

The network was established in 2023 with funds from the Nordic joint committee for Agricultural and Food research.

Through our network activities we aim to initiate co-operation across the Nordic countries resulting in joint development of methods, planning, execution, and statistical analysis with focus on field trials.

The activities in the network are coordinated in a collaboration between the [Danish Technological Institute](#), [SLU field](#) research from Sweden, [NIBIO](#) from Norway and [SEGES](#) Innovation also from Denmark

Program

- Introduction to the topic
- Interactive mapping
- Presentations
 - Jon Pedersen (SEGES)
 - Kenneth Sørensen (AGROLAB AS)
 - Rasmus Lund Hjortshøj (Sejet Plantbreeding) and Alex Lenkoski (Norsk Regnesentral)
 - Andris Lapans (AREI)
 - Morten Nygaard (TS Agro)
- Summary and input from the participants
- Interactive Brainsorming: future of trials, technologies and cooperation



Welcome to the Nordic Field Trial Network (NFTN)



SEGES
INNOVATION

solvi



AREI

Agrolab
RESULTS THROUGH KNOWLEDGE

Sejet
planteforædling

Jordbruksverket

NR



Hushållnings
sällskapet



LAAPC

SLU

Luke
NATURAL RESOURCES
INSTITUTE FINLAND

SEGES
INNOVATION



NIBIO

vkst



TS Agro
www.tsagro.dk

Agrolab A/S

Danish Technological Institute (DTI)

Hushållningssällskapet

Institute of agricultural resources and economics (AREI)

Jordbruksverket

Latvian Plant Protection Research Centre (LAAPC)

Linnaeus University

Natural Resources Institute Finland (LUKE)

Norwegian Computing Center (NR)

Norwegian Institute of Bioeconomy Research (NIBIO)

Seges Innovation

Sejet Plantbreeding

SIA AgroLab Baltics

Solvi

Swedish University of Agricultural Sciences (SLU)

TS Agro

VKST

Aarhus University

SEGES
INNOVATION

Value creation of cross border co-operation for field trial experiments

- Which areas gain from field trial experimental results?



Decision making
for farmers



Digitization and
precision farming



Development of
machinery and robotics



Plant breeding and
variety adaptation

SEGES
INNOVATION

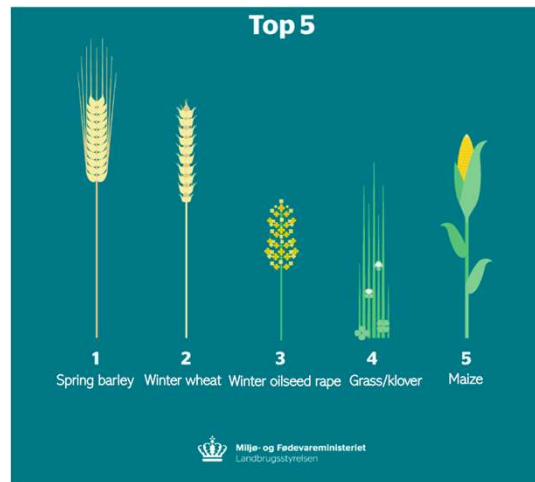
In the light of globalisation as well as global climatic changes field trial experiments and the resulting datasets can be used in several different fields. This is of course agriculture itself, where the farmer in the field will base certain decisions on results from field testing, but also included is technological development of machines and robots, digitisation and precision agriculture, plant breeding and adaptation of varieties, to just name some, but also for example climate modelling that can use the data as a foundation.

Funding of major crops vs. minor crops



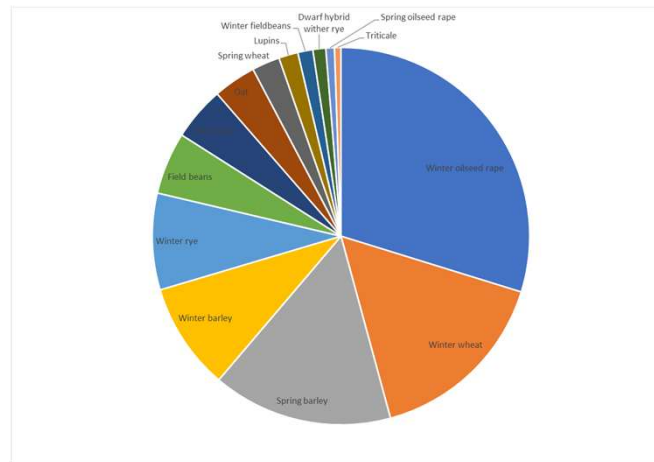
We can see that there is great interest and funding (which can go hand in hand) for major crops. However, looking at climate models today, these crops might not be the major crops of tomorrow, or at least some of today's minor crops will significantly increase in importance. Therefore, field trial tests also on minor crops will increase in importance. And that's where often the challenge lies. Projects wanting to investigate for example cultivation methods, or the adaptation potential of different varieties of crops and different crops not grown on large areas today might often experience a setback when it comes to funding from public funds as well as funding from the industry.

Most cultivated crops in Denmark in 2023



In 2023 the top 5 crops with the highest cultivation area in Denmark were spring barley, winter wheat, winter oilseed rape, grass/clover mix and maize.

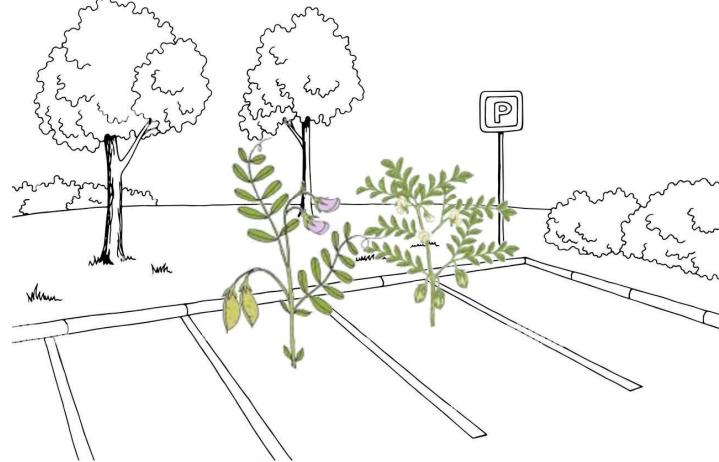
Varieties tested in Danish variety trials in 2023



SEGES
INNOVATION

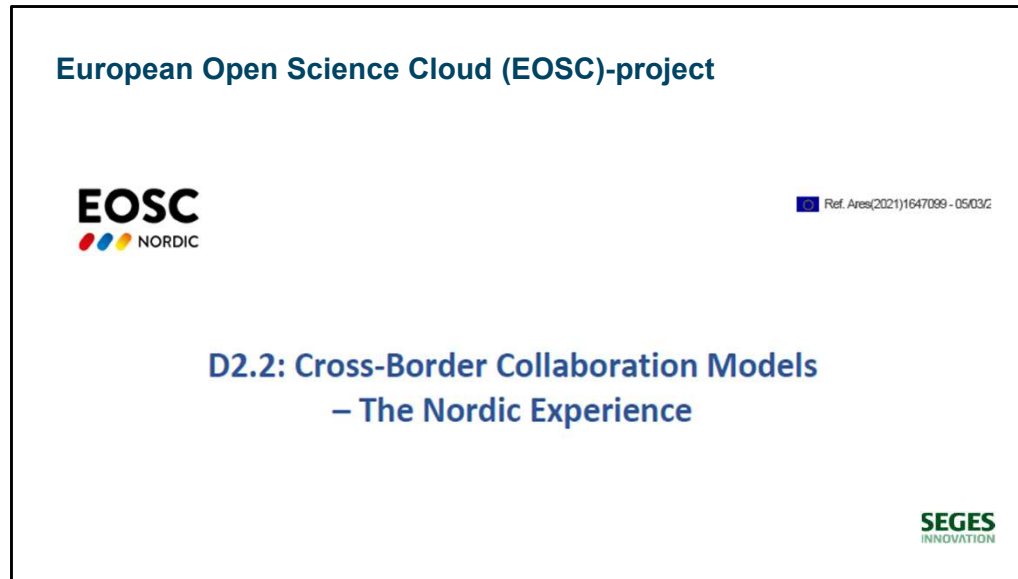
interestingly this is actually mirrored in the number of varieties we have registered in our variety trials here in Seges Innovation in that year with most varieties tested within Oilseed rape, spring barley and winter wheat.

Can cross-border cooperation overcome challenges faced by these smaller research projects?



This might leave crops like chickpeas or lentils in the waiting lane, even though we have a focus on increasing production of protein crops in the Nordic countries also for human consumption. But at the current moment it can be challenging for research and field testing to achieve sufficient project funding.

So therefore, the question: can cross-border cooperation overcome challenges faced by these smaller research projects?



This Report from the EU funded European Open Science Cloud; short EOSC-project (which ended in 2022) was looking at “cross border collaboration models” in the Nordics where they looked at different project set-ups to find out why some project work out good and others don’t.

I have only picked out two points I found most interesting and relevant in this context, but I will link to the report in this meeting if you are interested in more.

First the **resource sharing**, meaning the concept of co-operation and sharing of human, financial and material resources, with other organisations. This can take many forms, for example sharing of research data, sharing of expertise, costly

instruments, or unique infrastructure. Though it seems like shared finances is mostly avoided, at least in the project they used in the report to compare different concepts. For our field I assume the challenge might be that national funds usually don't allow for example field trials in other countries.

So, the other point I looked at was cross border funding possibilities, which also can be seen as a specialized version of resource sharing, though here my personal impression is that this might be avoided due to not wanting to end in dependencies where a foreign institution is deciding what your financial resources are used for. Additionally, those funds that allow for cross-border funding often come with a good administrative load which can easily scare off smaller projects.



Looking specifically in the field trial section most of us are working with, we also can have the challenge of uniformity when it comes to cultivation standards, assessments, statistical methods, and so on.

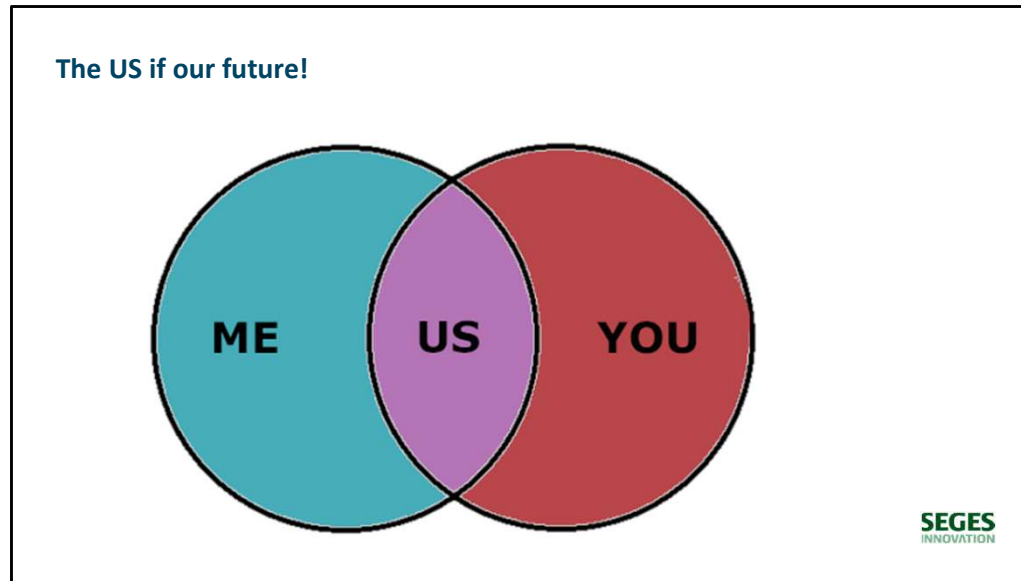
Not only between countries there are differences but already between companies and organisations within a country.

So is it necessary for collaboration to align? Do we really need to do things the same way?

Whin in GEP trials across Europe the EPPO standards are used to ensure

compatibility across organisations and countries.

In Seges we have developed guidelines for assessments that need to be followed in our national trials (Landsforsøg) where also different organisations are involved.

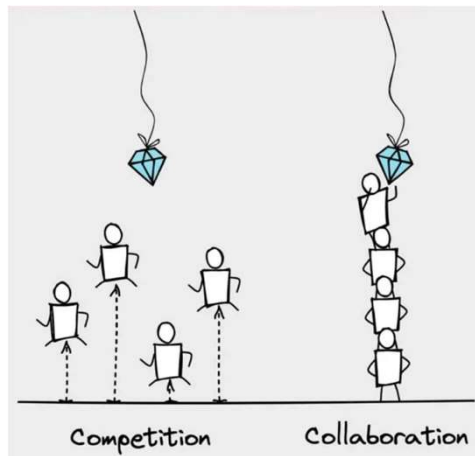


There are advantages if everything is conducted in a similar or at least comparable manor. But we do also need to acknowledge that these differences might reflect the regional differences and therefore, if you so will, are a necessary evil.

This doesn't have to mean that cross-border collaboration is worthless as long as we find the value in the overlap.

The US if our future. This is where we develop new methods and technologies that allow us to continue conducting field trials at an acceptable price level.

Is competition stopping us from sharing?



SEGES
INNOVATION

Is competition often stopping us from collaborating and sharing?

Just looking at many of the drone project going on at different universities, but also at Seges Innovation, many of them might use slightly different methods but share the goal. So why don't we see more collaboration in that area?

Interactive mapping

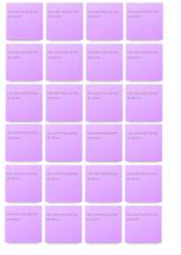



Which field are you working with or what topic is most interesting for you in the cooperation context ?

SEGES
INNOVATION

The question I would like you to answer is: which field you are working with (for example practical field trial testing, drone imagery, plant breeding, try to be a little specific) and/or which topic is most interesting for you in the cooperation context, thinking of the concepts of sharing of resources but also knowledge exchange, development of technology, methods



Interactive Brainstorming: future of trials, technologies and cooperation

Which trial types need to be developed?	Do we need streamlining of assessments? if yes, which are most important?	Which technologies and machines could shape future trials?	Areas where collaboration seems easy	Areas where collaboration seems difficult
				

SEGES
INNOVATION

The goal with this is to brainstorm ideas that can lead to possible collaboration project in whatever form.