

Transfarm4.0

FOCUS GROUPS WITH FARM ASSOCIATIONS & EIP OPERATIONAL GROUPS - AUSTRIA

D.T1.3.3: HBLFA FJ

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A. Introduction

The aim of this task is to interview representatives of farms associations and EIP operational groups and learn how tech trajectories of PF are influencing them and how they could be led to catch the industry and farmers needing.

The Focus group was held online on April 08 2021, from 10:00 to 11:30.

Participants:

- Ing. Mathias Brunner (MR NÖ)
- Lukas Handl (EIP GIS-ELA)
- Ing. Stefan Polly (LK NÖ)
- DI Christian Rechberger (HBLFA FJ-BLT)
- Helmut Steinkellner (HBLFA FJ-JR)
- DI Reinhard Streimelweger LL.M. (HBLFA FJ-JR)

B. Organisations

1.1. Farmers Associations/Organisations to be contacted

1.1.1. Agricultural Chamber of Lower Austria

Landwirtschaftskammer NÖ, abbreviated LK NÖ, (<https://noe.lko.at/>) is the legal representation of farmers in Lower Austria. This institution provides farmers with information, consulting and all kinds of events.

Excerpt of the range of offers to make digitisation useful for farmers from LK NL side¹:

- LK drone deployment
- To better communicate the topic of "cattle handling and animal welfare", for example with the "Echemer Kuhbrille", virtual reality goggles
- Lane planning for steering systems
- More:
 - "COWS & MORE" digital vulnerability analysis for dairy cattle barns
 - App list for farmers and foresters - listing of useful apps on the website of the LK noe.lko.at
 - Digital information channels - Whatsapp, lk-warning service, crop production newsletter
 - Digital learning - online courses, webinars and farminars are continuously expanded
 - Specific educational events

1.1.2. Machinery Ring in Lower Austria

Maschinenring NÖ, abbreviated MR NÖ, (<https://www.maschinenring.at/>) is an association that includes agricultural entities which jointly use agricultural and forest machines, and that arranges for agricultural manpower when needed. MR NÖ already operates PF machinery services (<https://www.maschinenring.at/leistungen/agrar>), for example:

- MR provides a "Real Time Kinematic" (RTK)-Signal for exact driving
- MR Nutrient Management

¹ Source: Polly S.: Digitalisierungsoffensive: Drohne, Kuhbrille & Lenksystem, in: lk online (<https://noe.lko.at/digitalisierungsoffensive-drohne-kuhbrille-lenksystem+2500+3021290>), abgerufen am 13.04.2021.

1.2. Relevant EIP-Agri Operational Group

Title	Geographic Information Systems for Site-Specific Management Aimed at Increasing Efficiency and Greening in Austrian Agriculture
Geographical location	Austria
Keywords	Agricultural production system Farming practice Farming equipment and machinery Plant production and horticulture Fertilisation and nutrients management Soil management / functionality
Starting – End date	2018 – 2020
Main funding source	Rural development 2014-2020 for Operational Groups (in the sense of Art 56 of Reg.1305/2013)
Description	Essential steps of the project are: (1) Examination of the available GIS software for their suitability regarding the requirements for systems and imports of data from various sources, (2) generation of yield potential and application maps by means of various methods with priority on the automation of the generation of maps and the simple easy operability, (3) transfer of the maps on the working tools and development and/or testing of the use of the maps, and (4) documentation, publication and spreading of project results and experiences.
Contact person	Lukas Handl, Josephinum Research Rottenhauser Straße 1, 3250 Wiesenburg, Austria https://gis-ela.josephinum.at/ https://www.josephinum.at/forschung-und-pruefung/agrartechnik/projekte/gis-ela.html

C. Results

1.3. General

We planned for the Transform focus group in Austria the following question and structure.

TOPIC: Technological requirements and developments in the field of precision farming.

Aim: What is needed in the field of PF? How to improve technology transfer from research and industry to the user (farmer)?

There were two central questions:

Question 1: What requirements do the users/farmers/associations have for the agricultural machinery industry in the area of precision farming? What is offered itself?

Question 2: What initiatives/desires are made by the participant's organisation itself and for the agricultural machinery industry in the area of precision farming applications? How can a technology transfer from research via industry to the farmer succeed better?

Structure Focus Group: Online, Participants: 4-7 persons-Duration: 90 min, Invited organisations: farm associations, EIP Agri Group member, and machinery ring (Service provider in the agricultural sector)

Question number 1 allows to define the needs/requirements from the groups associations and understand what emerged from their work.

Question number 2 collects their request/desires on the next steps of PF development and uptake.

1.4. Examples of existing initiatives (e.g. results from EIP-Agri-Projects)

1.4.1. Agricultural Chamber of Lower Austria

A problem the Agricultural Chamber (LK NÖ) hear often is, that farmers think that Precision Farming (PF) systems are not profitable. Or the farmers at least cannot see the advantage. So to encourage farmers to operate PF systems, it would be necessary to get publications of independent organizations, which show the amount of money a farmer can save by using PF. Because the Chamber is an organization that also provides help for farmers, they know of the troubles a PF system can cause. A big problem is, that there are systems which are not compatible. So most of the time it is the format of the data which is used. Even if this data is in an ISO certified form. So the farmers have to call the support-service of the machine, which does not work. The support is able to help them by converting the data in a format, the machine was able to use. A key initiative on the part of the Chamber is the focus on drones and showing what this technology can do, and farmers can try it out.

1.4.2. Machinery Ring in Lower Austria

The Machinery Ring (MR NÖ) as an association that provides a long list of services. According to them, the most important service is the RTK correction signal they provide. The MR also offers a “Smart-Antenna” which is used in land surveying. In Styria, the Machinery Ring supply sensors for the soil which is still in an early stage. Another service is the creation of application maps. The contractor mentioned that precision farming has quite a chance on the Austrian market, but there are still some problems that must be solved first. They mentioned three massive problems.

1. Price

First of all, they mentioned that the price (especially the initial investment) of some PF systems is too high. The suggestion of the contractor was that if there is a furtherance which supports the farmer investing in the technology would lead to an increased demand. The creation of a cooperation between farmers would help to divide the costs between the farmers.

2. Compatibility

Another big problem is the compatibility of the systems used. Their experience shows them that sometimes, one part of the machinery combination does not cooperate with the rest. So if one of them fails, the whole machine doesn't work. They had the most problems with the connection of the terminal, FMIS or the machine (sowing machine or fertilizer spreader). This leads to the next problem.

3. After sale support

The last major problem they mentioned was with farmers who already invested in the technique but had problems in operation this technique. The machinery vendor showed the technique only once to the farmer, when he bought it, and that is far too little. Precision Farming is a complicated issue, which you cannot learn in this one lesson in a few hours. So the Machinery Ring says, if the After-Sale consultation would be better, more farmer would choose precision farming technique. The best way to do that is with videos, which shows in short, how the technique operates and which advantages the farmer has from it.

1.4.3. EIP operational Group “GIS-ELA”

The GIS-ELA project assumes that the PF application must be easy to use for the farmer. Therefore, the application is provided via an app, which is free of charge and easy to use via smartphone or tablet. Researching close to the practical use of satellite-data, EIP thinks that Europe is already on the right way and that there is already positive feedback. But there are still some problems. EIP had some serious troubles in the beginning of using different technologies and they were able to solve them. For example: The problem with one of their devices was that the technics (hardware) for PF was purchased and also cooperating with each other, but the farmer had not bought all of the software. So he had to buy two more activations, which both costs about 1000€. So this was the point, when the use of the PF system in general became difficult. Another issue is the way of getting the right application map for the

fertilization. So the question is if the farmer should do it himself which is laborious and demands a lot of knowledge or shall the farmer buy it from a contractor? Each way has its advantages and disadvantages but they have the same problem. Is the data trustworthy? Many farmers have doubts if this maps show the right data and if the pros cover the cons of the system. The answer of EIP was that the PF systems are likely an air-conditioner. The user can not always see its benefit but it assists the farmer doing his job.

1.5. Innovation needs/requests for precision farming in the future

Requests/wishes on the next steps of PF development and uptake:

1. The most important step would be to lower the price of the technique. Either by supporting the farmers directly by the purchase of it or support the creation of machinery cooperation's.
2. The industry must make sure that all of the useable components can operate with each other. Even the software should work on every hardware-combinations. Therefore, there is a requirement that there is a register showing the compatibility between the machine, the attachment and the FMIS. There should be a uniform data format for the most essential data.
3. Assure that the farmer finds help when he needs it. Especially in the beginning. After the purchase the farmer should have a manual and a telephone number which he can call if there are any problems. Another good way would be the former mentioned videos because the farmer can watch someone doing it and also listen to the explanation of this person. This would not only have to be provided by the industry, but could also be done by so-called influencers.
4. Education, training and advertising is an important item in making PF popular. The most important media will be the internet because the people buying PF systems are technique affine and will prefer this. But also farmer journals are important. Independent (research) organizations should make experiments and publish the results and especially the utility. Research must emphasize the benefits. It will not be wise to let the technic-industry do that, because there is from farmer side a certain disbelief in their releases. A best practice example is the Project "Innovation Farm" (innovationfarm.at), where independent research bodies show through "use cases" the different systems are shown and compared.
5. The monetary benefit must be there for the farmer, but there should be a focus also on the farmer experiencing more practical implementation with new PF technology. The farmer should experience the benefits more in a tangible way. In addition to the monetary benefits, non-monetary factors can so also be seen, felted and therefore identified, from the farmer on the machine or spot. For example, steering systems are seen as the first step towards PF for many farmers, and are not only purchased because of the monetary benefit.