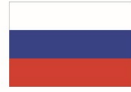




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STØTTET AF

# Promilleafgiftsfonden for landbrug

## W2 Waterdrive

### Water driven rural development in the Baltic Sea Region

Collective start-up meetings in Denmark and supportive interactive digital solutions

Sebastian Piet Zacho, SEGES, Denmark  
L&F - SEGES

Online meeting 10. November

# Today's agenda



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- 1) Background – implementation of environmental measures and land consolidation in DK
- 2) Working with a catchment based approach
- 3) Supportive interactive digital solutions

# Background



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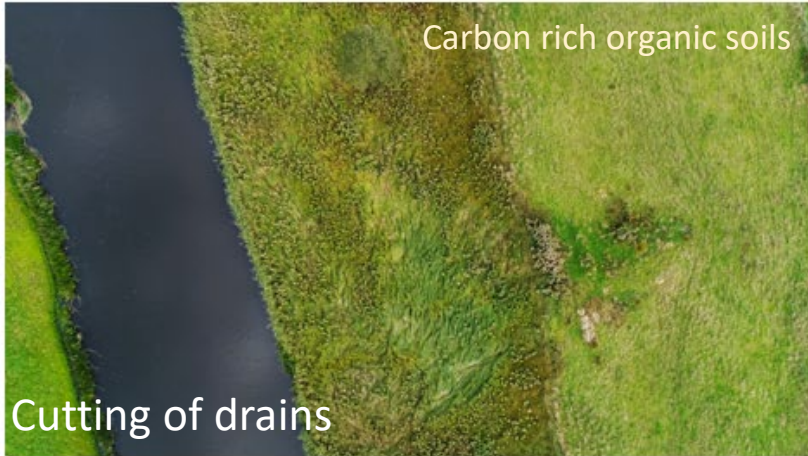
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DK have just recently launched two major aims targeting green house gas emission and reduction of nitrogen loads to coastal areas by:

1. Set-aside of 100.000 hectares of carbon rich lowland areas (peat soils)
2. Reduction of nitrogen loads with 1.500 tonnes by implementing collective measures (constructed wetlands, forestation and restored wetlands)

Compensated set-aside and free land consolidation are the main drivers for achieving these goals

# Collective measures examples



# The traditional Danish process



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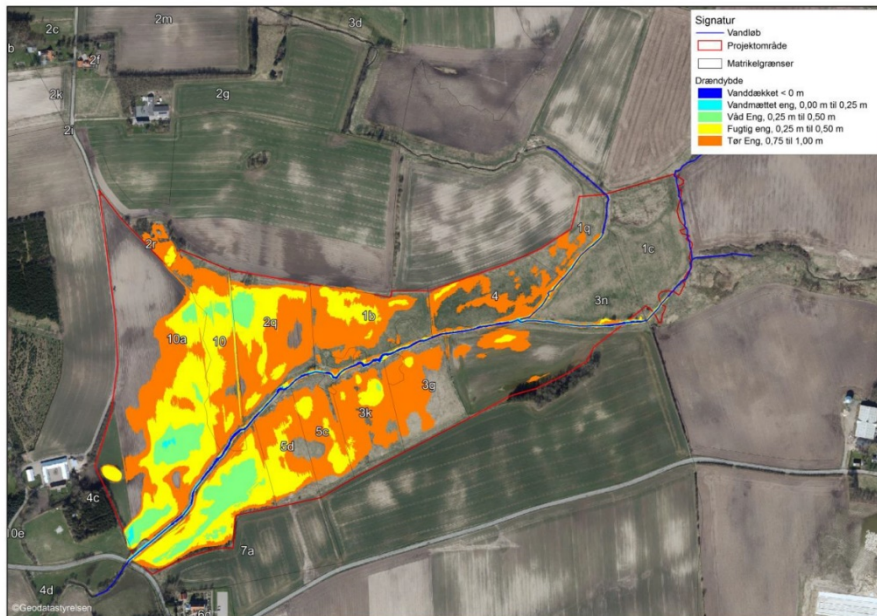
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## Restored wetlands & land consolidation

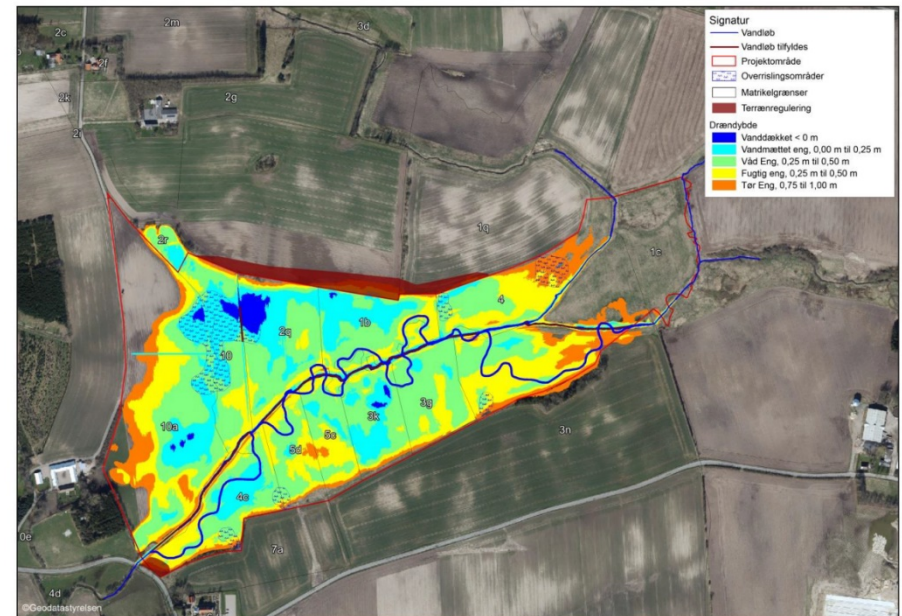
# All wetlands types

1. Property study – what do each farmer wants? Sell, buy, have new land or sell and buy back. The Danish state can also own the land if no one want to buy the new nature.

2. A technical study. Water level before and after, nitrogen-, phosphorous and climate effect



Water level before



Water level after

# What value does your land have?



Land consolidation  
meeting in the field  
with valuator

# Land consolidation – landvalue map



**Miljø- og  
Fødevarerministeriet**  
NaturErhvervstyrelsen

## VURDERINGSKORT

Aborg Minde

På dette kort er påført de ombyttningsværdier, der af vurderingsmændene Kons. Henrik S. Larsen og Kons. Kristian Eg Gaagegaard blev fastsat 27. juni 2016.

(med takst 100 for den bedste jord)

Loddernes takster er i øvrigt fastsat under hensyntagen til:

- 1 Kulturtilstand, 2 form, 3 vejforhold, 4 afvandsingsforhold,
- 5 overfladeform og overfladebæklining, 6 læspæntning,
- 7 el-master og vindmøller, 8 foreliggende oplysninger om forekomst af flyvehavre samt 9 foreliggende oplysninger om forekomst af okker. Endvidere er der taget hensyn til EU-tilskudenes påvirkning af handelsværdierne.

Opmærksomheden henledes udtrykkelig på, at der ikke er taget hensyn til beliggenhed i forhold til ejendommens bygninger eller landsbybebyggelse.

Vissenbjerg, den

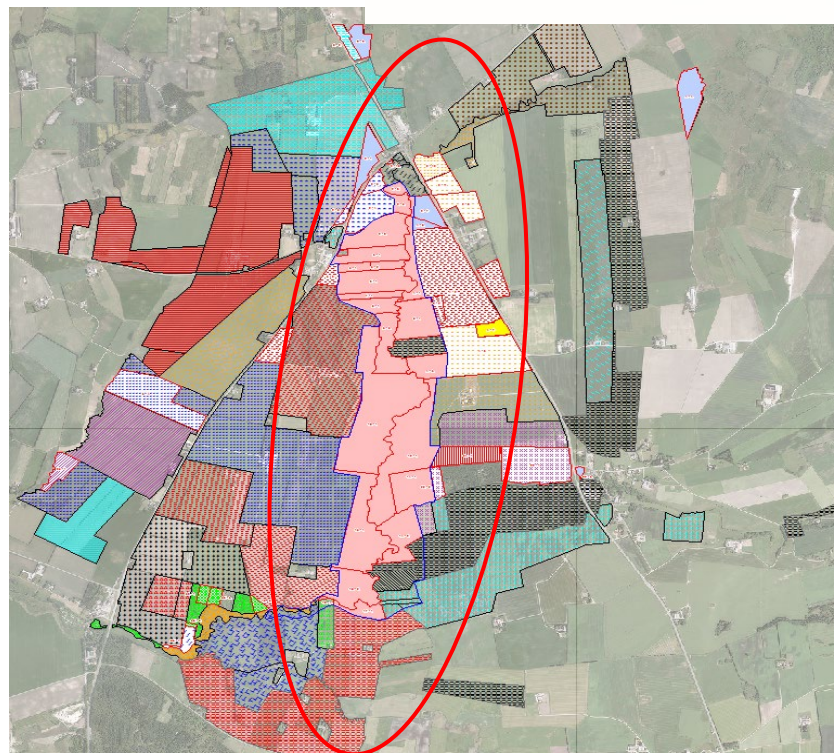
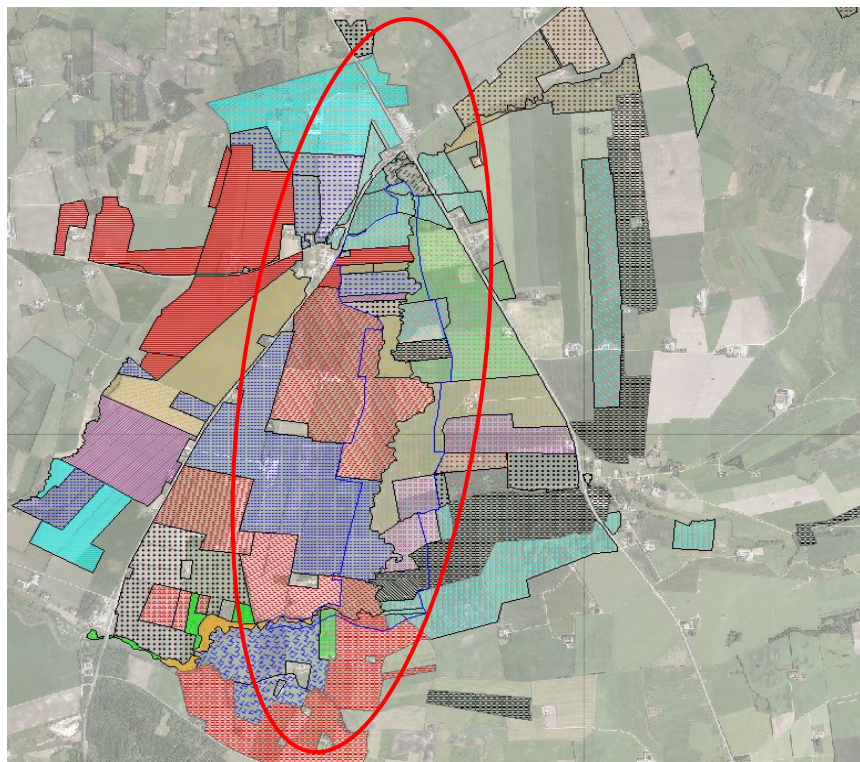
Tønder, den

Henrik S. Larsen

Kristian Eg Gaagegaard



# Before and after (long time!)

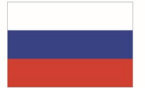


Wetland & re-meandering of the stream

# Catchment based approach



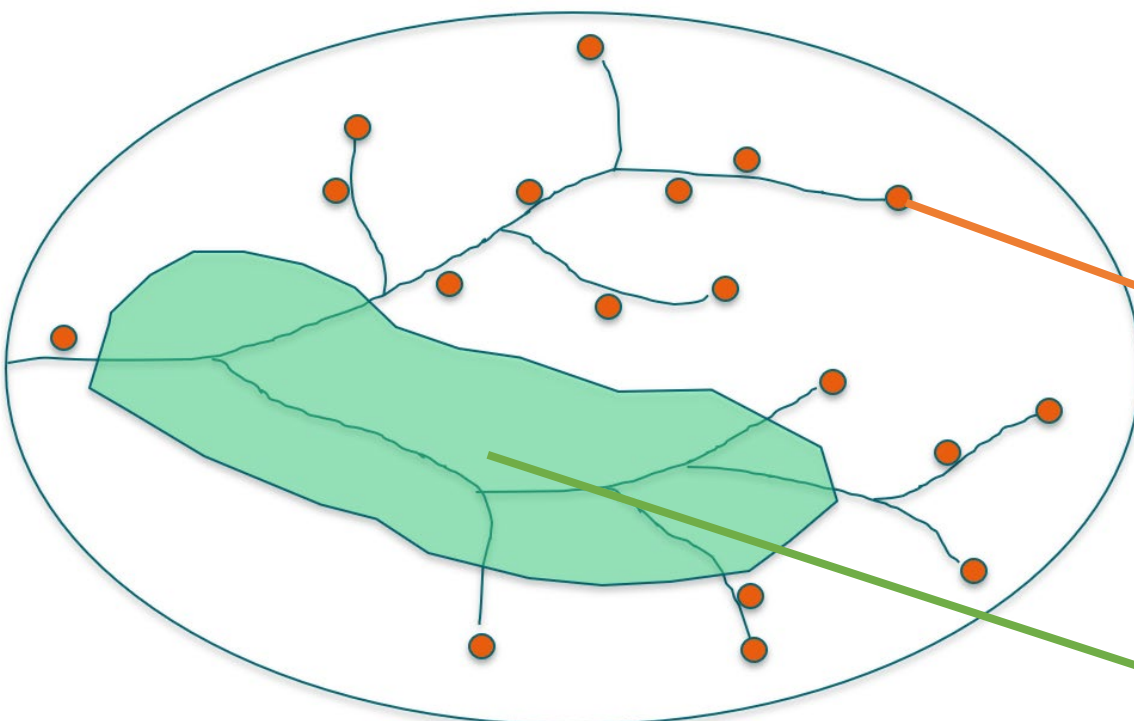
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## Restored wetlands & land consolidation and other environmental measures

# Catchment Plan




## Constructed wetland




## Wetland

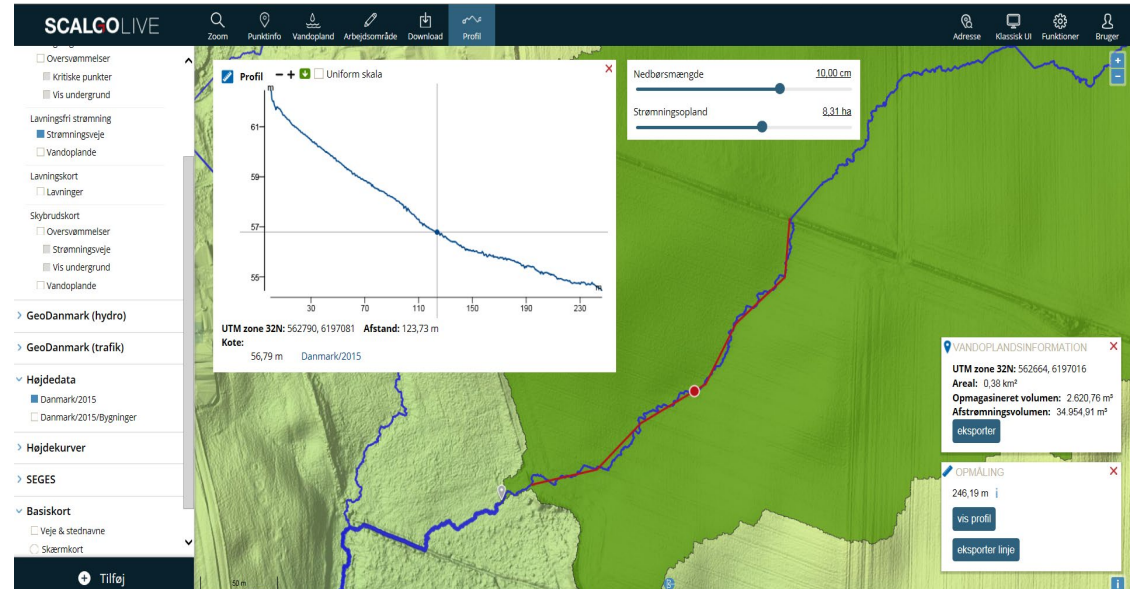
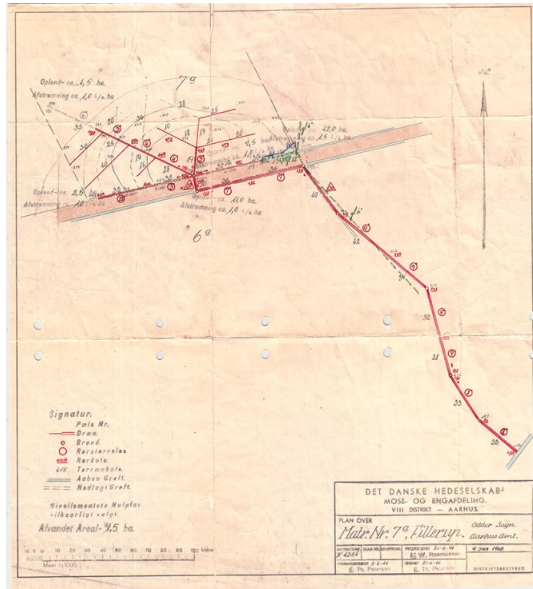


 ID15 opland

 Vådømrådeprojekter til privat gennemførelse

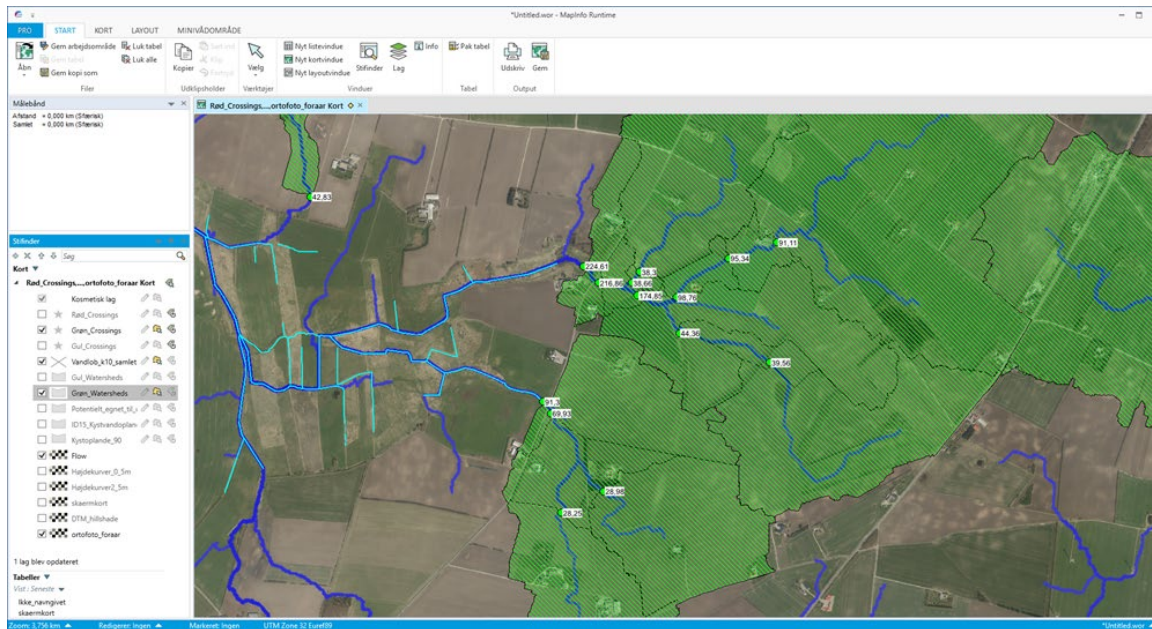
 Vådømråde/lavbundsprojekt til gennemførelse af kommune eller NST

# SCALGO Live prediction



- Key factor for Catchment Plans
- Used to predict drainage pipe location and drainage pipe outlets
- Used by Danish Catchment officers to estimate catchment sizes and predict drainage pipe outlets.
- Is an online tool, which is based on the Danish digital elevation model from 2018

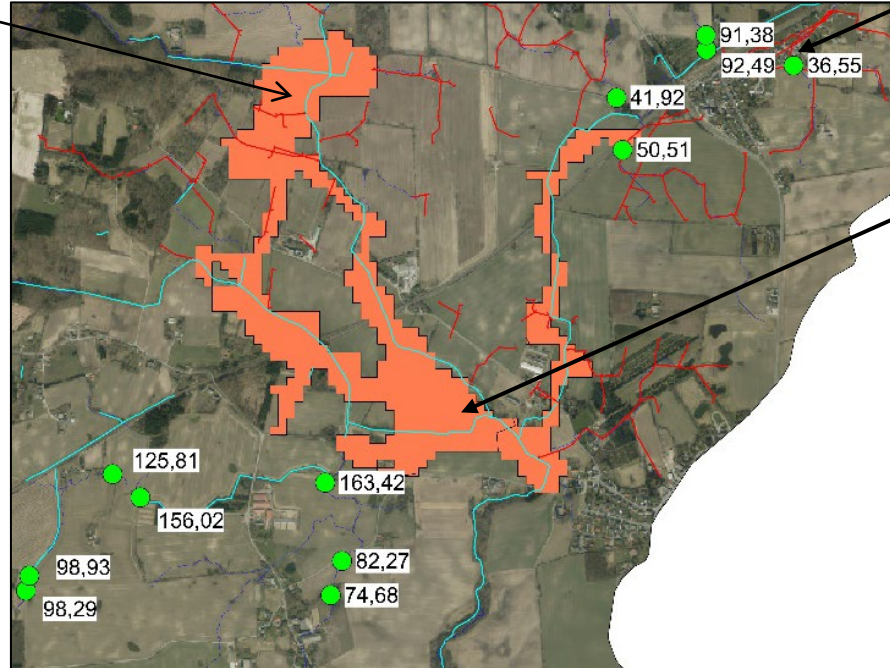
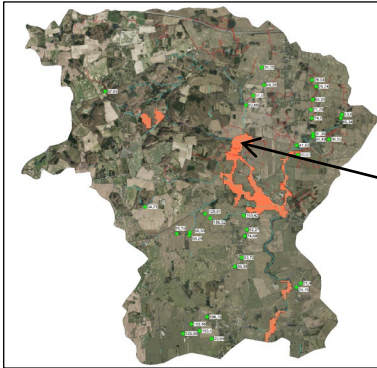
# Collective meetings: GIS-basic



Combination of SCALGO Live flow-pattern and governmental potential-map for constructed wetland and restored wetlands along with SEGES' landowner-database

GIS-analysis used to identify the landowners with the highest potential for constructed wetlands

# Wetlands & constructed wetlands



Constructed wetlands

Wetlands/organic soils

# Collective meeting setup



## Step 1

The municipality, the agricultural advisory service & the Nature Agency



## Step 2

The agricultural advisory service & the landowners



## Step 3

Applications is done by the local municipality or the Danish Nature Agency to the Danish Environmental Protection Agency

# Collective startup-meetings

All farmers (5-15) in small catchment areas invited to discuss possibilities for implementation of water environmental solutions.

## Agenda:

1. Welcome by local Farmers Union Pres.
2. Information on possible solutions
3. Map on the table, drain-pipe knowledge, solutions
4. Deciding which solutions to be chosen and where

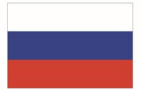




# Supportive Digital Tools



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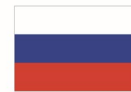
Aim:

- 1) To develop a tool that helps the facilitation of collective meetings
- 2) Easy access for farmers to participate in projects with an environmental focus
- 3) Give an overview of farmers and wishes in a project area

# Supportive Digital Tools



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[www.landmand.dk](http://www.landmand.dk) ([www.farmer.dk](http://www.farmer.dk))

## SEGES:

Owned and operated by SEGES

Visit from more than 20.000 farmers a year

2.000 unique visits a day

Free and everybody can sign up

Targeted communication through The Central Business Register and GIS-analysis

For instance, project opportunities for constructed wetlands or catch crops targets in catchment



Promilleafgiftsfonden for landbrug

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## Jordfordeling

Her kan du/ I indikere ønske om at lade dine egne marker indgå i jordfordeling, samt interesse for omkringliggende marker.

Udtagning ▼

Vælg ordning

1 Salg

2 Bytte

3 Udtagning

Information

Egen mark

- Cvr : 18278030
- Marknr : 02
- Areal : 3.42
- Afgrøde : Vinterhvede

Spørgeskema

Jeg er interesseret i at indgå i ordningen for denne mark.

Ordning: **1** Udtagning ▼

Hektar tilmeldt: **2** 3.42

Bemærkninger: **3** Lavbundsprojekt

SLET SVAR
GEM



- Information
- Egne marker
- Andre marker jeg er interesseret i

## Egne marker

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Marknr	Areal	Afgrøde	Ordning	Ønsket antal hektar	Bemærkning
01	3.82	Vinterhvede			
02	3.42	Vinterhvede	Udtagning	3.42	Lavbundsprojekt
13	5.88	Vårbyg			

**Blue colour:** the farmers own field

Possible to indicate: 1) What do I want to do with my field? 2) How large a proportion of the field? 3) Remarks (for instance which kind of project)

## Jordfordeling

Her kan du/i indikere ønske om at lade dine egne marker indgå i jordfordeling, samt interesse for omkringliggende marker.

**Information**

**Andre marker**

- Cvr: 28055048
- Marknr: 3
- Areal: 4.43
- Afgrøde: Vinterhvede

**Spørgeskema**

Jeg er interesseret i denne mark.

Ordning: **1** Køb

Hektar tilmeldt: **2** 4.43

Bemærkninger: **3** Inden påske

Jeg har bortforpagtet denne mark.

**SLET SVAR** **GEM**

Køb ▼  
**Vælg ordning**  
 Køb **1**  
 Bytte  
 Salg hvis bortforpagtet

■ = Egne marker ■ = Mine marker, der indgår i en ordning ■ = Andre marker ■ = Andre marker jeg er interesseret i ■ = Beskyttet Natur

Information
Egne marker
Andre marker jeg er interesseret i

## Andre marker jeg er interesseret i

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Cvr	Marknr	Areal	Afgrøde	Ordning	Ønsket antal hektar	Bemærkning
28055048	2	1.75	Vårhavre	Køb	1.75	Inden jul
'8055048	3	4.43	Vinterhvede	Køb	4.43	Inden påske

**Brown/orange** colour: other landowner's fields

Possible to indicate: 1) What do I want to do with the field? 2) How large a proportion of the field? 3) Remarks (for instance which kind of project)

# Future set-up DK



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Step 1: Make GIS-analysis and maps

Step 2: Meeting between municipality and agricultural service (facilitator/project leader)

Step 3: Collective start-up meeting between facilitator/project leader and landowners

Step 4: Landowners indicate which fields that could be part of the project and perhaps which field they could be interested in

Step 5: Facilitator/project get an overview and starts to solve the puzzle – perhaps look into what happens if landowners gets knowledge about each other wishes

Step 6: Application are made for the relevant environmental scheme

Thank you for your attention