# IPM adoption in my hub

## *Facilitation approach and progress made in IPM adoption*

# My group

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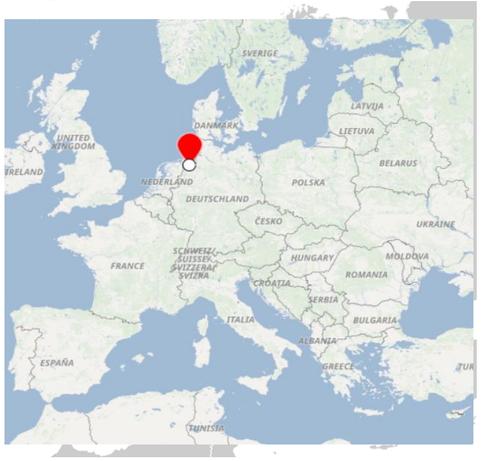
## PRESENTATION OF THE CENTRE FOR GRASSLAND Lower Saxony/Bremen e.V. (GLZ)

The GLZ develops innovative concepts for sustainable agriculture on grassland. The GLZ specialises in the creation of partnerships for knowledge-transfer and creation of networks. Co-design is a key-element, and strategies are developed in dialogue with involved actors. The focus is on jointly developed solutions and innovations that take economic, ecological and social aspects into account.

## THE HUB

Our farm network consists of a total of 10 grassland farms that also practise arable farming. They are located in East Frisia, a coastal region in north-west Germany characterised by peat- and marshland. In addition to the cultivated permanent grasslands and dairy farming, the farms also grow fodder. With regard to integrated pest management, the focus is on mechanical weed control and preventative PPPs.




## OBJECRIVES AND MOTIVATION OF THE FARMERS

Our farmers are very open to new technical and ecological developments and field-experiments. This includes both mechanical methods, such as rotary hoes or strip-till, and innovative spot spray technology for targeted weed control, as well as interactive, weather-based forecasting models for predicting pests and periods of high infestation pressure.
Knowledge generation in relation to IPM also plays a major role, for example in groundwater protection areas. In East Frisia, where sea, marsh and geest meet, groundwater-friendly agriculture is important in order to maintain good groundwater quality. This also applies to information about PPPs and their degradation products in groundwater.

## DRIVERS

At European, national and local level, there are constant adjustments and innovations in the area of PPPs. The farmers involved are very interested in the current political framework conditions.
Another driver is that sustainable management and, thus, the preservation of agricultural land for future generations is strongly rooted in the farmers' tradition and identification.

## BARRIERS

Innovations or associated changes are often associated with high (cost) expenditures. In addition, the current political situation in the agricultural sector is causing a great deal of uncertainty, which is also reflected in current farmer-protests.

It is, therefore, not the willingness to change that is an obstacle, but rather the uncertainty associated with operational decisions.

# IPM challenges and results

## IPM challenges

### What were the main IPM challenges?

Compared to arable farming, only small quantities of PPPs are applied to permanent grassland, if at all. However, certain weeds, such as rumex, pose challenges for farmers. Suitable technical innovations are becoming more and more effective, but are also associated with acquisition costs.

## The hub´s results

### What progress has the hub made on these challenges?

The practical testing of innovative techniques, in particular with regard to individual plant detection (spot spray or remote sensing), increased knowledge generation within the group. Demonstrating in the field that a small amount of PPP achieves good results helps convey the economic and ecological added value.

### What issues need to be addressed?

Permanent grassland can suffer from rust and wireworm infestation. There is a lack of suitable biological agents for this.
There is also scepticism towards new and autonomous technologies.

### How are the hub farmers going to proceed?

The coordination of the farm network by GLZ ends at the end of the project. However, the network will be incorporated into a cross-regional farm-network in which events will continue to take place and knowledge exchange will be offered in open formats (such as FarmDemos).

## Key onclusions

**The contribution of "soft skills" to the hub and issue management**

The farm demos in particular offered discussion and training platforms. Here, peer-to-peer learning has been applied.

The invited experts were able to communicate even complicated issues in an understandable way. The simultaneous practical presentations of new technologies increased the learning effect.

The network was able to show the participating farms that even though they operate in different locations, they face very similar challenges.

This connects to the potential that was communicated to the farmers as part of this project. They have also encouraged each other to test innovations.

# Facilitation approaches

## Participation formats - realisation of events

### What is the issue the hub work on more precisely?

Timing of events over the course of the year (vegetation period, weather, and own operational schedule)
Organising events in line with the target group when innovations are presented.

### How did you proceed? What did you do?

In direct dialogue with the network, efforts were always made to reach as many actors as possible - including those outside the network. Online events were recorded and are publicly accessible. Scientific input was kept to a minimum.

### What conclusions can you draw?

Farmers have a big interest in large machines that can serve as an incentive to take part in an event.
A balance between technical and practical content is a prerequisite for keeping the network motivated.

### My tips for making it work

Start the online event with a teaser.
Live-surveys (mentimeter) and similar activating formats are also beneficial.
You can't expect appointments to be confirmed for the long term.




## Individual facilitation

Farmers were advised on the following measures:
- Spot spray techniques
- Use of remote sensing
- Challenges in agricultural groundwater protection
- Seed mixtures and biodiversity
- Flower strips
- Funding opportunities

## Collective facilitation

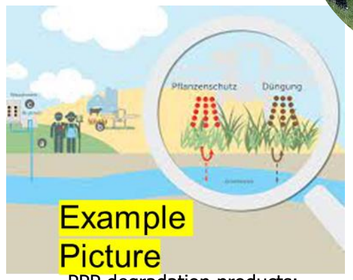
Joint consultation was carried out at major events and in online formats. There is also a WhatsApp and e-mail group in which relevant information is shared.

# IPM adoption & pesticide use

Mechanical weed control: hoe with camera control and GPS-supported section control and intensive harrow


Precise application: spot spray technique


Drones and AI for sustainable grassland farming




PPP degradation products: Agricultural groundwater protection advice

> Some of the results were surprising. More precise weed control with pinpoint application techniques enables the amount of herbicide to be reduced by around 70%. IPMWORKS has familiarised us with innovations and encouraged us to continue on our chosen path.

> Some innovations have already been trialled by the farmers and were presented to the network in a very practical way. The sharing of challenges and requirements led to a lively exchange and goal-oriented discussion of potentials.

**Dr Leena Karrasch**


Clover-grass stands have a positive effect against rust in permanent grassland


Biodiversity in grassland increases resilience

**A European network of demonstration farms promoting low pesticide use and economically efficient management strategies**

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