

## AUSTRIA

Increasing efficiency  
in energy use in  
agriculture and food  
processing

### Location

Wieselburg

### Programming period

2014 – 2020

### Priority

P5 – Resource-efficient,  
Climate-resilient Economy

### Measure

M1 – Knowledge transfer &  
information actions

### Funding (EUR)

Total budget 525 180.30  
EAFRD 240 643.55  
National/Regional 234 518.56  
Private 50 018.19

### Project duration

2018 – 2020

### Project promoter

Chamber of Agriculture  
Lower-Austria (LKNÖ) and 8  
pilot farms from 4 provinces

### Contact

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### Website

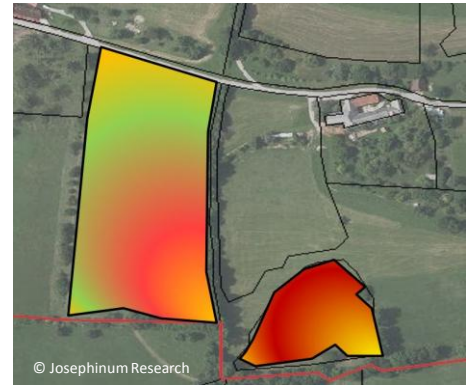
<http://gis-ela.josephinum.at/>

**Precision farming has great economic and environmental potentials and a project was set up to promote its use in the Austrian context.**

## Summary

Only 6% of the Austrian farmers are using data and GNSS/GPS-based precision farming, which is very popular across the world. Therefore the economic and environmental benefits of precision farming are not being exploited.

The project “GIS-ELA” will evaluate the potentials of precision farming technologies for Austria and promote its use.



## Results

Testing of the technical equipment on the pilot farms as a reference for Austrian farmers.

## Lessons & Recommendations

- ❑ The pilot farms employ a surprisingly large range of technical equipment and it emerged that high technical equipment does not correlate to the size of the farm.
- ❑ None of the eight farms had used application maps before, but two of them are using precision farming based on GPS-steering.
- ❑ One of the biggest challenges is how to integrate all the different data sources to create an application map. Many factors influence the growth of crops, such as the weather conditions, time of fertilisation or soil condensations.

## Context

While the uptake of precision farming is increasing globally, in Austria currently only 6% of farmers use such technologies. Application maps can be used to fertilise crops to the degree determined by the yield potential and growth status of the crops. The use of precision farming technologies has considerable economic and ecological potential since resources (e.g. fertilisers, pesticides and fuel) can be used more efficiently and thus environmental impacts can be reduced.

However, precision agriculture is initially costly as equipment must be purchased and farmers often lack the ICT know-how, especially in small or family-run farms.

## Objectives

Overall, the project GIS-ELA aimed to strengthen the use of such technologies in Austrian agriculture. Specific operational objectives were to:

- Assist farmers with the creation and use of application maps;
- Compare ways to create maps;
- Create free software for the use maps with low technical equipment in close cooperation with the pilot farms; and
- Outline the potential of precision farming technologies.

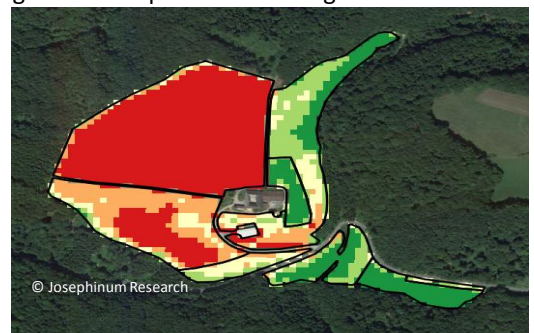
## Activities

The main steps of the project:

- Evaluation of the suitability of available GIS software in terms of system requirements and the integration of data from various sources in the Austrian context. A range of data sources will be collected from universities, institutions, authorities and services, and combined to provide solutions for farmers. However, small-scale farms in Austria have different requirements to large farms in the USA and suitable systems need to be identified.
- Generation of data for crops and application maps using various methods; satellite data, drone recordings, soil samplings etc. are used as data sources to create precision farming maps. Different methods are used on pilot farms to create these maps and will

be compared to identify the most suitable method. At first, the generation of maps through this process will be done manually but the process will be automated during the final phases of the project.

- Development of software to use the maps. The created maps will be tested on 'high-tech' farms. However, a simple software solution should be created for farms with low technical equipment. The use of these systems will be compared on the pilot farms.
- Documentation, publication and dissemination of the project's results and practical experience reports. All the experiences of the project will be published on a website. Trainings and seminars will help the farmers to get to know precision farming solutions.



## Main Results

- Testing of the technical equipment on the pilot farms as a reference for Austrian farmers.

## Key lessons

The pilot farms use a surprisingly large range of technical equipment, and it emerged that high technical equipment does not correlate to the size of the farm.

None of the eight farms had used application maps before but two of them are using precision farming based on GPS-steering.

One of the biggest challenges is how to integrate different data sources to create an application map. Many factors influence the growth of crops such as the weather conditions, time of fertilisation or soil condensations.

## Additional sources of information

[www.josephinum.at/fileadmin/content/BLT/3\\_Forschung/Projekte/GIS-ELA\\_EN.pdf](http://www.josephinum.at/fileadmin/content/BLT/3_Forschung/Projekte/GIS-ELA_EN.pdf)