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PLAID WP5 Research Report

Observations from 24 on-farm demonstration cases across Europe

WP5: Case studies of demonstration on commercial farms



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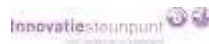
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ABSTRACT

This study presents an overview of 'Observations and lessons from case-studies' from the H2020 **PLAID** project (Peer to Peer Learning: Accessing Innovation through Demonstration). The general objective for demonstrations is: "To present, discuss and demonstrate innovations in farming practices, materials and equipment in a way that helps farmers to make better informed decisions about innovation on their farm." For this report, 24 case-studies representing a wide variety of on-farm demonstrations across Europe were evaluated. This report synthesizes the main findings from these case-studies on how to prepare for a demonstration, how to carry it out on the day, and how to ensure impact once the demonstration has been concluded.



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To the memory of Frank Wijnands

While working on this report, we were shocked and saddened by the news of Frank Wijnands' sudden death. Frank played a large role in crafting the findings of this report, never being satisfied with easy answers and always raising questions in an attempt to bring the analysis to a higher level. We dedicate this report to his memory.



PLAID

TABLE OF CONTENTS

1	Introduction.....	8
2	Demonstrations in context.....	11
2.1	Introduction	11
2.2	Innovation for sustainable agriculture: the role of AKIS	11
2.3	The context and needs of visiting farmers	13
2.4	Ingredients for change: Awareness, attitude and behaviour.....	13
2.5	Influencing a visiting farmer’s behaviour	15
2.6	Outcome and impact of the demonstration	16
2.7	Conclusion on the role of demonstrations	18
3	The Demonstration Event	20
3.1	Introduction: Demo objectives and set-up.....	20
3.2	Why: the motive(s) for the demonstration.....	21
3.2.1	Problem-driven motives.....	21
3.2.2	Innovation-driven motives	23
3.2.3	Additional motivations	23
3.2.4	Embedding of a demonstration	23
3.3	What: the topic of demonstration	24
3.3.1	Examples of topics: innovations.....	24
3.3.2	Topic range at a demonstration	25
3.3.3	Source of the innovation.....	25
3.3.4	Readiness of the innovation	26
3.3.5	Required skills to change	27
3.4	Who: targeted visitors of the demonstration	27
3.4.1	Various visitor groups.....	27
3.4.2	Visitor motivations to attend a demonstration	28
3.5	Goals: Targeted outcome of a demonstration.....	29
3.6	How: Learning at a demonstration.....	30
3.6.1	No mediation.....	30
3.6.2	Presentations	30
3.6.3	Presentation with Q&A.....	31
3.6.4	Presentation with group interaction	32
3.6.5	Networking	33
3.7	Gathering feedback from visitors.....	34
3.8	Good practice guidelines on carrying out a demonstration.....	35
3.8.1	Mediation and Learning.....	35
3.8.2	Monitoring and Evaluation.....	40
4	Impact of demonstrations.....	42



PLAID

4.1	Introduction	42
4.2	Outcomes of demonstrations: What visitors take home	42
4.3	Output of demonstrations: Visitors considering changes on their own farm	44
4.4	Increasing the impact of a demonstration.....	45
4.4.1	Follow-up by demonstration organisers.....	45
4.4.2	Media coverage	46
4.4.3	Impact via advisors.....	47
4.4.4	Network relations.....	47
4.4.5	Targeting the farming context	48
4.5	Impact analysis based on past demonstrations	49
4.6	Impact pathways	50
4.7	Good practice guidelines on the impact demonstrations	53
4.7.1	Achieving impact from demonstrations in context	53
4.7.2	Providing after-demonstration information	53
4.7.3	Stimulating further learning and networking.....	55
4.7.4	Conclusion	56
5	Preparing a demonstration.....	57
5.1	Demonstration organisers	57
5.2	Funding and fees.....	59
5.3	Demonstration objectives.....	60
5.4	The hosting farmer and farm	60
5.5	Location and timing	62
5.6	Building the demonstration programme	62
5.7	Recruiting visitors	63
5.8	Access	64
5.9	Facilities and take-home materials	65
5.10	Contingencies.....	65
5.11	Good practice guidelines on organising demonstrations	67
5.11.1	The organising team	67
5.11.2	Setting demonstration objectives.....	68
5.11.3	The hosting farm	73
5.11.4	Timing of the demonstration	74
5.11.5	Access.....	74
5.11.6	The demonstration programme.....	75
5.11.7	Other organisational issues	79
5.11.8	Announcement and registration	80
5.11.9	Monitoring & Evaluation.....	81
6	Conclusion: Reflection on P2P and F2E learning.....	84
7	Annex 1: Case study summaries	85
7.1	BE1: Open Energy Day	86



PLAID

7.2	BE3: Hof ten Bosch (potato).....	87
7.3	BG1: Renewable energy sources in milk production.....	88
7.4	BG2: New plant protection technologies in grain and crop production.....	90
7.5	CH1: Arenenberger Ackerbautreff.....	91
7.6	CH2: PROVIEH: Organic cattle day.....	92
7.7	CRO1: Wheat & barley day.....	92
7.8	CRO3: Vegetable production by Bais.....	93
7.9	ES2: Extensive Crops Trials Visit.....	93
7.10	ES5: Organic Cow Cheese Production.....	94
7.11	FR3: INOSYS: Réseaux d'élevage.....	95
7.12	FR4: SYPPRE: Platform for innovative crop systems.....	96
7.13	IT1: Demo days for sustainable viticulture.....	96
7.14	IT2: AIAB-APROBIO FVG - Organic farming.....	97
7.15	LAT1: Integrated fruit production.....	98
7.16	LAT2: Herbivorous Project: Network of demonstration farms in animal husbandry.....	99
7.17	NL1: National leek day.....	100
7.18	NL3: Grounded maize cropping.....	102
7.19	NOR1: Optimal soil culture.....	102
7.20	NOR2: Berry production in plastic tunnels.....	104
7.21	POL1: National Potato Day.....	106
7.22	POL2: Feast Onions and Potatoes.....	107
7.23	UK3: IFM Field Event.....	108
7.24	UK5: Lothian Monitor Farm Scotland.....	108



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1 INTRODUCTION

This report describes the main findings from the 24 case studies from the PLAID project (Peer to Peer Learning: Accessing Innovation through Demonstration) that is funded under the EU Horizon 2020 Framework Programme. PLAID has been designed to map and analyse on-farm demonstrations with the aim *“to increase the innovativeness and sustainability of European agriculture by enabling a wider range of farmers and farm employees to access high quality peer-to-peer learning opportunities on commercial farms”*.

This report discusses various aspects of on-farm demonstrations in a ‘logical order’ that will be further discussed below. These aspects include the *ex-ante* organisation of the demonstration, the demonstration event itself and the *ex-post* follow-up. Most of these aspects have been identified in the case study methodology¹ although they have been re-shuffled a bit in this report and some things are added, following the discussions at the Zagreb consortium meeting in October 2018 and the analysis of the case studies.

In this report we aim for an overall narrative on demonstrations that has a clear storyline. For this storyline, the demonstration aspects from the case study methodology constitute the backbone of the PLAID demonstration narrative, i.e. the ToC of this deliverable. The easiest way then would be to use the ToC from the methodology (which also structures the case study reports) which also has the logic of how various aspects follow each other in time.

However, we have chosen another set-up which is inspired with the dual ambition we have with this deliverable. On the one hand, it is an intermediate product from the PLAID project that gives a thorough analysis of what is at stake in demonstrations and that serves as the basis for a variety of concrete and more specific outputs for our targeted community, i.e. organisers of demonstrations. The report therefore needs to be comprehensive and targets an audience that is skilled in reading texts with a complex argument. On the other hand, however, we aim that the report makes also good reading for organisers of demonstrations who are interested in ‘digging deeper’ into the why and how of demonstrations. Many of these people are less skilled in reading complex texts and the text needs to be structured to address their needs and interests more specifically.

To make the report an easy and useful read for them, we need to develop a good didactical way to explain what is and should be at stake in demonstrations. To achieve this, we have developed a more logical narrative below by first placing demonstrations in their broader context, i.e. as a set of activities that seeks to contribute making agriculture more sustainable. Subsequently we focus on the potential role of demonstrations in these broader processes, followed by a discussion on how to increase the impact of demonstrations that is related to the earlier discussion on ‘demonstration in context’. Finally, in the last chapter, we discuss how demonstration’s should be set-up and governed to allow them to play an effective role in making agriculture more sustainable.

This in fact means that we have turned the line of reasoning from the case study reports upside down by first discussing what takes place at a demonstration and then how to organise it. But from the practical standpoint this is a much more logical narrative as it first discusses what a demonstration seeks to achieve, then what happens at the

¹ Boelie Elzen, Frank Wijnands, and Anda Ādamsonsone-Fiskoviča. PLAID Case Study Methodology. November 2017. <https://www.plaid-h2020.eu/>

demonstration to actually achieve this and, last, how to prepare and set up a demonstration to realise all this.

Based on the considerations on the envisaged readers of the report, we have identified the following requirements for this report:

- The main story should be interesting for a very varied readership (different stakeholder groups) from different EU regions, especially the organisers of demonstrations.
- Readers should feel it gives them practical guidance on how to organise a good demonstration. The report should have a practical orientation by ending various sections with some main conclusions on dos and don'ts.
- Yet, the report should also help demonstration organisers to understand the basic mechanics of knowledge transfer and anchoring related to demonstration visitors by providing them with meaningful information, presenting it in a way that they can relate that to their own practice, as a result of which they leave the demonstration better motivated and well informed.

These considerations lead to the following general set-up of this report:

- *Ch.2: Demonstration in context:* Discussion on innovation for sustainable agriculture, some of the main challenges in process terms and the role of demonstrations therein. Ends with a number of possible roles and objectives for demonstrations that aim to have a positive impact on sustainable innovation at farms. There are two sets of activities to achieve such an impact:
 - ◆ Activities during the demonstration itself
 - ◆ Activities following a demonstration.
 These two topics are elaborated in the following two chapters
- *Ch.3: Carrying out a demonstration.* The demonstration is the place where farmers are informed and enabled to assess whether or not to modify certain aspects of farming back home. This chapter will discuss the set-up of a demonstration, the form and content of learning and what visitors take home. Very importantly, this is related to various possible objectives of a demonstration as discussed in Chapter 2.
- *Ch.4: Raising the impact of a demonstration.* Most of what visitors and the wider farming community do after a demonstration is beyond the realm of demonstration organisers but there is a variety of things demonstrators can do to lubricate that process as the case studies illustrate. To do this effectively, it is important that the demonstrators explicitly evaluate what happened at the demonstration and try to assess what motivates the visiting farmers and what their needs are. To gather this type of info, monitoring and evaluation (M&E) of the demonstration itself is important.
- *Ch5: Preparing a demonstration:* Ch.3 and 4 describe what should be done at and after a demonstration and this chapter will describe the steps that need to be taken to realise that. It addresses the setting of objectives, selection of demonstration partner-organisers, building of a demonstration program and prepare its execution, selecting and cooperation with a host farm, advertising the demonstration and organising M&E of the demonstration.
- *Annex to this deliverable: Case study summaries.* In the previous sections, we will use 'good practice' examples from the case studies but these will only address one specific aspect of such a case. Readers may have a need to see the 'overall story' of the demonstration where the example comes from and this Annex will provide that info in a concise manner.

This set-up more or less turns the order of chapters from the case study methodology upside down but it is didactically more sound since, when new elements are introduced,

the reasons why they are needed have already been explained in a previous section or chapter.

Each chapter will have subsections, largely in line with the sections from the case study methodology that is reflected in the sections of the case study reports. Some of these sections have been taken together if this seemed more useful. Each chapter starts with 'observations' from the 24 case studies. It describes 'what we observe' in the case study, not by taking material from all 24 of them but by presenting a selection of 'rich material' and weave that into a 'story' on that aspect of what seem to be key observations. These observations are 'illustrated' with excerpts from the cases. After these descriptive sections, each chapter will conclude with a set of 'good practices for successful demonstrations' that are inferred from the preceding observations. These conclusions are illustrated with 'good practice examples' from the 24 cases.

These concluding sections form the basis for Deliverable 5.2 from the PLAID project: Boelie Elzen, Frank Wijnands and Anda Adamson-Fiskovica: "Good Practices for Successful Demonstrations: Findings from 24 European case studies". This deliverable can be downloaded from the PLAID website: <https://www.plaid-h2020.eu/>

Photo 1: Explanation at demonstration on cover crops (FR4).



2 DEMONSTRATIONS IN CONTEXT

2.1 INTRODUCTION

In this chapter we discuss that demonstrations take place in a wider context in which there are many factors that influence farmers to change their practices to become more sustainable. The first section below discusses this wider context. The next section briefly indicates how this affects the attitudes and needs of farmers that visit a demonstration. Subsequently, four ingredients for change by visiting farmers are briefly presented: awareness, attitude, knowledge and behaviour, followed by some general insights into how to affect the behaviour of demonstration visitors. Next, we discuss the possible outcomes and impact of demonstrations, indicating that demonstration organisers can also play a role in stimulating the impact of a demonstrations. We conclude with a brief discussion on the role of demonstrations that acknowledges the context in which they are held.

2.2 INNOVATION FOR SUSTAINABLE AGRICULTURE: THE ROLE OF AKIS

Demonstrations take part in a broader context in which the overall ambition is to stimulate innovation processes that contribute to making agriculture more sustainable. The two key terms in this ambition are 'sustainable agriculture' and 'innovation' that are briefly discussed in the next paragraphs.

Concerning the term 'sustainable agriculture', we use this in the broad sense, i.e. addressing people, planet and profit. Sustainability is often interpreted in a narrow sense, referring primarily to environmental and climate issues. In this study, we define it more broadly, also addressing farmers' capabilities to make a good living from their farm and the impact this may have on the wellbeing of others and of animals. This means that any demonstration that seeks to contribute to improving these aspects is taken to address sustainability issues. A complication may be that improvement on one aspect (e.g. new measures to reduce emissions) may go at the expense of another (e.g. a farmer's income). An important aspect of demonstrations can be to make such possible trade-offs explicit so that visiting farmers are better informed to make choices on adopting possible innovations.

A further complication concerning sustainability is that demonstrations usually have a rather narrow focus whereas sustainability is defined at a higher level, i.e. the whole farm or even the wider agro-food system. This renders a problem in assessing whether a demonstrated topic will contribute to sustainability as improvements at the detailed level may be counterbalanced by negative side effects on another level or by rebound effects. Concerning the term 'innovation', this is usually taken to refer something new in an absolute sense, i.e. never done before. In demonstrations, however, the key aspect of 'newness' is that it is new to the visiting farmer. It may even refer to century old practices or crop varieties and there are many examples of re-introducing these, often after adapting them a bit, in present-day agriculture. This is sometimes called 'retro-innovation'.² As a result, for a demonstration a topic by definition is also an innovation, i.e. new to a significant share of the visiting farmers. Below, we will use the terms 'demonstration topic' and 'innovation' interchangeably.

² Loucanova, E., Parobek, J. and Kalamarova, M. (2015). Retro-Innovation and Corporate Social Responsibility. Studia Universitatis 'Vasile Goldis' Arad. Economics Series, Vol 25, Issue 4. DOI: 10.1515/sues-2015-0023

On the basis of the above explanation of these two key terms we can state that the overall ambition of demonstrations is to assist visiting farmers in their decision-making on adopting innovations that may contribute to making agriculture more sustainable.

Based on our broad interpretation of sustainability, there are various pressures on farmers to innovate. Some of these are internal to the agro-food system while others come from society at large due to various 'side effects' of farming systems on the wider environment. Examples of the former may be decreasing soil health due to monocultures, increased plant or animal diseases due to intensification, loss farmer income related to globalisation of food and fodder production markets, etc. Examples of societal (and political) pressure may stem from concern over CO₂ emissions, pollution of surface waters from nutrients or herbicides, health problems of residents near large animal production facilities, animal welfare problems, etc.

Thus, farmers are under a variety of pressures for change but at the same time they are limited in what they can change because they are embedded in a larger agro-food system. As a result, changes at the farm may create misfits with the system that may lead to loss of production, fewer opportunities to sell crops, loss of income, etc. Looking from the perspective of innovation (towards sustainable agriculture), the common term used for this system is the 'Agricultural Knowledge and Innovation System' (AKIS). This system consist of a variety factors that stimulate farmers to innovate as well as factors that create barriers to innovation.

Some AKIS factors work at a pan-European level (e.g. the EU CAP) while other factors may work only at the national level or may even be specific to the level of the individual farmer, e.g. the specific advisors that a farmer consults. To account for this, different AKIS are distinguished for the different levels, i.e.:

- EU-AKIS: includes EU legislation, multinational food and farming produce companies, international markets;
- Natl-AKIS: includes national legislation, variety of national factors and stakeholders, national markets;
- Reg-AKIS: includes regional regulation, regional factors and stakeholders, neighbouring residents;
- μ -AKIS (micro AKIS'): includes the innovation factors that are relevant for an individual farmer, i.e. the sources of inspiration and information for a farmer, the factors that influence a farmer's decision-making.

A demonstration is intended to motivate and inform each visiting farmer and thus operates at the level of the μ -AKIS. This implies that the demonstration should attempt to make a connection between what is demonstrated and the motivations and attitudes of the visiting farmers. Since this will vary across the range of visitors, demonstrations will need to account for this which can be done in various ways:

- By offering a range of demonstration activities that may appeal to different subgroups of farmers;
- By interacting with farmers at the demonstration to better connect the information that is provided with what farmers need;
- By offering information that is relevant at a higher AKIS level and that is relevant for a range of farmers, for example relevant market or political developments.

This implies that a demonstration not only seeks to address the direct farming issues related to the demonstrated innovation but also the farming context of the individual farmer as well as relevant aspects of the wider context in which a farmer operates.

Yet, a demonstration does seek to affect the behaviour of the individual visiting farmer. Let us take a closer look at what this may imply for organising a demonstration.

2.3 THE CONTEXT AND NEEDS OF VISITING FARMERS

The way a farmer experiences his own situation does not necessarily coincide with the analysis above. For the farmer, some important elements of his farming situation include:

- a technical and practical setting in which s/he works: the available mechanisation and (technical) routines used to run the farm;
- specific farming challenges (e.g. income, soil quality, pests);
- economic performance of the farm (which also determines possibilities to invest in innovation);
- network relations with downstream and upstream commercial parties and with advisors;
- social context, including the farmer's family and neighbouring farmers.

Concerning his μ -AKIS, a farmer directly experiences:

- the sources regularly used to obtain knowledge and know-how on new methods and innovations;
- the type and level of support that is regularly used (e.g. various types of advisors);
- public and policy pressure for change;
- direct instruments to affect a farmer's behaviour, e.g. subsidies or penalties;

As a result of all this, a farmer will always face various challenges and may consider change of several farming aspects. Reversely, this may also lead to 'lock-in', i.e. that the farmer is not willing or able to change certain aspects. As a result, when the farmer visits a demonstration, s/he will not be completely open-minded but will have certain expectations on what s/he may take home from it that might be of use. The farmer may already have gathered information on the aspects that are demonstrated and will have certain ideas on the relevance for his own situation. Certainly, the visiting farmer will have an interest in the topics that are announced (otherwise s/he would not go) but his motivation may be rather different from what motivates the organisers of the demonstration. The way a demonstration is organised then becomes crucial to make a connection between the two.

2.4 INGREDIENTS FOR CHANGE: AWARENESS, ATTITUDE AND BEHAVIOUR

A demonstration usually seeks to influence the behaviour of the visiting farmers, notably to adopt the innovations that are demonstrated. For an individual, such a change needs to address the following key aspects: awareness, attitude, motivation, knowledge and behaviour:³

- **awareness**: the farmer realises that something is an issue and/or that a specific innovation is available;
- **attitude**: the farmer gives meaning to this new thing from the perspective of his own situation, e.g. this innovation is or is not relevant for me;
- **motivation**: the reasons that motivate a farmer has to attend a demonstration.

³ Abrahamse, W. and Matthies, E. (2012). Informational strategies to promote pro-environmental behaviour: Changing knowledge, awareness and attitudes. In Linda Steg, Agnes van den Berg and Judith de Groot. (eds.), *Environmental Psychology: An Introduction*. The British Psychological Society and John Wiley & Sons, Ltd.

- **knowledge**: the information that is provided at the demonstration and that the farmer processes in terms of what is relevant for her/his own situation.
- **behaviour**: to actually change behaviour, a farmer needs awareness, motivation (attitude) and the necessary knowledge concerning an innovation.

Different farmers will be in different situations concerning these aspects in connection with a specific demonstration topic. Hence, the demonstration needs to address all of them (unless it targets a very specific coherent group of farmers).

The **awareness** aspect is usually not addressed by itself but it is implicit in the other aspects of a demonstration. Awareness is a necessary step but it only leads to change if the next aspects are also included, i.e. that the farmer's attitude and motivation are addressed to make the awareness 'stick'.

Photo 2: Milking demonstration with artificial cow at the Organic Cattle Day (CH2).



A farmer's **attitude** relates to how the farmer evaluates the innovation and determines the level of interest and the (preliminary) judgement or opinion that a farmer has of a demonstrated innovation. According to social psychology theory, attitude (belief about the practice / object and an evaluation of whether the outcome is good or bad) forms the basis for intended behaviour. Various factors may influence a farmer's attitude, especially the opinion of 'significant others' (see below) and the perceived ability to achieve the intended behaviour. At a demonstration, visitor-farmers will exchange opinions between themselves (P2P) and with other professional groups (F2E; farmer to expert). At the demonstration, these exchanges take place while the farmer is directly immersed in her/his professional community. The P2P and F2E exchanges that take place can then be considered as a professional dialogue on the merits, drawbacks, usefulness, feasibility, etc. of the demonstrated object. These exchanges are partly structured by the demonstration set-up, partly they are unstructured and informal between various individuals or smaller groups. These dialogues will help the visiting farmers to better determine their own position towards the demonstration topic and provide them with better arguments pro and contra in relation to their own situation.

The **motivation** for farmers to attend a demo can vary and may include specific challenges that a farmer faces at her/his own farm. A farmer can also be more 'open-

minded’ and be curious to see if there are any new developments that might be interesting. The opportunity to meet people (farmers, advisors, experts) can also provide a motivation.

Concerning the **knowledge** that a farmer obtains at a demonstration we can distinguish two general types, notably factual knowledge and skills. Factual knowledge (or ‘know-what’) may relate to a range of issues in connection with an innovation. This is relatively easy to convey. Skills (or ‘know-how’) concern what the farmer needs to do to actually use the innovation. For ‘simple’ innovations this is also easy to convey but for more systemic innovations this is much more difficult. In the following chapters we will show that this does not always gets the attention needed at demonstrations.

If a demonstration is well organised, it not only transfers information to the visitor-farmers but it also helps the farmer to process this into “what does it mean for me”. Thus, the information becomes knowledge, with specific relevance for the visitor’s own situation. In Chapter 3 below we will address this as a learning process.

Eventually, after becoming aware, developing the right attitude and having gathered the relevant knowledge, a farmer may change **behaviour**.

The first four aspects above can be addressed at a demonstration while a change of behaviour will, of course, have to take place after a demonstration. However, through follow-up activities the organisers of a demonstration can also have influence on what happens after the demonstration to stimulate actual change of behaviour of visitor-farmers, as will be discussed in Chapter 4.

2.5 INFLUENCING A VISITING FARMER’S BEHAVIOUR

The PLAID Conceptual Framework⁴ (CF) discusses several approaches to understanding how farmers may change their behaviour. Based on the Theory of Planned Behaviour (TPB), the CF identifies the factors in table 2 as being of key relevance.

Table 1: Details of the terms used in the TPB

Behaviour	The behaviour e.g. Buy a new tractor	
Intention	The level of motivation to preform the behaviour	
Attitude towards the behaviour	Belief	Beliefs about the outcome of a specific behaviour <i>e.g. a new tractor will increase my profitability</i>
	Outcome evaluation	Evaluation of whether the outcome of the behavioural belief is good or bad. <i>e.g. it is good to increase my profitability</i>
Subjective Norm	Normative beliefs	Beliefs about what “significant others” believe about the behaviour <i>e.g. My best friend thinks it is a good thing to buy a new tractor</i>
	Motivation to comply	Motivation to act in the way significant others think you should act <i>e.g. I don’t really care what my friend says</i>
Perceived behavioural control	Control beliefs	Beliefs about factors that control the outcome <i>e.g. It depends on whether I can afford one</i>
	Perceived power	Ability to overcome control beliefs <i>e.g. I can afford a new tractor</i>

⁴ Burton, R. et al. (2017). *PLAID: A Practice-Based Conceptual Framework and Typology*. D2.1 from the Horizon 2020 PLAID project. <https://www.plaid-h2020.eu/>

The key value of the TPB for demonstration activities is that it suggests a number of factors that need to be in place to promote behavioural change by visiting farmers:

- New information is important to change behaviour but it is of equal importance how this information is transferred. It will only lead to change if it is conveyed in a way that challenges or strengthens a farmer's existing belief structures.
- The perceived views of others can have a significant influence on behaviour and, as such, working at the community level (rather than isolated individuals) may provide benefits – i.e. the higher the level of community engagement with the demonstration activity, the more likely change occurs. This underlines the importance of P2P learning that takes place at demonstrations.
- Promoting confidence in the farmer's ability to achieve positive outcomes is also likely to aid the success of interventions.
- Targeting specific behavioural change at demonstrations is more likely to lead to success than targeting general behavioural change. Hence, demonstration activities need to be targeted at specific beliefs about specific actions.
- Finally, while it is important to transfer knowledge (i.e. increase knowledge or introduce new beliefs) it is also important to focus on beliefs about the desirability or ability of the new knowledge. For example, educating farmers about how to farm organically is unlikely to achieve change if they do not evaluate the outcomes of organic farming positively.

A further important starting point based on the PLAID CF comes from the Elaboration Likelihood Model (ELM). The key contention of the ELM is that there are two means of processing information – peripherally and centrally, with central route processing leading to a stronger likelihood of behavioural change. Areas where central route processing can be encouraged through good demonstration concern the message, the message receiver, and the message source.

The model suggests a number of factors that might be key to demonstration success:

- Information needs to be provided focusing on how the demonstrated action is likely to help farmers meet their goals. Personal relevance is important.
- Providing a balanced argument (both positive and negative aspects) is more likely to lead to central route processing.
- The credibility of the demonstrator is critical to the extent the individual engages in central route processing.
- Expertise is one dimension of demonstrator credibility, meaning that the more expert the demonstrator is, the greater the likelihood of success.
- Trustworthiness is the other main dimension of credibility. Trustworthiness could be based on the personality of the individual or trust of the institution.

These factors clearly indicate that setting up a good demonstration is not just a matter of providing knowledge but also paying attention to other learning attributes (how to present the knowledge, who presents the knowledge) and social aspects (interaction between visitors to stimulate peer-to-peer learning).

2.6 OUTCOME AND IMPACT OF THE DEMONSTRATION

The direct outcome of a demonstration is that a farmer will come home with new knowledge on the various aspects that have been demonstrated. Importantly, this is not only 'objective' knowledge but knowledge that a farmer has assessed on its merits for his own situation. Some aspects of the demonstration may have been completely new to some farmers and they will have a raised awareness on these. On others, they may have a better idea of the pros and cons which may either have lowered or increased their motivation to try and use this on their own farm. They will have a better idea of whether

it is desirable, feasible, affordable, etc. As a result, a farmer may come home by being enriched in terms of:

- Motivation / inspiration for change: '**know-why**'
- Knowledge on new practices, materials, equipment: '**know-what**'
- Skills on how to change: '**know-how**'
- Having met various people that can provide them with information, farming supplies and/or assistance to help them to make their farm more sustainable: '**know-who**'

Yet, this does not imply the farmer will actually change as there are probably also various remaining unknowns and uncertainties and the farmer can use the new knowledge in various ways. In governance literature, three types of knowledge utilisation are distinguished that are also of relevance for demonstrations. These types are **instrumental** use (used directly as it is, if needed with some modifications), **conceptual** use (idea has been understood, causal relations, why something works, how it works etc., knowledge that can be used also in other situations) and **legitimative** use (to legitimise opinions and earlier actions).

Each of these, may play a role in what different farmers do after a demonstration. Legitimative use may imply that a farmer has become more convinced that what he already did is right and he may not change anything. Conceptual use may imply that a farmer understands better why certain things are as they are or that a new approach might be interesting but leave it for further consideration later. Instrumental use may imply that a farmer is motivated to change things in the near term, possibly after a process of further exploration and/or waiting until it fits her/his investment cycle.

As a result, it may take quite some time before the impact of a demonstration becomes visible and this impact is also affected by many other things than the demonstration. A farmer may decide to first collect information on certain aspects by using a variety of different sources, including articles in the farming press (broad variety of agricultural journals and magazines, newsletters, etc.), browsing the internet (news-sites, farmers organisations, businesses) or social media. Furthermore, a farmer may get information from various specialists and farming advisors ('impartial' advisors or related to specific business). Finally, to help make up her/his mind, a farmer is likely to interact with various 'significant others', for instance with farmer-colleagues (additional P2P exchange), at farmer study groups or working groups or with her/his household members.

These processes are beyond the control of the organisers of a demonstration. Yet, there are various things the organisers of a demonstration can do to stimulate and 'smoothen' the processes that take place after a demonstration. This can be achieved by building further on a strong point of demonstrations over written information or one-way communication channels, notably that farmers can actually see and feel the demonstrated object, and see the result of specific prior activities. Furthermore, there is the opportunity to directly interact with peers and other relevant parties on what is demonstrated which can have a strong motivational effect on the visitors.

Demonstrators can then try and do several things to make the lessons a farmer has learned 'stick' and motivate him to continue a further exploration after a demonstration, including:

- Provide written materials on what is demonstrated that farmers can take home (leaflets, brochures). This may include presentations, descriptions, weblinks for further info, contacts for further info (e.g. advisors, etc.);
- Create space at the demonstration for networking and follow-on contacts with advisors, businesses, farmer colleagues, etc.;

- Provide opportunity for visitors (and non-visitors) to ask for further information after the demonstration and offer a (web-based) discussion platform;
- Liaise with farming advisors to provide adequate support after the demonstration;
- Invite and adequately inform the farming press.

Thus, demonstration organisers need to be modest and acknowledge that a demonstration does not typically lead to direct impacts on the farming system. Yet, they can also exploit the unique features of demonstrations and give an impetus to the overall innovation process. Thus, demonstrations do stimulate that the potential impacts are realised by using the following mechanisms:

- Empowering farmers (with motivation, knowledge, skills);
- Inspiring farmers to inform themselves further;
- Inspiring farmers to change specific farming practices;
- Multiplying demonstration outcomes to raise their impact, e.g. via advisors, farming press, follow-up activities.

Photo 3: Field trials with demonstrator at wheat and barley day (CRO1).



2.7 CONCLUSION ON THE ROLE OF DEMONSTRATIONS

In summary, on-farm change provides an important route towards sustainability but this is part of a broader process in which many actors and factors play a role, many of which are beyond the control of farmers. Yet, with an of appropriate assessment of options for change and appropriate assistance, there are many things that farmers can do.

To help them do so, demonstrations can play an important role. They can help farmers to become aware of certain issues, to become motivated to change certain things and to gain 'applicable knowledge' on various options for change and use this to take better informed decisions on where to go with their own farm.

The term 'applicable knowledge' is key here. Information that a farmer receives (at demonstrations or via other channels) is usually of a kind that it cannot be directly applied and it needs to be 'tuned to the needs of the farmer' by placing it in the context of the farmer's own practice. To achieve this, demonstrations can play a key role if they do not only provide 'abstract' information but if they also seek to make that information 'tangible' for the visiting farmers. This can be done in two ways:

- By not only using cognitive means to transfer information but by also using means that allow using all senses: seeing, hearing, tasting, smelling, touching.
- By interacting with visiting farmers to make a closer connection between supply (the information provided and demonstrated) and demand (what farmers need for their own practice).

This brings us to formulating the following general objective for demonstrations: ***"To present, discuss and demonstrate innovations in farming practices, materials and equipment in a way that helps farmers to make better informed decisions about innovation on their farm."*** In the following chapters we will indicate how this objective can be specified for a concrete demonstration, depending on the exact topic and the specific targeted farming community.

3 THE DEMONSTRATION EVENT

3.1 INTRODUCTION: DEMO OBJECTIVES AND SET-UP

The demonstration event is the locus where farmers are informed and taught about the novelties that are demonstrated and where they need to be motivated to assess the relevance for their own situation. The starting point for how the demonstration is set-up are the objectives of the demonstration. These objectives need to address the following four aspects of the demonstration:

- Why: the motive(s) for the demonstration;
- What: the topic of demonstration;
- Who: the targeted visitors of the demonstration;
- Goals: what do the organisers want to achieve; what should visitors take home from the demonstration.

These four aspects of a demonstration objective determine how the demonstration could best be set-up to realise the objective(s). They are elaborated in the first four sections below.

The demonstration objectives subsequently determine the various organisational aspects of the actual demonstration event, notably:

- Where: hosting farmer and location of the demonstration
- When: time of year + duration of the demonstration
- How: The programme of the demonstration, i.e. all demonstration activities and how they are to be carried out.

The first two of these organisational aspects ('where' and 'when') are elaborated in Chapter 5. For the last aspects, 'how', a number of sub-categories can be distinguished that are discussed in section 3.6 below.

The first five sections below are mainly descriptive to present the main findings from the PLAID case-studies. The last section summarises a number of 'good practice guidelines' that are inferred from these findings and it is more prescriptive on how to organise a 'good' demonstration. This final section also contains a number of 'good practice examples' that emerged from the cases.

In the descriptive sections we make many references to the 24 cases studied from the PLAID project by using a case study ID indicating the country followed by a number (e.g. IT2). Summaries of these 24 cases are presented in Annex 1. The table below gives an overview of the cases, just indicating the ID and title.

Table 2: Overview of 24 PLAID case studies

Case ID	Case Study Title
BE1	Open Energy Day
BE3	Hof ten Bosch (potato)
BG1	Renewable energy sources in milk production
BG2	New plant protection technologies in grain crop production
CH1	Arenenberger Ackerbautreff (Arenenberg Arable Day)
CH2	PROVIEH: Organic cattle day

CRO1	Wheat & barley day
CRO3	Vegetable production Bais
ES1	Extensive Crops Trials Visit
ES2	Organic Cow Cheese Production
FR3	INOSYS: Réseaux d'élevage (Network of livestock farms)
FR4	SYPPRE: Platform for innovative crop systems
IT1	Demo days for sustainable viticulture
IT2	AIAB-APROBIO FVG - Organic farming
LAT1	Integrated fruit production
LAT2	Herbivorous Project: Network of demonstration farms in animal husbandry
NL1	National leek day
NL3	Grounded maize cropping
NOR1	Optimal soil culture
NOR2	Berry production in plastic tunnels
POL1	National potato day
POL2	Feast of Onions and potatoes
UK3	IFM Field Event
UK5	Lothian Monitor Farm Scotland

3.2 WHY: THE MOTIVE(S) FOR THE DEMONSTRATION

There can be various motives for a demonstration that can be grouped into two general categories:

- 'Problem-driven': there are specific problems within current farming practices or emerging from these practices (that may affect the broader society) that farmers need to tackle. The demonstrations intend to help farmers to understand these problems better and to offer possible solutions that they can consider. Here the emphasis is on the 'why' aspects of the objectives.
- 'Innovation-driven': the demonstration shows 'novelties' (new machinery, new farming practices, new materials, etc.) that can be advantageous to specific farmers. Here the emphasis is on the 'what' aspect of the objectives.

In practice, many demonstrations are motivated by a combination of these two categories but it is useful to distinguish them as they have different consequences for the set-up of a demonstration. They are further elaborated in the following two sub-sections.

3.2.1 Problem-driven motives

Problem-driven motives can originate from the farming practice or from the societal / political problems or goals.

Farmer / farming driven motives may include plant/animal diseases, farming problems, market developments that threaten a farmer's income, etc. If a demonstration is organised to address such type of issues, visiting farmers can easily relate to the demonstration topics because they are likely to be motivated by the same reasons.

Policy / public opinion driven motives can originate from policy goals or public opinions on farming practices. The latter can either stem from direct nuisance experienced by nearby residents (e.g. stench, health effects from bioactive emissions) or more general sustainability concerns (e.g. pollution, CO₂ emissions, animal welfare). In such a case the motivation for the demonstration will not necessarily coincide with the motivation of a visiting farmer. The 'why' aspect of the demonstration in such a case will

need to be given much more attention in the demonstration objective and be addressed at the demonstration itself.

Demonstrations are usually organised by organisations related to farmers or farming. Hence, they have a natural inclination to emphasize the former type of motives. Over the past decades, however, the societal downsides of farming have become increasingly manifest leading to increased regulation of farming practices. Initially, farmers tended to oppose such interferences as it made their practices more complicated and/or more costly. But farmers and farmer organisations have also become aware that they are highly dependent on the rest of society and have come to realise that it is in their best interest to make their production acceptable to society. This is reflected in the motivation for demonstrations which now often are a combination of aspects directly related to farming and aspects that are related to the societal impact of farming.

A motivation found for many demonstrations is to improve soil management. Initially this was driven by societal concerns on the large-scale use of herbicides, much of which ended up in surface waters. Farmers have come to realise that herbicides use may also affect soil life in a negative way and that a healthy soil and good soil structure is also in their interest. This is reflected in various demonstrations across Europe, e.g. a demonstration in Switzerland on soil protecting cultivation techniques and split tillage. In terms of weed control, both the chemical approach (herbicides) and the mechanical approach (tillage, split tillage) were presented (CH1). A Belgian demonstration addressed field fertility and protecting biodiversity by the responsible and correct use of crop protection products (BE3).

Environmental issues, energy consumption and CO₂ emissions can also be important motivations. A Belgian demonstration presented a variety of techniques for energy saving and sustainable or renewable energy production technologies. Not only environmental benefits were discussed, but also the economic and societal aspects (BE1).

In some cases, an upcoming new legislation was a key motivator. This was the case at a Dutch demonstration with a new regulation that prescribes that from 2020, a cover crop needs to be sown in maize by 1 October. In case that weather and growth conditions would not permit harvesting before that date, the cover crop needs to be sown before the harvest. The demonstration presented several new machines that could do so (NL2).

Animal husbandry is a special case since it has the additional aspect of animal welfare. This is a concern for both farmers and society although societal actors tend to demand stricter rules than farmers think are reasonable and/or economically viable. Also issues of manure storage, disposal and use as fertilizer can be strong motivators for a demonstration. The tendency of growing sizes of animal farms in some cases aggravates the problems related to this (ES5, LV2).

A combination of sustainability aspects can also be motivator. A Scottish demonstration focused on various agro-environmental practices (e.g. pollinator project, farm woodland creation), economic topics and agricultural markets, and relevant social issues (e.g. mental health; UK5). A Croatian demonstration addressed how a farmer supported a local community employing some of their neighbours contributed to the empowerment and development of the village (CRO3).

Some organisers of demonstrations are themselves primarily driven by societal sustainability concerns which is then, of course, reflected in the demonstration. This, for instance, is the case with LEAF (Linking Environment and Farming) in England that organised the Integrated Farm Management field event (UK3). This addressed a broad range of aspects, including soil and water management, animal husbandry, energy efficiency, community engagement. In a Latvian demonstration, sustainability underlies

most of the organising cooperative's activities since all members apply the principles of integrated fruit production on their farms (LAT1)

3.2.2 Innovation-driven motives

Whereas problem driven motivation starts at the 'why' side of a demonstration objective, an innovation driven motive starts at the 'what' side. The difference between the two can also be characterised as in the first case 'a problem is looking for a solution' while in the second case 'a solution is looking for a problem'.

In innovation studies, these two dynamics are seen as very different with diverging impacts on society. However, when we focus on demonstrations and the needs of demonstration visitors, the distinction is not so relevant. The reason is that a demonstration should address both the why and what side of an innovation and help visiting farmers to make the connection between the two to be able to assess the relevance of the novelty for their own farm.

Hence, we will not address the innovation driven side separately but below discuss how to connect the innovation topics with a farmer's motivations.

3.2.3 Additional motivations

An important additional motivation can be to contribute to the education and training of future farmers. Various organisers of demonstrations team up with agricultural colleges and invite agricultural students to a demonstration (ES5, NOR1, FR3, FR4, CRO3). A further motivation can come from seeking to establish (better) relations between farmers and society in general or with a specific community surrounding a farm (CRO3).

3.2.4 Embedding of a demonstration

A demonstration may be a once-off affair or it may be part of a longer tradition and/or be embedded in an extension or research programme. In the latter case, this embedding co-determines the objectives of a demonstration. In Switzerland, the studied demonstration was embedded in the PROVIEH programme. PROVIEH is a concept and approach based on farmer-to-farmer-learning on topics related to organic cattle husbandry. The concept consists of decentral farmers' working groups of limited size (about 10 members) and similarly decentral animal housing visits of slightly larger groups of farmers who meet at one farm, accompanied by some input from advisors and/or researchers (CH2). The Scottish case is embedded in the 'Monitor Farm' programme that works to a shared aim, 'to help improve profitability, productivity and sustainability of producers through practical demonstrations, the sharing of best practice and discussion of up-to-date issues'. The importance of shifting farmers' mindsets towards trying new things and making smart business decisions, as opposed to decisions driven by emotion or traditional practices, is also at the forefront of facilitators' objectives for the LMF (Lothian Monitor Farm) programme (UK5).

One French case is organised by the SYPPRE collaborative platform that is implemented by the French technical institutes on arable crops ARVALIS (cereals, maize, sorghum, potato and forage crops), and Terres Inovia (oilseed crops). It is based on 3 initiatives: an observatory of current agricultural cropping systems and multi-criteria performance, a long term experimental platform based on the co-design and ex-ante assessment of innovative cropping systems to be tested, and a network of farmers groups to facilitate the (re)design of farming systems and to test innovation on their farms (FR4). A Belgian case is organised within the framework of the Bayer Forward-Farming farms. Though these are run by a large multinational agro-chemical company, these demonstration activities do not have the objective to sell or promote their products in the short time, but to become/stay known as a credible and reliable partner in a sustainable and

responsible agriculture (BE3). The Italian case concerns a series of demonstrations that are held on a demonstration farm located in the Piacenza Hills wine region under the brand DEMOdays. These DEMOdays are technical-demonstration days focused on innovation, safety and sustainability in agriculture and each year, several are held on specific topics.

Some demonstrations already have a long history. The Dutch Leek Day, for instance, is held since 2003. The Croatian wheat and barley day has already been held for more than 30 years (CRO1).

These embedded demonstrations have several advantages over once-off demonstrations. They usually have a firm visitor base that the organisers know and can rely on. This makes it easier for them to tune the demonstration to the needs of the visitors. Furthermore, it is more easy for the organisers to organise various forms of follow-up because of these established relationships. These issues will be discussed in further depth below.

3.3 WHAT: THE TOPIC OF DEMONSTRATION

3.3.1 Examples of topics: innovations

As stated in Chapter 2, the 'newness' of an innovation is defined from the perspective of the visiting farmer. So it can also refer to things that farmers elsewhere have been using for quite some time. As a result, for a demonstration a topic by definition is also an innovation.

The topics of a demonstration can vary enormously. Some general categories that we found in our cases are:

- Machinery or equipment, e.g. harvesters (NL2, POL1), maize undersowing machines (NL2), (mobile) milking robot, etc.);
- Soil management, e.g. in organic and integrated viticulture (IT1, IT2) in organic production of fruit, vegetables and berries (NOR1), general soil health and management (UK5);
- Cultivation of specific crops (including fertilization, crop protection). Examples include beet and maize (CH1), integrated fruit production (LAT1), berry production in tunnels (NOR2), wheat and barley (CRO1), cereals (ES2);
- Comparison of crop varieties, e.g. of leek (NL), potatoes and onions (POL1 and POL2);
- Whole farming systems, like organic (CH, IT2) or integrated farming (UK3, IT1);
- Broad variety of topics at successive demonstrations (UK5);
- Animal husbandry topics, including organic cattle husbandry (CH2), Network of demonstration farms in animal husbandry (LAT2), management of pastures for cattle feed, cattle management, cheese production (ES5);
- Markets (CH1, IT1), policy (NL2) and other contextual topics;
- Working conditions, e.g. farmer health (FR2);
- Energy systems on farms (BE1);
- Sustainability topics like harnessing biodiversity (UK3).

The general conclusion from this list is that virtually anything can serve as the topic for a farming demonstration. The main challenge usually is not what to present but how to present this topic at the demonstration such that the visitors optimally learn from it.

3.3.2 Topic range at a demonstration

A demonstration can either be very focused or address a broad range of topics. Furthermore, it can have a wider or narrower focus in terms of the agricultural subsector it addresses. The table below gives some examples from the case studies.

Table 3: Ranges in demonstration topics

Topic range	Wide	Narrow
Farming focus		
Specific crop	NL1: New leek varieties, new harvester, 'intelligent fertilization', hydroponic leek cultivation POL1: Potato, several aspects of crop management: new varieties, fertilisation strategies with new fertilisers CRO1: Wheat and barley day	NL2: comparison of 6 new machines for undersowing in maize NOR2: Berry production in plastic tunnels
Farming subsector	FR3: Sheep farming system in the central part of France, with a wide range of thematic, to create an event where all sheep farmers from the region can exchange, talk and meet BG2: various innovative plant protection products and technologies and other tools (flowering buffer strips and "wooden hotels" for wild bees)	CRO3: vegetable production in greenhouse NOR2: Optimal soil culture
Farming system	CH2: Organic Dairy: 14 sessions for a range of topics IT1: Integrated farming viticulture: range of methods, technologies & tools	ES1: Production of organic cow cheese BG1: Innovative energy efficiency systems in milk production
All farming systems	BE1: Innovative energy efficiency and sustainable energy production techniques on 22 farms	

Demonstrations in the right-hand column of the matrix tend to be rather specialized with a limited number of visitors (a few dozen). In the left-hand column, especially towards the bottom, the number of topics demonstrated tends to become large as does the number of visitors.

3.3.3 Source of the innovation

The demonstrated innovation can come from different sources, e.g. an innovative farmer, an experimental farm or station (CH1), research organisation, private businesses (NL1). For the visiting farmer, these sources are relevant in terms of how easy they can relate to it and their expectation on how easily they might apply it on their own farm. If the innovation comes from a farmer-colleague, the barriers will be perceived as relatively low. If it comes from research, farmers often perceive it as being complicated and possibly overlooking aspects that are important to farmers. A good demonstration will take these differences into account by making more effort to address the practical implications for farmers of such innovations.

Photo 4: Explanation on energy equipment (BE1).



3.3.4 Readiness of the innovation

An innovation can be more or less ready for (widespread) application, depending on to what extent it is fully developed, to what extent a farmer will have to acquire new skills to be able to work with it and further things that will need to change to make it work. The EU Horizon 2020 work programme uses the term 'Technological Readiness Level' (scale TRL1 – TRL9)⁵ to indicate how far an innovation is developed. This scale is used in various subsidy schemes by the EU and member states. For demonstration purposes, however, the TRL concept has limited value because, as indicated above, various non-technical issues are important for a farmer to be able to work with an innovation. We just make a distinction between 'low' and 'high' readiness.

If the readiness is low, an 'common' farmer will not easily decide to apply it while an innovative farmer may see this as an interesting challenge. Yet, also for the 'common' farmer a 'low readiness' demonstration can still have a function to raise awareness (cf. Chapter 2) on possible future new developments making her/him consider it more seriously in the future (e.g. new leek harvesters since early 2000s in NL1). If readiness is high, the 'common' farmer may be more interested while an innovative farmer may see it as 'nothing new about it' (as some visitors indicated in BE1). Depending on the readiness of the innovation, the demonstration can thus have different objectives for different farmer groups as indicated in the table below.

Table 4: Relevance of readiness levels for different types of farmer

Readiness level	Common farmer	Innovative farmer
High	Consider it for application	Low relevance
Low	Stimulate awareness on possible future new developments	Consider it for application and further development

⁵ https://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/annexes/h2020-wp1415-annex-g-trl_en.pdf

The readiness of an innovation correlates to some extent to the source of an innovation. Innovations that stem from innovative farmers and from businesses tend to have a high level of readiness while innovations from experimental stations or research more often have a low level of readiness.

3.3.5 Required skills to change

As the previous section indicates, there are important non-technical aspects to innovation that require new skills from farmers to be able to apply them on their own farm. Some demonstration focus explicitly on this skills (or 'know-how') aspects (IT2).

Most demonstrations that we witnessed did not explicitly address the skills aspect. By this we mean that the demonstration addresses all the things that a farmer needs to do or change to be able to apply an innovation on her/his own farm. This may also include having to build new relations with suppliers or buyers of produce. Failing to address these aspects at a demonstration may result in visiting farmers not being able to oversee which steps they need to take to use the innovation and they may be scared off to consider it further.

3.4 WHO: TARGETED VISITORS OF THE DEMONSTRATION

3.4.1 Various visitor groups

The main targeted visitors of a demonstration are usually a subgroup of farmers from a specific agrarian subsector, depending upon the specific objective of the demonstration, especially the demonstrated topic. Furthermore, it varies with the type of agrarian production system, i.e. conventional, organic or integrated. Although demonstrations usually target a specific production system, farmers working in other systems sometimes also attend. These farmers tend to be of the more innovative type who are always interested in new things, no matter from which system it originates. Sometimes farmers participate who consider to convert to another system, e.g. from conventional to organic (CH2).

Next to farmers, farming advisors are usually the second key target group of demonstrations. Based on our cases, we estimate that the number of advisors is often between 10% and 20% of the total number of visitors.

Some demonstrations, especially the smaller ones with a specific focus, only address these two key target groups and are rather closed. Many of the larger demonstrations also tend to target a variety of other visitor groups, including:

- Other agro-food stakeholders. This may include suppliers of equipment and materials, buyers of produce, banks / financiers. These groups are often given the opportunity to make some sort of presentation in the form of a business fair (NL1)
- Agricultural contracting firms; they are sometimes present as the demonstrator of new machinery (POL1)
- Researchers; they are often make a presentation on the background of a demonstration (the 'why') and/or to explain certain innovations (UK3)
- Agricultural college teachers and students (ES5, NOR1, FR3, CRO3)
- Farming press (CRO1, NL1)
- Policy makers (IT1)
- General public. This may also include 'directly affected' public, e.g. via emissions of pollutants, stench, fine dust, bio-active substances affecting health, etc. (IT2)

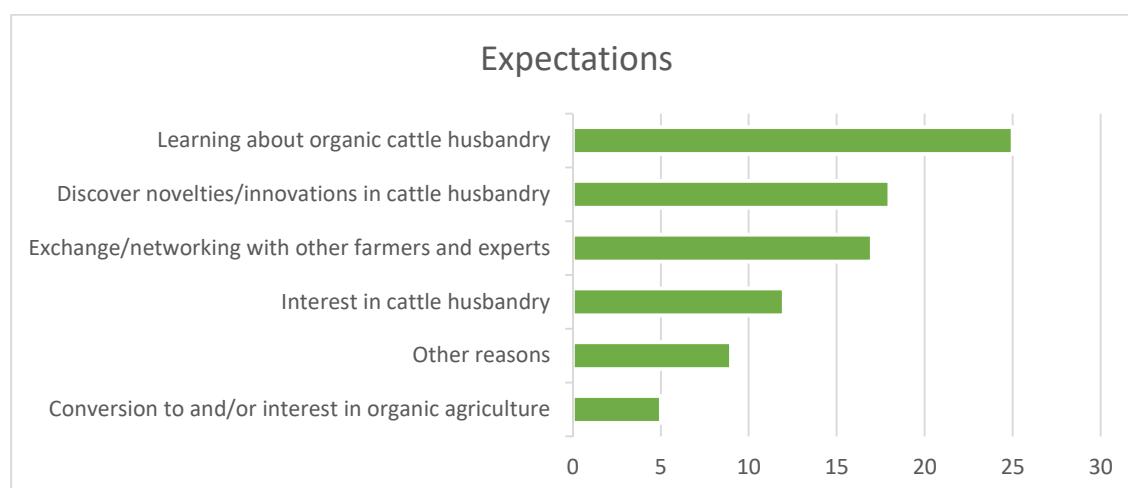
Demonstrations usually target visitors in a specific neighbourhood or region where visitors do not have to travel very far (often less than an hour). For specialised demonstration's, however, some visitors tend to come from further away and sometimes even foreign groups are invited. The Dutch leek day, for instance, had groups from France, Norway, Denmark and Poland (NL1).

The number of visitors varies widely. Some demonstrations are rather small with up to a few dozen visitors (IT1, IT2, BE3, ES2, NOR1, NOR2, FR4, UK3G). Others are 'medium sized' with 50-100 visitors (CH1, UK5, BE1, FR3, LAT2). Larger demonstrations range from several hundred up to a thousand visitors (CH2, NL1, CRO1). There are also examples of some very large demonstrations. For instance, the Polish national potato day (POL1) attracted 5,000 visitors in 2017, although there were only 2,000 in 2018. The reduction was attributed to holding the demonstration in a different region with fewer potato-growers. This demonstration was also a family and community event and only a minority of the visitors were farmers.

3.4.2 Visitor motivations to attend a demonstration

Visitors can have various reasons to attend a demonstration. The graph below gives an example for a Swiss case on organic cattle husbandry (CH2). Its main features, that can be found in many other demonstrations, are discussed below the table.

Figure 1: Visitor expectations for the Swiss organic cattle day (CH2)



The table indicates that most visitors are motivated strongly by the general topic of the demonstration and, more specifically, by innovations in that area. This type of motivation can be found in most of our case studies, e.g. in Poland on new potato varieties and machinery (POL1), in Norway on how to achieve optimal fertility without pesticides and fertilizers (NOR1).

Interestingly, for this organic demonstration, a number of visitors were motivated by an interest in conversion to organic agriculture. For an individual farmer, such a conversion would be a very radical step that would necessitate a complete transformation of her/his farming system and having to build new relations with suppliers and buyers of produce. It is noteworthy that demonstrations can be an important tool in such a radical transformation process.

Not only the content of a demonstration motivates visitors but also the persons who carry out the demonstration. Reputation of the speakers is important to visitors (IT1) as well as that of other demonstrators (FR3) and the reputation of the hosting farmer. The

host may also attract visitors if he is known as an active member of a producers group or farming organisation (FR3). The reputation of the farm can be a stimulus if it has a good track record in relation to certain aspects of farming, e.g. by being innovative on various sustainability aspects (UK3).

A striking result is that in almost all case study demonstrations, visitors ranked the networking motivation highly (e.g. CRO1, ES1, NL1). This networking tends to have two sides, one to establish (or maintain) relations with suppliers and buyers of produce (in case they have a place at the demonstration) and the other to interact and exchange experiences with other visiting farmers and advisors (UK5). It is evident that farmers are very interested to hear what their peers have to say about various aspects of farming in general and the demonstrated topics in particular. It can be seen as a form of benchmarking their own ideas and concerns and thus seems to play a crucial role in their decision-making process on whether they will apply the demonstrated innovations themselves.

In many demonstrations, visitors are not completely blank about the demonstrated topic. It usually concerns innovation that they have already heard or read about and on which they want to learn something new or not completely clear to them, to be better able to consider it for use in their own farm management (IT2).

An additional motivation may come from the embedding of a demonstration in a wider innovation programme. E.g. in the Netherlands, a project on “grounded maize cropping” has been running for several years within which several so-called ‘satellite farmers’ have been conducting various field experiments with catch crops on their farm. Several other farmers in the region are informed on results from the project via newsletters and mailings. Within this programme, occasional demonstrations are held and many farmers from this community then are motivated to attend these demonstrations to see for themselves how these innovations work (NL2). A comparable phenomenon can be observed in other countries, e.g. in Scotland in connection with the Lothian Monitor Farm (LMF) programme (UK5).

For a large number of farmers, demonstrations are so important that they visit several demonstrations per year (FR3, IT1). What we have not been able to establish is whether there may be a large fraction of the farmer population that does not or hardly visit demonstrations.

3.5 GOALS: TARGETED OUTCOME OF A DEMONSTRATION

When we asked demonstration organisers about the success factors of a demonstration, most of them answer in terms of all the interaction and networking that took place, the level of satisfaction of the visitors and the number of visitors. These they see as the important goals of a demonstration. In chapter 2, however, we indicated that demonstrations should target several different aspects that a visitor can take home from a demonstration, notably:

- Motivation / inspiration for change: **‘know-why’**
- Knowledge on new practices, materials, equipment: **‘know-what’**
- Skills to change: **‘know-how’**
- New or renewed relations with colleagues and others: **‘know-who’**

Organisers are most explicit about the relevance of the second point, less on the last two points and least on the first point. This does not mean that these aspects do not play a role at demonstrations as they can and do also result from various other activities. But this effect could be increased if organisers formulate this explicitly as a goal of the

demonstration and, based on that, try to adapt the set-up of the demonstration somewhat to better target these goals.

3.6 HOW: LEARNING AT A DEMONSTRATION

The general objective of a demonstration basically is to connect the who, the why and the what to achieve the demonstration goals. The general goal is to motivate (the why) the visiting farmers (the who) to assess whether the demonstrated topic (the what) is useful for them to use on their own farm, usually after further evaluation and collecting further information after the demonstration. In this section, we discuss how this is actually carried out by focussing on 'learning' by the demonstration visitors.

An important aspect of a demonstration is not only which information is provided but, at least as important, how this information is provided to the visitors. This 'mediation' has a great influence in how well the visitors process the information provided, and how this helps them to assess to what extent it may be useful to them. We can distinguish four general forms of mediation:

- No mediation provided: farmers walk around and see for themselves;
- Presentation only: one-way communication in which an instructor (farmer or other) tells or explains something;
- Presentation with Q&A: two-way communication: after (or during) a presentation visitors ask questions to which the presenter answers;
- Presentation with group discussion: visitors interact and react to the presenter as well as to each other.

All of these mediation methods were present in our case studies and each has strong and weak points. These will be discussed in the following subsections.

3.6.1 No mediation

In a strict, sense, we have not seen any demonstration where there was no mediation at all. Often, a demonstration comprises various activities, most of which are mediated. However, in some cases there were also parts of a demonstration where visitors just had to go and see for themselves, without any organised explanation (POL1).

3.6.2 Presentations

Presentations at demonstrations are given in various forms, such as:

- Lecture on a specific topics, sometimes supported by audio-visual means (powerpoints, movies, posters) or farming materials (IT1, NOR2);
- Explanation in the field on a demonstration topic, sometimes with additional support (posters, farming materials, diagrams; FR3, UK5);
- Explanation at stands during a business fair (NL1, POL1).

In our cases we found many examples of presentations by speakers with no or hardly any discussion with the audience. This is a linear form of knowledge transfer. This works well when the information provided is closely linked to what the listener already knows and to what motivates her/him. Visitors at a demonstration, however, usually have very varied backgrounds and much of what has been told will then be lost on many them.

The more complex the message is, the more difficult it will be for listeners to absorb it. It is therefore recommended, given the variety in the audience, to focus any presentation on 2-3 key points and repeat these a few times during the demonstration. This repetition makes it easier for listeners to remember.

In many cases, this one-way communication is not planned but quite often a presentation takes longer than anticipated, leaving very little time for questions and discussion. Of course, a presenter finds it important to finish his or her story but it is even more important that the listeners remember the most important parts of it. Focusing a presentation on key points then is much more effective than a longer 'complete' story.

It is also effective if any presentation ends with a clear 'take-home' message, something that the presenter finds most important that the listeners remembers. This can be supported by take-home materials (e.g. a flyer) that repeats the key message(s). What also helps is if a speaker is very engaged and committed. This helps visitors to remember as is evident from exit surveys held after a demonstration (CH1). Furthermore, giving 'extraordinary examples' helps to remember, e.g. things that (initially) went wrong (CH1, CRO3).

Photo 5: Discussion on innovative fences at demonstration on autonomy in sheep feeding (FR3).



3.6.3 Presentation with Q&A

The presentation aspects are the same as under the previous point. Leaving room for questions has the added value that visitors make an explicit connection between what is presented and their own situation. This not only benefits the person who asks a question but also some other visitors who may face comparable issues in their own situation.

An interesting observation in many demonstrations is that, when a presenter asks for questions, the visitors are often very reluctant to speak. It seems that this is not because everything is clear but because of a degree of shyness when visitors are in larger groups of unknown people. This appears to be less of a problem when many of them know each other (e.g. during repetitive demonstrations; BE1, NL1). A more active way of inviting responses may then help, initially by asking farmers to raise hands on a certain topic and subsequently asking one of them further on that topic, e.g. why they find a certain aspect relevant for their own farm or not (NL1, CRO3). It is striking that within the same

demonstration there was much more discussion in moderated sessions than in non-moderated sessions (CRO1, NL1).

Good moderation can also be a means to keep people together. In many 'loosely organised' demonstrations, visitors tend to break up in smaller groups of 2-5 and wander off or stand a while talking. This is not necessarily bad since they may be discussing something relevant to them from the demonstration. But to ensure they attend all organised events and listen to the explanations, organising animated discussions can help to keep groups together and make visitors stay focussed (NL2).

A barrier for interaction may also be that the presenter uses too abstract language that is not sufficiently in tune with the interests of the more practically oriented visitor farmers. Our cases indicate that especially researchers and technicians have this inclination and demonstration organisers should be aware of this. In some cases, the organisers interacted with speakers before the demonstration to ensure that they were aware of this (BE1, ES1).

When providing explanations and discussion in the field, audibility can sometimes be limited because of noise (roaring machines, wind). A portable audio installation can be helpful (NL1) but with larger groups this may still be a problem with responses from the public. A good habit in such a case is to repeat questions by a moderator (CH2). Furthermore, interactivity works best if groups are not larger than 10-15 people. It is striking that visitors of demonstrations with only a small number of participants spoke most highly of what they learned (LAT1, ES2). This also provides a lesson to measure the success of a demonstration. While funders might see the quantitative figures of attendance levels as an easily measurable indicator, these cannot be set as a primary criterion for *ex-ante* and/or *ex-post* assessment of a demonstration activity (LAT2). Also visibility can be an issue and a good solution has proven to be placing the demonstration object (incl. livestock units) in a place which can be approached by visitors from several sides, thus avoiding crowding in a limited area (LAT2).

3.6.4 Presentation with group interaction

Especially with demonstrations in the field it can be stimulating to have interaction between the visitors on what is demonstrated. To stimulate this occurring, a guided tour can be organised along various places with the guide not only explaining what is observed but also stimulating group discussions (NL1, UK3).

During such a demonstration it is useful to not only explain the 'what' (what is demonstrated), but also the 'why' (why is this relevant). Bringing up this 'why' aspect is a way to address the motivation of the visiting farmers, e.g. by pointing to the relevance for specific farming issues or societal/political issues, e.g. upcoming legislation (NL2).

Group interaction can also use elements other than question-answer sessions such as raising hands or using voting boxes to gather the participants' opinions or experience (BE1, BE3), subgroups for discussing some contents in more detail and provide a format for exchange of experience or more hands-on experience by asking the visitors to test a tool themselves (CH1).

Demonstration in the field also lends itself to address the 'know-how' topics better than in a room. Farmers not only need information on what is demonstrated but they may also need specific skills to be able to use it in their own situation. Presenters in the field should be aware of this and address this in their explanations (LAT1).

Furthermore, demonstration in the field offers the opportunity for visiting farmers to interact more directly with the demonstration topic, thus increasing the learning effect. E.g., in one case participants were invited to observe crops and entering the fields for a more visual and physical learning, picking weeds for identification, or sampling soil to

assess its structure (FR4). In another case, active engagement was encouraged by filling in observation sheets on soil (NOR1). In an Italian case, participants were invited to enter holes that were dug prior to the demonstration, and touch, smell and taste the soil, as well as discuss their impressions (IT2).

Explanation to demonstrations in the field not only needs to involve talking. In several cases, posters were made specifically for demonstration events and presented during the field visit, while there were also cases of using 'mobile' supports such as flyers with templates and figures (e.g. FR4).

Discussions among visitors occur at any demonstration, independent of how it has been organised. Much of this has a social character but it is also a way for visitors to process what they have heard and seen. This is an important form of P2P learning that supports farmers in forming their opinion about what is demonstrated. It can be seen as a form of benchmarking their own ideas vis-a-vis the ideas of their fellow-farmers. When confronted with new ideas at a demonstration, farmers may have strong initial opinions on some of these but they will also be uncertain about various others. These informal P2P discussions at a demonstration can help to remove some of these uncertainties.

This informal P2P will take place anyway but the set-up of a demonstration can encourage this further. E.g. by offering a drink and a bite after a demonstration. Many visitors tend to go home right after a demonstration but offering drinks at the end may tempt them to linger a while longer which can help them to process further what they have learned and witnessed (NL1)

3.6.5 Networking

A very important aspect of demonstrations is networking. At the exit surveys that we held among the visitors of the demonstrations that we studied, this networking was usually one of the most important motivations for them to attend a demonstration. This networking can either refer to making contact with various 'experts' or suppliers / buyers of farming produce, as well as interacting with other visitor-farmers (P2P exchange). In a Swiss case, both were clearly relevant as different interviewees stated that it was important to them to get to meet the people who offer courses on specific topics and to know whom to get back to when questions arise. Different interviewees explicitly referred to the importance of the social dimension of networking and that they appreciated meeting and socialising with farmers from all over Switzerland (CH2). In an Italian case, some respondents specified that they were more interested to establish more contacts with agricultural advisors present in the event rather than to meet other viticulturists (IT1).

The goal of networking can be different depending on the farmers: 1) exchange of technical experiences as they work on similar systems or in the same area; 2) exchange of ideas, approaches or opinions not linked to geographic reasons; 3) commercial, in terms of products or services (IT2). Concerning the latter, various demonstrations have business stands or a business fair where the suppliers of farming materials can show their produce and where farmers can purchase or order materials (CH3, POL1, UK5).

As was already stated above, much of this networking takes place in the more informal parts of a demonstration, during receptions with coffee (NL1), lunches or buffets (UK3, IT1) or drinks after a demonstration. These informal parts obviously are a very important part of the demonstration.

3.7 GATHERING FEEDBACK FROM VISITORS

Many organisers of the demonstrations we studied evaluated what happened at the demonstration some time afterwards. Especially organisations that organise more demonstrations thus try to learn from what they have done and try to improve on how to set up a demonstration. This, for instance helped them to improve timings across the day and size of groups (UK5), to better involve external stakeholders (POL1), to develop a balance between scientific and practical information (IT1). These evaluations, however, usually were carried out on the basis of what the organisers had observed themselves and what their 'impressions' were.

In our PLAID case studies, by contrast, we made a systematic attempt to analyse what happened at the case demonstrations, using fairly simple tools like small questionnaires for visiting farmers that took only a few minutes to fill in. On the basis of this, we were able to identify very specific topics that, according to the demonstration visitors, might be improved. These included, for instance,

- More room for informal exchange (CH1)
- Show really new things; much of what is demonstrated is not considered really new (CH1);
- More background information needed (NL2);
- Demo interesting for large farmers and not for small farmers (POL1);
- More explanation from farmers who are actually using an innovation;
- Invitation specifically targeted eco-interested farmers rather than common farmers (NOR1);
- Too much top down organisation, not sufficiently addressing farmer's needs (LAT2).

Many more of such rather specific points of feedback were collected from our cases. When we shared this type of feedback with the organisers after the demonstration, virtually all of them found this very useful and indicated this could help them planning a later demonstration. It thus seems that investing a bit of effort in monitoring what actually happens at a demonstration can have considerable value for organisers in learning how to do it better.

3.8 GOOD PRACTICE GUIDELINES ON CARRYING OUT A DEMONSTRATION

In this section we will infer a number of good practice guidelines from the discussion above. The first section below discusses mediation and learning which has various subsections on the following topics: (1) types of mediation, (2) variety in demonstration visitors, (3) stimulating learning, (4) connecting with the audience, (5) active engagement and (6) take home messages. Subsequently, section 3.8.2 discusses how to gather feedback from visitors using monitoring & evaluation.

3.8.1 Mediation and Learning

The discussion in section 3.6 illustrates that many forms of mediation can be used. This mediation has a great influence in how well the visitors process the information provided, and how this helps them to assess to what extent it may be useful to them. We can distinguish the following general forms of mediation:

- No mediation: farmers walk around and see for themselves;
- Presentation: one-way communication in which an instructor (farmer or other) tells or explains something;
- Presentation with Q&A: two-way communication: after (or during) a presentation visitors ask questions to which the presenter answers;
- Presentation with group discussion: visitors interact and react to the presenter as well as to each other;
- ‘Hands-on’ activities: visitors try things themselves;
- Informal P2P discussions (between visiting farmers).

All of these mediation methods were present in our case studies and each has strong and weak points. These were discussed in section 3.6 and they are summarised in the table below which includes a ‘tips and tricks’ column to use them in an optimal way.

Table 5: Various forms of mediation at a demonstration

	Function	Disadvantages	Tips and tricks
No mediation	Give visitors freedom to see whatever they want, whenever they want.	No structured offering of information, leading to minimal learning.	Give some guidance in writing.
Presentation	Awareness raising, motivation and knowledge transfer. Suited for larger groups	‘Absorption’ by listener is often limited, depending on listener learning style and attitude	Focus presentation on a few key points. Repeat these key messages. Engaged and committed speaker Use supporting means (audio-visuals, posters, etc.) Use examples, including ‘bad practice’ or ‘extraordinary’ ones. Provide hand-outs Address ‘what’ topics as well as ‘why’ topics Use ‘practical’ language

Presentation in a room with Q&A	All of the above + engage listener Suited for larger groups	'Shyness' of visitors in larger audience may hamper asking questions In larger groups, only few can respond	All of the above; Actively invoke responses from visitors; Use 'other' means: raising hands, voting boxes, group discussions Use of engagement webtools (slido, mentimeter, etc.)
Presentation or explanation in the field with Q&A	All of the above More suited for smaller groups	Audibility (noise; group size) Large number of visitors require many presenters / moderators to be able to break up the group	All of the above Make smaller groups Portable sound installation Repeat questions
Presentation or explanation with group interaction	All of the above P2P 'benchmarking' ideas to enhance connection with visitors' needs and interests	Large number of visitors require many presenters / moderators	Use 'other' means: raising hands, voting boxes, group discussions
Hands-on activities	Get the real-life experience	Limited capacity May require much preparation	
Informal P2P discussions	P2P 'benchmarking' ideas to increase visitors self-confidence		Provide 'free space' in the demonstration program.

Mediation has to take into account that the visitors of a demonstration can be quite varied and the first sub-section below discusses how this can be realised. This is followed by a number of sub-sections on how achieve that visitors learn the most from a demonstration.

Address variety in demonstration visitors

As was discussed in section 3.4.1, visitors of demonstrations can vary considerably. The key visitors, of course, are the **farmers** for whom the objective is that they will be **inspired** and **informed** on new developments and consider these for application on their own farm. But these farmers are not one of a kind since there are important differences between them, e.g. in terms of:

- Attitude (e.g. 'passive', not inclined to change much versus 'innovative', always looking for new opportunities);
- Motivation (networking, looking for specific information, interested in new developments in general);
- Learning styles. There is much variation in how individuals learn best, e.g. by listening to presentations, discussing with others, hands-on experience, observing what happens, etc.;
- Farming background (type of farm system, size of the farm, role on the farm, experience in farming)

Furthermore, there are other types of visitors of demonstrations. The two most important of these are farming **advisors** and the **farming press**, both of whom can act as '**multipliers**' of demonstrations because they can inform a wider audience of what they witnessed at a demonstration. **Other visitor groups** may include subcontractors (being often farmers themselves but sometimes specialized in subcontractor services), suppliers of farming equipment and materials (e.g. suppliers of seeds, fertilisers, crop

protection materials, etc.), buyers and processors of farming produce, policy-makers, general public.

All these groups have different expectations and motivations, different learning styles and different information needs. Yet, demonstrations are usually organised in a 'one size fits all' fashion, in which the way the demonstration is organised addresses all these groups in the same way. Though it is impractical to address all visitors in an individual way, it is useful to bring some variety in the set-up of a demonstration, based on an assessment of specific needs of the key visitor groups.

Photo 6: Promotion picture for 'feast of onions and potatoes' (POL2).



The main distinction in addressing these target groups is that the objectives for these actor groups will differ.

- For **farmers**, the general objective is to motivate and inform them. But since they vary in motivations, learning styles and interests, it is useful to offer a certain range of demonstration activities to reach farmers with different attitudes.
- For the **advisors**, firstly they need to be informed in the same way as the farmers to be able to convey the messages to other farmers. However, their advisory role implies that they face different challenges than the visiting farmers do. It is useful that the visiting advisors at a demonstration are offered the opportunity at a demonstration to exchange on this between them. This may be done in the form of a **brief discussion session with advisors**, the organisers and (some of) the presenters or demonstrators.
- The **farming press** is usually interested in obtaining some 'background' to what is demonstrated and further details on what they have witnessed. It is useful to **organise a brief session with the press** and the organisers (possibly also some presenters) to 'dig a bit deeper'. They are also usually interested in something 'exceptional' as a trigger for building a good story. Organising a special session for them also offers a chance of repeating the key messages so that they will feature in their articles.
- **Suppliers and buyers** of farming produce are to a large extent motivated by the goal of doing business. On the one hand, **this is also in the interest of visiting farmers** but this motivation will also 'colour' the way they operate, putting more emphasis on what is favourable for their business than what is favourable for a

farmer. To avoid introducing too much bias, information provided by businesses should be **balanced** by information provided by presentations **addressing other 'sustainability' aspects**, e.g. on the implications for the farmer, society at large and the environment.

- **Students and teachers** of agricultural schools can play two different roles. A demonstration can have the function of teaching students certain aspects of farming. On the other hand, teachers and students can also provide knowledge at the demonstration and discuss this with the other participants. They can also play a role in monitoring and evaluation (section **Fout! Verwijzingsbron niet gevonden.**).
- Concerning the **general public**, the main challenge is to address the tensions that exist between the farming community and the public on a lot of issues. This may relate to general public concerns (CO₂ emissions, animal welfare) or direct nuisance (stench, health effects from emissions). This can best be addressed by a **direct interaction between farmers and members of the public** and demonstrations can be a place where this can be organised. Since farmers and the public will have rather diverging interests, such a discussion needs to be well mediated.
- Concerning **policy-makers**, there are many tensions between what policy seeks to achieve (partly driven by public concerns) and practical implications / barriers for farmers. Also these can be addressed at a demonstration by organising **direct interaction between farmers and visiting policy-makers**. Also such a discussion needs to be well mediated.

To be able to tune the demonstration optimally to the needs of visitors, it is important to know what their needs are, especially for farmers who are the most important visitors. To achieve this, it is recommendable to let farmers register for the demonstration (e.g. on website) and let them answer some simple questions (c.f. section 5.7)**Fout! Verwijzingsbron niet gevonden..**

Stimulating learning

Next to a targeted approach for different visitor groups, there are also a number of general good practice lessons that can be drawn from the case studies on how to stimulate learning. These are:

- Farmers need to make new knowledge 'their own', i.e. relate it to their own situation on their own farm. This requires not just 'sending objective info' but interaction with farmers to connect the information provided to their motivations & attitudes. This requires use of facilitation skills to **make the demonstration interactive**.
- **Smaller groups** (up to 15 people) work better to achieve interaction between visitors. For field walks, this can be moderated by a guide who explains what is observed and who stimulates a discussion on this. If a speaker does not have any facilitation skills, it is advisable that a separate facilitator moderates the discussion.
- People can only process a limited amount of new information. Make clear what the key message is and **limit the number of key messages**.
- **Repetition of key messages** is important to make the new knowledge 'stick'. Give visitors **materials to take home** these key messages to encourage them to give it another look afterwards.
- Being able to **do business** at the demonstration is also a way to make the messages stick. This can take the form of directly buying or ordering products or to establish new relations with businesses to follow-up later.
- **Networking** between visitors and with demonstrators is important to stimulate reflection and to make messages stick. Provide **'open space' in the programme** to facilitate such networking.

Practice examples from UK3, FR3 and CH2

A good example is an English case where visitors were driven in a tractor trailer from one event to another. The aim for each of these stops was to generate knowledge exchange and encourage discussion between the group, sharing their experiences and asking questions, rather than just presenting an innovation or approach to them. Additional speakers from the audience were called on if it was felt they would have additional information to bring to the topic or to the discussion. During one farm stop a 'show of hands' was used to find out how many attendees had adopted a practice in question.

In a French case, a specific 'drink and talk' event was organised and facilitated during the demonstration day to facilitate exchange between participants as well as identification by the participants of the main lessons learned and ideas to bring home. They were invited to write these down.

In a Swiss case, participants were asked to indicate who had applied a certain technique and share their experiences. The program was designed in a way that speakers and demonstrators had time to exchange with the participants, also after the sessions. Moreover, participants could flexibly choose the sessions they wanted to attend. If a session seemed irrelevant to them, they could leave the session and join another session instead. Finally, during the entire event, catering facilities were open which was an ideal platform for participants to get in touch and discuss what they had heard and seen in the demonstrations.

Connecting with the audience

It struck us that in quite a number of demonstrations presenters or demonstrators just start talking about the content with little or no introduction on who they are and what they try to convey. In any interaction, the issue of trust is important and in a situation where people don't know each other, this trust will largely be built on prejudices. To gain the trust of the audience, it is **important that a speaker introduces her/himself** adequately and tries to make a connection with the audience and explicitly address certain prejudices that might be expected. For instance, in case of a presentation by a business person farmers may easily think that the story is biased by the goal of selling stuff. The speaker can try to gain trust by making this explicit ("Yes, of course I want to sell you stuff. But I also want you to be a good farmer. Therefore, ...") and by also addressing possible negative points and/or discuss under which circumstances an innovation can be favourable to a farmer.

Presentations and explanations should preferably be in **plain language** (avoiding complicated academic terminology), tuned to the interests and needs of the audience. It is advisable that organisers interact with speakers on what they expect from the presentations.

Practice examples from CH2 and BE1

A good example is a Swiss case in which organisers provided a guideline to the speakers on how to structure and organize their sessions and asked them to send their planned approach prior to the event. In a Belgian case, presenters who felt uncomfortable about moderating a discussion were offered assistance in this.

Active engagement

Organisers of many of the demonstrations from the case studies indicated that the level of interaction is one of the most important criteria for a successful demonstration. This is corroborated by the feedback from visitors who, in most of the cases, indicated that

one of their main motives to attend a demonstration was the opportunity for networking. Interestingly, most of this interaction takes place in the non-organised part of the demonstration, when visitors talk to each other. During the organised parts (lectures, field visits) interactions tend to be relatively few.

It is of key importance that organisers of demonstration also **stimulate interaction** in the organised parts of a demonstration by stimulating presenters to evoke discussions based on their presentation and / or provide facilitators to do this.

Practice example from UK5

A good example of engaging visitors is the demonstration organised in Scotland on the Lothian Monitor Farm. The organisers contracted team of independent facilitators to deliver and provide practical and organisational support and advice for the programme.

Take home messages

An important outcome of a demonstration is what visitors take home from it. This can either be in the form of what they remember or a material form. Concerning memorising, it is important to acknowledge that people can only remember a small number of new things. Therefore, it is of important to stress a **limited number of key messages** that people can directly memorize and **repeat these key messages** a few times. Of course, more nuances can be presented but by repeating the key messages people will memorise that and also remember that there were further nuances, though they won't remember these in detail. But if the key messages are sufficiently important to them, they will inform themselves further after the demonstration concerning these nuances.

An important aid to support their memory is if people can **take materials home**, e.g. in the form of prints from posters, powerpoints, leaflets or brochures. Also these, should highlight the key messages. **Photos and videos** can also be a way to help remember what happened at the demonstration.

Practice examples from ES2, FR3 and FR4

In both French cases, visitors were provided with brochures with a summary of all presentations and further info that was provided at the demonstrations. In a Spanish case, videos were made of the event and made available to the visitors.

3.8.2 Monitoring and Evaluation

An important result from our case studies is that demonstration organisers found it very useful to get feedback from demonstration visitors that was collected by PLAID partners. Collecting this type of information and analyse it afterwards is referred to as 'Monitoring and Evaluation' (M&E). It is therefore good practice that organisers themselves also try to carry out M&E. Some further background on M&E will be discussed in section **Fout! Verwijzingsbron niet gevonden..**

A very simple and effective **monitoring tool** is a brief questionnaire or exit survey for demonstration participants that takes a few minutes to fill in. Participants can be asked to fill this in themselves but response rates then tend to be low. The number of responses is far higher when some persons put the questionnaires on a clipboard and then interview visitors, e.g. during final drinks at the end of a demonstration. In half an hour, one person can thus collect around 10 responses from visitors.

The quality and effectiveness of M&E may be substantially increased by incorporating some **(semi-)skilled assistance**. For instance, monitoring may be carried out by students from an agricultural school or researchers with some basic social science skills. Working with students has the additional advantage that they can learn more about the role and effectiveness of demonstrations by collectively processing the results from these interviews in the classroom.

Demo organisers can use the information that is thus collected for various purposes:

- To get a better feel for **what motivates visiting farmers** and what they need:
 - ◆ What do they find interesting (motivation);
 - ◆ Barriers they face for implementation ('know-what' and 'know-how' needs);
- To better plan and shape **follow-up activities**;
- To improve the next version of a demonstration;
- Collect **contact details** of visiting farmers to be able to continue interaction with them which may help to increase the impact of the demonstration.

When **evaluating** the information thus collected, it is useful to relate this to the objective of the demonstration (cf. section 3.1). Thus, the organisers can compare what they intended to achieve with what they have actually achieved. This will add reflexivity to the process of organising a demonstration and helps the organisers to learn in a more structured way on how to best do this. This can have substantial benefits for the organisers while collecting and processing this information only takes little time.

4 IMPACT OF DEMONSTRATIONS

4.1 INTRODUCTION

As was discussed in Chapter 2, Farmers operate in an Agricultural Knowledge and Innovation System (AKIS) that forms the context within which demonstrations are held. This AKIS context is composed of a variety of actors and factors that influence a farmer's decision-making on innovation. Thus, the impact of a demonstration in terms of changing a farmer's behaviour is influenced by a variety of other factors than what happens at the demonstration itself. These factors are beyond the control of the organisers of demonstrations. Yet, demonstration organisers can do various things to stimulate that the AKIS context and what a visiting farmer takes home from a demonstration align better to actually change a farmer's behaviour.

This chapter discusses what demonstration organisers can do to raise the impact of their demonstration. The first two sections discuss what visiting farmers may take home from a demonstration and how this may stimulate them to consider changes on their own farm. The next section addresses what organisers can do to raise the impact. These sections are based on an analysis of the 24 PLAID case studies. A following section provides an additional discussion on raising impact, based on earlier demonstrations. The next section provides a discussion of 'impact pathways', i.e. various ways in which a demonstration can have an impact on what farmers do.

All these sections are mainly descriptive, presenting findings from the case study analysis in PLAID. The last section summarises a number of 'good practice guidelines' that are inferred from these findings and it is more prescriptive on how to raise the impact of a demonstration. This final section also contains a number of 'good practice examples' that emerged from the cases.

4.2 OUTCOMES OF DEMONSTRATIONS: WHAT VISITORS TAKE HOME

The general objective of demonstrations is to inspire and inform farmers about innovations in farming. This should enable them to better take decisions on changing things on their farm and to provide them with some initial ideas on how they may realise such changes. For an individual farmer this means that they have to go through four steps (cf. 2.4 and 2.6), notably *being aware* that things need to change (know-that), *being motivated* to change things (know-why), *being informed* on what they might change (know-what), *being able* to change things (know-how) and, if needed, knowing *from whom to get assistance* in this process (know-who). Demonstrations can address each of these abilities, as a result of which a farmer may come home from a demonstration with a higher level of awareness, a stronger motivation and/or better informed and enabled. Which of these applies will vary across the visiting farmers depending on their starting point: some may still need awareness raising, others may need to be motivated while another group may already be inclined towards change and may need more specific information on how to realise that. To reach as many farmers as possible, all of these abilities need to be addressed at a demonstration.

Demonstrations do not only have a function to transfer concrete information but can also be seen as a way for farmers to be updated on the developments in their farming area rather than as a place for learning on the subtleties of specific practices with an aim of introducing those on one's own farm. Thus, the demonstration event provides room for a mix of differentiable knowledge gains with regards to 'know-that', 'know-why', 'know-what', 'know-how' and 'know who'.

Photo 7: Attendees at farm stop on biodiversity at IFM field event (UK3).



Demonstrations tend to focus on the provision of concrete information, thus emphasising the 'know-what' aspect. At the demonstrations that we studied in this project, we held exit surveys among visitors on what they found most interesting. Many of them replied that they highly valued all kinds of concrete information they received, e.g. on new potato varieties and protection means (POL1), on means to produce or save energy (BE1), on machines to undersow in maize (NL2). When subsequently asked whether they would attend the next version of the demonstration, most of them answered yes which is a clear indication that they valued this kind of information provision highly.

This element of '**knowledge transfer**' obviously is very important outcome of demonstrations. However, this is only a 'partial achievement'. As was discussed in chapter 2, demonstrations are embedded in a wider innovation context in which the more general objective is to enable farmers to develop more sustainable forms of farming. Here, sustainability is defined in the broad sense, i.e. environmentally, socially and economically sustainable. This implies that farmers should not only be informed of possible innovations, they should also be made aware, motivated and enabled to apply these innovations on their own farm. These aspects do not always receive the attention they need at demonstration. It is striking that when we asked farmers whether they were considering to change things at their own farm after visiting a demonstration, a substantial number (in some cases 50% or more; CH2, BE3, LAV2) answered 'yes'. But when subsequently asked to specify what they might change, only few were able to make this concrete (IT1). Yet, as some focus groups held 1 or 2 months after a demonstration indicated, some farmers were still thinking of applying certain changes and had been exploring this further (NL1). Clearly, they took home something of interest to them but they were still not actually changing something back home.

Also in this respect, demonstrations can help farmers by addressing the awareness, motivation and skills aspects more explicitly. Concerning **awareness**, this is often a bit implicit in how a demonstration is carried out. It is usually about changing preconceptions that farmers have about what is at stake or not being aware of what is at stake. For instance, in the Dutch case of undersowing of maize, for which a new regulation will be enforced from 2020, many farmers had expected this would be a lot of hassle and would cost them quite a sum for new machinery. At the demonstration,

however, many were surprised that this could be done fairly easily with relatively simple machines, even by changing an existing machine a bit (NL2).

Concerning **motivation**, a relatively simple trigger can be a new regulation. In the Dutch maize undersow case from the previous paragraph, this was explicitly addressed at the demonstration in a presentation explaining the reasons for the regulation and what it entailed exactly (NL2). Also motivations directly related to problems in the farming practice (e.g. plant or animal diseases, market developments) are relatively easy to convey and farmers usually are already motivated by these to attend the demonstration. It becomes more complicated with motivations more external to the farmer and farming, e.g. environmental or societal concerns. In several demonstrations, such aspects are addressed in a lecture but the main problem is that farmers often perceive a tension between what society wants from them and what they think they can do, given for instance related costs aspects. As a result, when farmers come home after the demonstration, they are not really motivated to explore further how they could realise such changes.

An interesting aspect of motivation is that it not only needs to be related to change but it can also lead to a firmer decision not to change. In a Norwegian case, for some farmers the demonstration convinced them that they were on the right track with what they already did and that they should continue as they did by being more aware of the characteristics of their soil (NOR1). In general terms, this can be considered an example of **benchmarking**, i.e. that visiting farmers benchmark their own practices against those of others and obtain confirmation from other members that one's farming practices are good (LAT1). Such benchmarking primarily results from the P2P interaction between farmers at a demonstration which stresses the importance of this P2P aspect of demonstrations as a resource for more self-confidence on knowing why they do what they do.

Concerning the **skills** that visiting farmers need to make changes, this is often left implicit at a demonstration while it is often far from evident what a farmer would need to do to actually use an innovation back home.

To summarise, demonstrations always pay a lot of attention to knowledge transfer, thus providing farmers with new knowledge on various innovations. This is an important function of demonstrations that visitors value highly. However, to stimulate farmers to actually change things on their own farm, other necessary preconditions for change also need to be addressed, i.e. awareness raising, motivation and skills development.

4.3 OUTPUT OF DEMONSTRATIONS: VISITORS CONSIDERING CHANGES ON THEIR OWN FARM

For the demonstrations studied in the PLAID project it is too soon to be able to assess to what extent farmers actually implemented certain changes that they took home from the demonstration. However, we can assess the first step that is needed for such changes, i.e. whether farmers have plans to do so. This of course does not necessarily imply that they will actually do so but it does provide some indication of what the later impact might be. Furthermore, we asked visitors what barriers they saw in using what they witnessed and what would stimulate them to do so. This information is relevant to inform possible follow-up activities to stimulate further uptake.

One of the most outspoken examples is a Belgian case where participants responded that the new insights on water protection management changed their attitude. The demonstration convinced all of them to work more on the prevention of point pollution (by cleaning pesticides equipment) or to be more careful when using pesticides by using adapted nozzles to reduce drift (BE3). Also in a Swiss case, a large majority (two thirds)

of the interviewed visitors responded that they were planning to implement something of what they learned while one third was not sure yet. Three visitors even specified what they wanted to change (without being asked to do so) while no interviewee stated that s/he was not planning to implement anything of what was demonstrated. In a Latvian case, 55% of respondents reported a high likelihood of making use of the gained knowledge ('definitely yes'), while another 31% indicated that this might be the case ('rather yes than no'; LAV2).

In some cases, it were not only farmers that expressed plans to change things. In a Norwegian case, for instance, visiting teachers planned to use the information they had received in their teaching, and discuss it with their students (NOR1).

More telling than more or less firm plans to change things are the barriers or stimuli that farmers see in applying what has been demonstrated. A very common barrier are the high cost of some machinery or investment in other equipment, e.g. some of the energy techniques demonstrated in the Belgian case. Yet, some farmers mentioned that they expect to invest in a near future because they believe in the economic, ecological and societal benefits of a sustainable energy management on their farm (BE1). So, indeed, high cost is a barrier but if it fits the investment cycle of an individual farmer (and s/he is sufficiently motivated), this barrier can be taken away (cf. also BE3).

Another barrier is that new practices or techniques cannot be transferred easily from one situation to another. Some of the energy techniques demonstrated in Belgium would require further study from visiting farmers concerning dimensioning, to tailor them to their own farm (BE1). This is exemplary of a general degree of 'readiness' of an innovation. For many innovations, farmers not only need to buy new things but need to change many other things as well, like their regular farming practices, relations with suppliers and/or buyers of produce, etc. The more encompassing a change is, the higher the barrier for a farmer to apply it, e.g. the organic soil management in an Italian case (IT2) or integrated farming approach in an English case (UK3). In such a case, visitors are likely to only use small parts that give them the highest benefit for the least change or cost. The most drastic change is probably a move from conventional farming to organic farming and a farmer considering this would need a very strong motivation to do so and invest a lot in developing new skills. If a demonstration also targets such farmers (e.g. CH1), it will also need to address these motivational and skills aspects.

Next to barriers, the context in which a farmer operates can also provide stimuli to apply innovations that the farmer saw demonstrated. In a Croatian case, the effect of droughts on yields, and consequently on revenues in recent years is likely to speed up the decision on the application of new dry-resistant varieties of wheat and barley that were presented at the investigated demonstration event (CRO1). In a Polish case, various farmers have problems with their potato production and are actively looking for new opportunities. After the demonstration, some of the visitors were even rather specific about the new varieties that they would try the next year (POL1). Another stimulus can be to emphasize at a demonstration that innovations not only cost money but that they can also save money and have other advantages, e.g. that the use of break crops can also reduce input costs (such as fertilisers) and increase biodiversity on farm (UK3).

4.4 INCREASING THE IMPACT OF A DEMONSTRATION

4.4.1 Follow-up by demonstration organisers

Section 4.2 illustrates that farmers can take home different things from a demonstration (awareness, motivation, information, skills) but that in most cases various other things are needed to make them actually make changes on their own farm. There are various

ways in which demonstrations can contribute to this further process by organising some form of follow-up.

As a first step, demonstrators can provide visitors with take-home materials with various forms of information from the demonstration. Several organisers produce **leaflets** or a **brochure** of a demonstration with general information on the demonstration and/or specific presentation. e.g. in the form of powerpoints (LAT1, BE1, FR3).

Furthermore, various demonstrations have **newsletters** that they use to report on the demonstration and by which they also reach a wider audience than the visitors who were present (NL2, IT2). A newsletter also offers the opportunity to connect the demonstration to new developments as they become relevant, thus allowing to embed the demonstration better in the dynamic of the prevailing AKIS.

Various demonstration organisers also have **websites** where they can provide a report of a demonstration (IT2, BE1) and where they provide further background material on their website, e.g. in the form of a library (LAT2). Websites are also used to provide a **video registration** of a demonstration day (FR3, IT2) that may be uploaded to YouTube (UK3)⁶. Some organisers are also active on **social media** to announce and further discuss demonstrations (IT2).

A more targeted service is provided by some demonstration organisers by **keeping participants updated** on further development on the demonstrated topic. In a Dutch case, for instance, several different machines were used to undersow a catch crop in a maize field while the maize was already standing rather high. Visitors will be informed about the further growth of the maize and the undersown crop (NL2).

For demonstrations that are embedded in a larger research or extension programme, often have **follow-up meetings** within that programme like the 'winter meetings' following the Dutch 'Grass and maize manifestation' (NL2), technical seminars after a Spanish demonstration (ES2) or follow-up seminars in Latvia (LAT2). At such meetings, various aspects of a demonstration can be discussed further to support further learning and motivation by participating farmers. Follow-up activities can also take the form of study tours abroad as in the Latvian case with tours to Lithuania, Poland, and Germany (LAT1).

4.4.2 Media coverage

Apart from organising follow-up themselves, demonstration organisers can also make use of the farming press and other media to increase the impact of demonstrations. Especially organisers of 'broader' demonstrations, that seek to reach a large audience, usually also send announcements and invitations to the farming press. This is an important channel as the media can serve as a 'multiplier' of demonstration messages to a far larger audience than the demonstration visitors. This may lead to quite a broad coverage as for instance in the case of the Dutch Leek Day. In the weeks following the demonstration, four articles were published in four different national magazines. One of the magazines also published two other articles about topics from the Leek Day on the internet and another magazine uploaded a YouTube video on the demonstration (NL1). In a Croatian case, next to written publications, an item on a demonstration was broadcasted on local TV and radio stations and other social media (CRO 1).

Although agricultural journalists may be invited to a demonstration, we have not found that they were given special attention at the demonstration itself. They were treated just

⁶ <https://www.youtube.com/watch?v=WqYngnrV5hE>

like the visiting farmers, having to listen to presentations and witnessing demonstrations by themselves and base their publications on that.

4.4.3 Impact via advisors

Advisors in general play a key role in interacting with farmers and help them to decide upon possible changes on their farm. This is also the case in connection with demonstrations. Advisors can raise the impact of demonstrations in two ways:

- via **visiting-farmers**: if both the farmer and the advisor have attended a demonstration, the advisor can act as a sparring partner to help the farmer to further his motivation, knowledge and/or skills in relation to the topic of the demonstration. The organiser of a Spanish case even concluded that back support of the advisor is a fundamental element to guarantee the anchoring of what visiting farmers have learned (ES5).
- via **non-visiting farmers**: advisors can inform these farmers by informing them on what was demonstrated and, if possible, support this with written or photo/video material from the demonstration. Assuming a relation of trust between farmer and advisor, which usually is the case, this can raise the awareness of the farmer on the demonstrated topic and possibly motivate him/her to explore this further.

Demonstrators are usually aware of the importance of the role of advisors and send them an announcement or invitation for a demonstration. Advisors are usually strongly motivated to attend a demonstration as they know this can be an important source of knowledge on farming innovations that they can use in their day-to-day work. From the interviews that we held in the PLAID project with demonstration visitors it appeared that most of them were also attended by a substantial number of advisors. Even more than farmers, these advisors indicate that they will use what they observed in their further advisory work (IT2). In another Italian case, when visitors were asked whether they had applied lessons from earlier demonstrations in their work, all of whom who responded positively were advisors (IT1).

Advice after a demonstration may be given by visiting advisors but in various cases advisors are also involved in the organisation of a demonstrations. In many such cases, however, they take the role of organiser rather than advisor, i.e. they do not present themselves at the demonstration as advisor and explicitly invite visiting farmers to approach them in their advisory role (especially evident in NOR1). Yet, in some cases, visitors were invited to ask further questions to the organisers, also after the demonstration, and would be provided with further advice (CH1, ES2).

4.4.4 Network relations

After a demonstration, farmers not only interact with advisors but with a range of other actors in making up their mind on applying certain innovations on their farm. This may include interactions with suppliers and buyers of farming produce.

Very importantly, this may also include interactions with their farmer-colleagues. With neighbouring farmers, they may have frequent face-to-face interactions on the relevance of certain demonstrated topics. They may also interact with colleagues farther away by virtual means, e.g. social media. A nice example of involving neighbours comes from Switzerland where one interviewee stated that he was planning to get in touch with other farmers in his village and the surroundings to talk about a common investment in a new machine. He got inspired at the 'Arenenberg Arable Day' demonstration but stated that it would not make sense for his farm to invest in such a machine in economic terms. This is an interesting example of how a demonstration event can have scaling effects by provoking joint investments in new technologies (CH1).

Many network contacts can be established or renewed at demonstrations. Various demonstrations also have a business fair or business stands where farmers can interact with these businesses. At these stands, farmers can be informed, buy or order materials or take a brochure to further look at back home. More innovative farmers may also benefit interaction with specialists or researchers in specific areas to satisfy their interest in further detail and background. Networking may also take place *en route* towards the demonstration. Quite a number of visiting-farmers share a ride with their neighbours to a demonstration, especially if they have to travel some distance. In such a case, distance is not only negative but can be an important stimulus for P2P learning during the ride.

In the large majority of our case studies the visitors indicated that the possibility for networking was a key driver for them to attend demonstrations. It is evident that this is of high interest to them during the demonstration but the discussion above suggests this may even be of larger importance to what happens after the demonstration, i.e. to raise the impact of a demonstration after the event.

Photo 8: Tasting products at cow cheese demonstration (ES2).



4.4.5 Targeting the farming context

As was described in Chapter 2, farmers operate in a wider context with many important factors that are beyond their control. It can be useful to also invite some of these 'context actors' to a demonstration to facilitate a better understanding between different stakeholders and allow them to better tune each other's activities towards one another. This is especially true for policy actors who are always struggling to find a balance between what is societally needed or acceptable and the needs of the farming community to make a decent living under acceptable working conditions.

Several demonstration organisers therefore also invite policy makers to their demonstrations, for instance in the case of the Belgian Open Energy Day, because they can have quite an influence on the wider adoption of the demonstrated energy techniques. To make innovative sustainable energy techniques more widely adopted in agriculture, farmers need financial as well as regulatory incentives (BE1).

4.5 IMPACT ANALYSIS BASED ON PAST DEMONSTRATIONS

Based on the demonstrations visited in the project, we cannot assess what impacts these will actually have. During our interviews and focus groups, however, we also collected information on the impacts of earlier demonstrations that are discussed below.

Interviewees from many of our case studies reported that past demonstrations had played a significant role in contributing to on-farm changes. Many of them stressed that actually seeing things has a much stronger impact on a farmer's decision-making than only seeing or hearing about it (CH1).

Interviewees from various cases gave specific examples of things they changed after an earlier demonstration, e.g. in connection with specific organic farming practices in Italy (IT1). In a Bulgarian case, some farmers have started to apply renewable energy sources in milk production after an earlier demonstration (BUL1). In France, various farmers applied sheep health management approaches from an earlier demonstration (FR3). Sometimes, such an application also goes via an indirect route. In Poland, potato and onion value chain partners tested new potato varieties on a small scale and after demonstrating that it had extra value for them, they introduced it to the farmers that they work with (POL2).

The latter example shows how the impact of a demonstration can go beyond the actual visitors of a demonstration. Our cases show more of such examples. At the first Dutch National Leek Day in 2007 there was a machine demonstration with 5 new types of harvesters. One had a new harvesting method with a box filler, i.e. a conveyor belt on the harvester that loads the leeks directly into a box. The first time farmers saw this, most of them were very negative about its potential. Ten years later, however, every leek grower used this kind of harvester. How this actually happened is beyond the scope of this study but it shows that in the long run the impact of a demonstration can go beyond the visitors of the demonstration. Comparable examples can be found in other countries, like electric pruning shears in Latvia. As a result of demonstrations and subsidies, this kind of shear is currently widely used in the farming community of commercial fruit growers, and their use has become a mainstream practice (LAT1).

A nice example of a very simple method to assess soil health comes from Scotland (at monitor farms) and elsewhere. This concerns a demonstration activity commonly referred to as 'Soil my Pants' (based on a viral social media trend originating in Canada), which uses cotton underwear buried in topsoil as a fun and simple mean of investigating soil health depending on how degraded the material is after a period of 8 weeks (the more degraded, the healthier the soil). It is suggested that the impact of implementing this simple test has been very effective and widespread in terms of assessing soil health in recent years (UK5).

Looking a bit more in detail at the wider adoption of demonstrated novelties indicates that different types of farmers adopt an innovation in different stages. In the Dutch maize undersowing case, the '**early adopters**' (pioneer farmers) chose to apply a catch crop for reasons of increasing soil organic matter and soil quality. Since, they have been experimenting with it for several years on their own farms and were thus able to demonstrate that this worked in practice to other farmers. Several of these **followers** then also became convinced that this had value and subsequently also started to adopt it. But usually there is also a group that does not want to change their existing practices and, because the governments saw a need to make this generally applicable, it enforced general use by law. As a result, the '**late majority**' now will also have to change, not because they want to but because they have to (NL2). The same dynamic can be found in connection with a maize catch crop in south-western France (FR4).

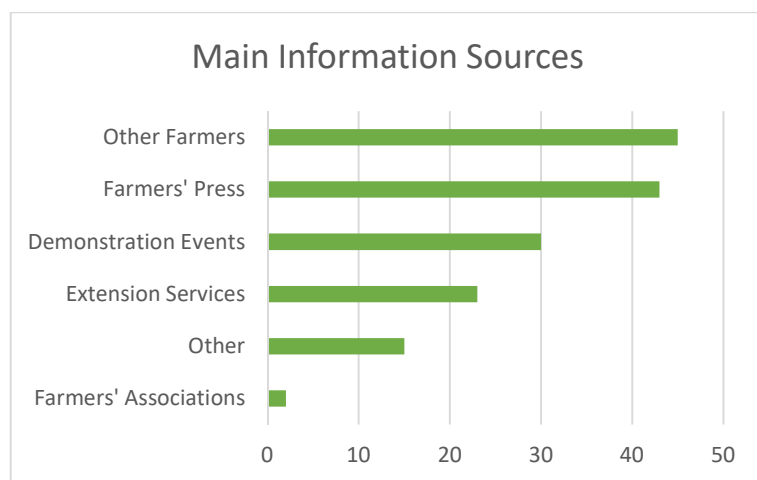
In Spain, cooperatives have proven to be an engine of innovation in the cereal sector in the region of Navarra. They organize demonstrations and subsequently promote varietal renewal and access to new plant protection products. This process is supported by the region’s largest farming advisory organization, INTIA. It is a consolidated work system in the last 40 years, with two fundamental pillars, the applied experimentation system (demonstrations are part of this experimentation system in farmers' own plots) and weekly advice to farmers (the proximity of technicians is key to drive continuous innovation in this area of knowledge). The statistics show high adoption of best demonstrated varieties. It can be taken as an example of the success of the innovation in this area of new varieties in Navarra, and the way that farmers follow the conclusions of the trials and demonstrations (ES2).

4.6 IMPACT PATHWAYS

Some of the on-farm changes can be directly attributed to an earlier demonstration but in most cases, demonstrations are only one of many factors that influence a farmers decision-making as the latter examples in the previous section show. Even in a case where a farmer attributes this directly to a demonstration, it can be expected that the farmer has been influenced by various factors prior to the demonstration. Below we discuss several of these factors that emerged from our studies which we call ‘impact pathways’.

The figure below shows the main information sources that the visitors of a Swiss demonstration mentioned (CH2).

Figure 2: Farmers main information sources in the Swiss organic cattle case (CH2).



While this is an example from only one case study, many other cases show comparable results. The main features are that in most cases the following four factors rank highly in a farmer’s decision-making:

- Demonstration events;
- Other farmers;
- Farmers’ press;
- Extension / advisory services.

Furthermore, there is a group of other factors that were mentioned less frequently, including:

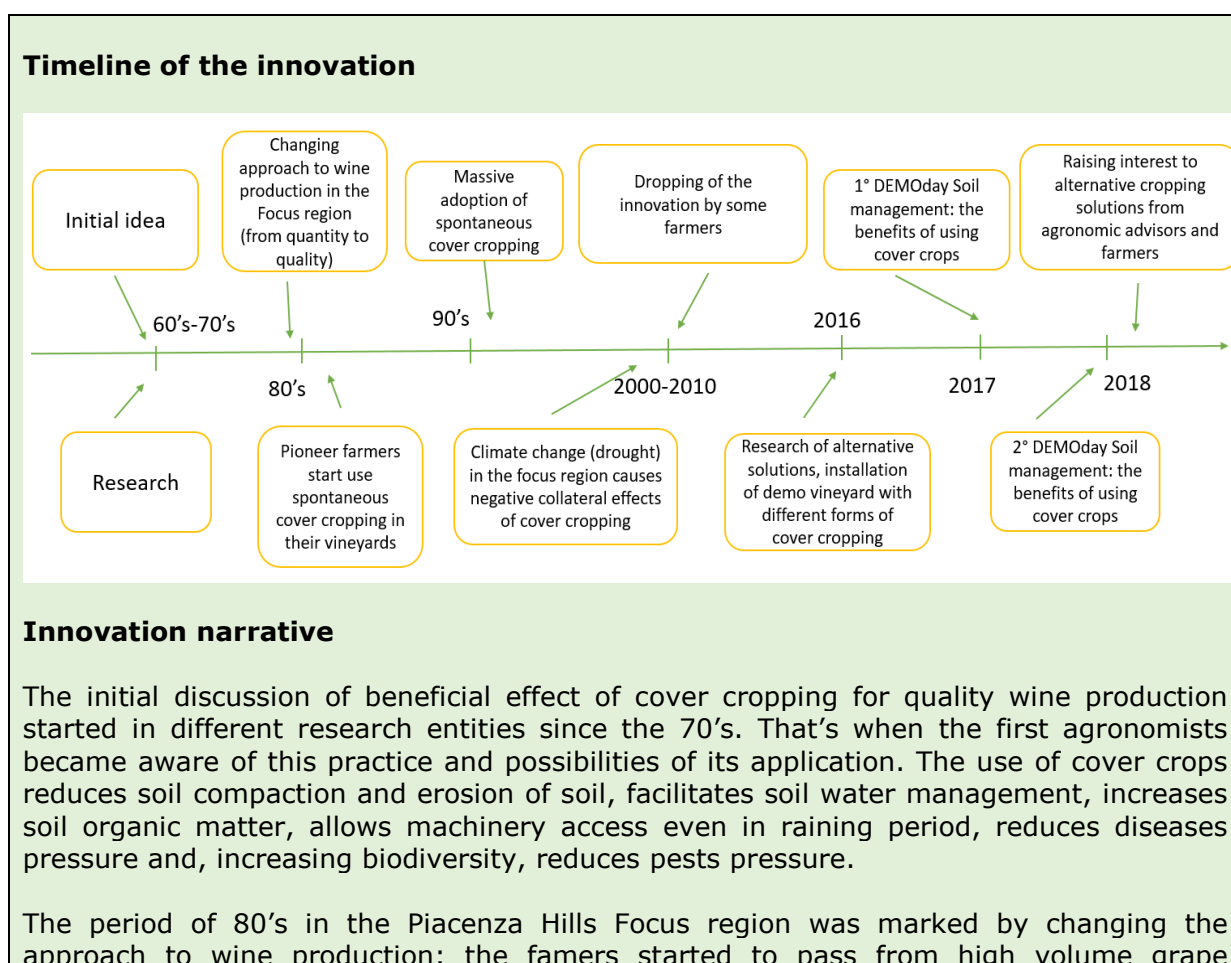
- Internet (news-sites, farmers organisations, businesses);

- Farmer study groups, working groups;
- Social media groups: Facebook, WhatsApp, Instagram;
- Suppliers of farming materials (seeds, fertilizers, crop protection), equipment and machinery;
- Buyers of farming produce;
- Farmer household members;
- Policy or societal pressure.

The general conclusion from this is that there exists a wide spectrum of farmers’ sources of new knowledge and advice, illustrating the complementarity of the closed activities of the group and the demonstration activities attended by the group members as part of other events and learning formats. In this list, demonstrations stand out in the sense that they do not only transfer knowledge but, by also triggering the other senses, they provide what might be called the ‘feel’ of novelties (CH2).

The uptake of an innovation not only follows (from) a demonstration but often has a longer history that forms the context of the demonstration, that contributes to the motivation for a demonstration and that co-determines whether and how farmers take-up the innovation. Such a longer process is called an ‘innovation narrative’. The box below provides a nice illustration of such an innovation narrative from Italy. It describes the very crooked cause of impact pathways that the adoption of an innovation can follow but also shows that demonstrations can play a significant role in this process.

Box 1: Innovation Narrative and timeline for an innovation on ‘Vineyard soil cover cropping’ (IT1).



production destined to huge cooperatives to the “full-cycle” wine production, including vinification and bottling in the winery. This required also to change some agronomic techniques in order to increase qualitative characteristics of grapes and vines. At that time the technique of cover cropping could be an appropriate solution for this problem, as cover crops entered in competition with vines slightly reducing volume of production, but the grapes produced were more concentrated and, as a consequence, more appropriate for high quality wine production. In that period some of pioneer farmers started to introduce the technique of spontaneous cover crop in their vineyards.

The massive introduction of cover cropping in Piacenza Hills viticulture practices started since the 90’s. Traditional tillage in whole vineyard has been gradually taken over in several lots by use of spontaneous cover crops, often in combination with tillage, mulching or herbicide use. As this technology is not linked to inputs sale, being them equipment or products, its introduction was not driven by any sort of suppliers or business actors. The large majority of viticulturists adopted the innovation following the example of the colleagues, both from the neighbourhood and from other viticulture areas in Italy.

In the 2000’s some of the adopters of cover cropping started to face problems related to a significant climate change in the area. The growing seasons became more droughty which meant that vine plants started to suffer from the competition with cover crops. That caused the fact that grapes had difficulties with arriving to full maturity and important losses of production volume. The farmers in the most problematic areas dropped the use of cover cropping and turned to conservative tillage techniques.

At that point the practice of cover cropping was reviewed by research in order to avoid negative collateral effects caused by cover crops in droughty seasons. Some alternative solutions were proposed, as seeding less competitive selected crops to cover vineyard soil instead of spontaneous crops. There were also introduced temporary cover crops used as a green manure. Of course, this solution are more cost and time consuming, which makes it difficult to convince farmers to recognise their positive effect.

Two DEMOdays devoted to soil management practices held consecutively in 2017 and in 2018 on the Res Uvae demonstration farm played an important role in introducing and explaining the practices of sustainable soil management. Combination of presenting results of various studies and demonstrationnstrating different cover crop solutions directly on the demonstration vineyard definitely lead to major awareness of this practices among farmers and private agronomic consultants. It is too early yet to judge about direct impact of DEMOdays on the future spreading of this new practices. Now we can’t even be sure how long this process will take. Our idea is that future DEMOs, followed by training process, involving farmers and advisors can definitely have a positive influence on the speed of adoption of this innovation.

Especially the example in the box above makes clear that demonstrations are only a small element in affecting innovation by farmers, yet they are an important element. This is especially so because many of the other factors that play a role before and after the demonstration can also be influenced by what happens at a demonstration, as the prior sections in this chapter clearly illustrate. In the next section we draw some important lessons on how this can be stimulated.

4.7 GOOD PRACTICE GUIDELINES ON THE IMPACT DEMONSTRATIONS

The previous sections in this chapter describe what we found in our cases. In this section we will infer some good practice guidelines from these descriptions, some of which will be illustrated with 'good practices' from the cases. These lessons summarise some of the main findings above but present them in a more 'prescriptive' way.

4.7.1 Achieving impact from demonstrations in context

As was discussed in Chapter 2, Farmers operate in a broader agro-food context that influences what they do on their farm. Thus they are influenced by many actors and factors, only one of which are demonstrations. Yet, demonstration organisers can do various things to stimulate that this wider context and what a visiting farmer takes home from a demonstration align better to actually change a farmer's behaviour.

To change behaviour, a farmer needs to be provided with new information and needs to assess the relevance of this information for the farmer's own situation. Farmers gather information from a broad variety of sources, including demonstrations, farmer's magazines, internet, newsletters, etc. In assessing the relevance of new information, farmer's may interact with a variety of people, including farming advisors, businesses, other farmers, their family members. Our cases indicate that both the collection of information and its processing by farmers can partially be influence by the organisers of demonstrations. How this can be achieved is discussed in the following two sections on 'providing information' and 'stimulating further learning and networking'.

Photo 9: Vineyard visit with different types of cover crops (IT1).



4.7.2 Providing after-demonstration information

Section 3.8.1 discussed that it is useful that demonstration organisers provide written materials that visiting farmers can take home from a demonstration. These materials can serve various functions and provide various types of information, including:

- Repeat the key messages from the demonstration;

- Provide references for further information (e.g. links to websites);
- Address 'know-how' or skills aspects: provide brief guidance with some key steps to implement an innovation;
- Provide contact information for various relevant aspects, e.g. demonstration organisers, advisors on various aspects, business information;
- Provide information on follow-up activities that are already planned.

These take-home materials only target the visitors of a demonstration. By using appropriate means, however, demonstration organisers can also reach wider audience, e.g. by providing information on the demonstration on their **website**. The usefulness of this information can be augmented by providing further links to other sites and/or contact information for further information. This information not only needs to address the demonstration itself but may also provide links to various other experiences in connection with the demonstration topics. It may also provide information on the wider context of the demonstrated topics, e.g. on relevant upcoming regulation.

Demo organisers can also use other means of communication, e.g. **video**. Videos allow a demonstration event to share the main findings of the day as well as promote the demonstrated approaches and describe how to use them on a farm. An increasing number of videos are produced by different organisations and shared across the agricultural sector through social media (Facebook, Twitter, Instagram) as well as YouTube and uploaded onto company websites. Videos often receive positive feedback from farmers although the level of impact that they have on innovation uptake has not been investigated in depth. The most likely impact of videos is awareness raising and motivation by sparking interest in a new approach. This can subsequently stimulate these farmers to search for additional information. Furthermore, there is an increasing number of videos produced by farmers, highlighting approaches they use on their farm that they want to share. These videos help to further share novel approaches to a wide range of farmers regardless of any previous geographical barriers and demonstration organisers can make use of this.

In combination with video, **social media** can form another important impact pathway. Social media can provide short snapshots of an event or approach, as well as allowing for discussion between people through comments on some social media such as Facebook group pages. Social media are also a means to distribute general information on the context of a demonstration, in particular Twitter and Facebook. These channels also provide an option to involve advisors in the exchange, allowing them to bring in their experience and give guidance.

Practice examples from UK3 and ES1

The IFM Field Event used video, social media and internet to communicate on the demonstration. A short video was created to share the event and point to post event materials such as a LEAF blog post. Local newspapers covered the event with articles featured in one newspaper with a reach of 51,000 people. The LEAF website was used to distribute online articles as well as to provide links to resources with more information and guidance on the demonstrated approaches. In a Spanish case, the organisers used a weekly newsletter to provide info on a demonstration and any follow-up activities.

Another interesting means of communication is via the **farming press**. This includes a range of specialised and general magazines and papers for farmers. These publications provide another impact pathway for demonstrated approaches and innovations. Articles and news items can be published on the demonstration and provide a brief overview of

the event, approach and main outcomes. This allows farmers to research further using other impact pathways such as internet, videos and farmer-to-farmer exchange.

Although agricultural journalists may be invited to a demonstration, we have not found that they were given special attention at the demonstration itself. They were treated just like the visiting farmers, having to listen to presentations and witnessing demonstrations by themselves and base their reports on that. Above in section 3.8.1 we already indicated that it may be useful to give specific attention to the farming press by presenting the key aspects to them and provide them with the opportunity to ask some further background and details on the demonstration.

4.7.3 Stimulating further learning and networking

An interesting finding in almost all of our case studies was that many visitors indicated that the possibility for networking was a key driver for them to attend demonstrations. It is evident that interaction with colleagues and others is of large interest to them during the demonstration but the discussion above suggests this may even be of larger importance to what happens after the demonstration, i.e. to raise the impact of a demonstration. Farmers do not change their behaviour easily by implementing an innovation and often interact with various others before making a decision to do so. Demo organisers can stimulate this type of interaction in various ways.

Stimulating after demonstration Peer-to-Peer interaction

Our cases show a number of **impact pathways** where demonstrated approaches can be shared with those who did not attend the event. The first is the **farmer-to-farmer** impact pathway. Via this route, farmers are able to see what their friends, neighbours or 'innovative farmers' are doing on their farm, including changes they have made that are based on what they learned at a demonstration. Likewise, hearing the opinions and experiences from other farmers either in a formal setting (such as a discussion group or meeting) or an informal setting is also likely to influence the uptake of a demonstrated approach.

Organisers of demonstrations can stimulate this form of P2P exchange by organising or contributing to the following:

- Use demonstration **exit surveys** as a source to identify farmers' needs;
- Place **posts on their website** addressing these needs with opportunity for farmers to react;
- **Create P2P groups** to discuss these needs in relation to the demonstrated topics. This can either be in the form of face-to-face meetings (workshops, study groups) or virtual platforms (WhatsApp group; other virtual media platforms)
- **Inform visitors** via e-mail (provided organisers have collected contact details) or newsletters that **new information** has become available

Practice example from ES1

In a Spanish case, the first part of a demonstration consisted of a field demonstration, allowing the visitors to see various types of innovation in a practical situation. A few weeks later, after the final results of the demonstrated activities had been obtained, a meeting was held to discuss these results with the farmers. This meeting was more conclusive and allowed reaching conclusions with greater certainty. A specific WhatsApp group allowed communicating the result with a wider audience.

Engaging Advisors

Advisors can play an important role as 'multipliers' of a demonstration, *i.e.* to help spread the key messages from a demonstration to a wider group of farmers. Depending on the farmer they are talking to, they can act as an awareness raiser, motivator or information provider. They can also act as a 'networker' by building links between farmers who applied the innovation and the ones who are interested, thus facilitating or fostering the P2P process.

As was already indicated in section 3.8.1, this capacity of advisors to raise the impact of a demonstration makes it useful to **give them special attention** at the demonstration (e.g. a brief session especially for advisors). Next to that, they can also be given a specific role in the after-demonstration activities since they have a broad overview of how various types of farmers respond to the innovations. They can be asked to bring this in in various ways, *e.g.* on the demonstrator's website, via social media, at face-to-face meetings, etc.

Furthermore, demonstrators can stimulate the advisor-farmer interaction to already commence at the demonstration, *e.g.* by organising an '**advisor fair**' during which farmers can ask questions to advisors which may be followed-up by further exchange later. This would also form an interesting networking opportunity for advisors as a way to come into contact with farmers that they would not meet otherwise.

4.7.4 Conclusion

It is evident that demonstrations are only one of many influencing factors for farmers. They obtain information on innovations from a variety of different sources and often interact on these with various people before taking a decision on whether or not to apply it on their own farm. Yet, demonstrations are an important source of information and they also provide some room for the farmer to interact with others (including farmer-colleagues and advisors) on the relevance of the innovations for their own situation. Furthermore, organisers of demonstrations can also initiate or take part in after-demonstration activities to further this decision-making process by farmers. Thus, demonstration organisers can play a significant role to raise the overall impact of demonstrations to make agriculture more 'integrally sustainable', *i.e.* good for farmer, animal, society and the environment.

5 PREPARING A DEMONSTRATION

This chapter describes the steps that need to be taken to prepare a demonstration. It addresses the setting of objectives, selection of demonstration partner-organisers, building of a demonstration program and prepare its execution, selecting and cooperation with a host farm, advertising the demonstration and organising M&E of the demonstration. The first ten sections are basically descriptive on various findings from the cases. The final section, 0, will provide some good practice guidelines on preparing a demonstration, based on the previous sections.

5.1 DEMONSTRATION ORGANISERS

In the PLAID cases, a large majority of demonstrations was organised by a team of organisers from different organisations. In our initial definition of the project, PLAID would focus on farmer-led organisations. In the strict sense, we found only few of those. Farmers or farming organisations are often part of a team of organisers but it is not very common that they have the leading role on their own.

A noticeable exception is the **farmer-led** Polish 'feast of onion and potatoes' that is led by a specific farmer family who organised it together with partners and commercial companies. They have organised this event annually since 2009 but, unfortunately, the planned 2018 edition was cancelled due to organisational problems (POL2). Another farmer-led example is the Croatian vegetable production demonstration that is largely organised by a young farmer that has a strong drive to connect his farm to the local community and to help other farmers and farming students. The specific demonstration was for students that the hosting farmer organised together with a number of agricultural schools and colleges.

There are also some examples of **farmers cooperatives** that organise a demonstration. Several of these are held annually on a rotating set of member farms. The Spanish extensive crop trials demonstration, for instance, is organised by the cooperative Valdorba and a group of farmers on whose soil the demonstrations are held (ES2). A Latvian demonstration was organised by a fruit-growers' cooperative *Augļu nams*⁷ (Fruit House) on member farms since 2010 (LAT1). In France, the demonstration was jointly organized by a network composed of Farmers, the French Livestock Institute and Agricultural Chambers. It's part of the INOSYS 'Réseau d'Élevage' (livestock network; FR3).

Next to farmers, **farming advisors** and **extension services** are often involved in the organisation of a demonstration. For instance, the Swiss Arenenberg demonstration was organised by the team for extension services on arable farming of the cantonal agricultural centre BBZ Arenenberg, together with two subsections of the regional farmers' association and with local advisory associations (CH1). The Italian organic farming demonstration was organised by the extension group from the regional association for the development of organic farming (IT2) while the Norwegian theme day was organised by the Trøndelag branch of Norwegian Agricultural Extension Service (NLR). NLR is an organisation that provides impartial advice to 3800 members in the Trøndelag region (NOR2). Interestingly, another Norwegian demonstration was co-organised by a **governing body**, notably the agriculture department at the county governor, in cooperation with the county governor of a neighbouring county, NLR and an agricultural company that operates in this region (NOR1).

⁷ <https://www.facebook.com/auglunams/>

In a considerable number of demonstrations, a **research organisation** was among the organisers. In France, the SYPPRE platforms have been implemented in 2015 by various technical institutes dedicated to arable crop research. These include Arvalis for cereals, maize and potatoes, Terre Inovia for oilseed crops and ITB for beet crops. The SYPPRE network is based on partnerships with farmers, applied research, advisory services and economic operators to redesign of cropping systems (FR4). The Dutch leek day and maize demonstrations are both co-organised by Wageningen Research, the largest agricultural applied research institute in the country (NL1). The Croatian 'wheat and barley field day' was organised by the Agricultural Institute Osijek (AIO), a public research institute in the scientific field of biotechnology which through scientific research and through finding innovative solutions contributes to the development and advancement of plant science and agricultural production (CRO1).

Next to research organisations, **other institutes for agricultural support** can be involved in organising demonstrations. These institutes often combine a research function with an extension and advice function. An example is the Latvian 'Competence Centre in Animal Husbandry' of the Latvian Rural Advisory and Training Centre (LRATC)⁸. The Centre is the primary organiser of the set of field trials and consecutive on-farm demonstrations, that are part of the so called herbivorous project ('Measures for boosting economic efficiency of livestock production in agricultural holdings'). This project organized 58 demonstrations over a period of 2 years (LAT2). The Polish national potato days were organized by the IHAR-PIB Institute of Plant Breeding and Acclimatization in Bonin, in northern Poland. The demonstration also has the objective to promote the institute more under potato farmers and value chain partners (POL1). In England, the IFM (integrated farm management) Field Event was organised by LEAF (Linking Environment and Farming). LEAF's mission is to "inspire and enable sustainable farming that is prosperous, enriches the environment and engages local communities"⁹ (UK3).

Although the focus in PLAID was on farmer-led demonstrations, private companies are sometimes also part of the organising team, e.g. in the NOR1 case mentioned above. In an Italian case, the demonstration days for sustainable viticulture were organised by Horta s.r.l., a spin-off company from a regional university that has specialized in demonstration of innovative tools for viticulture and in developing web-based Decisions Support Systems for sustainable agriculture (IT1). In the Belgian potato demonstration case, the main organiser was a commercial company, Bayer. Bayer closely cooperates with the hosting farm within the 'Bayer ForwardFarming' programme.¹⁰ Bayer's lead suggest that the emphasis would be on selling produce but the explicit objective of the demonstration was to show possibilities for sustainable potato growing. The demonstrations showed various good practices to minimise pollution, specifically related to crop protection application and residue management. But biodiversity issues related to bees were also addressed and there was a strong collaboration with different research organisations (BE3).

Most examples above illustrate that demonstrations are often organized by a team of organisations. Some demonstrations are organized by farming cooperatives only, sometimes with an advisory organization, but these tend to be limited for a small group of farmers on specialized topics. Larger demonstrations tend to be organized by also involving a research organization and/or commercial companies.

Such an heterogeneous organizing team may constitute a challenge because the different partners can have rather differing opinions on what they want to achieve. They come from different professional domains and have different skills, knowledge bases, priorities,

⁸ www.llkc.lv

⁹ <https://leafuk.org/about-leaf/what-we-do>

¹⁰ <https://www.cropscience.bayer.com/en/crop-science/forwardfarming>

work routines, along with personal qualities and motivations. Yet, it has the potential of a mutually enriching endeavour that, ideally, allows building on and aligning the various interests and types of knowledge represented by the various actors.

In a Swiss case, the heterogeneity of organising partners led to some organisational problems. Many of the organisers were engaged as speakers in the various sessions and could not help out with organisational issues during the event. Also there should have been people close to the hosting farm in the run-up of the event taking care of administrative and organisational issues as the main organiser Bio Suisse did a lot of travelling back and forth. The group of organisers acted primarily as a body for exchanging and discussing the concept and focus of the event (CH1).

For this to work, there is a need for defining clear terms of reference (what is the objective of the activity; what is the outline and the rationale of the methodology, procedures and the ambition for trial-based claims) and a mutually agreed upon organisation and division of labour.

Photo 10: Demonstration on renewable energy equipment at Matanski farm (BG1).



5.2 FUNDING AND FEES

In many instances, the organisers of a demonstration already have a substantial amount of budget available when they start the preparations. In most cases this comes from contributions of the organisers targeted for demonstrations, but funding may also come from a project in which the demonstration is embedded (BE1, CH2, CRO1). Governmental institutes are often (co-)sponsors of a demonstration but usually by already having institutional ties with a larger programme that the demonstration is embedded in. *E.g.* the funding Scottish Monitor Farms is provided by the Scottish Government and the European Union's Knowledge Transfer and Innovation Fund (KTIF). For the current round, £1.25 million was secured to fund the nine Monitor Farms located across Scotland for the three years of the programme (UK5). In the same fashion, the Belgian Open Energy Day was financed by the Flemish Climate Fund of the Flemish government in the context of the implementation of the Flemish Climate Plan 2013-2020 (BE1).

Additional sources of income come from businesses who pay a contribution to show their products at the demonstration (IT1, NL1, POL2). In the case of a business lead, the demonstration tends to be paid by the organising company, e.g. Bayer in the Belgian potato demonstration case (BE3).

As a result, it is rarely the case that organisers have to put a lot of effort into scraping the budget together. This allows making most demonstrations free for participants although in some cases they have to pay a small fee, e.g. €3 in the Spanish organic cow cheese production case (ES5). Such small contributions tend to be more common for rather small, targeted demonstrations that are often organised on a low budget as is also the case for the Latvian integrated fruit production demonstration (LAT1) and two Norwegian demonstrations (NOR1&2). Furthermore, visitors sometimes have to pay a small contribution for a lunch or buffet (CH1, IT2).

An interesting case is the Polish feast of onion and potatoes that has been organised successfully over the past decade with thousands of visitors. Participants did have to pay a fee for this demonstration but increasing numbers of visitors found this fee too high and the number of visitors gradually dropped. For the 2018 editions, many visitors again complained about the fee and the event was eventually cancelled (POL2).

Despite this last case, it seems that finding budget for a demonstration is rarely a serious problem. For smaller demonstrations, organised on a low budget, visitors sometimes have to pay a small fee but these tend to be very targeted demonstrations, also targeting a very specific and known audience who do not mind paying a small contribution. The larger demonstrations with a broader range of topics tend to be free of charge, trying to make the threshold to participate as low as possible, partly also to attract as many visitors as possible to justify the sometimes high expenses made.

5.3 DEMONSTRATION OBJECTIVES

In section 3.1 above we indicated that the objective of a demonstration should cover four important aspects, notably the 'why' (the motivation to organise a demonstration), the 'who' (the targeted visitors of a demonstration), the 'what' (the demonstration topics) and the goals (the outcome, i.e. what visiting farmers should take home). It is striking that in our interviews with demonstration organisers, most of them were rather explicit on the 'what' aspect but far less on the 'why' 'who' and 'goals' aspects. This is especially the case for the larger demonstrations with various topics while the smaller demonstrations tended to be more targeted, also in their motivations and the targeted visitors.

For the larger demonstrations, it appears that the 'why', 'who' and 'goals' aspects are rarely explicitly discussed in an organising team. These demonstrations are usually organised by a team of different organisers and it can be expected, given their different backgrounds, that they would have different views on the motivation for a demonstration. As a result of this lack of giving clarity, demonstrations do provide a lot of information on various innovations but they are less effective in addressing the 'why issues' to motivate the visiting farmers and in connecting the innovations with the attitudes and motivations from these visitors. Section 3.1 already addressed the importance of setting clear objectives.

5.4 THE HOSTING FARMER AND FARM

The PLAID project has focused on demonstrations on commercial farms though some specialised demonstration farms were also included in our cases. It appears however, that we need to distinguish various types of commercial farms that have different

consequences for how a demonstration can be organised. The following types were found in our cases:

- 'Regular' commercial farm, acting as an occasional host;
- Commercial farm, embedded in research and extension programmes;
- Commercial farm, connected to or owned by a farming institute or organisation.

Concerning a '**regular' commercial farm**, there are good reasons to organise the demonstration on such a farm. The strong point of such a location is that visitor can easily relate to the hosting farmer as one of their peers which helps the visitors to connect more easily with what is demonstrated. This approach also allows selecting a host who has a large experience with what is demonstrated, like the cultivation of berries in tunnels in the Norwegian case. This farmer has participated in a number of projects about production of berries in tunnels. He is recognised as a successful farmer by the organisers, and is referred to as a pioneer in this field in the region: "*he is future-oriented, and he can inspire people*" (NOR1). In a French case, the host was an 'innovative' farmer (farmer researcher) who is also a teacher at agriculture school and who is strongly motivated to experiment with both conventional and integrated cropping systems (FR3). In an Italian case, the host was a farmer largely acknowledged in the community as a pioneer and as particularly skilled farmer (IT2). In Switzerland, the host runs a very diverse farm including agricultural production as well as food processing (cheese, meat, honey, bread). This host has also experience and catering infrastructure for a large number of people CH2.

In some cases, when a demonstration is part of a series of demonstrations targeting a specific group of farmers, **the host rotates**, e.g. in the case of the Latvian herbivorous project where a series of 4 demonstrations were held in 2018 on 4 different farms (LAT2). Also in another Latvian case, the selection of the host farm is based on the principle of rotation with an aim of visiting a different site each time. Between 2010-2018 six (out of 11) members had hosted these farm visits (LAT1). In the case of the Belgian open energy day, demonstrations were held concurrently on 22 different commercial farms, each of which focused on a specific topic. These farms were all part of energy-intensive sectors such as livestock breeding (dairy cows, pigs, chicken), fruit, chicory and horticulture under glass. Of the host farms, 19 were family farms, while 3 of them were research farms (BE1).

In several PLAID cases, the demonstration was hosted on a commercial farm that had **close relations to specific research and extension programmes**. In the English case, the host was a very active member of the LEAF Demonstration Network attending and hosting a number of LEAF meetings and events throughout the year. It is a very innovative farm, working with a number of researchers to trial different approaches or varieties as well as trialling new approaches and analysing crop data independently (UK3). In Spain, a demonstration farm works closely with the region's largest advisory organisation (INTIA) and organised around 50 visits in 2017. The demonstrations are organised for professional breeders who want to know the production in ecological, and for young farmers. At the same, they are part of the tourism offer in the region for the general public (ES5). In Croatia, the 'wheat and barley field day' is held on a seed production farm with a commercial and public-good orientation. The demonstration has been held annually for over 30 years (CRO1).

In some of our cases, a farm is **operated commercially** while it is **owned by a farming or research organisation**. In Norway, the demonstration farm was owned by a society that acts as an umbrella for 27 of the county's farming organisations (NOR1). In a Dutch case, a demonstration was held on a farm owned by Wageningen UR that is at the same time an experimental research farm (NL1). In Poland, the farm was owned by the IHAR research institute (POL1).

In all cases, these host farms are commercial in the sense that they make money from selling farming produce so that visitors see them as examples of how farming is done in practice. Yet, they are in quite different positions concerning how well they are equipped to organising demonstrations and the support needed to do carry out demonstrations in an optimal way.

5.5 LOCATION AND TIMING

Most demonstrations studied targeted farmers in a certain region, meaning that most visitors had to drive no more than an hour. There are also cases, however, where visitors drove up to two hours. This especially is the case for specialised demonstration and/or demonstrations in regions where the farming density is low. In such a case, visitors tend to car-share more which can also be positive from the demonstration perspective since additional exchange of experiences and P2P learning can take place during the ride (FR3). An additional issue may emerge if the demonstration is hosted on a farm that is well suited in terms of what is demonstrated but that is very remote and / or that has none or poor facilities to host a demonstration. Extra provisions then are sometimes necessary, e.g. in terms of providing parking space (FR4). In a Croatian case, free bus transportation was organized from the city centre for visitors that came from far by public transport (CRO1).

When to hold a demonstration can be a tricky issue. Farmers have many 'peak seasons' and can have various routines during a working day (e.g. feeding animals, milking). Demos need to take this into account to be able to reach as many farmers as possible. But the topic of a demonstration does not always allow picking a 'low season' time since the 'rhythm' of activities on a commercial demonstration farm is the same as on the farm of the visitors. E.g., the best time to demonstrate new harvesting or sowing machinery is in harvesting or sowing time. The result of this is that there is enormous variety in when a demonstration is held as well as in how long a demonstration lasts. The latter varies from a few hours in the evening (NL2) to two full days (POL1). Some demonstrations, especially the larger ones also offer the possibility of attending only part of it by organising it such that different activities target different visitor groups (UK5).

Another important factor is the weather which, however, is impossible to plan for and its effects can also vary. Bad weather may make it less attractive for visitors to 'go out' to a demonstration while good weather may make farmers decide to stay home and work on their own farm. Also the longer term weather can have an effect as in the Dutch demonstration of undersowing maize. Due to a very good spring, the maize had grown much faster than anticipated making it tricky to do the demonstration on the anticipated date. It was even decided shortly beforehand to move the date two weeks forward which presented a considerable organisational challenge (NL2). Also in a Swiss case, the timing of the demonstration was not optimal because of unanticipated fast crop growth (CH1).

5.6 BUILDING THE DEMONSTRATION PROGRAMME

Building a demonstration programme, of course, is the key task in the preparation of a demonstration. This addresses how the demonstration will be performed in order to optimally reach the objectives set for the demonstration. The central aspect of this programme are the topics that are demonstrated and how they are demonstrated. These have already been discussed in sections 3.3 and 3.6 above.

Further aspects of the programme can be:

- Reception (e.g. half an hour coffee reception to facilitate initial P2P exchange);
- Formal opening with explanation and set-up;
 - ◆ If applicable: breaking up into smaller groups;

- ◆ Make people with special roles easy to recognise (coloured caps or vests)
- Catering (also to facilitate P2P)
- Formal closing (e.g. to recap key messages, point to take-home materials, indicate follow-up and possibilities for further exchange).
- Closing drinks and bite (to facilitate further networking and P2P exchange).

These aspects are indeed taken care of in most of the demonstrations although they are not always optimally organised. For instance, for larger demonstrations there are several examples of demonstrations in which the groups were too large to facilitate good interaction and people with special roles are not always well recognisable. Furthermore, there are few demonstrations that have a formal closing, attempting to provide visitors with a small set of key take-home messages?

5.7 RECRUITING VISITORS

Demonstrations are usually (co-)organised by professional organisations that have their own websites and many of whom are also active on social media. By using these means they can announce a demonstration widely. Furthermore, many of these organisations are member organisations or networks with an e-mail database of their members that they can send an announcement. They usually also have lists of relevant other actors, like advisors or agro businesses. In many cases, organisers use a range of channels to recruit visitors that are often re-sent by partnering organisations. Hence, reaching a large target audience is usually hardly a problem for demonstration organisers.

What is more of an issue is to reach them with the right message. For smaller, rather targeted demonstrations this is less of a problem as the narrow focus makes it often quite clear to potential visitors what they can expect. They are usually part of a network in which the demonstrated topic has already been identified as an issue and hence it is close to their own motivation. For larger demonstrations, that demonstrate a variety of topics, it is usually less clear which of these topics is addressed to whom. Announcements of demonstrations are usually presented as a 'one size fits all' event with a list of the various topics. The idea behind that is that, if the list is sufficiently broad, that there will be something in it for everybody.

This indeed seems to work in the sense that the number of visitors at a demonstration is often in the same order of magnitude that the organisers expected. However, many demonstration organisers complain that it is usually the same groups of farmers that visit demonstrations and that they would like to attract others than the usual participants (e.g. IT2, UK5). Also in a Norwegian case, the invitation did not work well as there were only few farmers that attended (NOR1).

Furthermore, after a demonstration it remains often unclear whether it sufficiently addressed the needs of the visitors and what they learned from the demonstration. It is true that exit surveys with demo visitors usually indicated that they found several things at the demonstration interesting, so there was certainly something in it for them. However, when asked about which things they might actually consider to apply on their own farm, most of them did not have an answer. So the demonstration was not successful in making a connection between the motivation of the visitor and the demonstrated objects. A more proper management of expectations of visitors by addressing that in the demonstration invitation could be one way to tackle this.

A more advanced way would be to get an *a priori* insight into the needs of the visitors, for example by asking them to pre-register. This appears to be not very common for demonstrations, especially for the larger ones. An exception is the Latvian Herbivorous farm day that asks visitors to register on the LRATC website and the Facebook page at

least ten days prior to the event (LAT2). Another example is the Belgian open energy day that also asked for pre-registration. This demonstration was held on 22 locations in parallel and the registration enabled to select a demonstration event to attend based on locality, type of farming system and the technology that individual farmers were interested in. It also helped to plan the timing of the demonstrations of the various farms. Such registrations do help somewhat in the organization of a demonstration although they provide too little insight in visitors' needs to allow planning a more optimal tuning to these needs. Some demonstration organisers have prior contact with visitors via social media, e.g. in the case of the LEAD IFM demonstration (UK3).

Hence, the recruitment of the visitors does not always reach the right audience, makes few attempts to connect the demonstration to prospective visitor's motivations and gives little insight into the motivations of the actual visitors.

5.8 ACCESS

In several of our cases demonstrators complained that it was always the same profile of people that attended - mostly older men, over 40 years of age. Organisers and demonstrators likewise tend to be mostly men although there are some exceptions where the main organiser was a woman (IT2, NL1, POL1, UK3, LAT2).

One might argue that the male dominance in terms of **gender** representation can be expected because this reflects the composition of the community of farmers and farming organisations. However, demonstrations are usually inspired by the motivation to change things, to make farming more sustainable, and demographic aspects are part of that. In that respect, there are some serious imbalances in the present farmers' community, largely being composed of older men. Young people and women are clearly underrepresented. Organisers of demonstrations could then make an extra effort to make a demonstration attractive for these groups. This is especially true because demonstrations feature the real farming experience and the most effective way to recruit new groups for any type of profession is to let them experience directly what it is about.

Some demonstrations explicitly target **younger people** by inviting students from farming schools and colleges (FR3, CRO3). We have seen no examples, however, where women were an explicit target audience although there were some examples where the majority of visitors were female (NOR1, CRO3). In the Croatian case, this reflected the composition of the school that the visiting students attended. In the Norwegian case, this was attributed to the focus of the demonstration on organic farming that appears to attract more women than conventional agriculture does. In the Latvian case (LAT2) there was a clear gender bias towards female participants in demonstrations dealing with dairy cattle, while a much more equal split between male and female participants was observed in the case of beef cattle and sheep farming communities, thus indicating notable sectoral differences.

Aside from gender and age, the issue of access also can be viewed in terms of *geographic* and *financial* accessibility of demonstrations. The first one is more related to the regional distribution of on-farm demonstrations and the possibilities of farmers from more distant areas to attend these due to long distances and travel time (see also Section 5.4). The second, in turn, has more to do with affordability of attending a demonstration, which, aside from travel costs, relates to the presence or absence of a participation fee for the visitors of these events. Most of our case studies represented demonstrations that were offered free of charge or, even if featuring a fee, it was more a symbolic one. While free admission is seen as enhancing the overall accessibility, this approach has also been contested in some case studies arguing in favour of a fee to ensure participation of highly motivated attendants. At the same time this can discourage

participation of those who are less motivated but probably are even in greater need to external stimuli for an on-farm change.

Photo 11: Examination of plant roots in oil seed rape field (UK5).



5.9 FACILITIES AND TAKE-HOME MATERIALS

Demonstrations may require a variety of facilities that have to be arranged or produced in advance. Some professional organisations even have special support facilities for a demonstration like the 'multifunctional vehicle' used in the Dutch maize demonstration. This vehicle can serve both as an issuing point for coffee and tea and as a podium with an audio installation for making presentations (NL2). Much of these type of facilities are rather trivial for organisers and are usually in place. However, there are also things that do not always get the right attention. Among these are audio installations that can be used in the field as audibility can be poor due to wind or other noise (CRO1, NL1), especially for larger groups over 10 people. Toilet facilities sometimes are also below standard which can especially be a nuisance to women.

Another material aspect is the production of hand-outs and brochures to raise the impact after the demonstration. Take-home materials can be very effective for a visitor to repeat the message back home and inform and inspire him further to consider implementing change. Few demonstrations take the effort to produce such materials. Also photo and video registrations can help to raise the impact of a demonstration, even if this is done by hobbyists rather than professionals. In some cases, drone videos were posted of a demonstration (NL1, POL1). Some demonstrations also used outdoor video presentations during the demonstration but this requires special attention to be well visible under outdoor circumstances (POL1).

5.10 CONTINGENCIES

The organisation of a demonstration is always built on a number of expectations. These are not always made explicit while some of these, if they are not fulfilled, can have a big impact on the success of the demonstration. The most obvious one is the weather. If the weather is bad (rain, storm), this is likely to reduce the number of visitors. Furthermore, the quality of all outdoor demonstration activities will be reduced and interactivity will be difficult and visitors will need a strong motivation to stay and listen rather than running for shelter. In one of our cases, demonstrations were postponed by two months at the last moment (FR4). In another case, the number of visitors was so low that the

demonstration was repeated one month later (IT2). In yet another case, only the indoor activities were held as planned while the field visits were postponed (ES2).

But also very warm weather can become a problem as staying in the sun, especially bare headed, can become rather unhealthy. This happened in two Croatian cases and in one case the field part of the demonstration was substantially reduced (CRO1). Bright sun may also become a problem for visibility of outdoor screens for projection of videos and other types of presentations (LV2, POL1). Heat also was a burden in a French case which was aggravated because there was not sufficient drinking water on the site (FR3). In a Norwegian case, there was an opposite weather effect as the temperature dropped drastically by the end of the day and many of the participants left the farm before the program was completed (NOR1).

Another unplanned big influence may come from the number of visitors. This may be due to the weather but also other factors can have the effect that the number is substantially different from what was expected. In a Swiss case, it was significantly lower, possibly because there appeared to be another activity for farmers in the region on the same day (CH2). In a French case, that also targeted students, several dozen were expected but 4 colleges attended with 110 students and 7 teachers (FR3).

Also within a demonstration, the numbers may play a role when there are various demonstration activities, some of which may be far more popular than others. This may constitute a problem for both the non-popular and the popular events, the latter because it is difficult to have good interaction in a larger group (LAT2). In a Dutch case, an attempt was made to manage groups by dividing up the visitors in smaller groups but the visitors soon left these groups to go wherever they and with whom wanted. Obviously, the way the various parts of the demonstration were presented was not good enough to motivate the visitors to stay in their groups (NL1).

5.11 GOOD PRACTICE GUIDELINES ON ORGANISING DEMONSTRATIONS

The previous sections in this chapter describe what we found in our cases. In this section we will infer some good practice guidelines from these descriptions, some of which will be illustrated with 'good practices' from the cases. These lessons summarise some of the main findings above but present them in a more 'prescriptive' way.

5.11.1 The organising team

The organisers of a demonstration have to carry out various tasks, including:

- Defining the objectives of the demonstration;
- Preparatory work in organising the demonstration;
- Recruiting visitors to the demonstration;
- Carry out the demonstration;
- Carry out monitoring and evaluation of the demonstration;
- Carry out follow-up activities.

Demonstrations can be seen as having a supply side (what is demonstrated) and a demand side (what do visiting farmers need). It is important that both sides are well represented in a team of organisers. This makes it possible to set the objectives for a demonstration such that it addresses both the supply and demand side in a balanced way. Thus it is important that the targeted audience of the demonstration is represented, *i.e.* it is always advisable to have farmers representatives in the organisation. But there may be additional target groups. *E.g.*, if a demonstration targets agricultural students, it is advisable to also have an agricultural school in the organising group. If policy makers are an important target group, it is important to also have a policy representative in the team. These representatives can subsequently also be instrumental in recruiting their constituency to attend the demonstration.

An important aspect of organisers is that they are often organisations with a constituency that play an important role at the demonstration. These may include:

- Farmers organisations;
- Farming advisory or extension organisations;
- Research organisations;
- Agricultural schools;
- Farming business organisations.

Who is to be part of the organising team depends on the objectives of the demonstration and how large the role is that various organisations have in connection with the demonstration, whether they are only at the demonstration to present their information or equipment or whether they are also active in organising it.

Practice examples from NL2 and CH2

From 2012, Wageningen Research in the Netherlands has been running the Grounded Maize cropping project and has organised demonstrations on this. Initially, these were not well attended. WR then started to organise these demonstrations jointly with a farmers cooperative, Agrifirm, that sells a variety of farming supplies, and other organisations. They subsequently succeeded in reaching a much larger group of farmers.

For the Swiss organic cattle day, the two main organisers (the organic farmers association and a research institute) invited other institutions to join the team of organizers. The choice was built on the choice of the demonstration farm: The main organizers invited relevant institutions from the region where the demonstration farm is located.

5.11.2 Setting demonstration objectives

For any demonstration it is important to first explicitly state the objective(s) of the demonstration. This is key because the objectives determine everything else in connection with the demonstration. For instance, they determine how the demonstration should be set-up to ensure that it achieves what it is intended to achieve. The objectives thus form the background to establish the success of the demonstration afterwards. By comparing the actual outcome of the demonstration with the objectives, it is possible to see which aspects were successful and which were not. Such an evaluation can be used to better organise a next version of a demonstration.

Our case studies show that many demonstration organisers put little effort in specifying the objectives and tend to jump to the organisational aspects from the beginning. The result is that many demonstrations are not optimised optimally as the feedback from various demonstration visitors clearly indicates. Much of this can be prevented if the demonstration objectives would be clearly defined at the beginning before starting to address the organisational aspects.

To realise this, organisers of demonstrations are advised to first put some effort in defining the four aspects of the objectives that are discussed below. Subsequently, when they address the organisational aspects of the demonstration, it is useful to go back to the objectives occasionally to assess whether the plans are indeed in line with the objectives and, if not, to adapt the plans or to adapt one or more aspects of the objective. This introduces reflexivity into the organisation of a demonstration that can help to ensure that how the demonstration set-up will indeed contribute to what the demonstration seeks to achieve.

To give guidance to the organisation of a demonstration, the objectives need to address the following aspects of the demonstration:

- Why: the motive(s) for the demonstration;
- What: the topic of demonstration;
- Who: the targeted visitors of the demonstration;
- Goals: what do the organisers want to achieve; what should visitors take home from the demonstration.

These four aspects determine how the demonstration can best be set-up to be successful and form the basis for the various organisational aspects of the actual demonstration event, including:

- Where: hosting farmer and location of the demonstration
- When: time of year + duration of the demonstration
- How: The programme of the demonstration, i.e. all demonstration activities and how they are to be carried out.

These organisational aspects are elaborated below, after discussing the four aspects of the demonstration objective that follow first.

Demo objective aspect 1: 'why'

The 'why' aspect specifies the motivation or need for the demonstration. The following two general reasons can lead to holding a demonstration and demonstrations are often inspired by a combination of these two:

- A **problem or challenge** in agriculture, either farming 'internal' (farming sustainability needs, e.g. plant health, labour) or societal / political (societal sustainability needs);
- A **new opportunity** (e.g. emerging from research, from business, from pioneer-farmers).

A demonstration has the largest impact when a new opportunity provides a solution to a problem or challenge that is encountered by the visiting farmers. Therefore, organisers of a demonstration should not only look at what they seek to demonstrate but also **assess which problems visiting farmers may be facing** for which the demonstrated object can provide a solution. Both the problem and solution side should be addressed at a demonstration such that many visiting farmers are capable to connect the two for their own situation and are encouraged to consider applying the innovation.

Practice examples from BG2, POL1 and NOR2

A Bulgarian case was mostly problem-driven. An important problem is soil pollution from plant protection product residues which cause a dramatic decline in bee populations. The objective of the demonstration was to distribute knowledge and show equipment and tools to address these problems.

A Polish case, by contrast, was mostly supply-driven. The national potato day was organised by the IHAR-PIB Institute of Plant Breeding and Acclimatization. IHAR very much sought to promote itself among farmers and other stakeholders as an important partner in the provision of better potato varieties.

A Norwegian case illustrates that both types of motivation can also be combined. Berry production at the Norwegian high latitudes is problematic because of relatively short season and unfavourable climate conditions. By setting up plastic tunnels, that were pioneered by a few farmers, Norwegian berry producers can extend the season, prevent major damage to crops due to heavy rain or droughts, and ensure the production to a greater extent.

Demo objective aspect 2: 'what'

The 'what' aspect specifies the object that is demonstrated, e.g. farming equipment, farming practice, crop varieties, etc. Section 3.3 illustrates that there can be an enormous variety in the innovations that are demonstrated. Some important aspects are:

- Range of innovations that are demonstrated;
- 'Readiness' of various innovations (how easy is it to buy and use?).

Organisers can follow two different types of models to demonstrate these innovations:

- The **open market** model: the organisers do not target specific farmer groups with what they will demonstrate. A diverse range of things is shown and a variety of visitors look around to see whether there is something in it for them;
- The **targeted visitor** model: the organisers target a specific farmer group with a limited number of specific innovations that are demonstrated.

Smaller demonstrations tend to be more targeted and often use the second model while broad demonstrations with many topics often use the open market model. But also in the latter case, some parts of the demonstration may be more targeted.

The 'readiness' of the innovation(s) is important in defining who the targeted visitors should be. For innovations with a high degree of readiness, the target group can be the 'common' farmer. However, if an innovation has a low degree of readiness, only 'innovative' farmers are likely to consider using it. Yet, in such a case the demonstration could also target the 'common' farmer to raise awareness on the innovation which may make them prepared to apply it in the longer term.

It is useful if organisers make an overview of the various innovations they want to demonstrate and to assess their readiness. This they can subsequently use to address the 'who' and 'goals' aspects of the demonstration that are discussed below.

Practice examples from CH2 and IT2

An example of the market model is the Swiss organic cattle day. The target audience of the event were farmers - especially organic farmers - interested in organic cattle husbandry from across Switzerland. This featured fourteen sessions which covered a broad range of topics in relation to organic cattle husbandry.

An Italian case that targeted regional organic farmers, by contrast, had a narrow focus on soil management for organic farming.

Demo objective aspect 3: 'who'

Based on the 'why' and 'what' aspects discussed above, the demonstration organisers should specify which audience that they target with the demonstration. This can be specific subsets of the farming community and/or other actors from the agro-food chain. The following **types of farmers** may be distinguished:

- 'Common' farmer (when the topic of the demonstration has a high level of 'readiness');
- Innovative farmers (for topics with a low level of 'readiness');
- Farmers in a specific subsector (e.g. dairy farmers, potato growers, fruit growers);
- Organic and / or integrated farmers.

Note: some demonstrations on organic or integrated topics may also be very inspiring for conventional farmers but this would then require a specific effort to make this attractive for them to attend).

Other audiences may include:

- Farming advisors (they are important as potential 'multipliers' of the demonstration 'messages');
- Farming press (can also act as 'multipliers');
- Stakeholders from the agro-food chain;
- Policy makers (to make them aware of potential policy barriers or stimuli);
- General public (to improve connections between farmers and the rest of society).

Organisers should indicate which specific groups they target as that will determine which information channels should be used to reach these audiences.

Of course, organisers can choose to target a variety of groups with a variety of topics and demonstrated objects (the 'open market' model discussed above). They should realise, however, that the extent to which a visitor does something with what is demonstrated depends on to what extent this visitor is able to assess the relevance of the demonstrated innovation for her/his own situation. This, then, depends to a considerable extent on 'how' the object is demonstrated (cf. section 3.6) and to what extent this is tuned to the needs of the visitor. In an 'open market' model this tuning is far from optimal for many of the visitors. To increase the effectiveness of large demonstrations with many topics, organisers could identify a limited number of innovations that they see as key and for these use a more targeted model, tuned to the needs of a subset of specific visitors (farmers and/or others).

To organise a successful demonstration, it is important that organisers make an explicit choice on which farmers and possible other visitor groups they will target.

Practice examples from CRO1 and CRO3

The Croatian 'wheat and barley field day' targeted a varied set of visitors, all from the related value chains. These included farmers, wheat and barley seed producers, commercial wheat and barley producers, advisors, input suppliers of fertilizers and plant protection means, processors and end users of wheat and barley such as representatives from bakery industry, beer producers, animal feed producers.

Another Croatian demonstration on vegetable production had a targeted approach for different visitor groups. The demonstration was held for an agricultural college but a separate subgroup was made consisting of students who were family farm members, young farmers or who were intending to take over the farm after graduation.

Demo objective aspect 4: Goals

The **short term goals** refer to what the visitors of a demonstration take home. Longer term goals can refer to what the visitors do after the demonstration with what they learned.

At a demonstration, visitors can gain various types of knowledge. In section 2.6, the following four types were distinguished:

- **Know-why** (motivation, awareness): visitors become aware that there are specific problems or challenges and/or that new options are available and may be needed in the future and become motivated to use these in their own situation;
- **Know-what** (the demonstration topic): visitors are informed on specific novelties (new practices, materials, varieties, machinery, etc.);
- **Know-how** (applying the demonstration topic): visitors can connect the new information to their own practice and are able to assess possibilities to implement it on their own farm.
- **Know-who** (providers of further information or assistance): Visitors meet various people that can provide them with information, farming supplies and/or assistance to help them to make their farm more sustainable.

What different farmers take home will depend upon the type of farmer and the demonstrated object. For instance, for an 'common' farmer, a 'very advanced' innovation will only lead to increased awareness while an innovative farmer may be motivated to actually apply it back home. Organisers need to be aware of these distinctions and, when they target 'common' farmers, emphasise the 'know-why' at such a demonstration while,

if they target innovative farmers, they should emphasize the 'know-what' and the 'know-how'.

Because visitors of a demonstration can easily be overwhelmed by all the information that is provided, it is recommended that also in an open market model the organisers specify a small number of key messages for a limited number of demonstrated objects that farmers should take home. These key messages should be put central in how the demonstration is organised, e.g. by repeating them in various instances and by providing visitors with take-home materials that highlight these messages.

Photo 12: Berry production in plastic tunnels (NOR2).



Organisers of a demonstration may also set **longer term goals** on stimulating what demonstration visitors do with their new knowledge after the demonstration and thus seek to increase the impact of the demonstration. Such longer term goals may include:

- **Empower farmers** in terms of motivation, knowledge and/or skills by providing them with further information after the demonstration;
- Motivate farmers to **inform themselves** further on specific aspects;
- Motivate farmers to further **consider changes** by offering platforms for exchange, e.g. via social media or face-to-face meetings;
- Motivate farmers to **change** specific farming **practices**;
- **Empower farming advisors** (in terms of motivation and knowledge) so that they can 'multiply' the demonstration outcome and raise its impact;
- **Inform the farming press** on a variety of 'inspiring' new developments.

The above shows that the four aspects of the demonstration are closely linked and partially define each other. The topic, for instance, defines who the targeted audience should be. As a starting point, it is useful to address them in the order 1, 2, 3 and 4 but while doing so, it is likely that you will need to jump back and forth a bit to ensure that the four aspects lead to a coherent objective or set of objectives.

Practice example from BE1

BE1: The Belgian Open Energy Day had a well-defined goal. Under the assumption that most visitors would already have some knowledge on the various demonstrated energy techniques, the objective of the demonstration was to show them the practical implications of using these. By listening to and discussing with the host farmers and other experts they gained relevant 'experience-based' knowledge. Last, but not least, they could see 'for themselves'.

5.11.3 The hosting farm

In PLAID we focused on demonstrations held on commercial farms. Based on the range of farms from our case studies, we distinguished three types of such farms, notably:

- 'Regular' commercial farm, acting as an occasional host;
- Commercial farm, embedded in research and extension programmes;
- Commercial farm, connected to or owned by a farming institute or organisation (e.g. research institute).

The advantage of the first type is that the farm is easily recognised by visitors as being representative of their own situation. But we have also encountered examples where some visitors indicated this was not really comparable to their own situation, e.g. in connection of the farm size or the level of mechanisation.

A disadvantage for such a farm is that the hosting farmer will have no experience in organising a demonstration. There will be a lack of special facilities (e.g. for meetings, presentations (screens, audio), sitting, catering, toilets) and the farmer will need a lot of support from the organisers to realise a demonstration. Hosting a demonstration, however, can be quite a burden, especially in the case of a once-off demonstration in which there is no learning effect for the host on how to do this. In such a case, it is important that the expected workload is clearly communicated and taken into account by the host farmer prior to his/her involvement. The organisers should also consider whether they can give such a farmer an adequate compensation.

The other two types of hosting farms usually already have various necessary facilities and they can get further support from the programmes in which they are embedded or the organisation that they are part of. Organising a demonstration on such a farm is typically more 'professional'.

Which choice is made will depend on the facilities and contacts that the demonstration organisers have. This choice may well be based mostly on practical considerations since our cases suggest that the success of a demonstration hardly depends on the type of farm where it is held. How the demonstration is set-up appears to be much more critical. An important consideration is where the hosting farm is located and how easy it is to reach for the targeted visitors. Our cases suggest that visitors do not mind having to travel up to an hour for a demonstration that lasts half a day or more. This is also partially related to the strength of the motivation of the visitors. For a very targeted demonstration, visitors know what to expect and if that suits their interests, they won't mind traveling a bit further. For an open market model, visitors know less what they can expect but our cases also suggest that the social aspects of such a demonstration (meeting farmer colleagues and others) can be a strong motivator to be prepared to travel quite a distance.

Practice examples from LAT1, NOR2 and POL2

In a Latvian demonstration case on integrated fruit production, the selection of the host farm was based on the principle of rotation between a cooperative's member farms with an aim of visiting a different site each time. Between 2010-2018 six members had hosted these farm visits. The host of the observed event held in October 2017 was a family farm having specialised in apple growing since 2005. The farm had gained public recognition both from the local government and the Latvian Association of Fruit-growers.

In a Norwegian case, the host farm was selected for the farmer's specific expertise. The local organiser chose this host farmer because he had most experience with cultivation of berries in tunnels in the region. In addition, he had participated in several projects about the production of berries in tunnels. He is recognised as a successful farmer by the organisers and is referred to as a pioneer in this field in the region: "He is future-oriented, and he can inspire people".

The Polish 'feast of union and potatoes' illustrates that the burden for the host farmer may also become too big. The demonstration was a private initiative from a farmer in 2003. Due to the success of the event it became bigger and bigger. In 2018, the organisers came to the conclusion that organising the event took too much time and effort, which had a large impact on their private life (e.g. no summer vacation with the children). They decided eventually to cancel the 2018 edition.

5.11.4 Timing of the demonstration

When to hold a demonstration can be a tricky issue. Farmers have many peak seasons and can have various routines during a working day (e.g. feeding animals, milking). Demos need to take this into account to be able to reach as many farmers as possible. But the topic of a demonstration does not always allow picking a low season since the rhythm of activities on a commercial demonstration farm is the same as on the farm of the visitors. E.g., the best time to demonstrate new harvesting or sowing machinery is in the harvesting or sowing season.

In our cases, we found an enormous variety in when a demonstration is held as well as in how long a demonstration lasts. The latter varies from a few hours in the evening up to two full days. Some demonstrations, especially the larger ones also offer the possibility of attending only part of it by organising it such that different activities target different visitor groups.

In general, it is advisable to hold a demonstration in a low season if the topic allows doing so. If this is not possible, then the potential visitors will attend the demonstration only if they have high expectations on what they may gain from it. This implies that it is more critical for the organisers to assess what potential visiting farmers need and set-up the demonstration such that these needs are met.

5.11.5 Access

Concerning the **gender bias** in demonstrations, various demonstrators indicate that male farmers are more attracted to the 'hard' side of agriculture, to equipment and machinery. Female farmers tend to be more attracted to the soft side, preferring more direct contact with plants and animals. In the PLAID project, we used the method of 'cluster analysis' to develop a typology that distinguished various forms of

demonstrations.¹¹ This suggested that two types of demonstration were more likely to include women, namely “environmentally sustainable horticulture / orcharding” which focused on a broad sustainability approach with a focus on environmental improvements, and “farmer led community development” which focused on the development of social capital in rural communities (mostly animal husbandry or general demonstrations) and attracted many non-farming visitors. The more production-oriented demonstration cluster-types tended to be male focused, some of them strongly. It is therefore these ‘hard’ production oriented demonstrations that most need to address the issue of gender balance, possibly by introducing a more general sustainability focus and making this clear in the invitation to the demonstration.

Another way to attract potential **new entrants** is to make the demonstration attractive to ‘outsiders’, i.e. people not directly involved as farmers but with an interest in farming. This can also make a demonstration attractive as a family event, so that farmers bring their spouses and children. We observed such an approach in some of our cases (CH1, POL2, CRO1).

Practice examples from CRO3 and CRO1

The Croatian case on greenhouse vegetables shows a gender shift. The demonstration targeted students from an agricultural college and the majority of these participating students appeared to be female. According to an accompanying teacher, this reflects a change in the school’s student population, which has recently changed to a 60% majority of female students. A notable share of the visitors were also young farmers working back home on their family farms.

The Croatian ‘wheat & barley day’ illustrates how a demonstration can be made attractive to ‘outsiders’. One attraction was the offer of free food and beverages. Furthermore, traditional music was played to create a party atmosphere. For people without transportation means there was free bus transportation from and to the city centre.

5.11.6 The demonstration programme

The overall programme

Evidently, the focus at a demonstration needs to be on the various demonstration activities. However, there are various other important aspects of the demonstration programme that can contribute significantly to the success of a demonstration, including:

- Welcoming reception;
- Formal opening with explanation of the set-up;
- Various demonstration activities;
- Catering;
- Toilet and other facilities;
- Formal closing;
- Final drinks and bite.

An opening reception is very instrumental in making visitors feel welcome. Furthermore, it is a place where people meet and the initial peer-to-peer exchange begins.

¹¹ Elzen, B. and Burton, R. (2019). *Revision of the PLAID Conceptual Framework*. Ch.3. D2.2 from the Horizon 2020 PLAID project. <https://www.plaid-h2020.eu/>

Following that, a formal opening is very useful to explain the overall set-up of the demonstration and to convey the 'key rules' to make the demonstration a success. Some of these rules may include:

- Breaking up the group into smaller groups and explain the importance of keeping in these groups (see below);
- Need to solicit feedback on the demonstration and ask visitors to provide this at the end of the demonstration;
- Introduce people with special roles and make them easy to recognise (e.g. coloured caps or vests).

Photo 13: Demonstration at the farm day in Taurene (LAT2).



Furthermore, the opening can be the first occasion to interact with the visitors by asking a few simple questions that can be answered by hand raising. Another option is to use easy to use phone-apps¹² for a simple poll, e.g. on the background of the visitors. This can help to 'loosen up' the visitors and get them accustomed to the interactive nature of the demonstration that will be continued during the rest of the programme.

Catering offers the option to connect the event to the wider environment of the farm, e.g. by offering regional products and involving regional caterers. Furthermore, eating and drinking offers possibilities for networking and peer-to-peer exchange.

A formal closing offers the opportunity to recap some key messages from the demonstration, point to take-home materials, indicate follow-up and possibilities for further exchange. It also offers the option to solicit some initial feedback from visitors by hand raising or using a phone-app. Visitors can also be encouraged to take part in an exit survey to improve the next version of the demonstration (cf. section 5.11.9 below).

Practice example from CH1

A Swiss example shows that the overall planning of the demonstration programme requires careful attention. Many of the organisers were engaged as speakers in the various sessions and could not help out with organisational issues during the event. As a

¹² E.g. Mentimeter: <https://www.mentimeter.com/>

result, people from the main organiser were rushing between different demonstration spots to solve issues. The group of organisers acted primarily as a body for exchanging and discussing the concept and focus of the event but were not sufficiently involved in carrying it out.

Various demonstration activities

In essence, demonstrations are about transferring knowledge to the visitors, i.e. it is about providing information. But the goal of a demonstration is not just to provide information, it is to achieve that visiting farmer actually learn from the demonstration and take various lessons home for further consideration whether or not to apply them on their own farm. To achieve this learning effect, various other aspects of demonstration activities are of key importance, including:

- Types of demonstration activity: e.g. indoor presentations, explanations or demonstrations in the field, field walks, etc.
- Types of presenters: e.g. farmers, farming advisors, researchers, business people;
- Types of knowledge: know-why, know-what, know-how and know-who;
- Types of visitors, including different types of farmers ('common', innovative), advisors, businesses, teachers and students, policy officials, general public;
- Type of facilitation, aiming to stimulate interactivity.

In preparing the demonstration, these aspects need to be carefully tuned to optimise success of the demonstration. Some important considerations in achieving this are discussed below.

The **demonstration objectives** (cf. 5.11.2) should **form the basis** for the demonstration programme. When building the programme, organisers should occasionally go back to the objectives to assess whether the right choices have been made to achieve the objectives. This process may also lead to refining or adjusting the objectives.

Concerning **presentations and explanations** to demonstrated objects, various aspects should be taken into account that are discussed in further detail in section 3.8.1. These include:

- Tune presentations and explanations as much as possible to the **needs of the members of the group** that is addressed. It is therefore important to make an effort to know what visitors need (cf. section 5.11.9 below);
- People can only process a limited amount of new information. Make clear what the **key message** is and limit the number of key messages. Repetition of these key messages is important to make the new knowledge 'stick'.
- **Interactivity** with the public is an important way to stimulate learning and let visitors make a connection between their needs and what is demonstrated;
- Interactivity works best in **smaller groups** of 10-15 people;
- **Trust** between presenter and audience is an important factor to stimulate learning (section 2.5). Trust is higher when both the speaker and the listener have the same background, i.e. if both are farmers. Other types of presenters can gain trust by introducing themselves, explaining what they seek to achieve and making clear that they understand the needs of the audience, especially the listening farmers.

Practice examples from CH1 and LAT2

The Swiss organic cattle day very much put the farmer at the centre of the programme. In total there were 14 thematic sessions and one “farmers’ session” that provided insights from seven farms. The speakers of the farmer testimonials session were all farmers and about half of the thematic sessions were co-led by farmers. All moderators were also farmers.

A Latvian case (Herbivorous project) shows a programme with various activities. It started with an in-door seminar with an introduction by the manager of the project, information on the demonstration farm, presentation of field trial results by the supervising advisor and scientific expert, additional information and recommendations on the trial topic by other invited (local or sometimes also foreign) specialists. After the theoretical part, participants were invited to an on-farm visit and demonstration at the trial farm where both the host farmer and advisors took the lead. The on-farm visits started with a practical demonstration in a designated place, either inside or outside a cattle-shed. Selected information materials were made freely available.

It is evident from our case studies that not all presenters and demonstrators are aware of these issues. It can be helpful to give them some instructions for their presentation and interact with them prior to the demonstration on this.

Furthermore, not all presenters will have the facilitation skills to conduct a fruitful interaction with the public. It is important to ensure that there are a number of **experienced facilitators** to stimulate discussions at the activities that are the most crucial for the success of the demonstration.

To make the messages stick, it can be helpful to prepare a **brochure and / or leaflets** on the key aspects of the demonstration that visitors can take home. This can also contain references for further details (e.g. to websites) and contact info for various relevant organisations.

Another option to make the demonstration stick is to take **photos** or make **videos** of the demonstration and make these available later on a website. This might be done by an amateur photographer from the organising team. In case a school class takes part in the demonstration, there is a fair chance that one of the students or teachers has photography as a hobby and can be asked to do this.

A **business fair** or set of business stands can also be instrumental to make the demonstration messages stick. Visitors can establish contacts with these businesses, be informed and/or take home a leaflet or brochure. In some cases it might also be possible to buy or order products directly.

The key target group for a demonstration are farmers but if a demonstration also targets other groups, it may be useful to dedicate some specific activities to these audiences, e.g.:

- **Advisors:** a brief session with organisers and (some) demonstrators on further background that advisors may need in their interaction with farmers;
- **Farming press:** a brief session with organisers and (some) demonstrators to give them further background on the demonstrated topics for their publications;
- **Teachers and students:** explore ways to engage them actively in the demonstration programme, e.g. in the form of presentations, facilitation, conducting monitoring and evaluation (including photo/video), general support;

- **Policy officials:** a session with officials and farmers to discuss possible tensions between policy and what farmers need and explore ways to improve policy support;
- **General public:** a session with the public and farmers to discuss possible tensions between them and explore ways to improve connections.

Dedicated activities to target these visitor groups can especially be an effective means to **increase the impact** of a demonstration.

Practice examples

Most cases: Although many demonstrations target different visitor groups, they typically do this in a 'one size fits all' fashion. In our cases, all visitor groups follow the same programme and there is usually little attention for the different needs of the different visitor groups.

5.11.7 Other organisational issues

Our cases show that there are some other organisational issues that are not always well addressed. One of these is the **sound quality**. Indoors, this is usually not an issue but outdoors, speakers are often not well audible due to background noise, including wind. Even with an outdoor sound installation this can be problematic, especially when the public takes part in the discussion without use of a microphone. In such a case, a pragmatic solution is when the person with the microphone (speaker or facilitator) repeats the question or gives the microphone to the person who reacts. Though this may seem trivial, this was not always adhered to in many of our case studies. A more fundamental solution is to make group sizes small enough so that audibility is not a problem.

Video quality can also be an issue, especially outdoors or in tents that should be properly addressed. One thing is to make sure that strong sunlight will not hamper visibility.

Toilet facilities are also not always sufficient or of a low standard. This should be properly taken care off, if possible with separate facilities for women. Women are already underrepresented in agriculture and it would be a real shame if such a trivial issue would create a barrier for women to participate in demonstrations.

A final issue may be '**contingency planning**'. There are various factors beyond the control of the organisers that can have a huge impact on the success of a demonstration. The clearest example is the **weather** and it is advisable to have a 'plan B' for bad weather (rain, storm, excessive cold or heat). This could be addressed by preparing for the option to move various activities indoor. More drastic would be to postpone or even cancel the demonstration. In the latter case, it is important that (most) potential visitors can be reached which provides an additional argument in favour of prior registration. Also extremely warm weather can become a problem. In such a case, people should not stand in the sun too long bare-headedly. Provision of caps could be (part of) a solution as well as ample provision of drinking water.

Another contingent factor can be the **number of visitors** in case it would either be far above or far below what was expected. It is recommended to prepare for what if either of these two happens. The risk that this happens can be reduced by asking for pre-registration. Also then, the number of people showing up will deviate from the registrations but deviations are likely to be smaller.

Practice example from UK3

Tractor trailers were covered, and refreshments were provided indoors, enabling the event to continue should the weather have been poor. No bad weather was forecast for the day of the demonstration event. The weather at the demonstration event was very sunny which caused the lunch venue to have too much light affecting the visibility of the video played during lunch as well as affecting the panel presentations.

5.11.8 Announcement and registration

The organisers of demonstrations usually have a member or constituent base that they can easily reach to invite them to the demonstration. However, depending on the objective of the demonstration, they may also target audiences that are not in their regular contact lists. For these an extra effort may be needed to invite them. This may be achieved by inviting an additional partner to the team of organisers that represents this target group.

Practice example from NL1

The Dutch Leek Day was widely announced. All clients of the demonstrators and organisers received a personal invitation by ordinary mail and e-mail. The announcement was on 22 websites of participants of the demonstration; organisers, demonstrators and stand holders. The demonstration was mentioned in 2 agricultural agendas on the internet, and in 4 magazines (3 with an article and 1 with an interview with the main organiser). Two Facebook pages also mentioned the event (NL1).

Whether people respond positively to **the invitation** will largely depend on how the invitation is made up. In our cases, it appeared that most invitations are rather 'supply-driven', i.e. they explained what would be shown and demonstrated. For a farmer, however, the key issue is whether this offer is relevant to her or him. To make this clear, an invitation should also be 'demand-driven', i.e. it should address the needs of the targeted visitors. If the demonstration targets different types of visitors, then it should be made clear that the demonstration addresses the needs of these different groups. This could either be done by listing each of them in one invitation or by producing different invitations for different visitor groups.

Both the content of the invitation and the targeted visitor groups should be derived from the demonstration objectives. The invitation should seek to specify why the demonstration is relevant to the different targeted audiences and what they can expect to take home from it (derived from the goals in the demonstration objectives).

Most demonstrations tend to work with 'open invitations' that do not ask for prior registration. However, as was discussed under the programme above it is important that the form of the demonstration activities are somewhat tuned to the needs of the audience. To achieve this, invitees can be asked to pre-register and fill in small number of simple questions. A problem may be that a large number of farmers will only decide shortly before the demonstration whether they will attend. This can be taken into account by also asking a question concerning their planned attendance. To stimulate them to fill this in you can offer to send them further updates, even if they do not take part.

Practice examples from NOR1 and ES2

A Norwegian demonstration organizer had created participant lists with contact information for all the participants, which they shared at the start of the event. This facilitate contact between participants and experts afterwards if they have questions or

wish to discuss matters further. These lists can also be used by the participants' networks, and they can give advices to others who want more information on the topic.

In the Spanish case, participants could not only register via a website but also by phone or a phone text message. This service is very useful for older farmers who are not familiar with ICTs.

5.11.9 Monitoring & Evaluation

A very simple and effective **monitoring** tool is a brief questionnaire for demonstration participants that takes a few minutes to fill in. Participants can be asked to fill this in themselves but response rates then tend to be low. The number of responses is far higher when some persons put the questionnaires on a clipboard and then interview visitors, e.g. during final drinks at the end of a demonstration. In half an hour, one person can thus collect around ten responses from visitors.

The objective of the **evaluation** is to learn about the strong and weak points of the demonstration. This can be used to organise the next version of the demonstration better. It can also be used to inform the follow-up of the demonstration if the organisers have planned such. Some of the monitoring questions then also need to be informative for such follow-up plans. Furthermore, the success of the demonstration can be established by relating the feedback from visitors with the initial demonstration objectives. This implies that some of the monitoring questions should be derived from the key aspects of the objectives.

Carrying out M&E may be an interesting task for an **agricultural school**. It can be made part of a teaching programme as students can learn a lot from doing this. It may also be interesting for a research organisation with expertise in social science research. If none of such assistance can be obtained, it is advisable that the organisers carry out a minimal form of M&E themselves, seeking to get at least a few dozen responses.

By involving **professional social science researchers**, the quality of the feedback and its analysis can be improved by using more advanced forms of M&E. For instance, such researchers may be present during the whole event to carry out 'participant observation' and have further, more in-depth interviews with various participants and demonstrators. They should subsequently share their findings with the organisers to evaluate them jointly.

Practice examples

Most cases: Our cases show that organisers typically do evaluate a past demonstration, but they tend to do that somewhat intuitively, based on their own impressions of what happened at the demonstration. PLAID partners did collect more structured data on the demonstrations that they studied and shared their results with the demonstration organisers. Most of the organisers found this feedback very useful which is a clear indication of the value of such monitoring activities to help improve demonstrations.

Demonstrations are not an isolated event but take place in a situation where many factors and actors influence a farmer. For a demonstration to have impact, it should also address this wider context called AKIS (Agricultural Knowledge and Innovation System). A first important implication from this is that a demonstration should not only provide information related to the specific topic in a general way, but also address its application by various farmers, with clear explanations regarding their applicability and costs in different contexts. It is also important to provide information on benefits as well as on disadvantages (or possible negative effects) of an innovation. Giving a complete picture to the audience helps to create a climate of confidence between farmers and

demonstration providers and will stimulate farmers to consider applying the innovation on their own farm.

But after visiting a demonstration, a farmer may go through a long process before actually deciding to implement an innovation. The organisers of demonstrations can do various things to stimulate and provide input to that process, as was discussed in the previous chapter.

Photo 14: visitors inspecting the result after the sowing machine has stopped (NL2).



The first thing the organisers then need to do is to make a choice: do they see their task as ended at the closing of the demonstration or do they also want to be involved in trying to raise the impact of the demonstration? If they choose to do the latter, there are two general types of things they can do which is to provide further information (cf. section 4.7.2) and to stimulate further learning and networking (cf. section 4.7.3).

To **provide further information**, organisers can use their own website and/or mailing lists. This information can either relate directly to what was demonstrated or to the wider context in which the demonstrated innovations have to function. In providing information it should be noted that information is more likely to have impact when it is more concrete and more targeted. For this, organisers should build on what they know about their visitors, e.g. the information collected via M&E. This will allow them to target new information to farmers that have indicated specific needs or interests.

To **stimulate further learning and networking**, demonstration organisers can offer various platforms for exchange between farmers (P2P learning) and between farmers and others (advisors, farming businesses). E.g. they may organise workshops or other meetings on topics that visitors have indicated as relevant to them via the M&E process at the demonstration. They can also offer virtual platforms for exchange via their own website or social media. These discussions in their turn may inspire organisers to take additional action on topics that emerge from the discussions on these platforms. Although these activities take place after the demonstration, they already need to be planned as part of organising the demonstration day as various preparations are needed to be able to carry this out effectively.

Practice example from NL2

An example to keep visitors updated comes from the Dutch demonstration on the undersowing of maize with a catch crop. At the end of the demonstration, the organisers announced that they would keep the participants informed on the sowing results and the growth of the catch crop via a newsletter. Furthermore, if any unexpected interesting developments would take place in the field, the group would be invited to a new demonstration at the same location in autumn.

6 CONCLUSION: REFLECTION ON P2P AND F2E LEARNING

The PLAID project was based on the assumption that peer-to-peer (P2P) is of key importance at on-farm demonstrations. This is indeed corroborated by what we found in our studies but it also appeared this is much more nuanced. Firstly, we found various forms of P2P that we had not anticipated. Secondly, P2P is only half the story.

Concerning the forms of P2P, at the beginning of the project we saw this as the exchange between the demonstrating farmers and the visiting farmers. This is indeed an important aspect and we saw many examples that the interaction between demonstrator and visiting farmer goes 'smoother' if the presenter is also a farmer than in the case of another type of demonstrator or speaker, e.g. researcher or commercial party. But we also saw another form of P2P exchange, notably between the visitors of a demonstration. Visitors themselves indicate this type of interaction is of key importance to them and we expect this is largely so because it allows the visitors to benchmark their own ideas with those of their peers. This helps the farmer to place the demonstrated innovation in his own context. Furthermore, there is a form of P2P when farmers go home and when they exchange with their neighbours, who may or may not have been at the demonstration, on what they learned at the demonstration.

While we thus have seen various forms of P2P, our cases also teach us that there is much more going on at demonstrations than P2P learning. Visitor-farmers at demonstrations also learn a lot from other types of presenters (e.g. researchers, commercial actors), which we call F2E (farmer to expert) exchange. Definitely, it makes a difference who makes a presentation and in that sense P2P may be more effective than F2E. However, it seems that good moderation is equally important if not more important. Hence, a farmer may learn more from a well moderated expert presentation than from a poorly moderated farmer presentation.

Practice examples from BE3 and BG2

A Belgian case illustrates that other presenters and demonstrators, including commercial parties, can have a very positive role in a demonstration. From this case study, we learned that the combination of a commercial company like Bayer and a commercial farm can lead to effective demonstration activities. Visitors saw the newest innovative techniques on a real working farm in a real context and under real farming conditions. Moreover, visitors learned from the knowledge and experience of both the experts from Bayer and the hosting farmers.

A Bulgarian case offers another good example of the positive role of commercial companies in demonstration activities. It concerns the cooperation between a commercial company and an agricultural association who jointly demonstrated how crop protection can be achieved in a more sustainable way.

However, potential organisers of demonstration activities should be aware of the possible pitfalls of such a collaboration, i.e. the provision of strongly biased information. To avoid this, it is important to make good agreements between the (co-)organisers. One of the principles could be that commercial companies should not solely co-organise or attend the demonstration to make a sales pitch, but also contribute in terms of knowledge and information exchange. Involving more than one company or involving 'neutral' parties like non-commercial advisory services or researchers can contribute to the credibility of the demonstration event and thus the wider use of the demonstrated novelties. Having an experienced neutral facilitator in such a case of diverging interests can also be a good way to increase the credibility for the audience of what is presented.

7 ANNEX 1: CASE STUDY SUMMARIES

This Annex presents the demonstration summaries from all 24 PLAID case study reports. They are listed alphabetically according to the case ID in the list below.

1. BE1 Open Energy Day
2. BE3 Hof ten Bosch (potato)
3. BG1 Renewable energy sources in milk production
4. BG2 New plant protection technologies in grain crop production
5. CH1 Arenenberger Ackerbautreff (Arenenberg Arable Day)
6. CH2 PROVIEH: Organic cattle day
7. CRO1 Wheat & barley day
8. CRO3 Vegetable production Bais
9. ES1 Extensive Crops Trials Visit
10. ES2 Organic Cow Cheese Production
11. FR3 INOSYS: Réseaux d'élevage (Network of livestock farms)
12. FR4 SYPPRE: Platform for innovative crop systems
13. IT1 Demo days for sustainable viticulture
14. IT2 AIAB-APROBIO FVG - Organic farming
15. LAT1 Integrated fruit production
16. LAT2 Herbivorous Project: Network of demonstration farms in animal husbandry
17. NL1 National leek day
18. NL3 Grounded maize cropping
19. NOR1 Optimal soil culture
20. NOR2 Berry production in plastic tunnels
21. POL1 National potato day
22. POL2 Feast of Onions and potatoes
23. UK3 IFM Field Event
24. UK5 Lothian Monitor Farm Scotland

7.1 BE1: OPEN ENERGY DAY

Farms

During the last Open Energy Day in March 2016, 22 agricultural and horticultural businesses (of which three are practice and research farms), spread across the whole region of Flanders in Belgium, opened their doors to introduce other farmers to innovative energy techniques that they have implemented on their farm. There were several scheduled visits for each farm during the day, giving farmers the opportunity to visit multiple farms. The host farms were selected by the advisors and researchers of the Enerpedia consortium who were familiar with their local agricultural sectors.

Organisation of the demonstration activities

The Open Energy Days in 2012 and 2016 were organised by the Enerpedia consortium, which includes the Flemish practice and research farms as well as knowledge and research centres Innovatiesteunpunt of the farmer's organisation Boerenbond, Kenniscentrum Energie of the University college Thomas More and ILVO (a government-funded applied research institute).

The Enerpedia consortium sensitizes and gives information and advice in the field of energy efficiency and sustainable energy production on farms to all farmers in the region of Flanders in Belgium. All their knowledge, study days announcements and news about energy in agriculture is bundled in one website www.enerpedia.be.

What is the main problem that is addressed?

The main problem that is addressed is sustainable energy within agriculture: the sustainable use of energy (e.g. greater efficiency through smaller demand for energy) and the sustainable production of (renewable) energy.

What is demonstrated?

The implementation of innovative energy efficiency and renewable energy production technologies on the various farms, e.g.:

- Small scale digester with in-farm manure;
- Solar panels which rotate in the sun;
- Energy exchange between a tomato farm and fish cultivation farm;
- Burning of miscanthus;
- Cooling with ammonia;
- Thermal solar panels for calf feed preparation; and,
- Heat recovery by dehumidification in greenhouses.

What role does sustainability play?

Sustainability was the main driver for the demonstration activities. The demonstration activities concerned sharing good experiences with viable energy saving and energy production techniques on commercial farms (people, profit, planet). This will strengthen the farming community, mitigate climate change and enhance financial viability.

The EU 2030 "climate and energy framework" sets 3 key targets for the year 2030: at least 40% cuts in greenhouse gas emissions (from 1990 levels); at least 27% share for renewable energy; and, at least 27% improvement in energy efficiency. Therefore, innovation regarding measures for energy efficiency and renewable energy are also

indispensable in agriculture. However, it is mainly rising energy bills that forces farmers to think about how best to handle energy on the farm.

What is the objective of the demonstration?

The main objective of the Open Energy Day is to share knowledge and experience on the implementation of innovative energy efficiency and sustainable energy production techniques on farms. Another goal was to inspire farmers, installers and policy makers with good practices, to show that it is possible to deploy the demonstrated techniques as viable methods to reduce GHG emissions and to reduce energy costs. Last but not least, another aim of the Open Energy Day was to raise awareness of sustainable energy in agriculture.

Who are the targeted visitors?

The targeted visitors are Flemish farmers and other interested stakeholders in the 'energy value chain' such as installers, providers of energy technology, advisors and regional and/or local policy makers.

What could be main lessons for the PLAID project?

The case provides an interesting example of an informal setup of demonstration. In 2016 there were few guidelines from the organizing consortium concerning the role of host farmers and supporting consultants when setting up a demonstration activity. Moreover, the visits were mostly held in smaller (though not limited) groups. As a result, there was a lot of opportunity for interactive discussions between the host farmer, the visitors, the Enerpedia consortium consultants or researchers and in some cases also the installer of a particular technique. This informal approach greatly stimulated the exchange of knowledge and experience with innovative energy techniques. In a few cases, consortium consultants arranged a daytrip for a group of farmers to visit and learn from host farms, during which these consultants acted as guides.

7.2 BE3: HOF TEN BOSCH (POTATO)

Farm

The farm where the demonstration is held, is a fourth-generation family farm (since 1890) that is located in a small village near Brussels in Belgium. The 150-hectare farm grows potatoes for the crisp industry in a four-year rotation across hilly fields on well drained and fertile sandy loam soil. Wheat, corn, sugar beet, oilseed rape and barley are the other crops grown on this farm. In addition, the farm cultivates three hectares of apples and pears, which are mainly sold directly from the farm.

In 2011 they began to participate in some sustainability and on farm-research projects. The first demonstration was on erosion measures. The next demonstration was a collaboration with the research farm PCFruit on a project that explored the use of mixed hedging around a pear plantation.

In 2014, they became the world's first Bayer Forward Farm. Bayer joined forces with the farmers to test a number of innovative and sustainable agricultural concepts. For example, the farm uses advanced weather stations to better estimate when disease pressure in the crops will increase. The tractors work with GPS-techniques to carry out the treatment of crops to a depth of 2cm. A system was also installed to process the cleaning water in an environmentally friendly way and with residues of crop protection agents. In addition, insects are used at Hof ten Bosch to strengthen resistance to harmful species, and grass and flower zones are created between the fields to stimulate biodiversity.

In May 2018, the farm opened an educational beekeeping centre in collaboration with the Beekeepers Association of Vlaams-Brabant and the Bayer Bee Care Centre. They placed six bee hives, laid flower borders and planted mixed hedges.

Organisation of the demonstration activities

Some of the farm demonstrations are organised and led by either Bayer advisors (within the Bayer Forward Farming program which is their knowledge platform on sustainable agricultural practices), or the farmers themselves. Projects and field tests are also undertaken in collaboration with public and private partners, such as the University of Ghent, John Deere or Yara.

What is the main problem that is addressed?

The objective of the demonstrations is the sharing of good practice on sustainable field practices (mainly crop protection, new cultivations, low-drift nozzles, weather station data, precision farming, water protection).

What is demonstrated?

The farmers as well as Bayer experts demonstrate innovative solutions for sustainable agriculture by field demonstrations, documentation, training sessions, etc.: crop protection; new cultivations; low-drift nozzles; weather station data; precision farming; and water protection, etc.

What role does sustainability play?

Sustainability is an integral part of the demonstrations. The host farm aims for a balance between raising productivity, and maintaining the fertility of the field and protecting biodiversity through responsible and correct use of crop protection products. In other words, the host farm aims to combine economic success with environmental and social responsibility.

What is the objective of the demonstration?

The objective of the demonstrations for farmers is the sharing of knowledge and good practice around sustainable agriculture. However, the demonstrations also show regulatory authorities what is possible with specialised technologies in terms of reducing the environmental impact of plant protection products.

Who are the targeted visitors?

The demonstrations bring together many stakeholders including farmers, consumers, universities and schools, machine builders, food chain representatives like food processing industry and retailers, politicians and regulatory authorities from all over Europe. About one third of the visitors are farmers, one third are food chain stakeholders and researchers and one third are administrations and policy makers.

What could be main lessons for the PLAID project?

The case provides an interesting example of a fruitful collaboration between farmers and a commercial supplier. Visitors can view the newest techniques in crop protection, smart farming, etc. on a real working farm. The diverse range of visitors to the demonstration farms is also important, with representations from food chain representatives, politicians and regulatory authorities, as well as farmers.

7.3 BG1: RENEWABLE ENERGY SOURCES IN MILK PRODUCTION

The history of agricultural demonstration activities in Bulgaria is split into two distinct periods. Firstly, until 1989 land in Bulgaria was state-owned and was the beginning of a

period of socio-economic change in Eastern Europe. Secondly, after 1990 there is more input from private companies in Bulgarian agriculture. Private commercial companies for machinery, seeds, agricultural production preparation begin to emerge and introduce demonstrations into the sector. The main demonstration providers are individual farmers, NAAS, Agricultural Academy, Agrarian Universities, Foundation for Organic Agriculture BIOSELENA (on the environmental issues) and supply chain companies. Meanwhile, the farmer associations rarely organise demonstrations. The majority of demonstrations are related to new fertilisers, plant protection products, new varieties, new machines, new technologies, new equipment, and demonstrations on specific topics such as organic farming innovations. Most demonstrations are led by non-farmers (experts from NAAS, researchers from the Agricultural Academy and agrarian universities and representatives of supply chain companies). The majority of participants in the demonstrations are farmers, students from agricultural universities and young farmers.

In this example the demonstrations are organised by Foundation for Organic Agriculture BIOSELENA (comprising farmers and advisors) and Trakia University in Stara Zagora (comprising students and researchers).

The demonstrations take place on a commercial dairy family farm. The farm is owned by the Matanski family and the whole family work on the farm. The farm is headed by the father, Georgi Matanski. The farm buildings and premises cover an area of 0.8 ha. The cultivated agricultural land is 150 ha and is mainly used to produce animal feed. The farm herd consists of 80 breeding cows, 20 heifers and 30 calves.

The demonstrations address common problems for farmers such as with non-effective energy use and big energy consumption costs, and with the milk quality and compliance with hygiene standards.

One particular demonstration was the use of renewable energy sources (RES) within milk production, specifically around the production of hot water for washing and cleaning. This demonstration comprised of a combined installation to produce hot water from solar panels and subsequent secondary use of the heat emitted from cooling the milk.

Sustainability underlies most of the demonstration activities as most of farmers attending the demonstrations could start to use similar RES to produce hot water for washing and cleaning, as well as for other farm activities. Furthermore the agrarian students who attended this demonstration will have learnt more about RES use in agriculture and hopefully use it in their work after graduating. These demonstrations are highlighting the importance of ecologically safer methods, minimising the use of non-renewable energy, and safeguarding the environment.

The objective of the demonstration was the dissemination of knowledge of the use of RES in milk production. The demo should stimulate increased dissemination of knowledge towards more environmentally friendly uses of energy in milk production. This could also contribute to improvements in the quality of the milk produced by Bulgarian small and medium-sized dairy farms.

The targeted visitors are other animal-breeding farmers from all regions, advisors and agrarian students.

This case study supports the PLAID project in lessons around:

- how to create an interesting demonstration program;
- what farmers learn from demonstrations, and how;
- what advisors and suppliers learn from demonstrations, and how;
- what agrarian speciality students learn from demonstrations, and how;

- how advisors and suppliers communicate their knowledge with the farmers;
- what participants find interesting from demonstrations.

Also, this case study demonstrates good practice for cooperation between farmers, researchers, representatives of non-governmental organisations and advisors for the promotion of environmentally friendly practices. In the two years since this case study began information has been gathered on what knowledge farmers have applied in practice after participating in the demonstrations. Recommendations around good practice for application of the demonstrated innovations have been developed. This case study also offers the PLAID project lessons of good practice on the application of novel innovations to outside of those who attended demonstration events.

7.4 BG2: NEW PLANT PROTECTION TECHNOLOGIES IN GRAIN AND CROP PRODUCTION

The history of agricultural demonstration activities in Bulgaria is split into two distinct periods. Firstly, until 1989 land in Bulgaria was state-owned and was the beginning of a period of socio-economic change in Eastern Europe. Secondly, after 1990 there is more input from private companies in Bulgarian agriculture. Private commercial companies for machinery, seeds, agricultural production preparation begin to emerge and introduce demonstrations into the sector. The main demonstration providers are individual farmers, NAAS, Agricultural Academy, Agrarian Universities, Foundation for Organic Agriculture BIOSELENA (on the environmental issues) and supply chain companies. Meanwhile, the farmer associations rarely organise demonstrations. The majority of demonstrations are related to new fertilisers, plant protection products, new varieties, new machines, new technologies, new equipment, and demonstrations on specific topics such as organic farming innovations. Most demonstrations are led by non-farmers (experts from NAAS, researchers from the Agricultural Academy and agrarian universities and representatives of supply chain companies). The majority of participants in the demonstrations are farmers, students from agricultural universities and young farmers.

In this example, the demonstrations are mainly organised by suppliers and the Bulgarian Crop Protection Association. The Bulgarian Crop Protection Association was established to support the development of innovative plant protection products and technologies for sustainable agriculture.

The demonstrations take place on experimental and demonstration fields within a commercial farm, which specialises in crop production (wheat, rape, sunflower and maize). The farmer is called Svetla Stoyanova, and the farm is known as "HELGA" farm. The farm was established in 1998 as a small family farm business within the plant production sector. Over the years, the farm has grown and gradually expanding and now occupies over 3 000 ha. The demonstrations on new plant protection technologies in grain crop production have been held on the farm (one or twice a year) since 2015.

The demonstrations address a whole range of problems that the farmers face such as, human and environmental safety, use of plant protection products, ensuring pollination of crops and the protection of (wild) bees.

Innovative plant protection products, technologies and other tools (flowering buffer strips and "wooden hotels" for wild bees) are also demonstrated.

Sustainability is the motivation behind participant farmers starting to apply the demonstration activities on their farms. These include applying the principles of integrated plant protection on their farms and the protection of bees, including wild bees which pollinate plants. Through these activities the farmers are prioritising ecologically

safer methods, minimising the undesirable side effects and use of agrochemicals, and safeguarding the environment and human health.

The aim of demonstration is to share knowledge and to promote the use of innovative plant protection products and technologies and other tools (flowering buffer strips and “wooden hotels” for wild bees) for more sustainable agriculture.

The target participants are other crop production farmers from all regions and advisors. This case study supports the PLAID project in lessons around:

- what farmers learn from demonstrations, and how;
- what advisors and suppliers learn from demonstrations, and how;
- what agrarian speciality students learn from demonstrations, and how;
- how advisors and suppliers communicate their knowledge with the farmers; and,
- what participants find interesting from demonstrations.

Also, this case study demonstrates good example for cooperation between farmers, advisors, suppliers and associations for the promotion of environmentally friendly practice. In the two years since this case study began information has been gathered on what knowledge farmers have applied in practice after participating in the demonstrations. Recommendations around good practice for application of the demonstrated innovations have been developed. This case study also offers the PLAID project lessons of good practice on the application of novel innovations to outside of those who attended demonstration events.

7.5 CH1: ARENENBERGER ACKERBAUTREFF

The Arenenberg Arable Day (*German: Arenenberger Ackerbautreff*) is a regional demonstration event on arable farming in the Canton of Thurgau. It has been organised annually since 2015. This year’s event took place from 9.30am-12.30pm on June 8th 2018. The main organiser of the event is the agricultural centre of the Canton of Thurgau (BBZ Arenenberg). The event attracts around 100 visitors every summer (DMLA).

The main aim of the event is to demonstrate the experimental areas of the BBZ Arenenberg. The event occurs annually on a 5-hectare plot of a commercial farm which is used for experimental purposes. The trial plot belongs to a farm who manage these areas for, and in cooperation with, BBZ Arenenberg. The plot is used throughout the year for further training courses and demonstrations. At the Arenenberg Arable Day, varying crops are demonstrated depending on the crop rotation rules of the farm. The 2018 Arable Day focused on soil protecting cultivation techniques of sugar beet and on weed control within maize production. The target participants included farmers and advisors from the region who produce or are interested in producing these crops. The event is usually attended by local and regional producers who appreciate the networking potential and friendly nature of and within the group.

The topics were demonstrated across four different 30 minute sessions. The visitors were divided into four groups and followed a predefined schedule, visiting all four sessions; a guide was assigned to each group to ensure efficient time-keeping. One session focused on the demonstration of sugar beet plots with different sowing techniques (ploughing, mulching, direct sowing). This session was led by advisors from BBZ Arenenberg. Another session was on the organic sugar beet production focusing on sowing techniques (with and without foil) and the market situation for organic sugar beets. One of the speakers was an advisor for organic arable farming from the BBZ Arenenberg and the other was a representative from the sugar company. Furthermore, there were two

sessions on maize production, one focusing on chemical weed control led by advisors from the BBZ Arenenberg and a final session on mechanical weed control led by the subsection on agricultural technology of the cantonal farmers' association in collaboration with a local agricultural contractor (DMLA; EAIO).

The event addressed various issues related to sustainability. In terms of weed control, the chemical (herbicides) and mechanical approach (tillage, split tillage) were presented. In addition, sowing techniques involving different tillage intensities were demonstrated. For both crops, the organic cultivation was presented. In addition, economic aspects were included, including the number of hours worked. This is especially important in relation to the economic efficiency of organic sugar beet production. (DMLA)

7.6 CH2: PROVIEH: ORGANIC CATTLE DAY

The Organic Cattle Day (*German: Bioviehtag*) 2018 was organised by Bio Suisse (the association of organic farmers in Switzerland), and the FiBL Research Institute for Organic Agriculture, in collaboration with the agricultural centre of Lucerne and its organic agriculture advisors, the regional organic farmers association as well as the host farm. It was the first event of its kind and was held in Central Switzerland. It is embedded within the PROVIEH programme by Bio Suisse which aims to foster farmer-to-farmer learning within the realm of cattle and animal husbandry (EAIO).

The Organic Cattle Day 2018 took place on 12th June and it focussed on the exchange of good agricultural practice, extension and research on organic cattle husbandry. The event included sessions on cow breeds, fodder, husbandry conditions and milking process, parasites and veterinary medicine, cost accounting, as well as testimonies by farmers. The day was organised into 14 thematic topics and farmer testimonies which were hosted by more than 30 speakers. The sessions were held in seven defined time slots throughout the course of the day. Within each time slot, seven topical discussions ran in parallel and each topic was repeated three or four times during the day. A buffer of ten minutes was planned between each timeslot to allow time for changing between areas. As a result, farmers could create an individual program according to their interests and time; there were no guides to move groups of visitors from one area to another. (EAIO, PO).

The Organic Cattle Day is part of the PROVIEH programme. PROVIEH is a concept and approach based on farmer-to-farmer-learning around topics related to organic cattle husbandry. The concept consists of decentral farmers' working groups of limited size (about 10 members) and similarly decentralised stable visits of slightly larger groups of farmers who meet at one farm, accompanied by some input from advisers and/or researchers. The programme has been running since 2014 and was developed by Bio Suisse in close cooperation with FiBL, the cantonal agricultural centres and regional organic farmers associations (EAIO; EPIO). PROVIEH participants are farmers with livestock farms or mixed farms. So far, more than 2100 farmers have participated in 83 information events and stable visits throughout Switzerland. PROVIEH stable visits offer an insight into interesting farms and exchange of good practice experiences within organic livestock husbandry among colleagues as well as with veterinarians and consultants (EAIO; DMLA).

Homepage of the Organic Cattle Day 2018: <https://www.bioviehtag.org>

Homepage of the PROVIEH programme: <https://www.bio-suisse.ch/de/provieh.php>

7.7 CRO1: WHEAT & BARLEY DAY

The Wheat and barley Field day by AIO is an international demonstration event for arable farming in Osijek, Croatia. It has been organised annually for more than thirty years.

This year's event took place from 9.30am-3pm on June 6th 2018. The main organiser of the event is the Agricultural Institute Osijek. The event attracts around 600 visitors every summer (DMLA).

With regards to the demonstrations, 22 varieties of wheat were shown on experimental fields (through field walks), as well as 22 varieties of winter barley and seven popular varieties of spring barley. The main aim of this demonstration was to ensure, and develop, excellence in applied research and plant science, as well as to improve production of wheat and barley. The demo was institutionally led – commercial orientation and public-good orientation. The main demo methods were indoor lectures and field walks around experimental fields with guides (speakers). The target group were crop production farmers, advisors and all interested facilitators from the region and abroad (EAIO).

The event addressed various issues related to sustainability. In terms of seed selection, the importance of dry-resistant varieties were presented.

Programme of the Wheat and barley Field day by AIO, 2018

9.30 a.m.	Welcome and group assignments
10.00 -10.30 a.m.	A speech from the director for the guests
10.30 -13.00 p.m.	Presentation of the results of scientific research and expert work In breeding and production of wheat and barley Oral presentations Poster exhibition A joint tour of field trials
13.00 p.m.	Lunch

7.8 CRO3: VEGETABLE PRODUCTION BY BAIS

Family farm *Grunt* is led by Vladimir Bais, a young farmer who produces 4million vegetable seedlings (across many varieties) and 1000 tonnes of vegetables annually across 6hectares of open fields and 4000 m² of glasshouse production by following the principles of integrated production. The aim of the demonstration was to produce high quality seedlings in a short period of time. This was implemented using mechanisation, glasshouse specific production, sustainability in glasshouse production and the principles of integrating production and markets.

The main topics of demonstration were to introduce the seedling planting robotic system, the germination of seedlings in a germination chamber, seedlings "over nosediving" and glasshouse specific production. The exchanges of experiences and knowledge in integrated and glasshouse production were demonstrated in very educational and practical way.

7.9 ES2: EXTENSIVE CROPS TRIALS VISIT

This demonstration was initiated by the cooperative and a group of farmers. Within the demonstration INTIA have a specific role, in collaboration with the Valdorba agrarian cooperative. It is mostly a farmer-led initiative, with innovative demonstrations on plots of their farms as well as in trials of INTIA. The demo objectives are: good practice around good variety maintenance and new pesticides products, herbicides and fungicides in cereals, as well as crop diversification. The main aim of the demonstration is the sharing of good practice between a group of innovative farmers and cooperative members to best deal with their common farming issues.

The main issue is the need for innovation to increase farm profitability and improve the impacts of poor sanitation. Improvements in genetics have led to increased productivity and environmental adaptation (sowing dates) and resistance to diseases (yellow rust). In addition, comparison trials of new varieties, herbicides and fungicides, and trials of wheat, barley, oats, peas, beans, and rapeseed were presented to the group.

The demonstration programme offers visits to demo sites and experimental trials, with an additional final meeting to discuss the experiences of the group (through a focus group).

Website: <https://farmdemo.eu/hub/app/inv/org.php?id=850>

To analyse the demo results and conclusions an online survey and focus groups were organised. This analysis found that the demonstration events have created an opportunity for clear identification of best practices to promote various innovations (e.g. new varieties, pesticides and techniques) as well as some common problems and future strategies to explore next year.

7.10 ES5: ORGANIC COW CHEESE PRODUCTION

This dairy cattle farm has been a partner of INTIA since its inception and it has received advice and ongoing training on aspects such as: livestock management, food, investments, environmental aspects, economic results, and transformation of products. The relationship between the farm (Jauregia) and INTIA is very close, and the farm receives advice on all aspects of organic production. The farmers are very active and engaged young people, collaborating frequently on research projects with INTIA. **INTIA's role** in this demonstration was to contact the farm, explain the project and enable them to participate as a case study.

The demonstration of organic cow cheese production is **organised** by a small dairy farmer family known as "Jauregia Esnekiak", located in Aniz, a town in the Valley of Baztán, north of Navarra (Spain), which has traditionally been dedicated to dairy production.

The farm has been owned for 15 years by two brothers and their wives. The brothers take care of the cows and the women take care of the cheese production. In addition, there is a rural house next to the cheese factory which can sleep 14 people. The farm was previously owned by his father who focussed on milk rather than cheese production. The milk was sold directly without processing.

Since 2004 they began to turn their milk into cheese and yogurt and sell them by direct market. In 2008 they installed the first milk vending machine in Spain. Currently the farm has approximately 56 animals comprising of calves, heifers and cows. Of these 56 animals, 29 cows are milked daily by the two brothers. By 2010, after a period of adaptation, they started to only produce organic products.

The demonstrations take place on the farm itself throughout the year (there were around 50 visits in 2017). The minimum number to ensure a visit goes ahead is 15 people, but normally visitor numbers varies between 25-30 on average per demonstration. The visits are a tourist attraction in the area, as well as an attraction for professional breeders who want to learn about this ecological production, and for the young farmers. The cost is 3 euros per person.

The demonstration was held on April 24, 2018, for a **group of 12 young farmers** who were training to work in the agricultural sector. **The objective of the visit** was to train young farmers on the possibilities offered by ecological production in milk cow, to understand the farm transformation and the process of direct farm product sales. During

the 200 hours of training they receive before commencing work in the agricultural sector, 2-3 days are devoted to training visits to professional farms. After a short break with a sample tastings of the farm's products, the evaluative Focus Group is undertaken. After the demonstration, the attendees had to complete an on-line survey to evaluate their visit.

During the demonstration there was a tour of the cattle farm, a visit to the foraging meadows, and visits to the livestock shed, cheese factory, and farm shop. They also offer accommodation through two rural houses that are managed by the farm wives.

The demonstrations cover a wide range of topics related to dairy cattle farming in organic production such as fodder autonomy, grazing management, ecological management of pastures, extensive management and regenerative agriculture. The topics vary are the ones who vary based on the profile of the visitors.

The demonstrations are part of the commercial activity of the dairy which aims to inform participants on how to make healthier foods, recover and enhance genuine aromas and tastes, and promote animal welfare and sustainable rural development. In this context, the process does not begin with the milk or even the cows, but rather it starts with the pastures, where the feeding of the cows is key to obtain excellent milk, cheese and yogurt. The calves are raised so that they will start to produce milk when they reach adulthood. This necessitates a smaller number of animals per hectare, strict controls within the feeding process, and having the cows in the pasture for a greater number of days per year, etc.

This report is based on desk research and empirical work. The empirical work consisted of: individual interviews with the owners of the farm and the INTIA advisory technician, between January and October, 2018; interviews with 12 young participants; observations made during the demonstration; observations made during the Focus Group.

7.11 FR3: INOSYS: RÉSEAUX D'ÉLEVAGE

Demonstration summary

Each year between 50-100 farmers in INOSYS réseau d'élevage (network of livestock farms) open their doors to regional farmers to demonstrate innovative, or interesting farming practices, systems and performances.

This case study focuses on two demo days organised in two locations. The cases provide two interesting examples of the co-organisation of demo activities between farmers and advisers. The farm network is rather old and well-structured but the specific demo farms change on a regular basis. Each farm is very well documented with precise and up to date information regarding all the sustainability issues.

Demo-activity in Auvergne

This demo day has been organised in the centre of France, in Thomas Farm which is close to Clermont-Ferrand (Romagnat). The targeted visitors are agricultural students and potential new entrants.

The main aim was to show that the sheep sector is still active and can create employment. It is an opportunity to demonstrate the innovations of this sector to all the stakeholders involved in the sheep meat sector. The demo activity took place in March 2018 across a whole day.

Demo-activity in Bourgogne

This demo day was organised in Bourgogne, Samuel Farm close to Nevers. The aim of the demonstration was primarily to share ideas and knowledge on specific practices or equipment introduced on the farm, and to share experiences regarding the specific problems that farmers face. The farmer who opens his farm also presents very precise figures and information about the farm's performance and organisation. Practices can be connected to economic, social and environmental performances. In that case, the demonstration activity is entitled "Work serenely with ewes".

The target visitors were sheep farmers and advisers. The demo activity took place on a Thursday afternoon in September 2018. The afternoon was composed of 7 workshops led by various actors from the sheep meat sector.

7.12 FR4: SYPPRE: PLATFORM FOR INNOVATIVE CROP SYSTEMS

The collaborative SYPPRE platform was implemented by the French technical institutes on arable crops ARVALIS (cereals, maize, sorghum, potato and forage crops), and Terres Inovia (oilseed crops). It was based on 3 initiatives: an observation of current agricultural cropping systems and multicriteria performance; a long-term experimental platform based on the testing of co-designed and *ex-ante* assessment of innovative cropping systems; and a network of farmer groups to facilitate the (re)design of farming systems and to test innovations on their own farms.

Demonstration activities are jointly organised by ARVALIS and technical institutes, with a network of farmers and local advisors.

The platform was implemented in a location which is typical of South West France in terms of the arable crops produced and the humus-rich soils. It is located in Sendets (15 km from Pau) across a 3ha area.

The main issue for farmers in Bearn area with humus-rich soils is to adapt maize based systems to new technical and regulation constraints whilst still maintaining system profitability.

Local agricultural objectives can be summarised through a decrease of pesticides use and effective control of pests and weeds, in order to maintain or increase crop production and economic margin. New practices and cropping systems must also be aware of the potential reduction of environmental risks and impacts.

The demonstrations address the cropping system as a whole, with a large vision on technical, economic, environmental, and organisational / social issues.

7.13 IT1: DEMO DAYS FOR SUSTAINABLE VITICULTURE

The demo events highlighted here took place on a demonstration farm located in the Piacenza Hills wine region under the brand DEMOdays. DEMOdays are technical-demonstration days focused on innovation, safety and sustainability in agriculture. The initiative arose from the need to effectively highlight innovations on a large scale, by encouraging the participants to try to undertake the new solutions proposed by research and technical suppliers on their own farms.

Multiple technical proposals and integrated together within the innovation's production process. DEMOdays are targeted towards various stakeholders: farmers, public and private technicians, and national level consultants and regional officials.

Various topics of sustainable viticulture were covered during these demonstration events, including:

- all aspects of the SUS (Sustainable Use of Pesticides, based on Directive 128/2009/EC) through pilot installations;
- fertilization and fertirrigation through a pilot installation;
- vine canopy management;
- pest (arthropods, diseases and weed) control; and,
- security in agricultural operations.

The farm tests innovations so they can be appropriately transferred to the large-scale farm community on a vineyard scale (not in small plots, as more frequently occurs), across whole (e.g. not in one spot demo event) or even multiple seasons (e.g. to measure effects over the long run in a “real” farm settings). To illustrate, when testing new sprayer machinery for pesticides, the farm uses the new sprayer in one vineyard over a whole season to compare results with traditional methods in another farm. Data can then be collected on the distribution quality and efficacy over different vine growth stages, operation times and costs, etc. Subsequently the farm organises demonstrations with stakeholders (under the brand DEMOdays) in which the participants can see the sprayer, its innovative technologies and how it works in the vineyard, gather information on the weaknesses and strengths of the techniques in the day-to-day farm operations.

When necessary, the farm installs pilot facilities. For example, there is a pilot for the sustainable use of pesticides in which 7 different biobed technologies are installed and compared. Stakeholders can observe all these technologies working at the same time in the same place, and subsequently make better informed decisions over which technologies would be most appropriate on their farms.

The Vinidea case study occurred across 3 Demo events from May – June 2018.

Web-link (in Italian): <https://www.horta-srl.it/sito/servizi/demo-days/>

7.14 IT2: AIAB-APROBIO FVG - ORGANIC FARMING

The main topics of the demo activity offered by AIAB-APROBIO FVG are:

- soil management (including machinery, tests to assess/measure fertility, use of cover crops, crop rotations)
- pest & disease management (preventative measures and combined used of practices and products)
- new crops and new varieties (also variety mixtures, heritage varieties, evolutionary and participatory breeding).

The demo activities aim to offer examples of “good organic management” which can provide viable alternatives to conventional farming as well as improvements within the existing organic community.

The demos are attracting increasing numbers of conventional farmers which offers the opportunity for exchanges beyond the organic community.

In this specific case the demo day focused on soil quality and properties which result of organic management.

The main objective of the demo was to increase farmers' awareness of how their management choices impact soil quality and fertility and, as a result, their productions.

The specific objectives were:

- to explain how to assess soil characteristics with tools and knowledge which was available on farm (no need of labs or complementary lab analysis);
- to share farming practices that help within a proper soil management strategy (no plowing, sod seeding, green manures etc.); and,
- to discuss more appropriate (from an agronomic but also an economic point of view) strategies in the different environments and farm situations.

Methods used: the whole demo day was held outside and included:

- an in the field presentation from a geologist who highlighted (with practical examples around the farm) the origin of soils, how to assess soil characteristics and how to identify management impacts;
- semi-structured discussions;
- lunch in the farm with informal discussions;
- guided observation of soil micro-vertebrates (in different areas of the farm which were characterised by different management styles); and,
- guided observation of spontaneous flora as an indicator of soil characteristics and problems.

The event invitation and description is available here: <http://www.aiab-aprobio.fvg.it/13-07-18-%E2%80%A2-seminario-sul-terreno/>

7.15 LAT1: INTEGRATED FRUIT PRODUCTION

This case study focuses on informally networked demonstration activities which have been organised annually by a fruit-growers' cooperative *Augļu nams*¹³ (Fruit House) on member farms since 2010. The cooperative unites 11 fruit farms and companies¹⁴ which grow apples and other varieties of fruit, apply integrated production methods and cooperate in production, primary processing, storage and marketing.

The case offers an interesting example of an informal (and therefore less structured) arrangement of demonstration activities that represent a bottom-up initiative by primary producers. Demonstration activities take place during collective farm visits on member farms. These visits usually take place once a year in tandem with the general meeting of the cooperative. The target visitors are mainly members of the cooperative.

The aim of the demonstrations is primarily to share knowledge on specific new practices that are introduced on the farms and to share experiences regarding the specific problems that farmers face during a particular given season such as the quality of fruit, annual yield, etc. New market channels for the produce and other ad hoc issues that relate to boosting the quality of the produce, productivity and overall competitiveness of the cooperative are also discussed.

The approach utilised for the mutual farm visits is related to a whole farm approach looking at multiple practices undertaken within the overall management of the farm

¹³ <https://www.facebook.com/auglunams/>

¹⁴ Basic information (in Latvian) on the involved farms/companies is available at <https://auglunams.lv/biedri/>

rather than a focus on single practices. The visits include an on-farm walk, visits to the orchard area, storage and processing facilities (if applicable). The length of the event varies from a few hours to all-day visits.

The demonstrations are regarded by the organiser as 'knowledge and experience sharing activities'. These joint learning activities mainly concern production-related topics, such as: variety selection and cultivation; management of orchards; production technologies; fruit tree pruning; pest and disease control, storage, etc.

More generally, the case of *Auglu nams* serves as an example of how learning and exchange of knowledge can take place in an informal arrangement between colleagues with similar goals and challenges.

This report is based on desk research and empirical work carried out as part of the wider case study of the informal demonstration activities of the cooperative (see Section 9 for details). The methods used included participant observation carried out at the annual farm visit held on 25th October 2017, followed by a focus group discussion with participants. In addition, several semi-structured interviews were conducted (over the phone or face-to-face) with the manager and members of the cooperative, as well as several experts in the field of fruit production.

7.16 LAT2: HERBIVOROUS PROJECT: NETWORK OF DEMONSTRATION FARMS IN ANIMAL HUSBANDRY

The network of demonstration farms in animal husbandry was launched in Latvia in 2012 within the framework of the Herbivorous project¹⁵ ("Measures for boosting economic efficiency of livestock production in agricultural holdings") headed by the Competence Centre in Animal Husbandry of the Latvian Rural Advisory and Training Centre (LRATC)¹⁶. The Centre is the primary organiser of the set of field trials and consecutive on-farm demonstrations, but it also attracts researchers from Latvia University of Life Sciences and Technologies as scientific consultants. The project is funded by the Ministry of Agriculture through the "Implementation of sustainable pilot projects of agricultural production" which is managed by the National Rural network. The events are subsequently able to be free attendance events.

The main aim of these demonstrations is to facilitate sustainable development of the sector and competence-based implementation of field trials and demonstrations in animal husbandry. This aim is achieved by presenting systematically organised and thematically comprehensive lessons to the wider farming community at the Farm days related to improving the efficiency of production in the field of livestock-breeding. The target visitors are Latvian livestock farmers as well as advisors, researchers, and students.

The project is responding to farmers' needs for better and cheaper maintenance of cattle through the promotion of cost-effective methods of farming which will in turn improve the quality and volume of production and competitiveness of the farms. Problems to be addressed at the field trials and demonstrations are identified by the board of the Competence Centre in Animal Husbandry in cooperation with researchers, advisors and other professionals. The trial areas are selected based on an economic analysis of the sector, the forecasts of the future development of the various segments of this sector, the existing legal requirements, and feedback from participants at the trials and demonstrations. The main problems that have been identified include: the quality of animal feed; inappropriate feed rations; quality of calves; unproductive animals; mortality of young animals; quality of milk, etc.

¹⁵ <https://www.youtube.com/watch?v=JagbXxGCLxI>; <http://new.llkc.lv/lv/nozares/lopkopiba/zaledaju-projekts>

¹⁶ www.llkc.lv

Table 5. Key figures of the Herbivorous project

	2014	2015	2016	2017	2018	Total
Number of newly launched trials	13	1	8	3	0	25* (in 29 farms)
Number of Farm days	16	14	14	10	4	58
Number of Farm day attendants	825	808	1144	774	276	3827

Source: Data provided by the project coordinator (LRATC).

* The total number of trials is lower than the number of farms as several trials were carried out simultaneously or consecutively on two farms.

Field trials (25 in total) have been held on a set of commercial farms which specialise in animal production (cows, sheep, goats). On these farms individual thematic trials were generally carried out over 2-3 years (see Table above). Since 2013 when the programme was first established, 29 host farms working in animal husbandry all over Latvia have been involved in these field trials. Usually one trial is carried out per farm but so several farms have carried out more than one trial.

Each of the farms involved address a different problem. These problems include: the in-house production of animal feed of high quality; longevity of herds; production and breeding of young animals, whilst also addressing various health issues (incl. fertility); introduction of new breeds, etc. Significant efforts are devoted to undertaking an economic analysis of farms to assess their efficiency.

The host farms and field trial results are presented to interested farmers on special Farm days on the individual farms (between May and October each year). These events are usually held on each farm twice (one per year) with a slight change to the focus of the event each time (see Image 1). The programme of these Farm days (~4-5 hours) usually includes a theoretical and a practical part. The programme consists of an indoor seminar with an introduction by the head of the project, information on the host farm, a presentation of trial results by the supervising advisor and researcher, additional information and recommendations on the trial topic by other invited experts, and demonstrations on, and visit to, the host farm.

This report is based on desk research and empirical work carried out as part of the wider case study of the Herbivorous project (see Section 9 for details). Altogether 12 in-depth interviews with managers, advisors and host farmers from across Latvia involved in the project at different times were conducted between January and September, 2018. In addition, participant observations and exit surveys with participants (131 filled-out questionnaires) were carried out during the four Farm days held in 2018.

7.17 NL1: NATIONAL LEEK DAY

The National Leek Day is organized every 3 to 4 years to share current developments in research, where this year the day focussed on, four hectares of leek trials. The research topics in these trials were very diverse ranging from fertilisation, pesticide choice related to MRL (Multiple Residue Level on product) and system comparisons (leek in different systems) to variety choice. The umbrella theme for the day was green crop protection. The day was free to attend. Here is a link to more information on the event and invite ([Link to the announcement](#)).

Programme

The day started with introductory words from the chairman of LLTB which was followed by a lecture by Plant Health Cure. This lecture covered how, at the basis of healthy,

resistant crops is a healthy, rich soil life and what Plant Health Cure can offer to leek growers.

After this lecture a continuous program with the following themes and demos could be visited via a guided tour, each hosted by either a commercial firm, a research organisation or an advisory organisation:

- Green crop protection – Residue-free at harvest.
Lead by Mertens and Bayer
- Demonstration of different varieties.
Lead by Bayer-Nunhems, Bejo, Hazera-Syngenta, Seminis, Enza and Takii
- Soil quality – including the importance of organic matter.
Lead by Wageningen Research - Applied Arable and Vegetable Research
- Hydroponic leek cultivation - Presentation of the results of 10 years of research into hydroponic cultivation.
Lead by Wageningen Research - Applied Arable and Vegetable Research
- Organic cultivation.
Lead by Wageningen Research - Applied Arable and Vegetable Research
- Precision agriculture:
 - Soil scans (Veris scan), drone images and location-specific compost spreading -
Lead by Agrifirm
 - Crop sensors:
Lead by Abemec
- Lifting demonstration.
Lead by Maesen Landbouwmecanisatie BV

At the end of the event networking opportunities were available at the company fair where food and drink were provided. The main demo methods were a lecture, a guided tour and a company fair with stand holders.

The main problem for leek producers is general sustainability and food safety in relation to market demands in particular. Sustainability played a very big role in the day and was present in every theme and demo of the guided tour. Two key issues addressed in the day were: pesticide use in relation to residues (spraying techniques and pesticide selection) and strategies to reduce and prevent nitrate leaching (fertilisation strategy, fertiliser use, precision agriculture, hydroponics, soil quality). Variety choice was a key topic for tackling issues with sustainability as well as for market development.

The objective of the demonstration was dissemination of knowledge about sustainable leek production. "As far as we are concerned, a trial is only truly successful if it finds its way into practice. This is the primary motivation behind National Leek Day", according to the main organiser of the event.

The targeted visitors were leek growers, advisors and suppliers. The previous National Leeks days have had about 400 visitors, 60% of which were leek grower and the remaining 40% suppliers and advisors.

Because this is a recurring demo (held for the 5th time in 12 years), the organizers have a lot of experience in organising demo events. They know what topics and components of the day are useful to visitors and how to run the day smoothly. Therefore, the National Leek Day is an excellent demo for the PLAID project to learn about:

- How to compose an interesting program;
- Improvements to the event over several years;

- What and how farmers learn (due to the variety of activities organised; from lectures to tours, demonstrations and company fair) looking at them:
 - ♦ individually;
 - ♦ as a Group;
- What and how advisers and suppliers learn;
- How advisors and suppliers use knowledge from their contacts with farmers;
- The exposure the knowledge demonstrated on the day which is included in national and regional farming press and, possibly, general media.
- Given the fact that it is recurring, we can ask farmers and advisers what they have learned AND USED from earlier meetings (though we still have to develop appropriate methods to analyse that).

7.18 NL3: GROUNDED MAIZE CROPPING

Demo title: 'Undersowing maize with grass'

The objective of the demo event according to the organiser was:

- To draw attention to the option of undersowing maize with grass as a means to comply to the new Dutch laws & regulations (under the Dutch Fertilization Act) in Drenthe. (By 2019 a catch crop has to be sown by 1st October at the latest. That can be done in several ways: before, via undersowing, or after harvest, in combination with an early maize variety. This demo focused on undersowing only).

The overarching objective was:

- To raise awareness about sustainable maize crop cultivation techniques (related to the application of a catch crop) which farmers can adopt on their own farm.

The motivations of the organiser were:

- To Show farmers who grow maize that undersowing can work in their own system and it can feasibly be used to to comply with new laws & regulations regarding nutrient and herbicide leaching in sandy soils in the Netherlands.

The Demo topic was to:

- Present the do's and dont's to undersowing maize with grass, and demonstrate the process of undersowing in a maize field (with maize at knee-height) with different undersowing machines.

The program consisted of an introductory lecture, demos in the field with (6) different under-sowing machines and ended with group discussion on what attendees learned and how they found the various activities throughout the day and networking.

7.19 NOR1: OPTIMAL SOIL CULTURE

The demonstration was held on a farm in the southern parts of Norway. The farm is owned by the agricultural company of this region – a private society that acts as an umbrella for 27 of the county's farming organisations. The farm has 10 acres dedicated to the organic production of fruit, vegetables and berries. The farm is the third cooperative farm established in Norway, with 200 stakeholders.

The demonstration event was in the form of a field day where experts demonstrated and conveyed knowledge about the soil, good soil management and the best possible ways to take care of the soil in order to optimise production. The approach involved a combination of theoretical presentations indoors and several practical demonstrations and field walks outside. The aim of the demonstration was to contribute to knowledge development and sharing between farmers/teachers/gardeners and advisors. A demo-day like this is a meeting place for farmers and others, with connections to, with interest in this theme, so they can obtain new knowledge and share their experiences and thoughts with other farmers. The main aim of the demo day is to raise the quality of production and products and increase the productiveness and competitiveness of farming in a sustainable way.

The day was organised by the agriculture department at the County Governor in cooperation with "Eco week" in the county with the southern branch of the Norwegian Agricultural Extension Service (NLR), the County Governor of the neighbouring county, and the agricultural company of this region. The event commenced in the afternoon and lasted four hours.

The researcher arrived at the farm a little earlier than the participants, and the event organiser gave them a quick tour of the farm and explained the plan for the demonstration day. Some practical preparations were carried out before the attendees arrived. Equipment was set up for demonstration of the new rainfall simulator. The event commenced in the meeting room in the converted barn with a small meal (hot soup) and coffee. Networking was lively, so it was evident that some attendees knew each other prior to the event. The main program started half an hour later and started with a welcome speech and introduction by the facilitator. They presented the two advisors/experts and informed the participants that one researcher from Ruralis also was participating. Each attendee then introduced themselves and their background in the sector. The researcher briefly informed the participants about the PLAID-project and had already talked to some of the participants and agreed on interviews during networking, but it was repeated that she was interested to talk to several of the attendees after the theme day. Attendees were also informed that pictures would be taken during the day.

After introductions, a male expert from the County Governor held a lecture about experiences from a project about topsoil: soil as a living organic organism, how to stimulate and rebuild the biodiversity and humus layer in the top soil. He gave a presentation where he first presented the main principles for keeping the soil healthy based on ecological principles. He also explained the important, but often neglected, role of the soil microorganisms. He showed several examples of how soil is destroyed by heavy machinery (packing soil with little oxygen), and various forms of soil cultivation. His main message was that - there are opportunities to correct what is wrong with soil management and rebuild the soil - the soil has a wonderful ability to restart. He gave examples of how to do this. After his lecture, several participants asked questions, gave comments and shared tips.

The next speaker was a female expert from the NLR who worked on a project on soil carbon - development and dissemination of carbon-binding agricultural practices in Norway. Mold content decreases with 1% annually in grain districts in Norway (problems with drainage). Climate change and environmental aspects were themes in focus, such as carbon binding in the soil. She spoke of five principles regarding soil management, and concrete advices and tips to the participants of how farming could contribute.

After the lectures, all attendees then went outside for a farm tour of various demonstrations. The first stop was a demonstration of a rain simulator, pouring water over five different soil samples. It was the first performance of such a simulator in Norway, and everyone was excited about the result. The female expert showed and explained the different degrees of soil erosion and the absorptive capacity of water in the

samples. This illustrative exercise showed that freshly ploughed soil was the worst regarding soil drainage, of which "untouched" grassland was the best.

The second demo showed some examples of various plants which were planted three weeks before. They were planted in "window boxes" so attendees could see how they already had developed root systems. These plants could be used as cover crops to improve the texture of the soil due to the good gripping effect produced by the roots.

The third stop was at a piece of farmland where the male expert had prepared a demonstration of various soil qualities. The expert first talked about a health card for soil, and handed out a written mapping tool so attendees could do the mapping work in their own fields. Then the expert specifically demonstrated how to conduct these soil samples, and the participants could learn how to study the quality of the soil, for instance by looking at the texture (hard lumps indicate mechanical damage by heavy machinery), counting earthworms, and smell of the soil. Several attendees got involved and smelled into the soil pit. The expert also demonstrated the use of a simple tool to measure how many centimetres it was with porous soil before coming to hard (packed) soil.

The attendees asked the expert many questions during and after the demonstration, but the weather was cold and probably limited the amount of questions that were asked. Many of the attendees left the farm before the end of the event. Some attendees and advisors continued conversations inside the meeting room, but the field day formally ended after the demo in the grassland. Inside the meeting room, one of the attendees showed pictures of their own land that had been destroyed by large machines (in connection with road construction) and asked the experts for advice on how to recover the damaged soil.

7.20 NOR2: BERRY PRODUCTION IN PLASTIC TUNNELS

The theme day was organised by the Trøndelag branch of the Norwegian Agricultural Extension Service (NLR). The NLR is an organisation that provides impartial advice to 3800 members in the Trøndelag region. The organisation has competences in, among other areas, soil and plant protection, agricultural economics, accounting and health and safety issues. Advice provided is based on research, local conditions and vast experience. The NLR organised the theme day, and while the NLR lead the event the host farmer contributed to the event and shared knowledge. Two local organisers and one external expert from the southern region, represented the NLR.

The theme day was held on a large farm in a municipality in the northern parts of Trøndelag. The demonstration and the theme day focused on berry production, mainly strawberries, and the use of polytunnels for cultivation. The initiator was the local advisory organisation for berries, which is a part of the NLR. According to the organiser the target group for the demo day was established berry producers, mainly strawberry producers, and those considering starting such production. The purpose of the theme day was to show the producers/farmers the opportunities they have, how berries can be produced in a more reliable (weather wise) and more cost-effective way by using polytunnels, and also give attendees the opportunity to ask questions and exchange experiences.

Regarding the PLAID-project, this case study will make an important contribution to PLAID by illustrating a typical method of demonstration in Norway. It provides a useful example of how to organise and facilitate high-quality knowledge dissemination between farmers in a country with large geographical distances, landscape and climate inequalities, and thus different regional challenges. Farmers are able to find an overview of field days in their local region on the NLR's website and can choose demonstrations that suit their own operations, knowledge and location. This approach seeks to minimise

the long distances required to travel that Norway experiences – providing an example of how this issue is resolved in the Norwegian context.

At the theme day, the local organisers started with a short welcome in the farmyard. They introduced the host farmer and his farm and the external expert who is based in another region in Norway. Attendees were then asked to introduce themselves to the rest of the group, telling them where they are from and what production type/system they run. Researchers also participated in the day and introduced themselves and their role for the day (to learn about how such demonstrations take place, and what kind of information and knowledge is being exchanged).

The host farmer noted that he took over the farm in 1990, and shortly after taking over the farm started producing berries, firstly as open field cultivation, before gradually diversifying to polytunnels. During introductions he spoke about the various challenges he has encountered over the years, about cultivation in polytunnels, and the berries he produces. He has made the most progress in the field and has worked with strawberry-production in polytunnels for more than ten years. He is a large-scale producer, and a pioneer in polytunnel farming in Trøndelag.

It was noted that several of the attendees greeted each other when they arrived, and many of them in such a way that it appeared they had previously met. It emerged that several were part of the same berry / fruit-growing network.

After introductions the group was taken on a field walk which lasted a couple of hours to see and learn about how polytunnel production works, and learn about the characteristics of the different types of strawberries the host farmer produces. As well as visiting some of the different polytunnels crops grown in open fields were also visited. Both the visiting expert and the host farmer told us about the challenges with cultivating in tunnels, the pros and cons of the different types of strawberries and demonstrated the different varieties.

Other topics dealt with the use of fertilizers, the use of irrigation-systems, and which systems may be appropriate for different farm types. The importance of airing and keeping the right temperature in polytunnels, crop yields of the different strawberry varieties, what pests and insects can be challenging, production methods, economic aspects of such production, as well as tips and solutions for how this approach can be done at a smaller scale were also discussed. There was a lot of questions regarding the polytunnels, such as the cost of building polytunnels and practical details about the layout of the pipe construction and the plastic deck that has to be taken down every winter. The host farmer demonstrated how he had built and made his own "table-top" system in some of the polytunnels. The "table-tops" are expensive to purchase, which makes creating your own 'table-top' cost effective. On the tour it was also possible to taste the berries and there were some discussions about strawberry varieties, taste and quality.

One of the tour stops took a closer look at irrigation-systems. The last part of the field walk was raspberry production, mainly open field production. Most of the participants attended the theme day to learn about strawberries, but some were raspberries producers and therefore were mainly interested in learning about how the host farmer produces them, and gain tips for good fertilisation and irrigation of them.

The expert conveyed the various themes and aspects in an understandable manner to the participants. It was noted that attendees asked questions to both the host farmer and experts and also asked questions to each other, both during each stop, but also between the stops. They asked each other for tips and advices, exchanged experiences, and discussed practical approaches to different challenges. For instance, two of the farmers discussed the opportunities to cooperate when buying polytunnels and hiring a

construction firm to build them in order to reduce costs. Both positive and negative experiences were shared. Discussion between attendees and questions to the host farmer and expert seemed very natural. Naturally, several smaller groups were established during the walk, where those with similar production systems found each other and discussed experiences. Here it was noted that women spoke mainly with other women and men with each other.

The last part of the demo day was indoors, in the farm lunchroom. The local organisers offered coffee, sandwiches, fruit and biscuits for all the participants, and many of the participants continued informal discussions from the field walk while eating. After lunch, one of the female advisors in NLR Trøndelag spoke before the visiting professional advisor took over and spoke about strawberry production in polytunnels. The advisor showed pictures, film clips and shared experiences from similar production systems from other parts of the country. The attendees could ask questions during the presentation and afterwards. When the presentations were finished, the local advisors thanked participants for attending, and emphasized the importance of people attending events like these. Some of the participants continued to network after the event.

7.21 POL1: NATIONAL POTATO DAY

The national potato days¹⁷ are focussed on field demonstrations of:

- New potato varieties: several stakeholders demonstrated small plots of different varieties they offer for the Polish market.
- Machine demonstrations: mainly potato harvesters and equipment needed for transporting potatoes from the harvester to the store.
- Demonstration field with fertilizer and plant protection strategies: different suppliers demonstrate their products.
- Several stands with product presentations and product tasting.

The main reason for organizing this event was the promotion of IHAR among farmers and companies in the potato value chain. IHAR aims to achieve increased recognition as an important research partner for the potato sector in Poland. National Potato Days were seen as a good opportunity to forward this goal with the ultimate aim of gaining a place in the organisation of the Potato Europe Event. This is a large annual potato promotion that 'travels' between Germany, France, Belgium and The Netherlands but currently does not include Poland.

The demonstration methods used are:

- Small fields, several fields next to each other, where companies show their products or strategies. The lack of guided tours around these fields may have reduced the attention the fields received (see pictures).
- Machine demonstrations with a focus on potato harvesters. Several companies showed different types of harvesters – self-propelled 4 row harvesters and tractor-pulled 2 row harvesters. There was only general information about the machines and no information about technical aspects (e.g. best setting in relation to the situation in the field, quality assessment of the performance of the different machines, etc.). The general information was provided at the head of the field where the audience remained – rather than moving into the field to see the results in more detail.
- Demonstration of the potato transport line from harvester to truck. There was a demonstration of very modern equipment for professional handling of potatoes. This

¹⁷ Weblink for the event: <http://krajowedniemiaka-ihar.pl>

created quite a bit of interest amongst the attendees, but its impact was hampered by the lack of an explanation of the technology.

- Drone-based video recording of the field operations. The real-time recording was visible on a big screen on the central platform. Through these videos the activities going on in the field could be watched but no detailed information could be obtained.
- Video recording in the field. Some companies made short videos of the demonstration fields in order to use them for other occasions.

7.22 POL2: FEAST ONIONS AND POTATOES

These demonstration activities are held in middle Poland (Wielkopolska). Although people from across Poland come to the event, most of the visitors come from the Wielkopolska region. This demonstration was not held in 2018, in part due to a recent trend of declining visitor numbers as a protest at high participation costs.

On August 18th and 19th 2012 in Henrykowo near Środa Wielkopolska, on the holding of the farm of Monika and Michał Nowak, the 10th Festival of Onion, Potato and Soya took place. In two days, at least five thousand visitors (farmers, families with children) from across Poland attended the event. Topics covered were new products to enhance onion, potato and soy bean production.

The Nowak family farms over 90 ha, of which 85.5 ha is arable land. The owners grow cereals (c. 48 ha), onions (c. 24 ha) and potatoes (this year c. 11 ha). In addition, more than 3 ha of soybeans were experimentally planted this year.

On the demonstration field the visitors could see plots with 64 varieties of onions, 32 varieties of potatoes and 5 varieties of soybeans. The visitors could personally compare the properties of the different varieties, their resistance to pathogens, and yields in the conditions of Wielkopolska. The availability of different varieties ensured yields could be compared (as each variant reacts differently to extreme and/or changing weather conditions) and enabled farmers to judge which varieties meet consumers demand for different colours, juiciness and taste.

The interest in soy bean production was high due to its fodder value, but also because of the possibility of obtaining additional co-financing offered as part of the direct payments for legumes. A soil excavation was made to demonstrate the extensive soy root system. Visitors could get up-to-date information about the latest generation of potato harvesters and become acquainted with the latest offers on tractors and agricultural machinery: machines for harvesting, sorting and packing potatoes and vegetables.

The topics that were raised during the meeting include fertilization, agrotechnics, and crop protection of potatoes and onions. In addition, expert advice was provided by seed and fertilizer advisers, machine companies and advisers involved in agriculture. In the field it was possible to see how onion varieties coped with drought.

Film: https://www.youtube.com/watch?v=cCrv_hcTEeA&feature=youtu.be

58 onion varieties and several potato varieties were presented in the demonstration fields in Henrykowo. The crops were spread over a fairly large area (6 ha.). Representatives of fertilizer, machine, seed and chemical companies invited participants to their stands. There were lectures on onion foliar fertilization technology, very early potato varieties, threats to agro-vegetable rotation, and potassium as an important mineral component. During the event, the project "Improvement of fire safety in rural areas of the province Wielkopolska" was also presented.

Film: <https://www.youtube.com/watch?v=z3k4oIUkW6A>
<https://www.youtube.com/watch?v=795QUdt4xpc>

The demonstration methods used were:

- Small fields, several fields next to each other, where companies showed their products.
- In field demonstrations of machines and equipment.
- Youtube videos from earlier events to provide information about the methods used.

7.23 UK3: IFM FIELD EVENT

The IFM Field Event was hosted 16th May 2018 organised by LEAF. The host farm is a 9,100 ha farm located Norfolk, East of England and is a LEAF Demonstration Farm.

As a LEAF Demonstration Farm they host and organise a range of demonstration events throughout the year, from small independent visits to larger demonstration events. During events and visits they highlight LEAF's whole farm IFM approach to attendees. The primary role of these demonstration visits and events is farmer to farmer learning but they also host visits for advisors, researchers, university students, policy and school groups throughout the year. Throughout 2017 Elveden Farms hosted a total of 21 visits and events to 480 people.

The IFM Field Event focused on the practices and technologies farmers and researchers are trailing to harness and maximise the use of biodiversity on-farm. This is key to maintaining farm level natural capital. Practices and technologies demonstrated were broadly sectioned into three areas:

- Harnessing biodiversity for soil and water management;
- Using biodiversity in crop health and protection;
- Promoting biodiversity for human health.

The demonstration event was led by the host farm manager and there were also a range of speakers from throughout the value chain at various stops on the tour, illustrating a specific approach or research outcome in relation to the 3 areas of the day.

The case study provides an interesting example of farmer led demonstration covering a whole farm system, including best practice, and highlighting interesting and new innovations on farm, as well as bringing in other practices and innovations from external speakers across the value chain. An important aspect for PLAID is the vast experience of the host farm manager of hosting demonstration events. The host farm is able to carry out best practice IFM to deliver sustainable farming, communicate messages in a practical and engaging way and host well planned and timed events, offering a variety of well targeted messages. The host farm is also involved in a number of farm trials with different institutes and companies. He is actively involved in the running and demonstrating of the trials.

7.24 UK5: LOTHIAN MONITOR FARM SCOTLAND

Lothians Monitor Farm (LMF) comprises two independently-run farm enterprises, which work collaboratively over the course of three years in the Monitor Farm programme. The concept for the programme was taken from New Zealand and allows farmers to share experiences and observe how their peers tackle problems and adopt best practice. The emphasis is strongly on practical farming and good business decisions rather than theory. The programme includes bimonthly demonstration days attended by the local farming community.

Funding for the Monitor Farm programme is provided by the Scottish Government and the European Union's Knowledge Transfer and Innovation Fund (KTIF). Monitor Farms Scotland is jointly run by two national levy boards, who serve the arable and livestock sectors in Scotland: Agriculture and Horticulture Development Board (ADHB) Cereals and Oilseeds Division; and Quality Meat Scotland (QMS). A management group comprising the farm hosts and other local farmers and stakeholders determines the direction of the LMF programme, and a team of independent facilitators provide organisational support. There is a strong focus on the principle, 'farmer led, farmer driven'.

The collaborative approach taken at LMF is novel in Scotland and underpins a central theme of the LMF demonstration programme. In addition, collaboration between the two neighbouring farms provides for joint focus on both the arable and livestock farming sectors. Demonstrations and discussions address a diversity of topics ranging from soil testing and soil fertility management to drought and flooding, and from grazing to flock/herd health. Topics generally have an underlying focus on the efficiency of farm businesses and aim to demonstrate new innovations and best practice. Sustainability is also an underlying focus.

Demonstration days are aimed at farmers and other interested stakeholders in the Lothians area. As the main agricultural sectors in the region, arable and livestock farmers are the target group for demonstration. Typically, demonstration days attract around 30-50 attendees. Interaction across traditional boundaries, between arable and livestock farming approaches, is an important feature of LMF in terms of learning, networking, and collaboration between the different stakeholders involved. Eight additional Monitor Farms are currently in operation across Scotland, serving the regions in which they are located.

The information presented in this report was primarily gathered by means of in-depth interviews with organisers and attendees involved at LMF, researcher observations made at demonstration days during the first two years of the programme, and supplemented with publicly-available reports and information available online.

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CONTRIBUTORS

This synthesis is based on the 24 case study reports that have been produced by PLAID partners. Some sentences or paragraphs, often somewhat paraphrased, are taken from these reports, not as examples, but as part of the overall argument in this report. For that reason, we did not put these texts in quotes so as not to hamper the flow of the text. Furthermore, various examples have been quoted from these reports, although many of them have also been reformulated a bit. To acknowledge these contributions in a general way we list all case study authors below as 'contributors' to this report. The names are followed by the title of the case report and a case ID. Summaries of the case studies can be found in Annex 1.

Marleen Gysen and **Koen Symons**. "Open Energy Day" (BE1) and "Hof ten Bosch (potato)" (BE3).

Dimitar Vanev, **Galina Metodieva**, **Emanuela Dimitrova** and **Petya Kumanova**. "Renewable energy sources in milk production" (BG1) and "New plant protection technologies in grain crop production" (BG2).

Rebekka Frick with support from **Thomas Alföldi**, **Kathrin Huber** and **Heidrun Moschitz**. "Arenenberger Ackerbautreff" (CH1) and "PROVIEH - Organic cattle day" (CH2).

Kristijan Jelakovic, **Milan Husnjak**, **Aleksandar Horvatic** and **Matija Cabrajec**. "Wheat & barley day" (CRO1) and "Vegetable production Bais" (CRO3).

Alberto Lafarga and **Isabel Gárriz**. "Extensive Crops Trials Visit" (ES1) and "Organic Cow Cheese Production" (ES2).

Marina Cholton. "INOSYS - Réseaux d'élevage (Network of livestock farms)" (FR3).

Florence Leprince. "SYPPRE - Platform for innovative crop systems" (FR4).

Ekaterina Kleshcheva. "Demo days for sustainable viticulture" (IT1).

Cristina Micheloni. "AIAB-APROBIO FVG - Organic farming" (IT2).

Anda Adamsone-Fiskovica, **Talis Tisenkopfs**, **Mikelis Grivins** and **Emils Kilis**. "Integrated fruit production" (LAT1) and "Herbivorous Project - Network of demonstration farms in animal husbandry" (LAT2).

Paulien van Asperen, **Maureen Schoutsen** and **Boelie Elzen**. "National leek day" (NL1) and "Grounded maize cropping" (NL3).



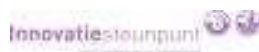
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Rita Moseng Sivertsvik and **Marit S. Haugen**. "Optimal soil culture" (NOR1) and "Berry production in plastic tunnels" (NOR2).

Harm Brinks, Emiel Kamminga and **Tomasz Krasowski**. "National potato day" (POL1) and "Feast of Onions and potatoes" (POL2).

Laura Tippin. "IFM Field Event" (UK3).

Sharon Flanigan. "Lothian Monitor Farm Scotland" (UK5).



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