly structured with a public agricultural advisory services operating through 16 regional agricultural advisory centres covering the whole country, but also integrated with research institutes. They coordinate demo activities at their appropriate areas of activities within their public funds allocated generally for advisory operations. The local agricultural advisors play a crucial role in facilitating development of demo farms

There are four key actors effectively managing the system: the public advisory service, the research institutes, farmers sectoral organisations, individual farmers voluntarily operating as demo farm managers/guides as their own personal long-term involvement.

The public advisory service acts as a coordinator within its functional and financial capacity as the main instrument of the governmental/public policy implementation at rural areas and rural communities (including farmers),

For research institutes demo farms are one of the key instruments for informing farmers on new solutions and practices. These are funded by the Ministry of Agriculture and Rural Development under the system of a multiannual working plan defining some thematic areas of demo activities

Sectoral farmers organisation act as a key coordinating actors of demo activities in a more complex way. They define the main areas of farmers' needs at their organisations levels. Subsequently, each demo farm manager arranges his own event without direct coordination with other members of any given sectoral organisation. It is, therefore, a hybrid type of demo activities, something between formal and informal coordination at any organisation level.

Individual farms are either acting on a long-term basis as demo farms managers/sometimes guides or other farmers are rather invited to be a part of demo activities on a short term basis

The current system is coordinated at a regional/local level. However, the lack of national coordinating instruments (i.e. no existing data base on planned schedule of event in demo farms) heavily limit the full potential of the demo farms system utilisation as part of the national AKIS policy.

Box 12 CS in France all integrated into the AKIS

All the CS are linked with local, regional or national AKIS by knowledge exchanges, experiments, research projects and communication. The Chamber of Agriculture is the main advisory and applied organisation at the regional scale, as these two CS examples show.

FR1 Innov'Action is a multilevel structure, which can put innovation in the field, offer technical support and reinforce knowledge sharing. Innov'Action is strongly based on the link between the farmer's innovation and the Brittany Chamber of Agriculture. The local coordinator, the elected members and the advisers from the Chamber decide with the farmer about the main demo organisation. The innovation shown and the technical knowledge exchanges are directly linked with the host farmer's purpose. They do the link with the regional program, the press and other communication actors. The farmer is used to working with several local partners and advisory companies. Some advisers from these companies could be present at the events however they have to respect an agreement on the global organisation of Innov'Action.

FR3 – *Is one of some 50 "Agroecological" groups* in Brittany coordinated by the Regional Chamber of Agriculture or other organisation on several different topics such as pesticide, veterinary medicine, fuel. The group of agroecological farmers cannot be dissociated from the Chamber or Agriculture facilitator who takes the farmer's individual and collective ideas and needs and transforms them into a project. She found the budget, the human resources (expert, press...) to manage the project. The group is also linked with other farmers groups to do experiments and cross fertilise ideas.

Box 13 Greece GR1 and 3: Leveraging different organisations in a weak/fragmented AKIS

The workshop participants note that success of any such initiative is mostly related to the interconnections and the reputation of the organisation in the local community.

GR1

HCPA/ESYF (GR1) always looks for local cooperation and co-organisers for their demonstration event. As the organisation is situated in Athens, they always collaborate with local services, advisors, agronomists/ practitioners in Greek provinces in order to select and adapt the demo topics locally. They mentioned that they very carefully choose their local partners, in order to achieve an impactful event. In that way ESYF uses feedback from local experts and partners in order to adapt the content of the demo. This kind of partnerships and cooperation with local organisations/actors are always an effective arrangement especially for those organisations that do not have local roots.

DAEV (GR1) makes use of their undeniable deep knowledge and experience on the problems, constrains, needs and interests of local farmers. At the same time, they make use of their extensive networking in the farming community and the long-term relations and personal contacts they keep with farmers, corporations, local agronomists, agricultural services stuff etc. Moreover, DAEV employees continuously search and get informed on the contemporary market needs, news on farming practices and innovations. In all, they achieved to build a very good reputation within the community through the years. This appears as one of the most effective way to organise, plan, design, and implement demonstration activities in a region.

GR3 American Farm School

AFS offers a good example of an organisation with extensive experience on hands-on training that employs demos to train farmers. AFS is not part of a network but, when needed, it activates its links with research institutes to reach out to appropriate know how and engage experts into demonstrations. Equally important is the organisation's ability to connect with sponsors and design trainings and demos to serve their needs and mobilise donors to fund demo initiatives. This is a process that stems from, but also reinforces the organisation's reputation in agricultural training.

Demos shaping the AKIS

Demo organisations are not only influenced by but can themselves influence the AKIS. Analysis was conducted to see what role demos play in the wider advisory landscape, to what extent demos transform and expand the reach and depth of the advisory services, and how advisory services can leverage or gain an advantage through the use of demos. The purpose of demos can include: delivering a coordinated advisory programme, the means of sharing in a network or group – e.g Monitor farm, research and project dissemination and more. Thus they can make a contribution to all elements of the AKIS

The NL/BE workshop participants noted the valuable role demos can play contributing to or in addition to existing advice programmes. In Greece the workshop participants agreed that demos should be considered as an additional tool offering another opportunity for farmer to farmer learning but that thy should not be considered as appropriate for all cases/objectives, and should not undermine or substitute efforts for an integrated approach on farmer training and farmer to farmer learning.

In relation to the demo goals, although the primary goals might be dissemination of trial results or uptake of a single technology, **secondary goals tend to include more far reaching aims**. For example, for PL1 the main goal of the demo activities is the presentation of technology developments in a productive system, however the intention is also to improve the collaboration with research institutes and the advisory system as well as to improve transfer of knowledge and training advisers and farmers. For FR2 the first aim is to deliver to the producers the results of trials implemented but the second objective is to federate independent producers in Brittany who are isolated. Furthermore soft objectives and goals need to be considered - such as empowering farmers by building social capital, aiding effective knowledge exchange to improve the problem-solving abilities of the farmers involved, building good links and personal relationships between farmers and advisory and research communities etc. All of the latter are reliant on longer term relationships.

As part of using demos as a means of supporting a wider programme of advice, the DK/SW workshop noted that it is important to follow-up with participants, although this was rarely mentioned in interviews. They suggested some ways of doing this: if consultants attend the demo they can act as a contact for people afterwards, other existing networks could be utilised, or even created if a group of innovative farmers want to continue looking into the demo topic. This follow-up idea was raised in the UK workshop, which noted the important role of mentoring, coaching and peer support in addition to demos (called 'Demo+') in helping to ensure buy-in and group commitment, something that traditional demos typically would not have in place. Farming Connect CS in Wales already operate this, they think in terms of leading farmers along a journey. Firstly farmers attend an open demo meeting, then if interested they attend a more focused closed (progression) demo meeting, they can eventually attend a two day master class at the innovation centre. This is in line with the suggestion at the workshop that one event is not enough, a series of events are needed to bring about learning and change. A person at this workshop also suggested pausing to reflect as an organisation, to share and reflect on demo experiences. Analysis of responses to the interview question: Do you - at the programme level - continue to engage participants after the demonstrations? Showed a relatively high response level (42%) for all organisation categories with farmer organisations (58%) and advisory services (53%) more likely to engage afterwards compared to NGOs and research institutes.

As an indication of whether organisations manage and plan demos as part of a wider advisory programme or strategy, analysis was done of programme interviewee responses to the question: Do you try to assess the extent of influence (diffusion) from your demonstration programme(s) to non-participants (those who have not attended demo events)? Table 28 shows that only one third of the organisations assessed wider diffusion.

					Total
			No	Yes	
Organisation	Farmers' organisation	Count	7	5	12
type		% within Org_type	58.3%	41.7%	100.0%
	Private/public extension	Count	9	2	11
	of advisory service	% within Org_type	81.8%	18.2%	100.0%
	Research institution	Count	5	1	6
		% within Org_type	83.3%	16.7%	100.0%
	Individual farmer	Count	1	1	2
		% within Org_type	50.0%	50.0%	100.0%
	NGO/charity and/or other ag dev org	Count	1	2	3
		% within Org_type	33.3%	66.7%	100.0%
Total		Count	23	11	34
		% within Org_type	67.6%	32.4%	100.0%

Table 28. Extent of influence (diffusion) from demonstration programme(s) to non-participants

Conclusions

Demos already play a key role in contributing to or as part of existing advice programmes or dissemination activities but this role can be further enhanced. Positioning demos within the wider advisory landscape and assessing the influence beyond participants is important but needs to be strengthened by demo organisers. Incorporating demos as part of a planned learning pathway for farmers can be successful but requires engaging with participants before and after the demos as part of a planned progarmme.

5.3. Organisational arrangements: organisation categories

The diversity of CS demonstration programmes and how they have emerged/developed and are delivered can be explained by multiple factors: AKIS context, organisational structure and actors, objective, (focus, topic, target audience), sector, funding arrangements, scale (geographic/temporal), and means of delivery. At a general level five organisational categories can be distinguished according to the main organisers of the CS demonstration programmes (Table 29). The distribution of CS shows that they are predominantly organised by farmer organisations (FO) and private/public extension or advisory service, and to a lesser extent by research institutes and NGOs, with individual farmers only represented by two CS.

Table 29. Numb	Table 29. Number of case studies in each type of organisation category					
-	.				••	

Farmer organisations	Private/public extension or advisory service	Research institution	Individual farmer	NGO/charity and/or other agricultural development organisation
11	10	6	2	5

Commercial organisations (machinery firms, seed companies, ...) were not included in this study although it is important to note that they regularly deliver on-farm demonstrations, as highlighted by a number of respondents. Their role is greater where the AKIS are fragmented and largely privatised. Here we only mention commercial companies when they play a role in the organisational arrangements of the five categories identified within our CS.

The categories and examples of CS are described briefly below. This is a useful framework for understanding to what extent, and how, the organisational arrangements enable the delivery, and impact the effectiveness of, demonstrations.

This categorisation is loose as CS organisers can span more than one category (as noted in 5.2). It also hides a more nuanced picture of demo organisational arrangements which can be complex and dynamic, often involving multiple partners and roles and operating at different spatial and temporal scales. The majority of CS describe a partnership of organisations delivering demo programmes where actors and organisations from these different categories intersect. These are described variously as networks, collaborations, cooperations which operate with varying levels of formalisation (see section 5.5).

Goals of demo programmes vary within organisations, whilst very generally research organisations aim to disseminate trial results, advisory organisations largely aim to support farm businesses by demonstrate a range of technology and techniques and practices, , whilst NGOs are more likely to have ideological goals such as balancing ecology and economy in production.

Farmer organisations (FO)

CS: ES2,3, FR1,3, NL 1,2,3, GR1, PL3, SW1

This category includes CS where demonstrations are predominantly organised by Farmer Organisations like Chambers of Agriculture (COA), organic grower communities, and sector specific grower cooperatives or foundations.

In France CSs (FR1 and FR3) the role of the Chamber of Agriculture which is the main advisory and applied organisation at the national and regional scale is significant. In other countries the presence of sector specific farmer organisations with strong commercial connections are evident in providing and collaborating in demos in CS (where the AKIS can be characterised more as privatised, demand-led) e.g. Open Greenhouse day's foundation and Strawberry foundation in NL. In both CS these commercial sector organisations are linked to private advisory organisations that often provide support and sponsorship. In Sweden (SW1) the Swedish cereal producers' association and a Swedish local organisation for seed and oilseed producers combine to organise a growers' day. They all work closely with commercial sector companies but the delivery arrangements vary, NL1 (Practice centre for precision farming) and NL2 are part of a national demo farm network coordinated by a centralised organiser

and favour large one-off events at the regional, sponsored by exhibitors; while in Spain (ES2) the Reboredo farm, although part of the Coren "cooperative of cooperatives", provides single local events. One comment was made at the DK/SW workshop that farmer-organised demos are more effective than those organised by the public authorities since they address topics of interest to farmers, and because farmers lose interest when the authorities start to control an issue. This was repeated in some other CSs.

Private/public extension or advisory service

CS: AT1, DK1,2 , FR2 , UK2, 3, IR1,2,3

In this category arrangements can vary, demonstrations programmes can be part of established public advisory services as in Ireland (Teagasc) or Wales (Farming Connect). In Austria (AT1) for example the advisory services for soil and water protection, Chamber of Agriculture (COA), agricultural companies, AGES and farmers combine to deliver demos and the host farmer provides trials for the COA. Alternatively services are provided by arable levy boards (AHDB) with knowledge exchange activities using demonstration style activities (Monitor farms) in England.

In Denmark Seges is the dominant advisory organisation supported by farmer levies and is a major partner in two DK CS, integrated with strong networks across the country. Seges Økologi Innovation work closely with Organic Denmark an advisory organisation in Denmark which develop innovative projects on organic agriculture but also collaborates with commercial companies for its demonstrations. They also cooperate with other organic bodies like LMO (DK2), a local extension service.

Research organisations

CS: AT2, BE2,3, RS1, PL1, GR2, DK3

Some CS are demo programmes run by research organisations or are part of a research project's dissemination activities. Centre for Practical Training (PL1) for example is set up on a research institute which is involved in a delivery of multiannual plans of cooperation with farming communities/farmers' organisations and public advisory service. This type of activity is funded within the framework of multiannual funding programmes managed by the Polish Ministry of Agriculture and Rural Development. In RS1 BioSense Institute's researchers are responsible for the design, coordination and organisation/development of the demonstration, the topic selection and the timing proposition but they are collaborating with KRIVAJA doo employees. AT2 is a trial of a specific machine on a host field organised by research institutes and universities.

Some of these research-led CS are part of single research projects. For example BE3 "Buffertech" is an EU project dissemination WP. For BE 3 the demonstration (one off in 2 regions) was held to inform dairy farmers on a newly developed calculation tool to make smarter decisions on a dairy farm. The demonstration represented the dissemination phase of the project 'Routeplanner dairy'.

NGO/charity and/or other agricultural development or environmental organisations

GR3, UK1, SW1,2,3

These can be networks and programmes or stand alone. The Swedish farm demonstration network OiB (Odling I Balans, Farming In Balance) was initiated by farmers. UK1 Innovative Farmers (in partnership with other bodies) is a networked initiative which uses a model of on-farm experiments which are shared or demonstrated to small groups , although is not a demo programme per se. Both UK and SW CS have good links with other actors in the AKIS although do not intersect with commercial organisations in the same way as categories 1 and 2. The American Farm School (AFS) in Greece, is a stand-alone private, non-profit organisation which offers several agricultural training programmes to interested farmers and exploits a number of networks in its delivery plans.

Individual farmers

BE1, ES1

Many CS demos have a degree of self organisation, however in this category they are characterised as stand-alone and not being part of a wider network or programme. They can however be facilitated by organisations, for example BE1 where demonstration was inserted in the programme of the EURAF-2018 conference in The Netherlands, as a field tour on Agroforestry. It was facilitated by Van Akker Naar Boss a Belgian and Dutch organisation which aims to accelerate the transition to agroforestry or nature inclusive agriculture and arranges events and people from their network. For the ES1 in Spain, this is a family farm which operates independently as a demo farm but is linked to and facilitated by the regulatory body for organics.

5.4. Organisational arrangements: funding

Funding arrangements

The funding arrangements are closely linked to the sort of organisation or nature of the collaboration and to the national AKIS context. Both the interviews and the workshop reports indicate that, although public authorities are important funders of some CS demonstration activities (through regional, national or EU funds or through programmes/projects), alternative financing models are common with mixed strategies pursued with multiple funders, public and private, are co-financing events. Dynamic and complex arrangements are described comprising a mix of sources: public funds, partners' contributions, sponsorship by commercial companies, project funding and participant fees. This is illustrated in the examples below.

Examples of complex funding arrangements:

- SW2 OiB is funded by research and development projects and by the stakeholders linked to the network.
 OiB applies for money from a financing institution or from organisations in the agronomic business that they collaborate with. Farmer are not reimbursed.
- NL1 The Practice Centre for Precision Agriculture network is supported by EU, national and provincial funds (EU Rural Development, the Dutch government, the province Noord-Brabant, partners' contributions) and also by participants' fees. Although the network aims to be self-funded through demonstrations activities.
- FR2 is an example of a CS using multiple public funding envelopes and they also need to submit research proposals to secure funds for some activities
- Participant fees are commonly used to supplement costs to some extent (e.g. SW3)
- GR1 the ESYF association is connected to several donors, they give resources to demos, as does the Kapetan Vaslis foundation for the CS event studied

Ability to access funds

Arguably the organisation's position in the AKIS, and how embedded or established they are, will impact access to funding, whether to public or private funds.

Advisory organisations and farmer organisations

Where there is a public advisory service - a range of public funds are available often through RDP instruments, e.g. the Farming Connect demo network in Wales; Teagasc and DAFM (IR1). This access to funding can allow some continuity in demo programmes, and in some cases demos are part of a wider package of RDP funding (Farming Connect, Wales). In France although the three CS differ the budget sources are quite similar with a large part coming from public authorities or public projects (supplemented by private funds). Private advisory bodies can also access public funds. In the BE2 CS in Belgium the organising body Inagro, a research and advisory centre in the West of Flanders which is the main initiator and organiser of the demonstration, was able to access RDP funds and took the initiative for setting up an Operational Group Controlled Traffic Farming (CTF) in organic farming.

Farmer organisations also provide or facilitate funding of demo activities such as Chambers of Agriculture. For FR2 the Chamber of Agriculture finances the experimental farm on its own budget which come from agricultural taxes however this is supplemented with funding from a combination of other sources, from local and national authority, also the manager of the vegetable experimental farm seeks private and public partners for projects and look for financial resources. Cooperatives fund programmes of events, for example the pig meat production cooperative

ES2 Coren (ES2) fund events at the Autofarm system demo farm, while levy boards AHDB (UK) utilise their farmer levies to fund KE programmes with some demo elements (e.g. the Monitor farm programme - UK2).

It is noted that relying on project funding can affect demos in that it often determines and steers the demo objectives and topics.

Sponsorship

A number of demo programmes (partially) rely on commercial sponsorship for running a programme of events. For example, the strawberry annual event in NL is funded by sponsors, and ØRD (DK) collaborates with commercial companies for sponsorship of its demonstrations.

The extent to which sponsorship impacts delivery is reported differently. For NL3 the network of the demonstration day is funded by exhibitors and sponsors. They apparently determine/steer topic selection of their contribution to the event, even though farmers are consulted in regional groups about topics as well. In Sweden SW1, the organisers rely on commercial companies which they approach to participate and cover the programme's costs. In this case, demonstration activities such as the "Grower's day" are often free for farmers but sponsors are invited and they pay a certain fee which covers the costs of the programme. However, this does not appear to impact the goals since the OiB work is still steered by a group of independent scientists and representatives from agricultural organisations that are stakeholders.

In Greece - GR3 the American Farm School (AFS) cooperate similarly with sponsors, companies or farmers. AFS offers its services to farmers receiving sponsorship or who are self-financed. Sponsorship is not always guaranteed or easy to find. In NL2 this example shows how different actors can have different success in seeking sponsorship. The Open Greenhouse Days foundation has national sponsors.

"As an organisation in this region we have searched for local sponsors. First this sponsors are contacted by the programme maker (foundation) the response was very low. After that we, as horticulturists, approach personally the sponsors. That was more effective." (NL2 - Farmer)

Self-funded

Self-funded means that organisation uses its own funds to run the demo activities, for example for GR1 the majority of demos organised by HCPA are described as self-financed, although there are cases in which the organisations teams up with foundations in order to deliver demos in Greek rural areas. The RS1 KRIVAJA doo CS was also described as self-funded. At farm level self-funded can also be interpreted as the farmer hosts themselves effectively underwriting an event by not charging or not receiving compensation for hosting a demo. Often there is a combination of arrangements – for example ES2 the Coren cooperatives organise and fund a programme of demos, while the host farmer himself self organises and self-funds other visits for the company Autofarm.

Impact of limited funding

The impact of limited funding can be felt at programme, farm and event level. Whatever the level, where funds are limited, the longer-term sustainability of programmes (and thus their contribution to wider advisory objectives) can be uncertain. At a national level in Poland the respondents at the workshop reported that there are limited funds for research institutes carrying out demo activities under a multiannual plan of cooperation of national institutes with the farmers' communities/farmers' organisations and the public agricultural advisory service. The workshop participants identified the lack of substantial public funding for demo activities at a national level in Poland as a weakness. The strongest message from the workshop was that provision of public funds for farmers operating as demo farms is absolutely fundamental precondition of any effective and systematic inclusion of demo farms in any national AKIS plan in Poland.

The workshop participants in Spain agree that there are problems for Spanish CS in obtaining funding. A common theme amongst a number of CS respondents was the constant need to secure funding through different means, such as seeking project funding, as described above. Arguably having to chase funds impacts continuity, and the

ability to engage farmers in the longer term and to build up farmer knowledge and capacity through any progressive programmes (learning pathways).

Limited funding also has an impact on the ability of farmers to deliver demos. In SW3, with reference to the funding of the demonstrations, both programme interviewees shared their concerns on the limited resources channelled to support/compensate the relevant activities of the network and host farmers' engagement. That there is no payment for the network to arrange the demonstrations on the farm was also perceived as problematic. The ability to offer rewards is seen as important, arguably in terms of motivating demo farmers as well. The SP1 CS in answer to the question:

"Do you offer any incentives to farmers to host demonstration activities?: replied "YES, As much as possible, if our budget allows it, well, I like to reward people who dedicate a part of their time to these training programmes" (SP1 - Programme interviewee).

However not all CS are able to do this, also it was pointed out that from the host farmers' perspective some (e.g. SW3) take a wider view of potential benefits to them, beyond monetary ones.

In Poland a general comment for the three CS was that a weak aspect of demo activities was the lack of compensation for using farm assets and farmers' time for demo activities. Farmers involved in demo activities are often engaged through personal involvement and maybe their leadership drive, however it was felt that this leads to a situation where the long term sustainability of demo activities relies heavily of personal approaches of some individuals. In Austria it was also noted at the workshop that barriers to achieving best practice at national, programme, event and farm level include financing of events as often there are no subsidies provided, public/private companies contribute with "man/woman power".

The NL/BE workshop discussed the possibility of having alternative financial models to make it more manageable for farmer demonstrators to organise demos on a regular basis, such as expert payments out of project budgets for compensation, or tax breaks. There are institutional and cultural difference between countries, in Flanders it is culturally more difficult to ask participants to pay a fee and the government is used to financing demos, while in NL this is different.

Conclusions

Funding is from multiple sources and depends on the collaboration between the organisations behind the demo. Access to funds does impact demo effectiveness in terms of: continuity, creating transactions costs when chasing funds, relying on the commitment of individual farmers, the potential bias from involving commercial sponsors, and being constrained by project topics. For some regions/countries, further provision of public funds for farmers operating as demo farms is absolutely fundamental precondition of any effective and systematic inclusion of demo farms in any national AKIS plan.

5.5. Organisational arrangements: coordination approaches

Coordination across/within programmesfindings

In CS organised by public advisory services or farmer organisations there is some level of coordination of demos to deliver programmes effectively to the regions or to integrate demos into existing structures (of research, advice and farm) or connect to networks. For example, in FR1 where the main actors are the different Chamber of Agriculture employees they coordinate the demo programme at different levels (regional coordinator, local coordinator, advisers) together with elected members and host farmers (Box 12). In Poland the workshop participants emphasised the role of coordination activities of public agricultural advisory services supported by research institutes and to a lesser extent by sectoral farmers' organisation as key structural elements of the Polish system of demo activities and regional/local and event levels. For PL1 for example the specific demonstration

programme is managed through an advisory branch including a social council consisting of representatives of farmers, scientists, advisers. Thus, the specific programme is connected to other networks/programmes, through the participation of advisers and farmers from different regions and farming sectors.

However, few CS countries reported having a national framework covering demo activities. Although public bodies run programmes with a national remit, they are not necessarily coordinated at a national level. In Poland this was seen as a lost opportunity with the lack of a coordination framework at a national level (through, for example, a national data base of planned events). They also observed that this leads to a situation that the whole system relies, to large extent, on an individual farmers involvement in carrying of demo activities. In Serbia the workshop discussed the possibility of having a national coordinating body for bee keeping for 'quality control' of information.

This limited coordination is also a feature of farmer organisations and private advisory programmes. Although part of a wider programme or national event often CS demo farms are not connected to other demo farms. For example, NL2 (the Open Greenhouse days with more than 200.000 visitors over more than 200 horticulture farms) does not link the different farms involved; the host farms are not connected to other farm demo in a sense of a common goals and implementation of specific activities in the frame of a demo programme. Each region has the autonomy to organise its own programme under an open day general theme defined nationally, and farm events are simply part of the national Open Greenhouse Day network for this year. In Denmark as well there is not a specific programme for the overall coordination and organisation of demonstration events managed by LMO for DK2.

Farming Connect has a demo network of 12 farms, which is part of (and linked into) the wider Farming Connect farm support programme but the demo network is more for geographical and sector reach and representation rather than for enabling networking between demos. Although in Poland the PL1 demo farm is part of a network of six other experimental farms which are part of the programme which are connected together.

Although connected to larger organisations, some host farms do not perceive themselves as being part of a programme or wider network. For ES2 the host farmer stated that he is not involved in the overall development of demos at the programme /network level, even though he is linked to the Coren cooperative. Furthermore, this specific farm's demonstration activities are not connected to other demo farms and/or other knowledge exchange organisations in any sort of network.

The NL/BE workshop participants acknowledged the importance of combining demonstrations and communicating between demo organisers to manage/control the scope and topics and to stimulate interaction between programmes, and be efficient with resources. They recommended that co-operation between different projects, organising partners and stakeholders delivering demos should be stronger to avoid overlap.

In Spain a comment was made at the workshop that demo CS belonging to several networks and seeking different funding options have a more holistic and diverse view of actors, and a greater interest in openness and transparency.

From informal networking to more formal collaborations

The CS thus describe a collection of organisational arrangements active in coordinating, managing and delivering their demo programmes, which operate with differing structures (and actors), levels of formalisation, at different scales and provide different roles for partners. These range from the more centralised public body arrangements with few partners, through to the more complex collaborations and informal networks.

Although respondents and workshop participants use terms like collaboration, cooperation, partnerships and networks interchangeably, a distinction is drawn here between *collaboration* where arrangements are more formalised or (semi) permanent with partners for delivering a programme or a project; and the more informal *networks*¹¹ which are often temporary or used more opportunistically to develop a programme or deliver an event. Organisers join and exploit these arrangements to different extents to optimise both the impact and reach of the demos, efficiency, to secure funding and to build on synergies in delivery and access.

¹¹ complex, multi-layered interactions between actors, groups and institutions (Murdoch 2000)

Formalised collaborations and working arrangements

Different multi-partner arrangements were reported with varying roles assigned to partners, for example in the Netherlands CS:

- NL1 (Practice centre for precision farming) ZLTO leads the consortium with farming associations, advisory entities, universities etc. The specific demonstration farm is part of four programmes and wider networks.
- NL2 the open days were jointly organised and coordinated by ZLTO and five host farmers (local group of market gardeners), in collaboration with the Open Greenhouse day's foundation. A ZLTO employee was responsible for the overall coordination (plan, preparation and get network together) of the event over the whole region. Host farmers then were each responsible for planning, preparing and implementing the demonstrations activities.
- NL3 Aardbeiendemodag is organised by a foundation, the national strawberry commission, with a board
 of strawberry growers, linked to ZLTO and Delphy. Different roles are apparent. Delphy takes care about
 the field trials. ZLTO take about the organisational part of the demonstration, the ZLTO manager supports
 this complex cooperation and coaches the host farmer when needed.

In the example of GR1 (Box 14) the collaboration builds on different strengths and relationships of the partners, the crop protection association need to choose the suitable partners, in order to gain access to local community to enable European and nationally determined objectives to be delivered effectively in the regions.

Box 14 GR1 Collaboration builds on different strengths and relationships of the partners

In GR1 three organisations partnered to organise and conduct the demonstration event. The first (HCPA/ESYF) is an association working on the safe use of pesticides (Hellenic Crop Protection Association working with the relevant European crop protection association, the second is a public regional agricultural directorate (DAEV/DAOK) and the third one a foundation (Kapetan Vasilis) with roots in the region. The three organisations maintain links and have worked together in the past. HCPA initiated the process for the event and possesses the expert know how with regard to the safe use of pesticides, i.e. the core topic of the event. However, as they are headquartered in Athens, connections with local actors are not strong, compared with those referred to DAEV, which has a very strong through a long-term presence in the region. Thus, DAEV appears to be the most influential among the existing actors, as the strong connection between DAEV and the region's actors, led to an event effectively organised and linked to local needs. Finally, the Foundation's supporting role of agricultural initiatives in the rural area as funder and intermediary is reflected on the limited, yet critical, flows linking it with the event's actors.

ESYF is also related to sponsors and their contracted farmers for demo activities. ESYF sometimes is connected to several donors which although not connected with specific farmers' groups, they facilitate or give resources for demonstrations, as is the case with Kapetan Vasilis foundation in the case of the specific event.

Informal networks outside formal organisations

CS organisations and actors often have diverse informal networks with organisations outside their own formal organisational arrangements. Typically, when questioned about networks each CS listed a number of organisations they were linked to, they tend to be oriented towards similar or complementary organisations that can support their programme in achieving its objectives. For example, the following two CS in Denmark highlight industry and supply chains networks:

"LMO keeps strong contacts and partnerships with supply chain companies, organic businesses, scientific programs, and other related organisations. However as already mentioned there is not a specific program for the overall coordination and organisation of demonstration events managed by LMO" (DK2)

"We join in the many industry networks (f.i. DIH in Smart Industry), by projects like IoF2020, Optimove, and in private initiatives, like Making sense (with a farm near Rotterdam)" (NL2 -Farmer)

While for AT2 (a research focused CS), this CS has wider ranging 'networks within networks' but largely with research, advice and farming subsystems, as the programme interviewee noted:

"We (Fibl) are very well connected to all kinds of advisory services in the field of agriculture, like the agricultural chamber or BioAustria. We also cooperate with research institutions like Boku* or Raumberg Gumpenstein. There is also a network of farmers in the Bionet and Biobo projects who are interested in conducting experiments on their own field." (AT2)

Whereas for BE2 Inagro connects with a range of knowledge exchange organisations, research centres, such as several agricultural organisations, processing actors, supply chain actors, advisory entities, ILVO. Similarly FR2 links to organic research stations nationally and regionally.

In the case of ES2, when asked about networking, the farmer host response reflects the demo topic which is about automated farming

"We have contacts with other Start-ups but we aren't with any kind of network regarding the demo matter....We work with technological centres and universities even with universities which are closely connected with the primary sector and cooperatives such as COREN. [But you are not in any [formal] network.] No". (ES-Farmer)

Benefits of cooperation, collaboration and networking

Collaboration and networking are used to achieve programme objectives. For example, in Sweden SW3 OiB the respondent (Programme interviewee) explained that to meet its objectives, the organisation, being a network of farms, manages demonstrations with its member-farmers, and when appropriate or needed, it teams up also with other farmer organisations, the authorities, advisers and researchers.(In the same way for BE1, Van Akker Naar Boss a Belgian and Dutch organisation which aims to accelerate the transition to agroforestry or nature inclusive agriculture, and arranges events and people from their network, the programme level respondent remarked *"As long as it fits in our own aim of accelerating the transition we are open for everything*". This **opportunistic approach** is repeated elsewhere. The DK1 programme interviewee for example remarked that Seges cooperates with any organisation that can *"fit in its demonstrations*", saying_ *"When we make bigger events, we cooperate with whomever it makes sense to cooperate with"*. Sometimes they cooperate with local extension services, as well as with other organisations/partners at several EU or national projects in which they participate.

The respondent from FR1 explained that "We also potentially work with farmers' networks, because on some farms, in fact, it's a group of farmers who take charge of the open houses." (Programme Interviewee).

Collaboration can be **reciprocal or synergistic**. DK1 include smaller projects in their network to benefit from and to support them in a reciprocal arrangement :

"The GUDP projects are very much about development and innovation and they are often very good to cooperate with, since they have same outgoing nature. And other very narrow theme projects, for example projects on faba beans, they also need to tell a story, but they can seldom do that themselves, so it is very good when they get embedded in some bigger projects. So, we cooperate on all kinds of levels" (DK1-Program Level Interviewee 1)

Other CS explain how they work together to look for synergies and avoid duplication, for example BE3:

"Yes, through our project work we are connected...after a while you start to get to know each other. So it's become a logical process to ask each other who is going to write what, or how we could work together. We also have partnerships with ILVO and the University of Leuven, which means we try at least once a year to discuss together how and what we are doing. We both have similar infrastructure, so we have to make sure that what we do is not exactly the same, which would be unfortunate. So we try to communicate about that. For example we just had a project that we arranged that there was first an edition at ILVO and the next edition was at our centre, so we try to supplement each other". (BE-Programme interviewee). This collaboration (BE3) extends also to **the recruitment of host farmers**, which according to the programme interviewee is pursued through the mobilisation of contacts and networks. This process often leads to long-standing connections with farmers willing and able to host events. The function of networking by organisers is thus also to identify hosts. In NL1, ZLTO target farmers to host demonstrations through its extensive network in the Netherland's farming community and the long-term relations that ZLTO keeps with farmers. Additionally, through its networking, ZLTO identifies relevant topics that will interest farmers, as farmers' needs are an absolute priority for ZLTO, according to oneProgramme interviewee. Similarly in CS AT2 networking is used at many levels- they refer to the network of the Bionet project where relevant information is available and they invite farmers to participate in further events and recruit them to become part of the Bionet network and so to further intensify the collaboration.

Organisers also **exploit their host farmer connections**, typically host farmers are well connected. For example, the host farmer in BE2 was described as 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. In NL1 the host farmer is widely connected to other demo farms as well as other knowledge exchange organisations (individual farmer colleagues, farmer networks or groups, universities and companies). The host farmer also holds elected or appointed roles on three farming networks/boards.

Others explain how collaborations support their activities, particularly with respect **to collecting feedback**. For NL1, ZLTO's extensive connections, collaborations and networking with the farming community help the organisation to "accomplish all the difficult tasks involved in running a demo", such as the adaptation of the content to attendees, the feedback activities (about the demo itself and on probable adoption of practice), evaluation procedures and the continuous engagement of demo participants after the event.

Organisers also use their networks to identify topics. NL3 consults with growers to deliver a good programme:

"The overall goal of the network is to show new developments and create a network for strawberry growers. The network asks the growers for relevant subjects. In consultation between the network and the growers, a good program is created." (NL-Programme interviewee)

Networking in terms of maintaining **good relationships with a broad range of actors** was also highlighted as important. In GR1 The Directorate of Agricultural Economics and Veterinary Services (DAEV), is a public service, they rely on their extensive networking in the farming community and the long-term relations and personal contacts they keep with farmers, corporations, local agronomists, agricultural services etc (Box 13)

Commercial links are numerous and used to different extents, as many demo programmes recognise that companies play a significant role in the farming community and AKIS. For example, in FR2 the vegetable experimental farm demo in France, they work with several private partners to experiments tools, machinery or vegetable varieties, although they aim to be objective and unbiased (Box 7).

The NL/BE workshop participants suggested that big **companies can be valuable partners**. It was noted that Bayer companies had an interesting and effective whole farm approach to demonstrations, and that although perceived as wanting to sell products, they are also interested in the future of the sector. Linking with companies was also highlighted by the UK workshop who asked "*what can we learn from them*?" Since they hold events all the time and spend a lot of resources on them.

Conversely in one the workshop in Greece private players were considered a potential threat as in Greece commercial/supply chain companies are very active in using demonstrations to promote their services and

The value of coordination between programmes is recognised but there are not many examples of this, particularly at national level. Collaboration builds on different strengths and relationships of the partners, Collaboration and networking are used to achieve programme objectives and can be strategic, reciprocal or synergistic. Networking is used by organisers to identify hosts and participants and capture farmer needs. Links with commercial companies are exploited and in most cases appear to be beneficial and not introduce any bias.

products. They suggested that any risks these initiatives pose for farmers need analysis. At a policy level when planning support measures are discussed, they argued that these company demo ventures should not be omitted from the picture, as this may under estimate the challenges that need to be tackled in order to develop an efficient and long-standing demo framework.

Conclusions

5.6. Governance and farmer representation in demo decision making

Governance mechanisms

There are a number of different governance structures and mechanisms (advisory boards, concept plans, action plans, steering committees, grower panels etc) used in bringing together and consulting actors involved in the demo programmes about achieving objectives, strategy and future plans. As noted in the sub section below these mechanisms aim to consult farmer representatives along with other key actors.

"ØRD makes an action plan based on a demonstration idea/goal. ØRD involves multiple actors on the demonstration topic selection in order to meet its audience interests" (DK1-Programme Interviewee 2)

These mechanisms generally aim to be consultative, for example a respondent for BE2 described programme management:

"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." (BE2-Programme interviewee)

Some mechanisms aim to connect actors within the network. As noted earlier for PL1 the specific demonstration programme is managed through an advisory branch including a social council consisting of representatives of farmers, scientists, advisers. Thus the specific programme is connected to other networks/programmes, through the participation of advisers and farmers from different regions and farming sectors.

Mechanisms for decision making also change with the level or scale of activity, to ensure that the programmes consider different territorial contexts, this can involve different roles for the actors involved, as demonstrated for FR1 (Box 15). In this case the main aims and objectives are decided centrally by the elected members of the Chamber of Agriculture. However the other actors in the CS have clearly defined roles as well.

For FR2 (Box 16) programme level governance arrangements, which deal with identifying priorities and potential projects, differ from those of the farm level activities, which are the responsibility of the host farm manager and Chamber of Agriculture advisers, as well as private partners.

Box 15 FR1 French national demo programme Innov'Action [check for duplication with Box 3]

Funding and Governance Elected members of the Chambers of Agriculture define the main objectives and annual topics at the regional level. For instance they want the program to be homogenous in the implementation of the operation, but also to be diversified from multiple farms to the scale of territories. At county level a steering committee composed of elected persons and advisers organise the practical side of the demo activities. The program is funded by the Chamber of Agriculture. The budget is a mix and public funding: taxes, research program communication, local authority funding.

Actors and networks The main actors are the host farmers and the different Chamber of Agriculture employees (regional coordinator, local coordinator, advisers) and elected members. For instance in 2018, for 32 on farms demo activity 110 person took part of the program for a total of 550 working days. There are also local partners which are involved in the demo activity: other advisers, book-keepers, cooperatives, machinery sellers...Sometimes researchers or project managers of French institutes could present research project results.

How it works The host farmers decide the innovation to present. The local partners are involved. During the event the host farmer presents his farm and guide the groups of visitors. The elected members of the Chamber of Agriculture decide the main aims and objectives and deal with political issues. During the event they welcome participants and speak about the Chamber of Agriculture local actions.

The local coordinator organises the demo activity and connects the farmers, the demonstrator (most of the time they are advisers), the partners and the regional coordinator. The adviser (most of the time employed by Chamber of Agriculture) provide technical solutions and explain the different innovations. There are 4 to 5 innovations in each demo farm so 4 to 5 demonstrators. They also explain the advices and training that the Chamber of Agriculture could provide to farmers.

The regional coordinator manages the program and is the facilitator of the regional group, composed by a local coordinator and an elected member.

Other CS respondents describe a hierarchical governance structure:

"The connection between national, regional commissions and working groups is a kind of pyramid. It starts with the national commission, the next step are the regional commissions and regional commissions take care of the working groups" (NL3)

This structure allows them always to be connected with each other; according to a ZLTO employee (Programme interviewee) when asked: Do you - at the programme level - continue to engage participants after the demonstrations? He said "*Yes. Yes, as said before there is a continue connection with the growers in the local and national working groups.*"

There are different **levels of autonomy** at the local level observed as well. Some CS distinguish strategic arrangements and farm level arrangements for sectoral farmers' organisations. In Poland there is a mixture of formal and informal approaches in managing demo activities. They operate at formal level when members of managing boards discuss issues related to farmers' needs' identification regarding topics of demo activities. However, at the farm level each farmer makes decision concerning scope of any particular demo events, making this "a hybrid between formal and informal organisations". As noted "in practice at local level, involved farmers operate quite efficiently meeting the needs of their target groups" (PL3 -programme interviewee).

This is important as some respondents highlight. The regional differences in countries, mentioned in the NL workshop, for example, have to be catered for at a programme level. This has to be adaptable, for DK1 "ØRD the Programme Interviewee (2) pointed out that although they have a programme level action plan, they are adaptable, and context is important - "Our big and small demos are situational".

Box 16 FR2 Vegetable experimental farm France

Programme level arrangements

Decisions A steering committee comprising the experimental farm manager, other employees of the regional Chamber of Agriculture and about 12 vegetable producers decide to implement research projects based on: working time and painfulness, pesticides decrease, organic farming development, new equipment and robot. They meet twice a year, at the beginning of the season to agree on directions of development for the year, the objectives of the year, and at the end of the season to analyse the results. During the demo and moreover during all the year partners, advisers, elected members who are also producers try to gauge the farmers' needs and problems. The board rank the priorities and turn farmers' questions into research projects to find solutions.

Funding For each topic the manager of the experimental farm writes a project, finds private and public partners and looks for financial resources. The funding mainly come from local and national authority. The Chamber of Agriculture also finances the experimental farm on its own budget which come from agricultural taxes. Based on this governance and funding this demo, which is the main event in the year for the experimental farm, is the best way to present the results and exchanges with the farmers.

Farm level arrangements

The main actors for the demo activity is the farm manager and Chamber of Agriculture advisers. They organise the demo activity, choose the topics and results to focus on, and the partners to associate with. They also manage the budget: document and leaflet to write and print, coffee, lunch...

Private partners are associated with organising the demo activity. The experimental farm tests some equipment and presents the results of these tests. During the demo event several equipment and materials were shown and presented by private companies: movable greenhouse, weather forecast station, organic and natural material (mulch, strings...), new vegetable variety (tomatoes, pepper, zucchini...).

In another CS example ES2 the arrangements are more complex. Here the Reboredo farm which demonstrates the AUTOFARM system (oriented towards animal welfare and management) which is implemented by Coren, described as a "cooperative of cooperatives" in that it integrates first-degree cooperatives made up of a total of 3,200 members (the farmers). This structure allows both the cooperative members and the Coren team to be directly involved in the management. The Coren cooperative has a team consisting of 3 vets assigned to each type of production, who coordinate the actions, logistics and carry out the visits to the farm with the farmer. There is a coordinator of visits to the farms that selects the topics that are interesting for the farmers. Coren are the most interested in organising and financing 2/3 visits per year to this farm to achieve the highest quality in each phase of the production process and in a socially responsible management, keys of the "Coren model". However the company Autofarm also manages and arranges visits, and then the farmer himself manages and finances the visits from the reception to the farewell. This shows that different arrangements can take place on one farm, giving the host farmer different degrees of autonomy, responsibility and commitment to the programme.

Farmer involvement

Farmer involvement in demo decision making at programme level

The importance of involving farmers in decision making for demo activity planning has been identified in a number of other studies, although rarely at the programme level. Analysis of CS programme interviews shows that **the majority of CS involve host farmers** both in the development of the overall demonstration programme (76%) as well as in the for individual demonstration activities or set up of events (92%). As noted above various mechanisms are used to enable this involvement at programme, local and farm (and event set up) level, although informal methods for feedback are equally important. It is implicit that involving farmers in the planning decisions is beneficial, but rarely stated.

A number of CS do have procedures for involving farmers at programme level although arrangements vary. For example in DK1 (ORD) both programme level interviewees stated that host farmers are always involved in the overall development of demonstration activities. For NL1 the host farmers are involved in both programme and event planning, with the two linked. The Programme interviewee stated that host farmers are always involved in the development of in the_overall demonstration programme as well as the individual demonstration activities. The goals (to provide demonstrations and test precision techniques in practice) were decided "after long cooperation period between farmer and union" as it is very relevant for farmers to know what direction to take in Precision Agriculture, according to the Programme interviewee. The collaboration of ZLTO with a host farmer for a demo event, presupposes an agreement with the host farmer as well as his active involvement on the subject selection of the demonstration, as shown here:

"They are always involved in general, in the subjects or demonstration. Hosting the demonstration is part of a longer relation. Involving them only to host a demonstration will not work: so many projects are rejected and we have to disappoint them in that case." (NL1-Programme interviewee)

"They will only open their farms if they agree on what is demonstrated." (NL1-Programme interviewee)

This was reiterated in Sweden (SW2- OiB) - Many of the projects are developed in close collaboration with farmers, advisers, researchers, suppliers, and sometimes NGOs. The host farmer remarked on the importance of involving host farmers in the programme development saying "*It is their farm, they need to decide. You cannot decide over someone else's farm. It's somebody's business you visit*". For NL2 the farmer interviewee remarked that while the "*host farmers and organisers make the programme participants only visit*". There was also a suggestion that it is logical to involve host farmers in the development of overall demo programme since these are the sort of farmers who open up their doors, are active at other study days, involved in local boards and show engagement towards agricultural organisations, so are well informed and connected.

Analysis of interview data (programme level respondents) shows that nearly 80% of all CS organisations represented by programme level respondents involve host farmers in the development of the overall demonstration programme always or sometimes. With respect to whether organisation types involve host farmers to different extents, advisory services (45%) and farmer organisations (44%) are more likely to always involve host farmers, compared to NGOs (33%), with research institutes (25%) least likely (Table 30).

			Always	Sometimes	Never	Don't know	Total
Org_type	Farmers' organisation	Count	5	3	2	1	11
		% within Org_type	45.5%	27.3%	18.2%	9.1%	100.0%
	Private/public extension	Count	4	4	1	0	9
	or advisory service	% within Org_type	44.4%	44.4%	11.1%	0.0%	100.0%
	Research institution	Count	1	1	1	1	4
		% within Org_type	25.0%	25.0%	25.0%	25.0%	100.0%
	Individual farmer	Count	1	0	0	0	1
		% within Org_type	100.0%	0.0%	0.0%	0.0%	100.0%
	NGO/charity and/or other	Count	1	2	0	0	3
	ag dev org	% within Org_type	33.3%	66.7%	0.0%	0.0%	100.0%
Total		Count	12	10	4	2	28
		% within Org_type	42.9%	35.7%	14.3%	7.1%	100.0%

Table 30. Host farmer involvement in overall demonstration programme by organisation category

The value of a **long term relationship with participant farmers** was also noted. The NL1 interviewee remarked on the importance of continuing to engage with participants at the programme level, from 'project to project'. This is reflected in the relatively high response level (42%) for all organisation categories to the question: at the

programme level do you continue to engage participants after the demonstrations? (Table 31). As noted above some organisational structures support such connections (DK1 connecting growers with local and national working groups). Again the distribution mirrors that shown in Table 3 with farmer organisations (58%) and advisory services (53%) more likely to continue to engage compared to NGOs and with research institutes.

					Total	
			No	Yes		
Org_type	Farmers' organisation	Count	7	5	12	
		% within Org_type	58.3%	41.7%	100.0%	
	Private/public extension or advisory service	Count	7	6	13	
		% within Org_type	53.8%	46.2%	100.0%	
	Research institution	Count	1	5	6	
		% within Org_type	16.7%	83.3%	100.0%	
	Individual farmer	Count	0	2	2	
		% within Org_type	0.0%	100.0%	100.0%	
	NGO/charity and/or other ag dev org	Count	0	3	3	
		% within Org_type	0.0%	100.0%	100.0%	
Total		Count	15	21	36	
		% within Org_type	41.7%	58.3%	100.0%	

Fable 31. Extent of engagement of	participants after the demonstrations
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Farmer involvement in topic selection for programmes, projects and events

In most CS topic selection is done through a combination of advisory boards, technical centres, consultation

Box 18 BE2: Topic selection

Responses to the question How are demonstration topics selected? show the decision is a combination of inputs steered by different needs and that consultation to collect ideas from the community is done in a formal and informal way:

"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)

"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?" (Programme interviewee)

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

and drawing on organisers' experience and knowledge of the community. This is illustrated for BE2 (Box 8)

A similar procedure is described for BE3 where one of the organisations involved is a practice centre, so, as the respondent explained

"We have a technical work group, who comes together once a year. There we present the topics we are working on. And there we also try and find out what is happening in the sector. What they think is important... (...) And further more... you hear from farmers you visit what is going on. The technical work group represents the work field in a small format".

The significance of projects to demo topic selection is clear in a number of CS. Where demos are linked to funded projects the topics are often pre determined and steered by the project's aims. For NL1 (Precision Farming), as the programme and farmer interviewees stated, although ZLTO always involves the host farmer as well as participants in the topic selection, the topics are also strongly related to the topics funded through the projects that ZLTO applies. Similarly with BE3 the Inagro Programme interviewee remarked: "For us it usually starts with the projects. The themes for this projects are already connected to what is going on in the sector".

However even where topics are selected as part of a project/dissemination, the CS organisers often use their strong links and good understanding of farmer needs to determine topics. For BE3 for example - the main organisation's (Inagro) proximity and close links to the farming community steers the decision making progress in organising demonstrations as well as their objectives. This is both at the level of selecting the theme a project will work on as well as on the topics that will be demonstrated:

"Yes, .. we have our 'open doors day', and then we ask farmers to write down what they think we should put more time in. Then we get a lot of answers, also impossible ones. But if there are things in there that return a couple of times, then you know this 'lives' within the community. Then we have to try to fit this in somewhere. We don't want to organise things that interests nobody." (Programme interviewee)

The example of NL3 also shows that the organisers consult farmers but also draw on their knowledge of the sector and community:

"First, the organisation asks some farmers for ideas [about demo topics]. We, ZLTO and Delphy, make a concept program. Other people such as strawberry farmers can respond to this and suggest some change. In the end, ZLTO and Delphy make the final program (Programme interviewee) [but].... In coordination with the growers the relevant topics are selected. As an organisation, of course, we have knowledge of the sector. With this knowledge we make a selection and ask the growers for feedback." (Programme interviewee)

Local knowledge is also important in other cases (e.g. in all cases in Sweden and in FR1 in France):

"The chambers rely a lot on their own accumulated work and knowledge from the field. They intend to implement all sorts of topics and innovation and not to restrict themselves to specific topics in order to meet the contemporary needs." (FR1 Programme Interviewee).

For other CS the topic selection is more in the hands of the organisers. For GR1 HPCA's (one of the main organisers) objective is to demonstrate safe handling of pesticides – a single objective, for which the HPCA makes the topic selection and does not include farmers in topic decision. It has a clear goal, which is delivered more as hands on training event, however consultation and organisational knowledge is also used:

"As explained earlier the themes and topics are selected following the organisation's/programme's objectives. Still, we use feedback from local experts to steer and structure the demo as close to the participants needs as possible." (HPCA Programme interviewee 1)

Although farmers are not consulted, the nature of programme and the respect given to the DAEV (one of the organisers) involved who "make use of their deep knowledge and experience on the problems, constrains, needs and interests of local people", leads to effective delivery.

The Programme interviewee describes the value of local knowledge:

"We live here and we know well the region and farmers. We have the knowledge and the experience but also direct/close communication with all the local actors and the farmers. It always depends on problems and local concerns. Even when other institutions/actors/initiators make us a proposal for cooperation on a specific topic, we always adapt these topics in relation to the local crops and local needs." (GR1 Programme interviewee 2)

This is replicated in Poland where selection of topics is not based on systematic farmer needs assessment. Instead demo farm organisers (farmers' sectoral organisations and advisory services) rely on their overall knowledge of farmers expectations, but their choices are verified by farmers.

Often decisions are made with farmer consultation but also referring to other influences, such as sponsors, and visitors. Interestingly, this farmer involved in NL3 suggested that ultimately the suppliers who sponsor the event decide:

"Some of the participants are part of different working groups. The working groups have an effect of the programme during the strawberry day. The working group can suggest different topics and interesting developments. But in the end, the suppliers make the decision. They have to pay the demonstration activity, not the participants." (Farmer)

In another example (SW3), a broader consultation is carried out, this reflects different objectives and audiences:

"I discuss this with farmers if it is a farmer event. I am also following the media about farming that guides what is the interesting subject... In discussions with farmer, adviser or in discussions with the OIB board. It is common that visitors ask to see something special or are interested in a particular topic as well." (SW3 Programme interviewee).

Sometimes there is no decision to make since the objective or topic is simple and clear. For example GR1 (as noted above), RS1 (KRIVAJA doo) and ES2. For the latter the demonstration topics are always connected to the presentation of the Autofarm in pig/livestock production, the host farmer said "*Yes, we always focus on the application and its application in the environment in order not to raise other issues*". In this case, where the demo is self organised, the farmer is also totally responsible for the content of the demo events. In some cases famers are not consulted, for AT2 the selection of topics is done in collaboration between a work group leader and an adviser. The demo goals and objectives are decided in a top down fashion at different hierarchical levels. Namely, the executive board, the assembly of delegates, various adviser meetings and training courses in Austria's federal states as well as the agricultural chamber concerning education issues decides. Objectives may vary between adviser groups and federal states.

Although there are multiple examples of CS involving farmers in programme and event level decisions, the benefits are rarely stated or evaluated. Events for those programmes with less farmer involvement (often single focus topics) appear to be rated just as highly in the observation tools used at events in the CS. For example for RS1 the demonstrations on KRIVAJA doo intend to bring together end-users interested in utilising IT solutions in agriculture. It seems that the demo audience of this farm does not have any active role at any demonstration function and/or organisation. This was the case in both demonstration events (25-05 and 27-04,) in which participants (farmers, advisers, researchers etc.) were not involved in the overall development of this demonstration (Post survey demonstrator1). However the event rated highly in that it demonstrated practical demonstrations and included a good mix of participants, although suggestions for improvement included: "Demonstrators should be more interesting and able to include better participants into discussion".

In GR1 also the observation tool remarks validate programme efforts to use their accumulated knowledge in topic selection:

"Observed main strong points of the event: Very good knowledge of subject/topic. The facilitator was well known, trusted and respected. The farmers were convinced that the topic is important (both for

quality and safety of production, as well as for their own health and the protection of environment and the community)."

This questions whether farmer involvement in programme development and topic selection, whilst valued in steering demos towards relevant issues and topics, is always necessary; the picture is more nuanced, with single issue topics and local knowledge steering decisions.

Farmer involvement in the development of the demo set-up and activities

Development of the demo set-up is influenced by the demo programme objectives and topics but care is taken to suit the local contextual conditions. As this DK2 (LMO) interviewee remarked

"We design and plan the activity according to the specific case we want to demonstrate. So we do not just use the same approach for all. We adapt it to the situation" (Programme Level Interviewee).

The importance of matching the demo to the local context is highlighted by a number of interviewees, as this makes it relevant and by inference more effective. As noted above, a number of CS see the importance of involving the host farmer at all levels of demo set-up planning. In terms of preparing the practical aspects of the day, again involving the host farmer or farmer networks is seen as critical in many cases. For example in ES1 when asked "Are host farmers involved in the development of the individual demonstration activities?" the reply was:

"Always - Yes, always. When, as I have already said, we end all promotion actions with a practice test, well, we need the farmer to have prepared in advance, he defines it... he must have already prepared the framework, where he is going to carry out the training, what tools we are going to use, he also must have developed a field where we are going to have the training and so on" (Programme interviewee)

As noted above a number of CS described how the set-up planning and arrangements for farm level activities are often delegated to the local organisers. For example for FR2 governance (Box 16) -host farm manager and Chamber of Agriculture advisers, as well as private partners, deliver the programme's objectives according to different situational requirements.

Although farmers are consulted about approaches to demo activities, they are not always considered to know what is the best approach, indeed professionals in the organisations may often have better knowledge and ideas about communication, for example in ES1, when asked "How do you decide about events?" the response was:

"We always listen to the farmers but sometimes we don't do the training or other activities in the manner they ask for. We try to introduce some details which, in our opinion, make the programme more enjoyable and more complete. [Why do you take this approach?] Well, I have just explained, because we design it so... [Because it is the most effective approach...] We have organised the training courses for some years and believe this approach provides better outcome" (Programme interviewee).

Regarding the extent of farmer involvement in demonstration set-up, analysis of interview data (programme level respondents) shows that the majority of CS organisations represented by programme level respondents involve host farmers in the development of the individual demonstration activities always or sometimes (Table 32). The analysis indicates that involvement in activities is higher than involvement in development of demonstration programmes overall. With respect to whether organisation types involve host farmers in set-up decisions to different extents, advisory services and farmer organisations are more likely to always involve host farmers, compared to NGOs, with research institutes least likely, thus reflecting the distribution for demonstration programme involvement.

			Always	Sometimes	Don't know	
	Farmers' organisation	Count	9	2	1	12
		% within Org_type	75.0%	16.7%	8.3%	100.0%
	Private/public extension or advisory service	Count	9	2	0	11
		% within Org_type	81.8%	18.2%	0.0%	100.0%
	Research institution	Count	3	3	0	6
		% within Org_type	50.0%	50.0%	0.0%	100.0%
	Individual farmer	Count	2	0	0	2
		% within Org_type	100.0%	0.0%	0.0%	100.0%
	NGO/charity and/or other ag dev org	Count	2	1	0	3
		% within Org_type	66.7%	33.3%	0.0%	100.0%
Total		Count	25	8	1	34
		% within Org_type	73.5%	23.5%	2.9%	100.0%

Table 32. Extent of host farmers involved in the development of the individual demonstration activities

Conclusions

Clearly there are a number of different governance structures and mechanisms (advisory boards, concept plans, action plans, steering committees, grower panels etc) used in bringing together and consulting actors involved in the demo programmes about achieving objectives, strategy and future plans. These also allow regional differences in countries to be catered for at a programme level. The value of a long term relationship with participant farmers was also noted. The majority of CS involve host farmers both in the development of the overall demonstration programme (76%) and to a greater in the individual demonstration activities or set up (92%), as well as topic selection. Where there are no mechanisms for involving farmers, programmes use local knowledge to inform their decisions.

6. Best practice interventions

Based on results in the previous chapter, this chapter summarises the key points of possible interventions that can be made to enhance the effectiveness of on farm demonstration events. The numbers refer to the numbers on the figure 12.

This key intervention point 6 is very crucial, it is a new way of understanding how demonstration events should operate. The more traditional linear approach applies mostly a one way approach where social interaction is directed one way from the demonstrator to the participants (for example when oral presentations are given) or a two way social interaction between the demonstrator and the participants, e.g. when a Q&A session is included. An approach that stimulates peer learning needs to go a step further and needs to attempt a multiple ways social interaction between the demonstrator and the participants, or within the group of participants; the demonstrator acts mostly as a facilitator of a discussion in the whole group (participants and demonstrator). In some cases, a demonstrator is not even necessary to be present. The degree of social interaction between the demonstrator and participants and the active engagement required by the farmers is thus crucial.

This should become the new understanding of what a demonstration event entails, to be called a peer demonstration or a demonstration 2.0.



Figure 12. Improved Agridemo-F2F framework for on farm demonstration with possible points of intervention

1. Goal setting at all levels

Goal setting is important at all levels. Demos already play a key role in contributing to or as part of existing advice programmes or dissemination activities but this role can be further enhanced. Positioning demos within the wider advisory landscape and assessing the influence beyond participants is important but needs to be strengthened by
demo organisers. Incorporating demos as part of a planned learning pathway for farmers can be successful but requires engaging with participants before and after the demos as part of a planned programme.

For demonstration events, it is important to state clear objectives, think on why you want to organise the demo event, targeted effect can range from building awareness, knowledge co-creation, training over innovation adoption and problem solving to research or policy implementation. Also the topic is very important, a series of demo on the same topic or a recurrent event are sometimes mentioned as being more effective. Also important is targeting your participants clever and clearly linking the target group to the goal of the demo.

2. AKIS arrangements enable more effective demo programmes

National level coordination is identified as absent in most countries, this might be considered in some countries and for some demo objectives, to build a more strategic and long term approach and to avoid duplication and competition.

- Provide an environment that fosters demo programmes through well-funded structures and facilities, and well trained staff (facilitation, evaluation etc)
- Consider measures that provide long term funding opportunities for demo programmes to ensure a stable and committed network of demo farmers

3. Demo organisations should embed demo activities into existing structures or leverage and optimise existing links

Where there are established public or private advisory services or farmer organisations, demo organisations should optimise these existing structures and networks to benefit from regional structures, trained staff, long term knowledge and relationships with farmers, access to funding, farm-advice-research integration. Where advisory services or farmer organisations are less established or absent demo, organisations need to partner or network accordingly to fulfil their objectives.

- Identifying synergies and networks is key when working with other organisations, collaborate to build on different strengths and relationships of the partners
- Linking with commercial companies is already a feature of many demo programmes and activities (as active AKIS actors), and this can be beneficial in extending reach and scope of demos, achieving objectives and learning from commercial partners

4. Set up collaborative and co - governance models and integrate demos into farmer learning pathways

More effort in linking demo farms should be made with programmes as the value of local knowledge and building long term relationships with host and participant farmers should not be under estimated

- Create programmes that cater for regional differences, draw on partners with good local links, local links and knowledge
- Utilise governance mechanisms for involving farmers in decision making at programme development (steering groups, action plans, councils) as well as at set up level and topic
- Consider the demos position in the advisory landscape, follow up with participants after events, and assess the wider diffusion impact beyond participants
- Consider demo as part of progressive farmer learning pathways and support with mentoring, coaching and networks after events, and series of events rather than one offs

5. Demonstration structural set up with a variety of learning methods

Scheduling and structuring of the demonstration was experienced as an important effectiveness factor, referring to the necessity of thorough preparation, for example regarding a balanced program, a suitable time and budget, and easy registration support the demo-set up and satisfaction of the participants. Also the host location, host and demonstrator are important, participants should be able to relate to both the host farmer as the demonstrator.

• Real life conditions, access and decent facilities on the host farm are crucial.

- A trustworthy host farmer is a dedicated farmer, a "good" farmer who is an expert is his field, a farmer that opens up and with opinions that are highly respected by his/her peers.
- A trustworthy demonstrator that is recognised by the community of demonstration participants as knowledgeable, honest and dedicated influences the trust participants will have in his/her words, on thus possibly the impact of the demonstration. Furthermore, it is also important that a demonstrator is skilled to guide participants on the farm and opens up the discussions.

We thus suggest to offer a wide range of diverse activities. Examples may be field walks, observing practical demonstrations carried out by a demonstrator, and letting participants carry out hands-on activities. Such practical activities enhance learning and understanding, and also the interactions between participants. By adding a surprise effect to the demonstration activities, participants will more likely remember the information for a longer time.

- Select suitable learning methods. There are 3 basic principles: relate learning content to the farming practice, engage participants in active knowledge exchange and use a variety of learning methods.
- Follow the rule of 3, Provide three key messages that are repeated throughout the demo event and are also summarised at the end, as 'take home' messages for the participants.
- 6. Group dynamics and creating a motivational space are crucial to enhance peer learning during on farm demonstrations

Offer opportunities for peer-to-peer knowledge exchange and go for a peer demonstration. If the 3 basic needs (autonomy, relatedness and competence) are addressed by the demo event, participants will more likely to internalise the practices. Peer-to-peer learning activities and a good facilitation seem to add much to the participants' perception of these basic needs and thus lead to an effective demo event. You can increase participation in presentations and demonstrations, by e.g. actively giving participants the opportunity to share their experiences with the audience, by organising discussions with smaller numbers of participants, or by organising workshops in which active knowledge exchange is stimulated.

- Group size and dynamics are crucial for the effectiveness of a demo. Split up large groups in smaller groups to increase active participation and discussion.
- Recruitment determines group numbers, group composition and connectedness and thus group dynamics
- Have a good facilitator present, safeguard good time management and plan for the unexpected.
- Ensuring the active participation of the participants can be stimulated through the demonstrator adopting the role of a facilitator, and inviting the participants to actively engage in the discussion, for example through sharing their experiences, or through exchange in small groups.
- Create opportunities for more informal knowledge exchange, by providing enough time for farmers to chat to each other, for example during lunch, drinks or workshops.

7. Evaluation/Follow up processes

Follow up during and after the demo event through monitoring and evaluation are essential to gauge effectiveness both in terms of whether objectives have been achieved and softer outcomes such as peer to peer learning, empowerment, capacity building have been brought about. These ultimately affect the national AKIS.

These key characteristics and key messages **at event and farm level** resulting from the analyses in this report were further operationalised or translated into **more concrete 'best practices' for delivering a demonstration**. Here we understand practices to be the decisions and management options entailed in delivering demonstrations. While all these key characteristics need to be considered when one organises a (series of) demo(s), there is no one best practice. There are many options to choose from, so many best practices exist. The concrete 'best practices' are described with more depth within the demo design guide, this guide was developed as a FarmDemo collaboration and is available at <u>https://trainingkit.farmdemo.eu/</u>. FarmDemo is a close collaboration of three European projects funded under Horizon 2020. Together with two other H2020 projects PLAID (H2020 funded n°727388) and

NEFERTITI (H2020 funded n°772705). The demo design guide was thus based on deliverables from Agridemo-F2F and on two deliverables from the other FarmDemo projects¹².

These key characteristics and key messages **at organisation, AKIS and policy level** resulting from the analyses in this report were further operationalised or translated into 4 policy briefs. PLAID and AgriDemo-F2F have cooperated to formulate a set of key messages, primarily intended to support R&I policy-makers and funders in the European Commission, in National Ministries and Regional authorities to increase the impact of their programmes with these advantages. However, these recommendations are also intended to provide value to the Agricultural Knowledge and Innovation Systems (AKIS) including educational bodies and the demonstration organisers themselves. The key messages have been developed into four policy briefs:

- Demonstration as part of the dissemination activities in the innovation support projects in EU
- Education and training to enhance demonstration for farmers, facilitators and demo organisers
- Supporting Demonstration through Agricultural Knowledge and Innovation Systems (AKIS) Funding Schemes
- Setting long term (EU) demonstration networks and exchange programmes

¹² Agridemo-F2F: D3.3 Key structural characteristics, D4.3 Key functional characteristics leading to effective outcomes & D6.1 Best practical approaches for on-farm demonstration activities, projects and programs. PLAID: D5.3 Best practice materials; NEFERTITI: D1.2 Best practices for on farm demonstrations

Annex 1 Methodology

Data gathering

The first step of the Agridemo-F2F approach was developing an analytical framework to clarify concepts related to peer learning and on farm demonstration and to further construct qualitative data collection tools. Based on this Agridemo-F2F analytical framework (D2.1 The Agridemo-F2F analytical framework; Koutsouris et al. 2017), the research team constructed data collection tools. Both the framework and all tools were develop in close cooperation with multiple actors experienced with on-farm demonstrations. This set of tools consisted of semi-structured interviews (with host farmers, demonstrators and organisers), an observation tool (completed by an observing researcher during on-farm demonstration events), a set of pre- and post-surveys connected to the same event.

The second step encompassed data collection across 12 European countries. Data from 35 case studies was obtained using the set of data collection tools. Data was collected in the form of 65 semi-structured interviews, 31 completed observation tools, 351 post on-farm demonstration surveys completed by participants, and 28 pre and post on-farm demonstration surveys completed by demonstrators. Table a shows for each case the organiser, topic addressed, the type of demo (one-off or series), the group size and more details on the numbers of data tools fulfilled. Based on the data for each case, a draft case study report was prepared. All 35 draft case study reports were validated during country or regional workshops (Table b) and resulted in 10 workshop reports. During these workshops, there was a specific session dedicated to the identification of key characteristics for effective on-farm demonstrations.

AT (Austria)	GR (Greece)
BE (Belgium) & NL (the Netherlands)	IR (Ireland)
DK (Denmark) & SW(Sweden)	PL (Poland)
ES (Spain)	SE (Serbia)
FR (France)	UK (United Kingdom)

Table b. List of workshop reports at country level

Research questions

The data set, based on the analytical framework, was very rich. As we wanted to focus on the most relevant questions, we discussed and refined our overall research question (RQ) within Agridemo towards more concrete RQs. Furthermore, we also discussed possible approaches for analysis during our project meetings. These discussions took place during our project meetings with the multi-actor project partners and the advisory board. The following concrete RQs came forward related to these key characteristics and best practices.

RQ1:	What are the most important key characteristics at event level? Are there some standard recipes to choose from?
RQ2:	What are the most important key characteristics at farm level? In other words, what does it entail to be a good demonstration farm or farmer?
RQ3:	How does a combined set of structural practices - related to these key characteristics – influence the effectiveness of a demo event?
RQ4:	What about the dynamics in the context of a demo event? What role does the organisation, network or AKIS structure play?
RQ5:	What are the key points of possible interventions that can be made to enhance the effectiveness of on farm demonstration events?

Table a. List of 35 Agridemo-F2F cases including country and organiser, topic addressed, the type of demo (one-off or series), the group size and more details on the numbers of data tools fulfilled

CASES	Country and Organisers/programme	Торіс	type of demo	Group size	participants pre survey	participants post survey	post demo host farmer interview	interview farm level	interview programme/network level	demonstrators with pre survey	demonstrators with post survey	observation tool
AT1	Austria: Cooperation between: AGES; The Agricultural Chamber of Upper Austria; working group with advisers and farmers	10 trials on: 1. fertilisation of winter rape, 2. fungicides in winter barley, 3. winter barley varieties, 4. winter rape varieties, 5. under sown crops and herbicides in grain maize, 6. N-fertilisation in winter wheat, 7. varieties and sowing density of winter wheat, 8. growth regulators for winter barley, 9. varieties and sowing density of winter barley, 10. varieties of winter wheat	series	350	37	37	1	1	4	6	6	v
AT2	Austria: Cooperation between: FIBL, BOKU, Bio Austria and the host farmer	1. no-tillage and roller-crimper, 2. vermicomposting, 3. agroforestry and flower strips	one- off	8	8	8	1	1	2	2	2	v
BE1	Belgium: Cooperation between: EURAF; Van Akker Naar Bos; AGROFORESTRY Nederland and the host farmer	agroforestry	one- off	40	4	4	1	1	1	1	1	v
BE2	Belgium: Operational group guided by Inagro, Flanders, on CTF in organic farming	mechanical weed control in maize	one- off	100	26	21	0	1	1	1	1	v

BE3	Belgium: Cooperation between Hooibeekhoeve, ILVO, Boerenbond, Inagro and the host farmer	calculation tool for optimising dairy farm management + new barn dairy farm with latest technologies		40	21	15	0	1	1	0	1	v
BE4	Belgium: Ferme de Froidefontaine staff	Care of orchards	series	10	4	4	1	1	0	2	2	v
DK1	Denmark: ØRD	Roughage for organic milk cows	one- off	100	17	4	1	0	2	10	3	v
DK2	Denmark: LMO							1	1			х
DK3	Denmark: Aarhus and Copenhagen University in collaboration with local extension services	Intelligent buffer zones	series	20	10	9	0	0	1	5	3	v
ES1	Spain: Regulatory Board of Ecological Agriculture (CRAEGA)	Casa Grande de Xanceda	one- off	20	20	20	1	0	1	1	0	v
ES2	Spain: Coren SCG cooperative	Ganadería Reboredo-Autofarm d		12	13	12	1	1	0	1	0	v
ES3	Spain: Cooperative of pistachio growers of Castilla la Mancha "Pistamancha'	Pistachios crop in Castilla-La Mancha (Spain)		5	2	2	0	1	0	1	1	v
FR1	France: Steering group of host farmers and Chamber of Agriculture employees (FR)	New barn, farmer co-working, robot and grazing	series	15	11	11	1	1	1	2	2	v
FR2	France: Steering group with farm manager and Chamber of agriculture advisers (FR)	experimental vegetable farm tour with several demonstrator to present results of projects	yearly	36	6	6	0	0	1	2	2	v
FR3	France: Agroecological group coordinated by the Regional Chamber of Agriculture (FR)	parasitism on heifer	series	6	4	4	1	1	1	1	1	v
GR1	Greece: The Hellenic Crop Protection Association (HCPA)	alternative spraying tools/equipment (use, calibrating, etc); handling of pesticide containers; farmers' health protection; environmental protection		30	13	22	0	0	1	1	1	V
GR2	Greece: The Forest Research Institute of Athens (FRIA)			0	0	0	0	0	1	0	0	x
GR3	Greece: The American Farm School (AFS)	cheese production (yellow cheese); The event is part of a series of of 4 similal ones that focus on dairy products (Greek feta cheese, yellow		7	7	7	0	0	1	1	1	v

		cheese, other traditional Greek cheeses, and yogurt).										
IR1	Ireland: ALB project coordinated by Teagasc, the Forest Service of the DAFM and LB (3 people)	Agroforestry- establishment options and management	series	9	5	5	0	1	2	1	1	v
IR2	Ireland: Cooperation between Teagasc and the Department of Agriculture, Food and Marine (DAFM)	Organic cereal production as well as on-farm s processing.		50	16	15	1	1	1	1	1	v
IR3	Ireland: Programme partnership between Dawn Meats, Teagasc, McDonald's and the Irish Farmers Journal (IFJ)	Beef production and cross breeding	yearly	700	75	27	0	0	0	3	3	v
NL1	The Netherlands: Led by ZLTO and partners: farming vdBorne; universities: HAS and TU/e and WPIR; and advisory: Rusthoeve, Delphi	Precision farming in arable farming (potatoes).		50	13	10	1	1	1	1	1	v
NL2	The Netherlands: Cooperation between ZLTO, five host farmers and the Open Greenhouse day's foundation	Open Greenhouse Days - Red Pepper		25	14	11	1	1	1	1	1	v
NL3	The Netherlands: A board of strawberry growers, supported by and linked to ZLTO	Strawberry demo day – Vertical ventilation strawberry		25	13	13	1	1	1	1	1	v
PL1	Poland: Cooperation between mainly the Institute for Soil Science and Plant Cultivation and the Agricultural Advisory Centre	Conventional and organic farming, partly experimental and demonstration farm.		20	18	18	1	1	1	1	1	v
PL2	Poland: Polish Union of Cereal Grain Producers (PZPRZ)	Maize production, Decision Support System in plant protection, computer + GPS control of tractor and agricultural machinery		25	12	12	1	1	1	1	1	v
PL3	Poland: Polish Society of Organic Farmers (PTRE)	Specialised organic vegetable production		18	13	13	1	1	1	1	1	v

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SE1	Serbia: Cooperation between researchers of BioSense Institute and employees of KRIVAJA doo	LoRa system for communication with sensors and meteorological stations – continuous monitoring of the field conditions	series	50	11	11	2	1	0	0	4	v
	Cooperation between researchers of BioSense Institute and employees of KRIVAJA doo	event 2 SE1		30	8	8	0	0	0	1	1	v
SE2	Serbia: Beekeepers Association "Jovan Zivanovic"	Precision Agriculture (AgroSense application; Variable fertilisation- saving fertiliser and increasing yield)	one- off	0	0	0	0	0	1	0	0	x
SW1	Sweden: Cooperation between the Swedish cereal producers association (SpmO), and a Swedish local organisation for seed and oil seed producers (SFO)	Growers day; plots at biogas facility, o winterwheat, ley and canola fields		15	0	4	0	1	2	0	0	V
SW2	Sweden: The OiB (Odling In Balance) farm network	Samzones-protectives zones in or around fields	unkn own	30	0	3	0	1	0	2	0	v
SW3	Sweden: The OiB (Odling In Balance) farm network			50	0	0	0	1	1	3	0	v
UK1	United Kingdom: Innovative Farmers, England	Alternative methods for terminating cover crops		6	6	6	0	0	2	1	1	v
UK2	United Kingdom: AHDB Monitor Farms, England	Benchmarking in arable framing		25	17	3	0	1	1	1	0	v
UK3	United Kingdom: Farming Connect, Wales	no demo		0	0	0	0	1	1	0	0	х

Data analysis RQ1

For the first RQ, we performed a mixed methods approach (figure a). We will first elaborate on the qualitative analysis that defined our entry points for further analysis at event level. We wanted to focus on the characteristics that have a clear link with the effectiveness outcomes of a given case study. For each case study, we qualitatively colour-coded each of the 50 characteristics (selection process is described in the Agridemo-F2F D3.3-4.3), explaining for each characteristics the reasoning behind the colour-code and if the variable was clearly mentioned as a key characteristic (Figure b).



Figure a. Mixed methods approach for RQ1

	Attributes	Green/Red	How?	Mentioned as key?
Attendees pay an entrance fee at the demo	yes (green) - no (red)			
Host farmer received compensation	yes (green) - no (red)			
The demo is externally funded	yes (green) - no (red)			
The demo is part of a series of demo's	yes (green) - no (red)			

Figure b: Qualitative colour-coding approach

First, we defined a set of effectiveness outcome variables. As described in D5.2, we determine effectiveness of learning based on two main elements, i.e. the extent and nature of learning. For each of these two dimensions, we selected a number of variables, offering us insight in this specific dimension. Data for these variables was collected in the post-demonstration surveys of the participants.

Related to the extent of learning, we selected 2 main variables. The first one is 'individual learning' of the participants, assessed in the survey by the following question: "Have you learned something new?' This variable was coded green if more than half of the survey participants of the demo event related to the case study stated 'yes' on the question. As a second variable, we included the overall effectiveness rate the surveyed participants attributed to the demo event. If the average score was higher than 3,9 on 5, rated on a 5-point Likert scale, the demo event was coded green. Demo's with an average score between 2,9 and 3,9 were coded orange, and below 2,9 they were coded red. Related to the nature of learning, we focused on the reported occurrence of different levels of learning and key elements of peer-to-peer learning. Therefore we opted to include as variables: if participants on average for each demo event 1) felt actively involved; 2) felt like they could share their own background knowledge and 3) reflected on their own point of view at some point during the demo. These variables were scored in the same way as the 'individual learning' variable.

Combining the qualitative scoring of the characteristics with the scores of the effectiveness outcome variables enabled us to find patterns of characteristics leading to more positive outcome variables across specific demonstration events of all case studies. This approach revealed that two characteristics where clearly linked to the effectiveness outcome. The first one was group size, in most cases where they had a small group size or divided the group into subsets of smaller groups, higher scores were given by the participants for the effectiveness outcomes. This is illustrated in Figure c. The same counts for the learning methods, participants rated their learning outcomes higher when a more diverse set of learning methods was applied during the demonstration event. As such, we took group size and learning methods as an 'entry point' for a more in-depth descriptive analysis of both the quantitative and qualitative case study data (qualitative interviews, surveys and workshop reports). We targeted the analysis towards more insights in how i) group dynamics and ii) the set of learning methods were related to learning outcomes, and to other key characteristics. Furthermore, we tried to understand whether and how group dynamics, and the variety in learning methods, determine best practices and relate to (influence or are influenced by) other key characteristics such as set-up, recruitment, etc.

CASE STUDIES	Knowledge exchange	Active involvement	Self-reflection	Individual learning	Effectiveness rate	group size	split in groups
	yes (green)=> 51% ans	syes (green)= >51% a	yes= >51% ans	yes (green)= >51% a	(1, 2 <3: red; 3 - <	small =1-20	; medium= 21-5
AT2 - rating	green	green	green	green	green	small	small
BE3 - rating	green	green	green	green	green	medium	medium
BE4 - rating	green	green	green	green	green	small	small
FR3 - rating	green	green	green	green	green	small	small
GR1 - rating	green	green	green	green	green	large	large
GR3 - rating	green	green	green	green	green	small	small
IR2 - rating	green	green	green	green	green	small	small
PL1 - rating	green	green	green	green	green	small	small
PL2 - rating	green	green	green	green	green	medium	small
FR1- rating	green	green	green	green	Orange	large	small
FR2 - rating	green	green	green	green	green	large	medium
PL3- rating	green	green	green	green	green	large	small
SE1 rating demo 2	green	green	green	green	green	medium	small
SP1 - rating	green	green	green	green	green	small	small
SP2 - ratinG	green	green	green	green	green	small	small
SP3 - rating	green	green	green	green	green	small	small
UK1 - rating	green	green	green	green	green	small	small
UK2 - rating	green	green	green	green	green	medium	medium
IR1 - rating	red	green	green	green	green	medium	medium
AT1 - rating	green	green	green	green	Orange	large	small
DE3- rating	green	green	green	green	Orange	small	small
SE1 - rating + demo 1	green	green	green	green	Orange	medium	small
SW1 - rating	green	green	green	green	orange	large	small
SW2 - rating	green	green	green	green	orange	medium	medium
NL3- rating	green	green	green	green	Orange	large	small
DE1- rating	green	green	red	green	Orange	large	medium
BE2 - rating	orange	green	green	green	orange	large	large
IR3 - rating	red	green	green	green	Orange	large	medium
NL1 - rating	red	green	red	green	Orange	medium	medium
BE1 - rating	green	red	green	green	red	medium	medium
NL2 - rating	green	green	green	red	Orange	large	small

Figure c: Example of cross case comparison of outcome variables and group size

The second step within our mixed methods approach was a triangulation step with both a qualitative and quantitative descriptive analysis. To further elaborate on group dynamics and variation in learning methods, we coded and screened the following data sources for quotes related to these characteristics: programme/network interviews, workshop reports, case study reports and observation tools. Furthermore, for each key characteristic, we performed a descriptive quantitative analysis using mainly cross tabs and Chi-square tests, calculated in SPSS 25, mostly with data from the 351 post on-farm demonstration surveys completed by participants.

Data analysis RQ2

For RQ2, we used a similar mixed methods design (Figure d) with a triangulation approach including both a descriptive qualitative and quantitative analysis at **farm level** (see chapter 3 for results). The entry points were determined directly by the RQ. We selected all relevant key characteristics at farm level from table 1. We screened the following data sources for quotes: workshop reports, case study reports and observation tools filled in by observing AgriDemo-F2F partners. For the characteristics, we focused on the importance of real-life conditions of demo farms; accessibility of the demo farms; facilities, such as rooms, toilets and audio; and the relation of these conditions related to the decision on set-up.



Figure d. Mixed methods approach for RQ2

Furthermore, for each key characteristic, we performed a descriptive quantitative analysis using mainly cross tabs and Chi-square tests, calculated in SPSS 25. Based on the observation tool and as a prerequisite for some questions, we analysed percentages of CS in which the host farmer was not demonstrating, he/she was one of the demonstrators or even the main demonstrator. Next, the quantitative analyses were mainly based on answers given by participants on the post surveys. More specifically, we analysed the questions 'I think the host farm operation was well suited for this demonstration', 'I thought the host farm was comparable enough to my own farm', 'I had the feeling I could trust the knowledge of the demonstrator, 'I think the demonstrator had the right skills to carry out the demonstration'. For the latter two questions, only the 14 CS where the host farmer was the main demonstrator were taken into account as we focused on the role of the participants, we investigated the answers on the pre survey for demonstrators related to their experience as a demonstrator. For this analysis, also only the 14 CS where the host farmer was the main demonstrator. For

Additionally, based on the interviews with organisers on programme and farm level, we categorised the CS as top-down, bottom-up or participatory in deciding on content and on organisation of the CS. We validated our own judgement of the categorisation of these cases by sending this first categorisation through Google forms to the observing partner for each CS, asking them to review the category we attributed to their CS. Next we investigated the relation between these categories and the available facilities of the demonstration event; and with effectiveness of the demonstration event.

Data analysis RQ3

To answer RQ3, we also choose a mixed methods approach (Figure e), however, for this analysis the main focus was on the statistical analysis, while the further qualitative and quantitative descriptive analyses served as understanding the results of the first statistical analysis to a greater depth.



Figure e. Mixed methods approach for RQ3

First, to understand how structural characteristics of on-farm demonstration events impact the perceived effectiveness of the demonstration, we performed a 2-step statistical analysis (factor analysis and multiple linear regression). This quantitative analysis is based on the responses of participants collected through the post-demonstration questionnaire.

At the end of demonstration events, participants were requested to take some time to express the level of agreement/disagreement upon certain statements regarding their experiences during/from the demonstration and the level of their satisfaction. A structured questionnaire covering different areas such as structural, functional, and learning characteristics of the event, along with their opinion on the event's effectiveness was thus used. Participants' agreement with a variety of statements was measured with a four point Likert scale.

Overall, 345 questionnaires were used in this analysis, filled out by participants of 31 demo events in 12 EU countries. Table a explicit the distribution of surveys per county.

Country code	Country	Frequency	Percent (%)
AT	Austria	45	13.0
BE	Belgium	44	12.8
DK	Denmark	13	3.8
ES	Spain	34	9.9
FR	France	21	6.1
GR	Greece	29	8.4
IE	Ireland	47	13.6
NL	Netherlands	34	9.9
PL	Poland	43	12.5
RS	Serbia	19	5.5
SW	Sweden	7	2.0
UK	United Kingdom	9	2.6

Table a: Post-demonstration participants' survey (Number of valid cases per country)

Responses were cross-checked to confirm that there is not any event and/or country dominating their distribution as well as that there are no outliers. Out of the 42 items of the questionnaire that were using the 4-point Likert scale, 21 variables focusing on the structural and social interaction aspects, along with variables aimed to capture respondents' assessment of the demo effectiveness, were selected. Thus, variables, which were mainly linked with functional and/or learning characteristics related to demo events were excluded from further analysis at this point. Inasmuch as the effectiveness of an on-farm demonstration is a multifaceted concept, the research team worked to construct a combined factor to better capture respondents' assessment of demo effectiveness. Thus, six (6) out of the 21 variables were selected to form a factor, which was named "general effectiveness". This factor comprised of three variables describing the general effectiveness of the event(s) and another three, which were focusing on the actions that participants stated that were ready to take on, as a result of the event they attended. With the remaining (15) variables, a factor analysis with principal component analysis and Varimax rotation was employed to reduce their number. The Factors generated were further used to compute new continuous variables that fed a Multiple Linear Regression, which had as a dependent variable demo effectiveness.

In addition, we searched for evidence in the qualitative data to understand these results to a greater depth. We screened the case study reports for quotes related to peer learning facilitated through discussions, the structure of the day, relatedness to the demonstration farm, group connectedness and group composition.

With this analysis, we could answer in **chapter 4** the following question: How does a combined set of structural practices - related to these key characteristics – influence the effectiveness of a demo event?

Data analysis RQ4

RQ4 does focus on the role of AKIS and the organisational arrangements. It thus disentangles the dynamics in the context of a demo focusing on the role of the **organisation**, the network in which the demo is embedded in and the AKIS structure.

To answer RQ4, the analysis draws on data from 37 organisation/programme level interviews supplemented with selected farm level interviews (27) where respondents comments are pertinent to the organisational arrangements, and 10 workshop reports. The data is largely qualitative and was analysed using NVIVO and thematic codding focusing on those themes relevant to the role of organisations as shown in the analytical framework. Data for closed questions in the interviews were analysed and provide some descriptive statistic to complement the qualitative analysis.

Data analysis RQ5

Conclusions of previous chapters were discussed during our last project partner meeting with multi-actor partners (22th of Mai Brussels). Based on these discussions, we translated the conclusions into key messages and best practices in **chapter 6** in order to summarise the key points of possible interventions that can be made to enhance the effectiveness of on farm demonstration events.