

Farmer-to-farmer field days for adaptation to climate change in livestock management

Lessons learned and a guideline for implementation



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1. Introduction

The concept of farmer-to-farmer field days (F2F-FD) builds on the understanding that socially diverse farmers' epistemologies are varied yet similar among people who define themselves as 'farmers', but they are rather different from the epistemological understanding of people who define themselves as 'scientists': social worlds influence the ways of knowing of different actors, and farmers have a range of ways of knowing what they value, that is rarely equally valued by scientists (Habermann, 2014). For example, farmers rely on more varied ways of knowing than scientists, who rely mostly on reason and authority, whilst farmers trust in senses and language, but also in emotional and intuitive aspects such as spirituality and memories (Habermann, 2014).

Both scientific outreach and extension approaches have attempted to involve farmers in technology transfer activities in ways that were understood to be more apt to farmers' needs than conventional technology demonstrations on research farms: examples are farmer field schools (Duveskog, Friis-Hansen, & Taylor, 2011; FAO, 2018; Mfitumukiza et al., 2014; Siregar & Crane, 2011), farmer research groups (Mekonnen et al., 2006), farmer research networks (Nelson, Coe, & Hausmann, 2016; Richardson et al., 2022), farmer-to-farmer extension (F2FE) and the idea of farmers teaching farmers (Franzel, Kiptot, & Degrande, 2019; Khaila, Tchuwa, Franzel, & Simpson, 2015; Kiptot & Franzel, 2013) and many others. These approaches respond to the increasing need for information and support demands by farmers at a time of extension systems with reduced capacity (Franzel et al., 2019; Kiptot & Franzel, 2013). Moreover, the F2FE approach builds on the fact that most farmers tend to '*rely on other farmers as their primary source of information about new technologies. The F2FE approach therefore can be viewed as an extension of farmers' existing practices.*' (Franzel et al., 2019, p. 277). The terminology may vary, as sometimes the farmers are called lead farmers, in other cases farmer-trainers or contact farmers, community facilitators (Franzel et al., 2019, p. 279), or with a similar idea but differently implemented they are called model farmers or lead farmers (Taylor & Bhasme, 2018). What makes these approaches successful is that '*farmers preferred to learn novel practices from their colleagues rather than from extension staff.*' (Franzel et al., 2019, p. 280). Thus, there is an indication that this also has to do with language and communication (Habermann, Felt, Vogl, Bekele, & Mekonnen, 2012; Habermann, Vogl, Mekonnen, Bekele, & Felt, 2021) as well as trust – and expectations:

Organizations reported three main problems in implementing F2FE [...] First, as reported by over 40% of organizations in Cameroon and over 20% in Kenya and Malawi, farmers sometimes had unreasonably high expectations in terms of financial and non-financial benefits, despite organizations' attempts to reduce such expectations. Unmet expectations could be a cause of high dropout rates, which were also reported as a problem. Limited budgets for supporting farmer-trainers also created challenges. (Franzel et al., 2019, pp. 280–281)

However, the effectiveness of working with farmer trainers in F2FE tends to be positive: farmer trainers manage to reach a relatively reasonable number of farmers per month (Kiptot & Franzel, 2013), and the cost is lower than in conventional approaches (Franzel et al., 2019). It is also an opportunity for female farmers to get recognition for their knowledge, and the proportion of female farmer trainers in Kenya was in fact higher than the proportion of female extension staff (Franzel et al., 2019). But it is not a substitute for the agricultural extension system as such, it is merely complementary (Franzel et al., 2019).

It is noteworthy that beyond the financial incentive, the societal aspect of being recognized as a knowledgeable farmer is quite an important incentive. Yet, F2FE is not suitable for all kinds of innovations, and supervision by extension staff has been recommended (Degrande & Benoudji, 2017). A combination of different approaches may be most effective in reaching larger numbers of farmers (Franzel et al., 2019).

These learning grounds have informed the development of the farmer-to-farmer field days (F2F-FD). The F2F-FD were developed while implementing an approach to support positive deviant farmers in explaining to their fellow farmers how they manage to adapt better to the impact of climate change in their livestock production. The positive deviant approach is based on the idea that some people act differently from the mainstream, but in an effective way – they achieve certain things better than the majority (Herington & van de Fliert, 2018; Spreitzer & Sonenshein, 2016). This approach has been tested for adaptation to climate change in livestock production in East Africa (Habermann, Crane, Worku, Gichuki, & Mugumya, 2021; Habermann, Crane, Worku, Mugumya, & Gichuki, 2021; Habermann, Crane, Gichuki, & Worku, 2022; B. Habermann, Todd A. Crane, et al., 2021). Through the process of implementing this approach, the concept of the F2F-FD emerged and became an essential part of the process: the positive deviant farmers, called ‘adaptation pioneers’ were farmers who were doing things differently from other, and were successful in increasing productivity and sustainable livelihoods for their families in doing so, better than mainstream farmers in their vicinity, and they were willing to show other farmers how to follow their path while learning from each other at the same time (B. Habermann, T. Crane, T. Worku, L. Gichuki, et al., 2021; Habermann et al., 2022).

The research process studying positive deviance in adaptation to climate change by livestock keepers involved regular interviews and biophysical measurements of the adaptation practices applied by local livestock keepers. This helped these adaptation pioneers in livestock management to better understand their own practices – and it was the outcome of this learning process, that they then demonstrated to others at the F2F-FD. (Habermann, Crane, Worku, Gichuki et al. 2021; Habermann et al. 2022)

While many such projects document outcomes, little research is done on social processes and group dynamics taking place in these projects (Akpo, Crane, Vissoh, & Tossou, 2014). While studying what makes adaptation pioneers successful, we need to understand how others can implement their adaptation practices and become equally successful. To further develop the adaptation practices into technologies suitable to a wider community of local livestock

keepers it is important to offer learning events where others can participate and then adapt the technologies to their own circumstances. In facilitating such learning events we hope to enable local livestock keepers to both share and evaluate their experiences and knowledge with others (Akpo et al., 2014).

Technology uptake by end-users would get easier if the process is more transparent and collaborative from the start to the end, wherein consumers of technologies are also explicit co-producers of it. Social spaces are useful to share knowledge and experiences. Learning takes place each time people exchange and reflect on a common problem that requires a timely and appropriate solution. The way the process is designed and conducted has a great effect on the ownership by the participants. (Akpo et al., 2014, p. 17)


Together with adaptation pioneer farmers, we therefore developed an approach for collaborative learning that is driven by pioneer farmers involving peer farmers, that they wanted to be involved in, at the place and date that they had chosen themselves. The objective of developing the F2F-FD was to facilitate learning among livestock keepers on adaptation to climate change to upscale expertise of pioneers of adaptation and to understand social processes enabling livestock keepers to benefit from each other's knowledge and experiences in adaptation to climate change. To do so we applied a social practice approach on learning and transdisciplinary co-production explained in the following section (Slater & Robinson, 2020).

2. Conceptual framework

In transdisciplinary co-production, research activities take place among people to enable researchers and other actors to work together on knowledge production. This process starts from understanding of the problems, development of research objectives as well as the implementation and ownership of the actual research process (Habermann, 2013; Slater & Robinson, 2020).

To understand the nature of transdisciplinary co-production during the field days, we focused on observing social learning processes: social learning emerges through dialogue and joint problem-solving, hoping to understand how through sharing, new knowledge emerges and helps to address complex problems, helps to build trust, empowerment, social networks and even producing new identities and capacities (Slater & Robinson, 2020).

Table 1: Conceptual framework for documenting the F2F-FDs.

1.Social learning processes	2.Emergent properties		3.Social learning outcomes	4.Network effects
Reflexivity: what was it like for the participants (trust, emotions, respect...)?	Materials	Commitment/trust/reframing	New knowledge	
Dialogue: who spoke with whom, what prevented, supported dialogue?	Competences		New actions	5.Sustainability impacts
Experimentation/innovation: new things observed, new thinking inspired?	Meanings		New relations	
METHODS APPLIED				
				
Participant observation at the field day (FD) Contact forms FGD at the end of FD [Consent forms, contact numbers] Follow up interview with host in the month following the FD			Follow up interview with participants of FDs after a few months	Follow up interview with participants of FDs Follow up interview with host of FD

Adapted from Slater and Robinson (2020, p. 3).

3. Methods

3.1 How to organize the field days

As part of the twelve month long *participatory adaptation analysis* (B. Habermann, T. Crane, T. Worku, L. Gichuki, et al., 2021), adaptation pioneers were organizing 'field days'. The purpose of the field day was to offer an opportunity for the adaptation pioneers to explain to others 1) how they were implementing their livestock management adaptation practices; 2) what they had learned from the implementation while collecting data on the practice; 3) what they believed they were doing differently from others.

Beyond that, the field days are also an opportunity for the adaptation pioneers to get feedback and learn from others. It is important to explain to the farmers that this is a learning event, not just a regular field day where the government or researchers demonstrate technologies. The focus is on the adaptation pioneers, and the knowledge exchange among livestock keepers. The external visitors are merely observers and only the researchers should be documenting the field day, or experts brought in to cover a specific demand expressed by the farmers.

The program for the field days is developed by the adaptation pioneers in direct communication with the researchers. The preparation starts about 3 to 4 months ahead of the event. Adaptation pioneers can hold field days together or organize them individually. However, either way the number of participants should be limited to 15 people. The adaptation pioneers decide whom to invite.

3.2 Preparation

Step 1: Clarify with adaptation pioneers what the field days are, ensure expectations are clear on all sides. Explain to them that the program depends on them, as well as the selection of participants.

Step 2: Adaptation pioneers explain what they want to demonstrate at the field visit and suggest a date for the field day.

Step 3: List of participants – the people attending the field day should fulfill these criteria:

1. Invited local livestock keepers should have good relations with the adaptation pioneers, but they should not be relatives or direct neighbours.
2. Invited local livestock keepers should be eager learners during discussions at the field day, and they should be able to implement in their own farm what they see.
3. Invited local livestock keepers should ideally be able to learn something new and different, as well as contribute their own knowledge to the group.
4. Invited local livestock keepers should be interested in being farmer-to-farmer trainers as well, so they should be interested in passing on what they learn to others.

3.3 Program and documentation

3.3.1 Field day 1

The attendants of the field days are locally determined, but the focus should be on livestock keepers inviting other livestock keepers, possibly avoiding political representatives. The program is determined by the adaptation pioneer who invites the group to visit their farm/herd. Thus, it could follow the following sequence:

1. **Introduction:** Registration, informed and photo consent and filling of attendance sheets with full names and contact details to be able to follow up with the participants later. Welcome speeches should be done by the inviting adaptation pioneer representing the household, ideally more than one person per household (e.g., husband and wife), and a few words by the researcher explaining the background of the project. The researcher should explain at this point that at the end of the pioneer's program there will be a group discussion, and a few months later, a brief follow-up interview to understand how the attendants have used what they learned on the day in their own practices, and a second field day later on.
2. **Demonstration by host** (example from a site in Ethiopia):
 - Showing the barn and the compound where they are keeping sheep.
 - Explaining where they got them from, which breed, which requirements, benefits, and disadvantages.
 - Demonstrating home-made feed supplements.
 - Demonstrating feed storage/preservation.
 - Demonstrating market-based feed.
 - Showing feed and forage on field/ field boundaries.

If possible, the adaptation pioneer will support the explanations with findings from data collected on the practice in the survey. This may be difficult at the first field day after 4 to 6 months, but it will be part of the second field day after 10 to 12 months.

3. Question and answer session

4. Feedback session

3.4 Documentation and evaluation

Contact form: There is a contact form (see Appendix I) that helps the researchers to document their observations during the field days. This should capture the discussion, points of agreement, points of divergence, the reaction of participants, reflections on how the host presents, and what kind of questions follow, what kind of feedback was given to the host and explanations about what can be seen, what is demonstrated (and what is not).

Group discussion: Group discussions (groups of 5) should be held at the end of the farmer's program. These help participants reflect on the field day experience, what they learned, what challenges and opportunities they see, and if they wanted to attend another field day (guidelines in Appendix II). These discussions should be recorded.

Follow up interview with host: This recorded interview serves to understand what the host learns on this day, about the practice but also about the experience of presenting to other people on their own, on their farm, and if they are willing to do this again (guidelines in Appendix III).

Follow up interviews with participants: At a later stage the participants will be contacted again via phone and asked about the impact of this event (guidelines in Appendix IV).

Team reflection: After each series of field days, the research team will hold a reflection meeting where they report on observations and lessons learned.

3.4.1 Field day 2

The second field day builds on the results of the documentation and evaluation of field day 1. The researchers discuss with the adaptation pioneers what they want to show at this field day. New experiences may have emerged, seasons may have changed, and the data collection may have led to new insights. The follow-up interviews inform which additional expertise may be required and which topics should be revisited or addressed. Additional experts can be brought in on demand, ideally local extension agents, veterinary officers etc.

Again, the adaptation pioneer household decides when to hold the field day, and what the program should be like. Participants should ideally be the same people as last time. For new participants, the same criteria as above apply.

The program follows a similar sequence, but brings in additional expertise in the second part:

1. Introduction
2. Demonstration by host
3. Question and answer session with additional expert(s)
4. Feedback session

The event will be documented by the researcher with the contact forms (see Appendix I). Further evaluation, as in field day 1, will only be done if another field day is planned as a follow-up. For example, it is possible that adaptation pioneers and field day participants will already have started forming a group to continue this knowledge exchange. In this case it might be helpful to organize a follow-up field day that also addresses group management, by-laws etc.

Figure 1 :Adaptation pioneer Tomas Yebei talking to his field day visitors, Kenya.



Photo: Birgit Habermann/ILRI.

4. Reports on field days in Ethiopia, Kenya and Uganda

4.1 Ethiopia

The F2F-FDs took place in North Shewa Zone (Amhara Region). This is a mountainous area with elevation between 2,800 and 37,00 metres, extreme temperature and rainfall ranges (Abebaw & Mesele, 2022; Shefine, 2018). The impact of climate change is noticeable in increased occurrence of frost and hale, as well as a shift in seasonal patterns and the extent and timing of rainfall in the two rainy seasons. The shorter rainy season is on the verge of disappearing entirely.

Figure 2: Adaptation pioneers Kidane and Weleta in Ethiopia, demonstrating tree lucerne as a viable feed for sheep fattening.



Photo: Apollo Habtamu/ILRI.

Two rounds of field days were carried out. The first round of field days was hosted by four adaptation pioneer farmers in their respective compounds in April 2021 together with their families. After each of these field days, a group discussion was done with the participants split into two groups. The hosts were interviewed separately. Six months after the first field day, a phone interview was conducted as a follow up to understand how useful this day was for the participants, and how much they could implement from what they learned. The second field day took place much later, in April 2022, when the second round of field days was organized. Unfortunately, one of the four pioneer farmers was ill and could not host a second field day. Among the other three, two neighbouring pioneers decided to hold the field day together at one of their compounds. The fourth pioneer, together with his wife, invited farmers to his compound, like the first time.

The research team was initially worried if farmers would engage in open and free discussion, but the set-up of the F2F-FDs was very well received. The adaptation pioneers were initially hesitant, but then proud to present their experiences to the others. The positive feedback that they received inspired them and gave them confidence. Participants expressed their appreciation for the hands-on learning opportunity. Some participants and one adaptation pioneer indicated that they had never participated in such an event before and that it was an excellent opportunity to share knowledge. A participant said, *'We all have [sheep] fattening experiences, but we never exchanged our experiences. We may visit each other and appreciate or comment on the practice, but we haven't had such a group discussion and experience-sharing session.'*

On the second field day, the representatives of the district (woreda) and village (kebele) agriculture and livestock offices attended the field days. Participants got the opportunity to get answers to some of their questions from the agriculture officers regarding access to livestock feed, improving breeding, livestock diseases, medication, market access and linkage. They were given suggestions for addressing some challenges regarding livestock production in general and sheep fattening in particular, including organizing themselves in a group to access improved livestock breeds, feeds from the suppliers, and creating market linkages. Participants appreciated the free exchange of opinions and insights during the discussion. The environment which was created by the field day was valued by all participants, and they requested the continuity of such a platform.

Figure 3: Group discussion at the end of the field day at the farm of adaptation pioneer Ms Tenagne, Ethiopia.



Photo: Apollo Habtamu/ILRI.

4.2 Kenya

Nandi and Bomet are two counties in the western highlands of Kenya. The distance from Nairobi to Bomet town is 220 km and 308 km to Kapsabet town, the capital of Nandi County. The altitude in both counties averages 2,000 m, but it can vary, similar to the agro-ecological zones in the two counties. Livestock production focuses primarily on semi-intensive dairy with crossbred dairy cows. In terms of the impact of climate change, the most severe impact comes from the extended dry season. In line with the change in livestock management, the demand for feed has increased, and farmers face challenges managing the lack of feed sufficient in quantity and quality for the new breeds in the dry seasons.

In the feedback group discussions, farmers appreciated the field day hosts, but they also had suggestions on how they can even further improve their practices. This shows how important this kind of interaction is, a practical learning ground for people who can talk to each other at the same level and understand each other because they have a similar epistemology. Like one adaptation pioneer said, *'There are things I didn't also know, so the other pioneers helped in that. Through questions raised, I learned many things because some things I didn't know came up'*. A participant explained in the group discussion that *'This mode of doing field day is good because you let the farmer train other farmers. Most of the other ones come and train you and they use theory. They force people to do like a certain farmer, while farms are different. When you let a farmer do it, he explains to others out of experience. And by looking at things on your own, we have gone to the farm, and we have seen. It is not just saying you do like this and like this.'* Many participants appreciated this different type of field day.

Figure 4: Demonstration of silage making on the farm of adaptation pioneer Edwin M., Kenya.



Photo: Birgit Habermann/ILRI.

Furthermore, the participants mentioned several times in the group discussions that they were surprised to learn so many new things from their neighbour. They pass each other's places, and talk, but not on this level. As one participant explained, *'We have learned a lot by the way. We used to think that we know but we don't know.'*

Another interesting aspect was also the interaction with female participants. Some of the pioneers did not that many women played such an important role in livestock management, it was a new experience for the pioneers. Women on the other hand perceived this as a unique opportunity for them: one participant remarked that she usually hears information in the radio, but at the field day, she could see it with her own eyes. It is the women who are mostly at home with the cattle. One of the women also remarked, *'The ones who are here today, we should try to visit each other and encourage one another so that by the time you are coming we have encouraged each other. Maybe when they come to my place, they will tell me that I am weak here and I should do this and this... They should come we see what my weakness is and maybe they will get to my place and see something that they don't have. Because we have come to our host's home, and he has Napier [grass], but he doesn't have Boma Rhodes.'*

Some farmers also collected *Desmodium* and other plants that can easily be propagated vegetatively. And they also requested to obtain seeds and samples at the second field day to take something practical home with them. The second field day was also appreciated because of the seasonal changes: for example, participants were interested to see how the pioneer grows sorghum from the start, so returning at another time of year was important for them.

Appreciation was given by a participant for the fact that the field day was in their own language, as some of them struggle with English and Swahili. Using local languages in such events not only appreciates linguistic diversity, but also enables more equitable access to information.

Figure 5: Adaptation pioneer Felix S. showing fodder trees as an option for substituting cattle feed, Kenya.



Photo: David Ngome/ILRI.

4.3 Uganda

Sanga sub-county is in southwestern Uganda, in Kiruhura District and along Uganda's cattle corridor. The area experiences a bimodal rainfall pattern with two long dry seasons. The effect of climate change in Sanga and surrounding areas is mainly noticeable in prolonged droughts for livestock keepers.

Livestock production in Sanga is mainly carried out for milk and meat. The greater part of Kiruhura District consists of large grazing areas that are commonly fenced with either barbed wire or natural shrubs or a combination of both (Wurzinger, Okeyo, Semambo, & Soelkner, 2009).

Discussions and exchange of information and ideas in the first field day went on smoothly among participants and the inviting adaptation pioneer. The views of participants were respected, and contributions were made without interruptions. Contentious and divergent issues were solved through consensus. For example, the issue of why acaricides seemed ineffective was intensely discussed, as it is a great concern to all livestock keepers in the area. To answer this question, participants had to agree: Are the acaricides indeed fake or adulterated? Are livestock keepers unaware of how to spray? Are livestock keepers not mixing the acaricide in right proportions?

Figure 6: Mixing acaricides in preparation for spraying on the farm of adaptation pioneer, George K., Uganda.



Photo: Pamela Wairagala/ILRI.

Generally, the field day was the first of its kind in the area in many years. In fact, Sanga has not had such events in the past at all. Their experience was that livestock keepers were taken to farms of big livestock keepers to obtain information from them, without involving exchange of ideas with the host. The F2F-FD provided an avenue for learning and exchange of ideas on livestock production and on how livestock keepers were addressing various climate change related challenges.

The field days generally provided an avenue for learning and exchange of ideas from the host and the participants. A male participant from Sanga who attended a field day stated that *'Learning is a continuous process, which has to be carried out regularly'*. The local researcher working with the adaptation pioneers reaffirmed this by stating that *'any learning opportunity comes with new ideas that are supposed to transform the activities that are carried out for the benefits of households or communities'*.

Participants who attended the field days were able to learn and acquire new knowledge related to water management, disease control, pasture improvement and feeding. Under water management, participants saw for themselves that one can have several water harvesting technologies on their farm rather than relying on one water harvesting technology. An elderly male livestock keeper from Nyakiganda village stated that *'I saw a water pond located up the hill at the adaptation pioneer's farm. The ponds normally have water available throughout the year, implying that his cattle do not have to look for water elsewhere or move long distances in search for water'*.

Figure 7: A recently constructed dam for collecting rainwater in Sanga, Uganda.



Photo: Birgit Habermann/ILRI.

5. Reflections and lessons learned

The research team was enthusiastic about the success of the field days, and the feedback from the participants and the organizers, the adaptation pioneers, was overwhelmingly positive. Adaptation pioneers and the field day participants started forming learning groups by themselves, and the whole experience reportedly gave them confidence to become farmer-to-farmer trainers, and to engage with extension agents on an equal footing. However, there were also lessons learned in this first round of field days that will be important for future F2F-FDs to consider. In the sections below, we report on the reflections shared by the adaptation pioneers and field day participants, and the research team consisting of nine researchers in three countries.

5.1 Representativeness of participation

An issue addressed by the adaptation pioneers and the other farmers was the relatively small number of pioneers selected. This was due to the qualitative research method and the piloting character of the first phase of the research. A solution for this is to select pioneers with a more quantitative approach using pareto-optimality (Shija, Mwai, Migwi, Komwihangilo, & Bebe, 2022; Steinke et al., 2019). If the respondents for the household survey for this approach are selected randomly over a wider geographical area, then more farmers can be reached overall (Gichuki et al. forthcoming).

In terms of representativeness, it was astonishing how difficult it was to achieve gender balance at the field days. The participants were largely male mostly over 40 years of age – a more detailed calculation on the numbers for all organized field days will be presented in a forthcoming publication. In some places, there were many senior farmers participating, and it is challenging for others to manage them if they lead the discussion off-topic because their senior positions must be respected.

Participating women were often the wives of participants, or the wives of pioneers, and they were hardly involved, and spent more time cooking the meal for lunch than participating. This was also true when the adaptation pioneer was from a female-headed household. It is therefore important to redefine the nature of an adaptation pioneer from a person to a household. In that case, the invitation for a field day will come from a household to another household, making sure the person participating is the one who has the main responsibility for managing the livestock in that household. However, the topic of the field day will always influence who is invited and who attends. For example, in East Africa, more men than women are likely to be invited to and attend a field day on livestock breeding.

In some cases, most local livestock keepers were invited from the neighborhood. That has the disadvantage that they already know each other too well, and they cannot see what is new or innovative, because they often visit each other. It is better to mix people from different but comparable locations. Then they will be more attentive and interested in the topics presented.

While in some cases it may be important to have government representatives involved, in other countries it is important to avoid this so that people can discuss matters freely. Issues of power and trust should never be underestimated. Where there is only a minimal level of trust, there will be no knowledge exchange and no learning. Beyond trust, people invited should have an interest in, or be practising aspects of the technology being pretested.

For a lively and rich discussion, it can work well to invite other adaptation pioneers to attend the field days of others. The linkages between them can become very fruitful and it also helps the other participants to better understand the work of the pioneers.

Apart from making sure to have the right people at the farm, it is equally important to ensure that the date is chosen by livestock keepers and not the researcher who is working with them. For example, at the peak season for ploughing and harvesting, it is not a good idea to try and organize a field day. The season must be right both for demonstration purpose and for livestock keepers' availability. This applies both to time and place, even if the farm is difficult to access it is not advisable to try and relocate the field day somewhere else, that would defeat the purpose of the entire process.

5.2 Change in self-perception

Regarding the self-perception of the adaptation pioneers, we found that many were not confident about their own practice in the beginning of the research process. It was only through the field days that they realized that they were doing something different from others. However, most local livestock keepers participating in the field days brought in their own experiences, and the learning and exchange was in multiple directions, between the farmers, but also between farmers and extension agents who in many cases were not aware of the adaptation pioneers' innovations.

5.3 Managing expectations

Many farmers and extension agents have a preconceived idea of what a 'field day' means, which may be different from F2F-FDs. The conventional field day comes with certain connotations, and it needs to be clarified which ones apply to the F2F-FDs and which ones do not.

An important clarification are incentives for participation, as there are already well-established expectations in many countries regarding travel refunds and other payments for attending events like field days. The other important clarification is that the nature of research being tested and shared in F2F-FDs, is different from that in development projects, and so the benefit of this activity is non-physical/non-monetary: it is focused on learning and experience sharing. For this purpose, it is important to explain well in the introduction to participants who you are, explain the project, organization, people involved, how the pioneers and this farm were selected, and what happens with the information collected (see also enclosed informed consent form in Appendix V).

5.4 Methodological guidance

Based on the experiences in the field days, we believe it is important to meet each adaptation pioneer household briefly before the event to discuss all open questions, and to help the pioneers in choosing topics for the field day if they ask for help. If other pioneers are invited to the field day, clearly specify their roles to avoid having many facilitators or exceeding the required number of people for group meetings.

Furthermore, it is important to check the lists of participants invited for the field day and discuss the rationale of the selection. Preferably, invited participants should be those that will benefit from the field day, regardless of whether they are neighbours or friends.

Inevitably, many questions and issues related to livestock management will come up that were not the focus of the field day. In this regard, it is crucial to avoid the temptation to make promises which cannot be fulfilled while trying to respond to such questions or issues. Time planning can be a challenge. There are always participants coming early, others late. If the field day starts much later than planned, some participants will get tired before the end of the event. If delays occur, then the research team should call the missing participants, as too much familiarity with the organizer (the pioneer) may prevent them from feeling any urgency to come on time.

In the second round of field days, experts can be invited if necessary. Invitation of the experts should depend on the results of the first field days. However, the role of the experts must be clearly defined. Experts are expected to be humble and ready to answer open-ended question and or technical questions that cannot be answered by pioneers or farmers. The questions could include among others, those related to animal health, breeding and feed analysis.

For political reasons and where applicable, local leaders or local administrators can be informed about the proposed field day. It is the pioneer's responsibility to choose whether to involve local leaders – researchers should only interfere if they are aware of any problematic connotations of doing so and not doing so.

6. Summary

F2F-FDs build on existing approaches that acknowledge the fact that in many cases farmers' epistemologies are complex, diverse, and different from scientists' epistemologies. They adjust methods of knowledge generation to co-production and work with participatory methods. F2F-FDs are an approach that recognizes co-production as important, as well as building on existing success stories of adaptation pioneers in livestock management in adaptation to climate change.

Farmers appreciate the novelty of the approach, and that it respects the fact that farmers like to learn about innovations in practical and visual ways, ideally from other farmers. Inherent in the approach is the option to reach more people through group formation and working with a snowball effect. Another added benefit is that learning in the F2F-FDs is mutual; both the adaptation pioneers, the people invited and visiting external experts all learn from each other.

The F2F-FDs can also be beneficial to women if they can practically see information they usually only hear about. It is also an opportunity for them to form networks with other female farmers engaged in livestock keeping. However, the role of women in the field days needs attention, as there is a risk that they are sidelined and too engaged in domestic activities to actively participate and benefit.

Adaptation pioneers emerged highly motivated from the field days: not only did the events increase their self-respect as their perception of their own expertise changed, but it helped them to create more linkages to other farmers, and to extension agents, to create a knowledge network and groups to continue learning in mutual and practical ways.

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Appendices

Appendix I: Contact summary form field days

Contact type: Field day 1 Field day 2		Site: _____ Date: _____
Code of farm:		Phone:
1. WHAT WERE THE MAIN ISSUES OR THEMES THAT STRUCK ME DURING THE DAY? (personal perceptions of observed dialogues, remarks and emphasis on certain issues during the encounter,...)		
2. WHAT DID YOU OBSERVE REGARDING THE FARMER/PASTORALIST AND HIS INTERACTION WITH OTHERS?		
3. WHAT DO YOU THINK HE/SHE DID NOT SHOW AND WHY?		
4. WHICH TOPICS DID YOU FEEL HE/SHE WAS VERY / LESS COMFORTABLE WITH?		
5. TAKE NOTES ON INNOVATIVE PRACTICES AND ADAPTATION PRACTICES LINKED TO CLIMATE CHANGE:		
<ul style="list-style-type: none"> • observe how local land users are implementing these practices, • who is involved, • which resources required, • are there other local land users doing the same, • do they learn from each other, • is it successful, what are the outcomes? • which challenges do you notice that were not mentioned? 		
6. WHAT WERE THE MAIN OBSERVATIONS, COMMENTS AND QUESTIONS BY THE VISITING FARMERS/PASTORALISTS?		
7. HOW WOULD YOU DESCRIBE THE GENERAL MOOD AMONG THE VISITING FARMERS/PASTORALISTS?		

8. WHAT FOLLOW-UP AGREEMENTS WERE MADE BETWEEN THE FARMERS/PASTORALISTS?

9. WHICH ACTION/ WHAT SUPPORT WILL BE NECESSARY TO ENABLE THIS FOLLOW-UP?

10. ANY OTHER OBSERVATIONS

Appendix II: Guidelines for group discussions

At the end of field day, brief focus group discussions with participants (groups of 5).

Introduction: Thank you for participating in today's learning event. This was the first time we met in this group, but we hope to be able to stay in touch with you for the next 8 months. We also hope that we can have a second meeting like today. Now I want to ask you a few questions in this group about how you experienced this day and what you are taking home from here.

1. How did you experience this day? What feedback would you like to give back to your host?
2. Whom did you communicate with most on this day? What prevented/supported dialogue?
3. What are the main things you learned today? How useful are they for you? What was new?
4. If you say this is useful and interesting, if you were to do it, what would you have to do? How would you adapt it, which challenges, which opportunities do you see for yourself?
5. What other comments do you have? What do you want us to do for the second learning event?

Wrap up: Thank you for your feedback, this helps us a lot. Let me please remind you, that we would like to stay in touch with you and contact you for a short follow-up interview to see how useful this field day was for you, and to understand what we can do differently next time. We hope to see you again at the second field day in about 8 months' time.

Appendix III: Guidelines for host interview

1. What do you take away from the learning event (field day)?
2. What have you learned by presenting this to other people? How do you think the participants experienced this day?
3. Who were the people who asked most of the questions, and who interacted most with you on this? Why them?
4. What prevented dialogue/what could have supported dialogue more?
5. Do you feel you are an authority on a topic in your community? What would that be?
6. How transformative/impactful was this for you in terms of your active sharing with other people?
7. What do you think the participants got out of it? What feedback did you get? What new things did you learn in talking to the others?
8. How has the learning event (field day) changed your perception of yourself / the perception of others about you?

Appendix IV: Guidelines for follow-up interview with field day participants

.... months ago, you participated at a field day held on the farm of..... At that time we told you that we might contact you again with some follow-up questions.

If you have time now, please let me ask you the following:

1. The field day was planned as a learning event, with focus on knowledge exchange among livestock keepers. In hindsight, what do you remember most about the field day?
2. We asked you this on the same day, but now a few months later,
 - what did you learn from the workshop?
 - what would you say was new and/or different about what you learned there?
 - If given another learning opportunity, what would you want to learn regarding the adaptation practice?
3. What have you implemented from what you learned at the field day?
 - What is your experience so far with implementing what you have learned? Any challenges?
 - What support from the field day host/ other field day participants/neighbours/ extension officers could you get?
 - What kind of improvement did you incorporate in your adaptation practice after the field day, and how would you describe its importance to your practice?
4. We were hoping to encourage you to share your own knowledge and possible new things you have learned on the day with other livestock keepers.
 - How many other livestock keepers approximately would you say you have been sharing your knowledge with since the field day?
 - What opportunities did you have to train others since, if any?
 - What response did you get from others?
5. What ideas and suggestions do you have to make such learning opportunities more impactful?
6. Any further comments, questions?

Appendix V: Informed consent

Research topic: _____

I am _____ from the _____

The program/project is funded by _____

Purpose of the study: _____

Benefits to the respondent/discussant

Research findings will be shared with farmers through farmer trainings, farmers meetings or workshops. Field days will be carried out to highlight among others, farmers' positive contribution to mitigating the effects of climate change and successful adaptation.

Please note that this is a research project without any development or intervention component. We cannot offer you any long-term benefits based on today's discussion.

However, we will share our findings on this research with you. Research findings will also be used to lobby for more focus on adaptation in livestock farming for better interventions to support local land users in their efforts to adapt to climate change. Please note that this project has a years' time duration, so do not expect immediate results.

About the interview/group discussion

- You have been selected for this interview/group discussion based on criteria decided at the beginning of the study. Due to time constraints, we cannot talk to everyone, but we have to agree on a selected sample.
- This discussion should take approximately 1 hour. Your name will not be used in any reporting and the information, if used, will be kept anonymous.
- You are free to decide if you do not want to participate at any time. If you agree to participate, please tell us when a question is unclear to you.
- We would like to record this conversation so that we can ensure that we capture all the details, some may be lost during the notetaking.
- We will be asking you questions about your agricultural practices and the field day you have just participated in. Should you feel that any of the knowledge shared with us requires legal protection in terms of intellectual property rights, please do inform us so that we avoid processing this information in any public documents. *[needs appropriate explanation for relevant aspects for each community!]*

Privacy and confidentiality

The audio files, videos and notes will be considered confidential, and no one except the research team will have access to them. Once we have completed analyses of these materials, we will discard them through means that guarantee confidentiality. The reports generated from these data will also uphold discussants' confidentiality. The findings of this study will be shared appropriately through feedback sessions. Films, photographs, audio recordings or images of me (discussant/respondent) may be published on the organization's and on partner websites and remain there for an indefinite number of years.

Voluntary participation

Participating in survey is voluntary and choosing to withdraw will not affect you or your relationship with ILRI now and in the future. ILRI will not tell anyone about your objection to participate. You are free also not to answer any question that makes you uncomfortable. Giving my consent (discussant/ respondent) to the publication of these materials (Films, photographs, audio recordings or images of me) will not lead to me receiving any monies or gifts now or in the future unless specified by ILRI.

Approval of the research

Provision of a witness

For participants that are either illiterate or mentally incapacitated or physically handicapped, a witness may be provided.

Please indicate the type of informed consent

Photograph Videotape Audiotape

Data collected and entered on tablets/sheets

Contact details

For questions regarding this study, please contact any of the following

For questions regarding participation rights and welfare, please contact

Discussant's declaration: 'I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I had have been answered to my satisfaction. I consent voluntarily to participate in this study and understand that I have the right to withdraw from the discussion at any time with no consequences.'

Researcher's name _____ Signature _____ Date _____

Discussant/Respondent's name _____ Signature/thumbprint _____
Date _____

Witness' name _____ Signature/thumbprint _____
Date _____



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