



# Note 3: The role of demonstration in promoting innovation

Rob Burton, Boelie Elzen and Rita Moseng Sivertsvik

## Overview

Innovations in agriculture emerge from numerous different sources – from innovative farmers, experimental farms, scientific research organisations and private companies. As well as coming from different sources, the audience targeted by demonstrations is varied and has multiple different needs. How innovations are demonstrated to farmers is thus an important issue that guides the success of demonstration activities. In this information note we use the conceptual framework and the PLAID European case studies (D5.2) to look at how demonstration contributes to promoting new innovations. While Information Note 2 looked at the theory of learning from demonstration, this note focuses on how differences in the nature of the innovation affect its uptake.

## Key findings

- Demonstration can be “problem driven” (resolving an issue that may require multiple innovations) or “innovation driven” (promoting a new innovation).
- The source of the innovation affects both how it is likely to be viewed by farmers and the approach to demonstration.
- High readiness innovations appeal to the average farmer, but more innovative farmers may not adopt it as there is “nothing new about it”.
- Low readiness innovations will appeal more to innovative farmers who have the resources to experiment. For the average farmer, demonstration of low readiness innovations increases awareness but is less likely to lead to adoption.
- Demonstration of innovations to promote sustainable agriculture need to consider the whole farm, or even broader context such as the wider agri-food system.
- Because sustainability covers the whole farming system, demonstrations of sustainability innovations need to connect with farmers in a variety of situations and with a variety of motivations.
- Farmers generally do not immediately adopt the innovation demonstrated.
- When there is an urgent problem to be fixed (such as drought), however, innovation adoption can be rapid. Speed of adoption is thus dependent on the urgency with which the issue needs to be addressed.

# Introduction

In Information Note 2 we presented the theory behind learning by demonstration. But what happens when an organisation has an innovation it wishes to encourage the farming community to use? In this information note we use a combination of the conceptual framework and the PLAID European case studies (D5.2) to present an analysis of how demonstration contributes to promoting innovations. This covers the issues of the difference between “problem driven” and “innovation driven” demonstration, the importance of the source of the innovation for demonstration, the importance of the readiness of the innovation, problems associated with demonstrating sustainable agriculture as an innovation, and the timing of the uptake of the innovation.

## Innovation features that affect the demonstration approach

### **Problem driven or innovation driven demonstration?**

Motivations for holding a demonstration activity can be grouped into two general categories.

*“Problem driven”* demonstration occurs when specific problems with current farming practices have been identified and a solution is desired. In this case demonstration is intended to help farmers identify solutions to the problem but does not focus on any single innovation. Demonstration of activities designed to address environmental problems or strengthen rural communities often fall into this category.

*“Innovation driven”* demonstration shows novelties that might be of use to farmers, but, while improving agricultural practices, do not address any specific problem. Demonstrations driven by, for example, machinery or seed companies would generally fall into this category.

Although there appears to be a clear-cut difference between these categories, the difference is not always that obvious. All innovations address, to some extent, a “problem” – even though it may be relatively minor (e.g. offering a small improvement in productivity) and not recognised as a problem. In general, demonstration visitors need to both recognise a problem *and* believe that the potential innovation addresses it – as well as being able to assess the relevance to their own farm.

### **Where does the innovation come from?**

Innovations can come from a variety of different sources.

- Innovative farmers
- Experimental farms
- Scientific research
- Private companies

The source of the innovation has an impact on how it is likely to be viewed by the visiting farmers and thus the way the innovation is demonstrated.

In the case of farmer-based innovation, the barriers to innovation will be relatively low while “social congruence” (social similarities between the demonstrator and attending farmers – see Information Note

2) means that transferring information is relatively easy. Farmer innovators are expected to understand the practical considerations farmers will experience when adopting the innovation.

Innovations that emerge from outside of the farming community do not have these advantages. Scientific research innovations are often seen as complicated, untested, and overlooking the practical considerations that are important to farmers. In some cases – for example, environmental innovations in response to policy measures – they may be seen as not in the farmer’s best interests. In the case of commercial companies, a suspicion that the innovation is designed more to improve the profit margins of the company than those of the farmers may need to be overcome.

In many cases trust in the source is essential to the early uptake of the innovation. For scientific innovations, getting experienced farmers to demonstrate can assist by providing assurances that the practical considerations have been considered as well as providing social congruence for message transfer.

### How ready is the innovation to be adopted?

The extent to which the innovation is ready for application also influences the demonstration process. In many cases innovations need to be “fine-tuned” by being practically implemented and then adjusted as problems emerge. While it is desirable that this is done within the experimental and development stages, overlap can occur with the early implementation stages as early adopters identify practical problems and innovators seek to resolve them. Factors such as the level of upskilling farmers require and the farm adjustments that need to be made to make the innovation function in a practical setting are often only learned after the innovation has been implemented.

There is a difference between high and low readiness innovations in terms of who is likely to adopt and when:

*High readiness innovations:* If readiness is high the ‘average’ farmer may be more interested in the innovation (that has by now been thoroughly tested) whereas the more innovative farmers may be less willing to adopt as there is “nothing new about it” (as indicated in the Belgium case study – BE1). High readiness innovations tend to come from innovative farmers and commercial companies.

*Low readiness innovations:* If the readiness is low, the situation is reversed. Innovations in this state are more likely to be adopted by ‘innovative’ farmers who have the capacity to risk economic loss if the innovation fails, have the time to experiment, and see the innovation as presenting an interesting challenge. However, low readiness innovations can also be of interest to average farmers who wish to see possible future developments – even when not intending to adopt it immediately. In this case, demonstration can help to raise awareness and assist in possible future adoption – as occurred in the case of new leek harvesters in the early 2000s in the Netherlands case study (NL1). Innovations from experimental stations and research tend to fall into this category.

The readiness of the innovation can thus affect the types of farmers targeted in the demonstration as is illustrated in Table 1:

Readiness level	Average 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

**Table 1: Type of farmer targeted for innovations with ‘low’ and ‘high’ readiness levels**

## **Demonstrating sustainable agriculture as an innovation**

Demonstrating sustainable agriculture as an innovation is somewhat problematic. Sustainability is not something that is often targeted by single innovations – which tend to have a very narrow focus - but rather by a range of innovations aimed at economic (income), social, and environmental improvements. Thus, an innovation aimed to increase profitability could also increase sustainability, while focusing only on innovations for profitability could make the farming system ultimately less sustainable. Demonstrations of innovations to promote sustainable agriculture thus need to consider the whole farm, or even broader context such as the wider agro-food system.

Innovations are often implemented in order to meet sustainability objectives. In particular, farmers may need to innovate to mitigate the “side effects” of agricultural production. Examples include decreasing soil health as a result of monoculture, increased plant or animal diseases due to intensification, improving animal welfare to meet changing public expectations, the adoption of CO<sub>2</sub> mitigation measures, or the need to control nitrate release into water bodies.

These pressures to change are often difficult to address as farmers are embedded within a system where adopting a new innovation to address, for example, environmental sustainability could affect the economic sustainability of the farm. As each farmer is in a different position, to account for sustainability the demonstration activities need to attempt to connect with farmers in a variety of situations and with a variety of motivations. This could be done in a variety of ways including:

- Offering a range of demonstration activities that may appeal to different subgroups of farmers.
- Interacting with farmers at the demo to better connect the information that is provided with what individual farmers need.
- Offering information that is relevant for a range of farmers, for example relevant market or political developments.

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

## When will the innovation be adopted?

In many cases a demonstration does little more in the short term than increase awareness. When farmers in the PLAID study were asked whether they were considering changing their practices after visiting the demonstration, a substantial number answered 'yes' (in cases in Switzerland, Belgium and Latvia (CH2, BE3, LAV2) 50% or more). However, when asked to specify what it was they would change, only a few were able to do so. Focus groups held one to two months later indicated that farmers were still thinking of making changes and had looked further into their options but had not taken any action. This suggests that the link between innovation adoption and demonstration activities is relatively diffuse. Farmers do not, in general, make immediate changes after attending a demonstration – even when the topic is of interest to them – but rather use it as part of a broader information gathering and testing process.

However, in some cases, significant changes in the farmer's situation can lead to more rapid implementation of innovations – in particular, when the demonstration is problem driven and the problem requires urgent attention. In a Croatian case, the accumulative effect of a succession of droughts on yields (and consequently on revenues), sped up the decision to apply the new drought-resistant varieties of wheat and barley that were presented at the demonstration event (CRO1).

## Conclusion

The type of approach used to demonstrate new innovations depends on whether the demonstration is driven by the innovation or by a problem that needs to be solved, the source of the innovation (innovative farmers, experimental farms, scientific research, or private companies), and how ready the innovation is to be adopted. Special consideration also needs to be taken of how to demonstrate sustainability innovations. It should not be expected when demonstrations are innovation based that there will be any immediate adoption of the innovation as farmers often use demonstration as part of a broader information gathering process.