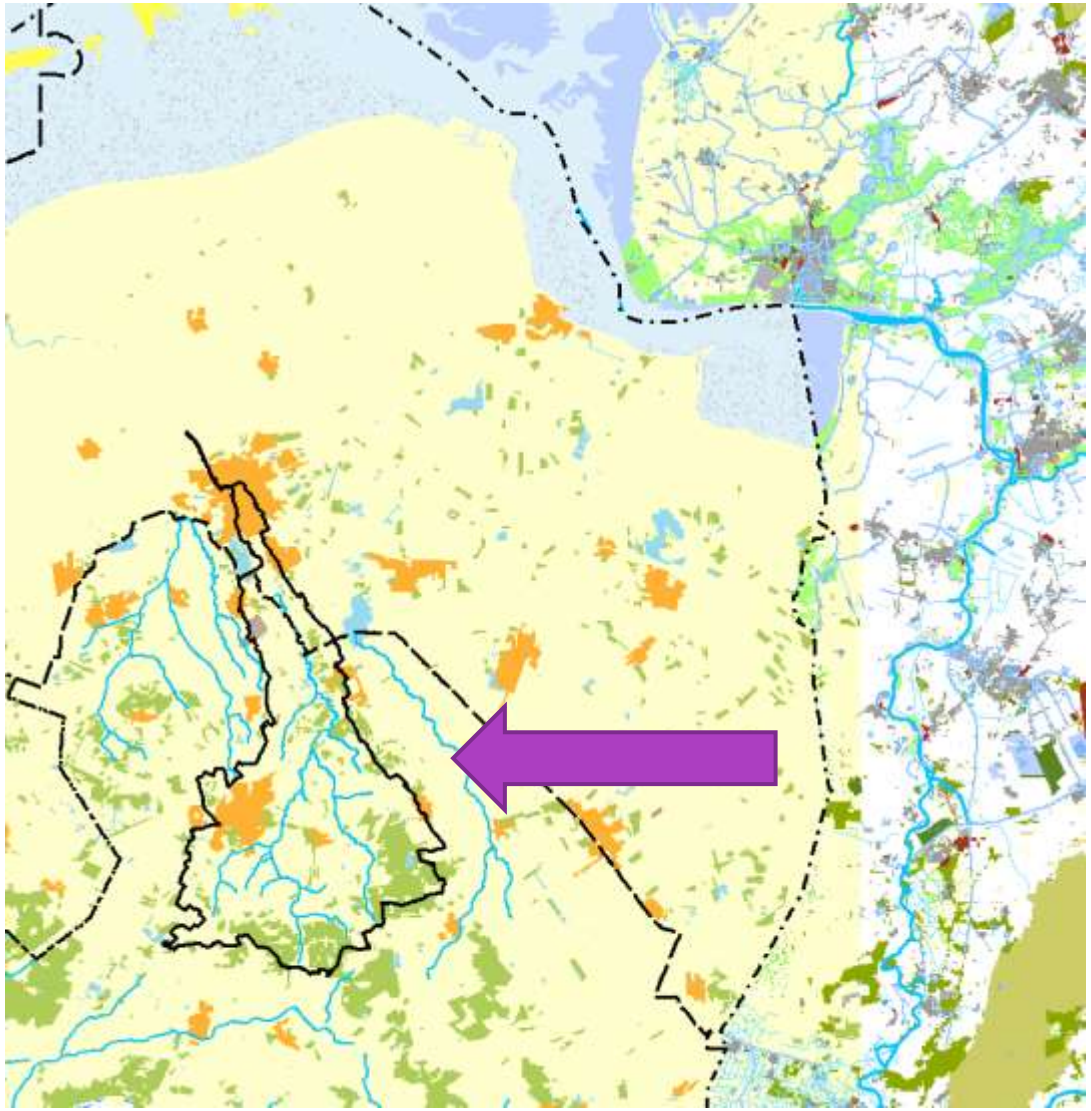

TOP SOIL
Interreg
North Sea Region
European Regional Development Fund
EUROPEAN UNION
provincie Drenthe
Seasonal Balancing Drentsche Aa
Irrigation from groundwater
WATERSCHAP
Hunze en Aa's

Project area

provincie Drenthe



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What's on the balance?

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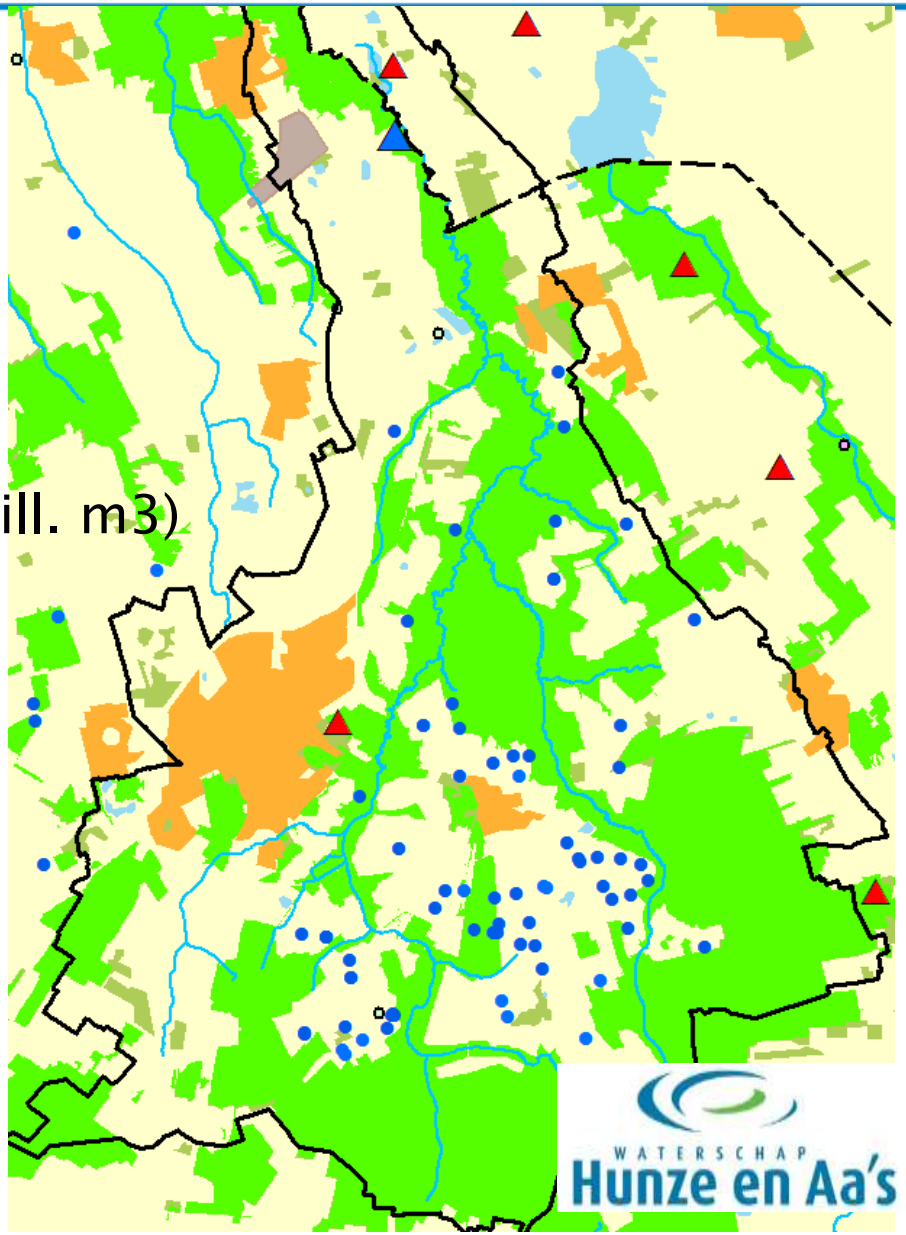
In:
rainfall 235 mill. m3

Out:
evaporation 141 mill. m3
groundwater flow ??
extraction groundwater for drinking water (7 mill.)
extraction surface water for drinking water extractions (mill. m3)
extraction groundwater for irrigation (3 mill. m3)

left discharge 77 mill. m3

Shortage in summer
Use groundwater as buffer



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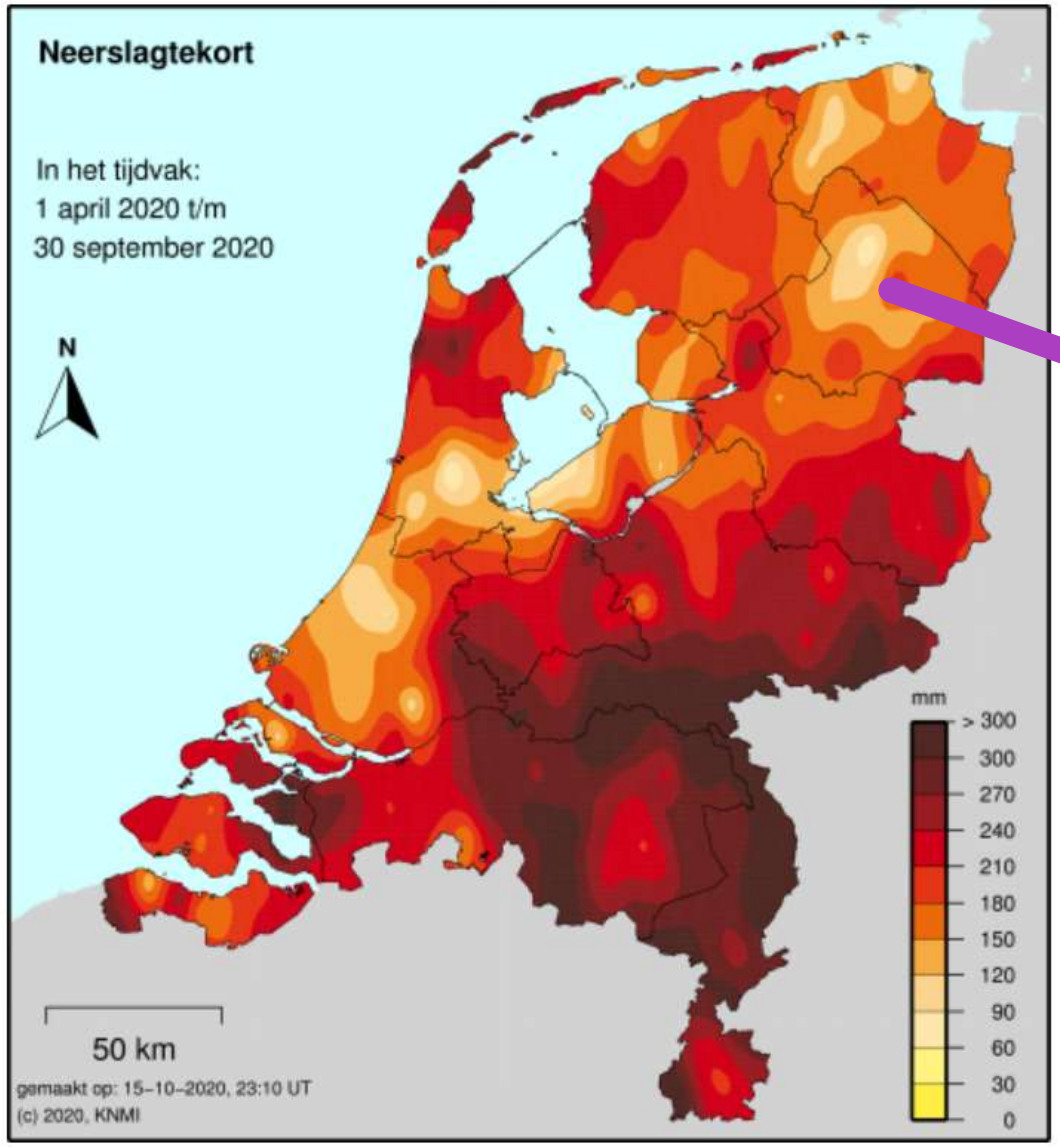
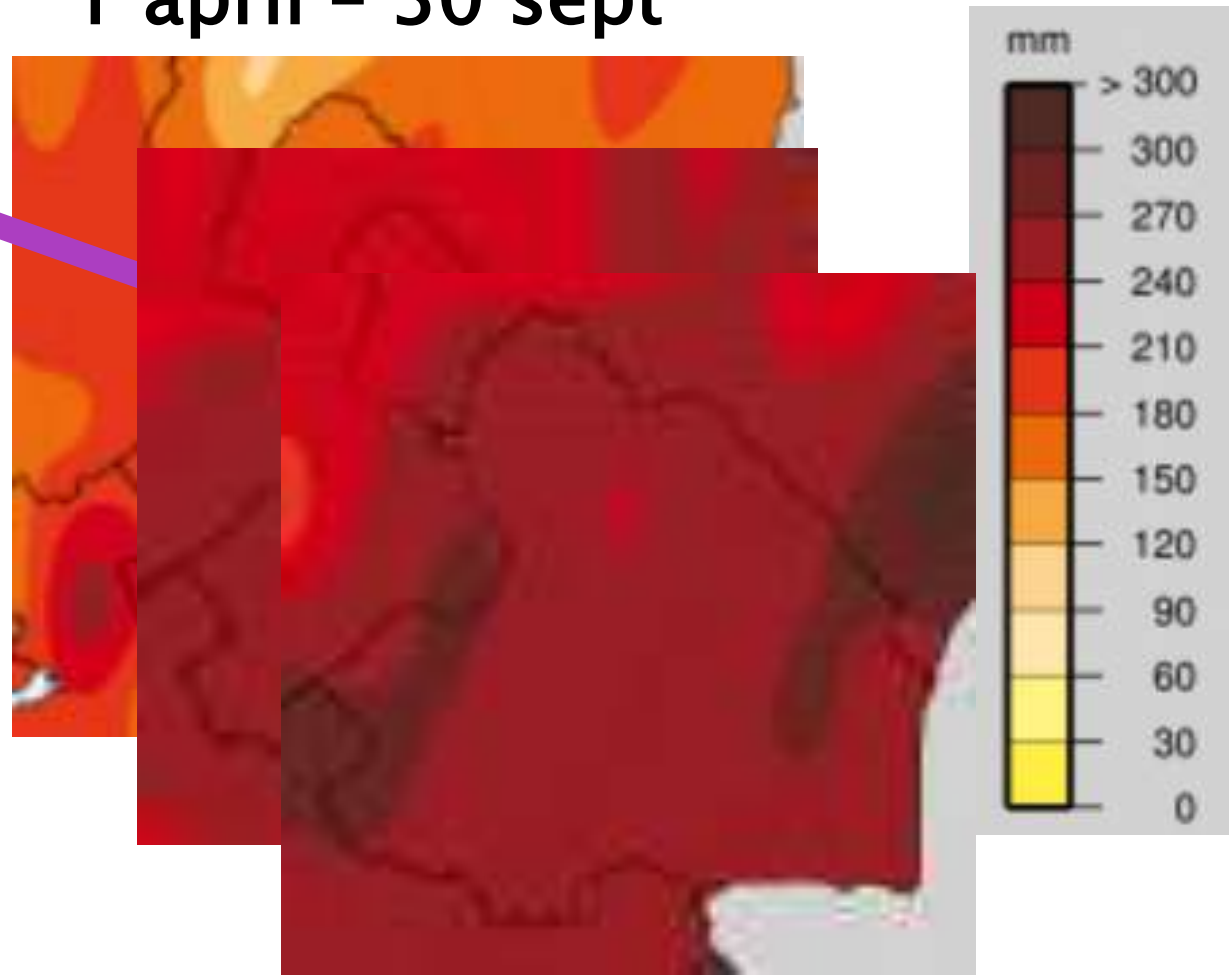


Shortage water 2020
1 april – 30 sept



Topsoil first phase

1. Groundwater model study

- impact climate change on wet nature in river valley
- impact mitigation measures
- areas for extraction of groundwater for irrigation

→ current situation: no extraction for irrigation except for flower bulb and starch potatoes and “historic wells”.

2. Create support from stakeholders
nature, drinking water
)

Topsoil first phase

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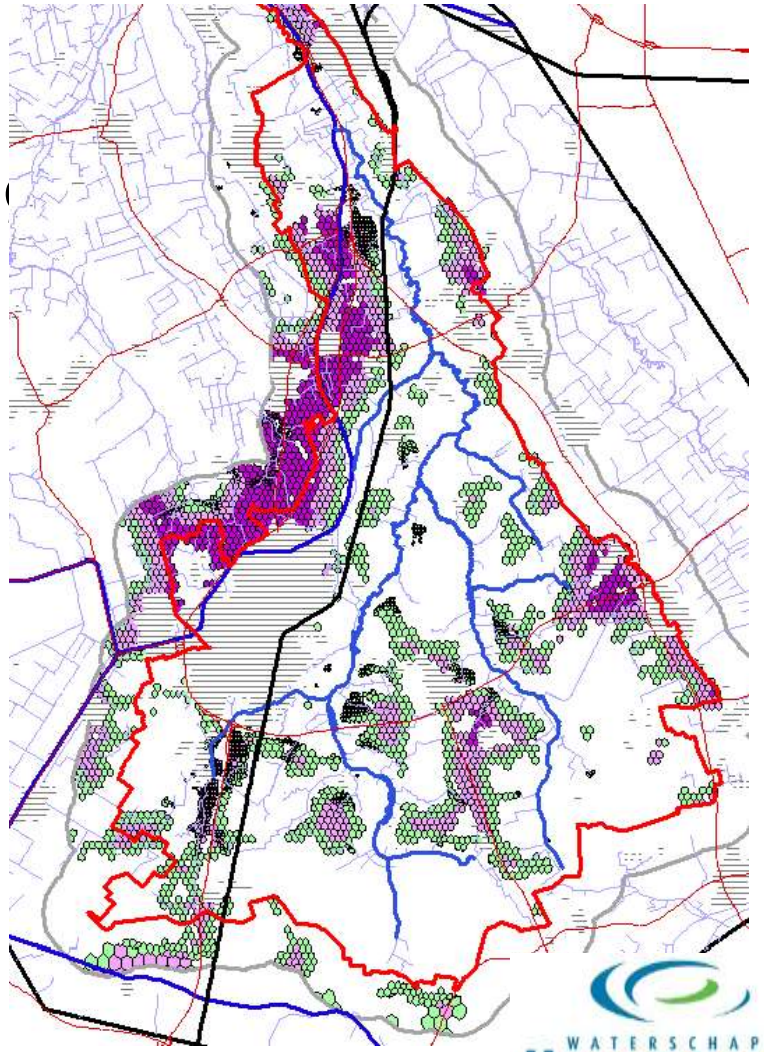
Result:

Map with possibilities to use groundwater for irri
based on a maximum impact on nature areas

Buffer 500 meter and 50 mm.



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Topsoil first phase

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Presentation for farmers and nature organization (2019)

→ Not all existing wells were in the model
→ Using 2003 as a dry year
→ General solution instead of fitting for purpos
→ Not all nature is even vulnerable

Members of the daily board of the regional water authority were present at meeting and discussed the issue in advance with the province of Drenthe.

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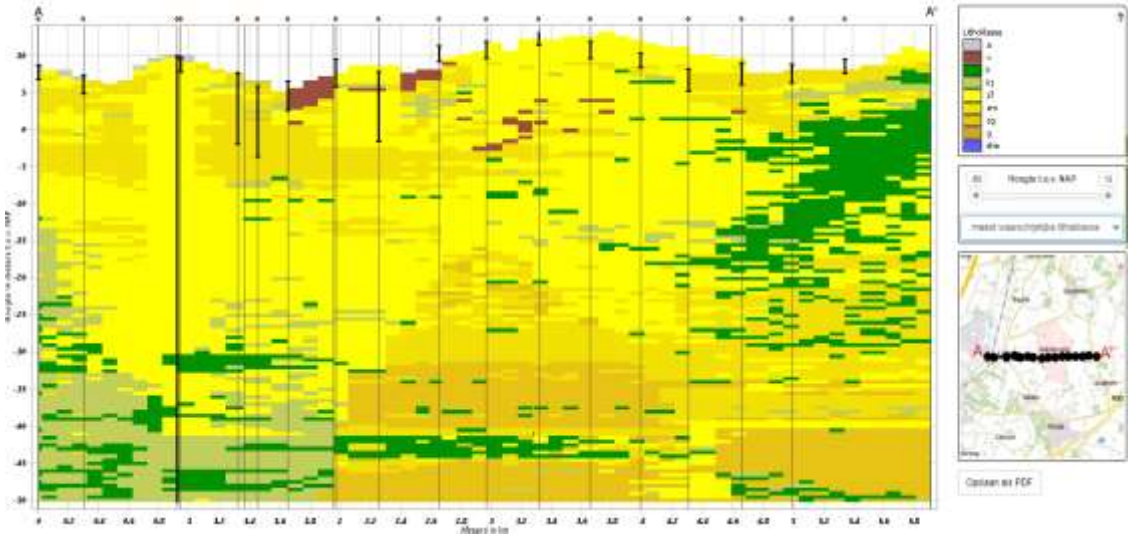
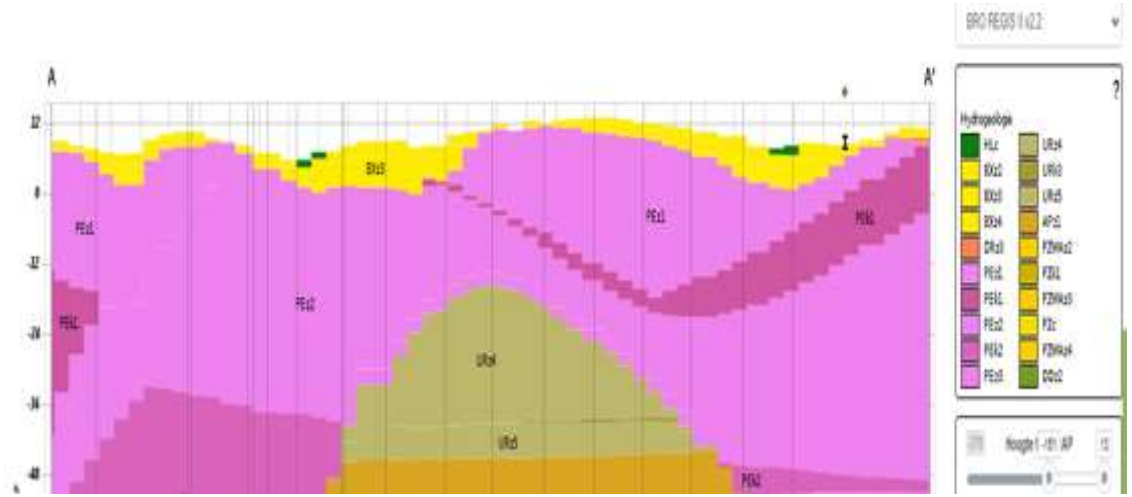
Topsoil extension: activities

Improve the modelling by using Skytem data

1. Translate foxhol model geological model

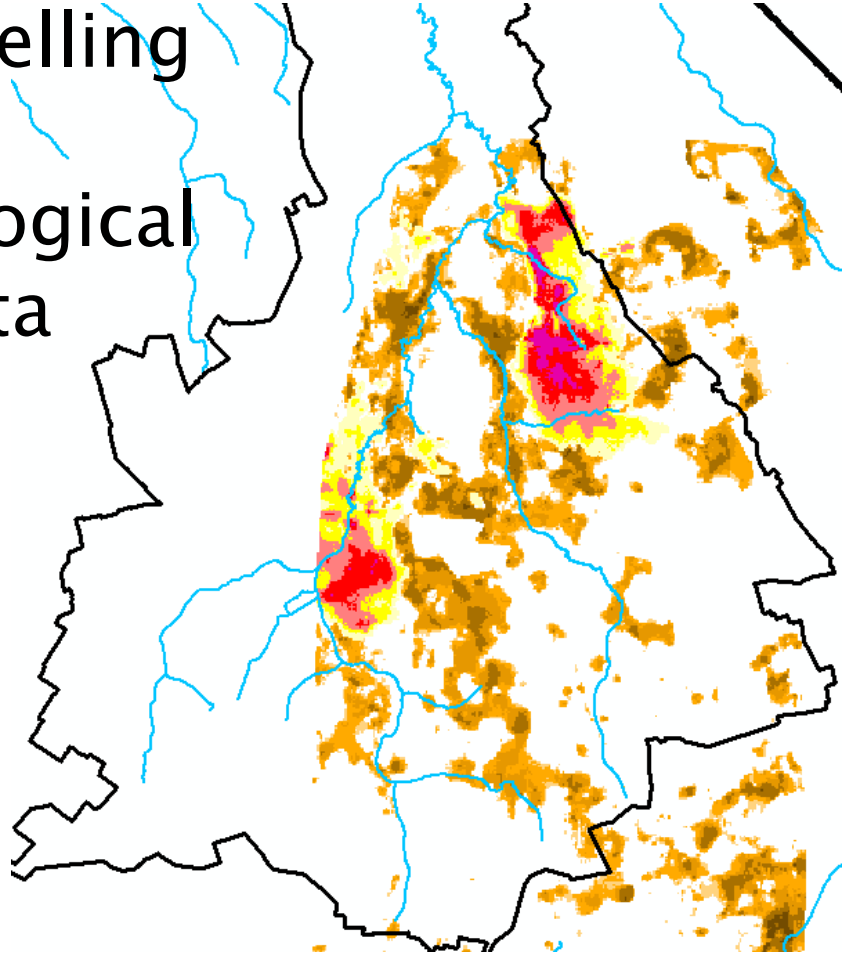


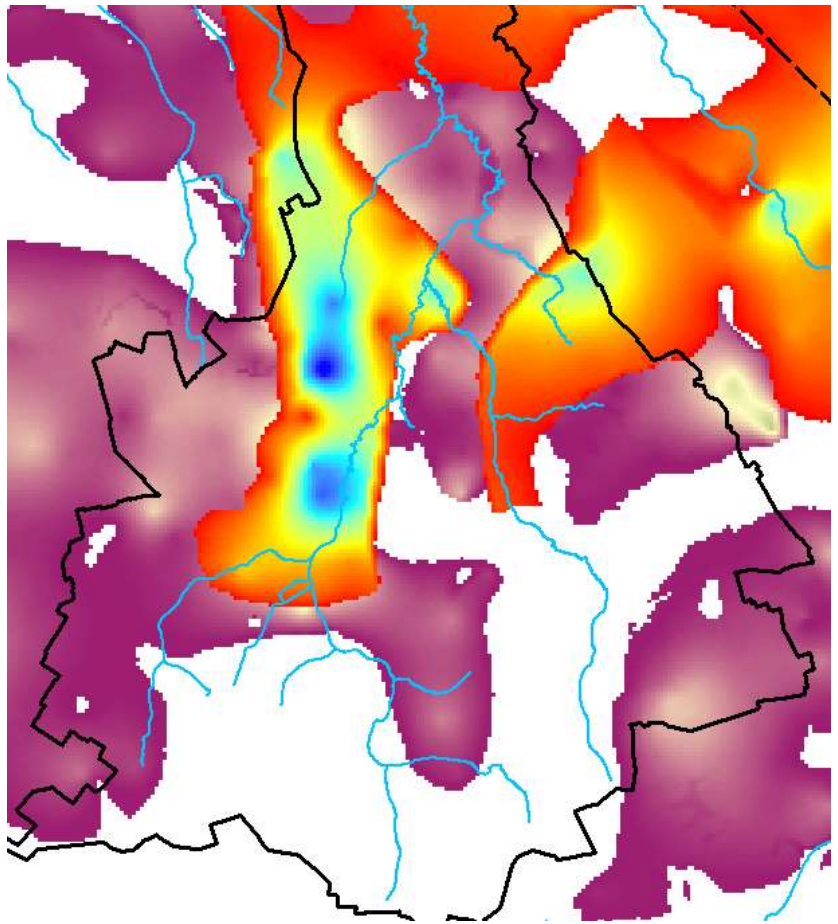


Topsoil extension: activities

Improve the modelling

2. Translate geological data in model data





Topsoil extension: activities

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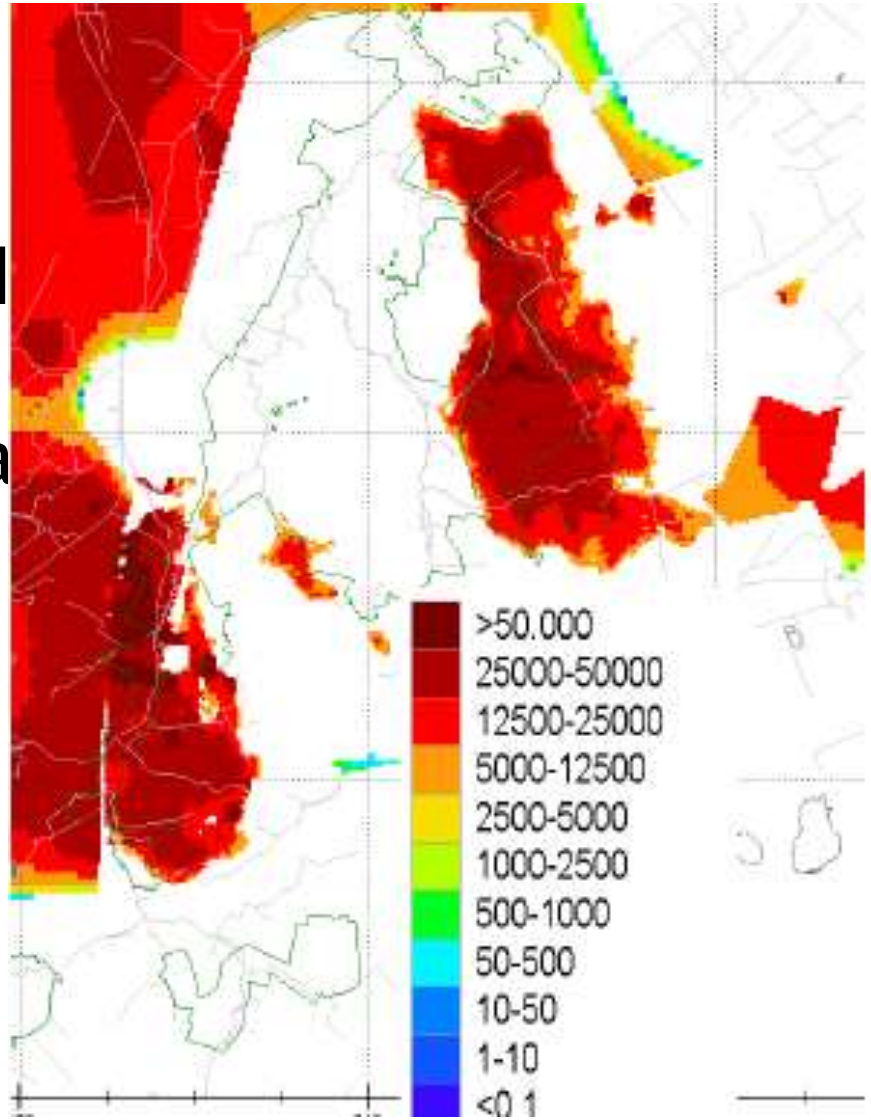
Improve the modelling

3. Fit new data in existing mod

4. Testing the model on accura



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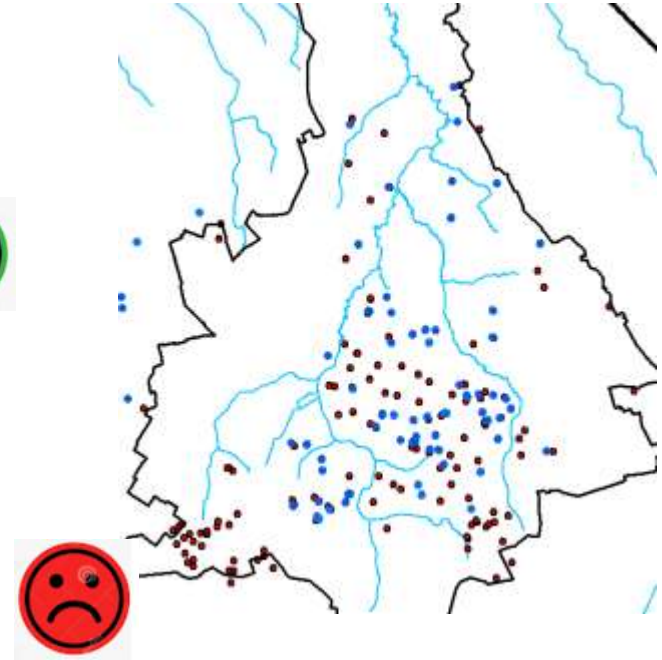
Topsoil extension: activities

Improve the modelling

1. Improve the model by using new SkyTEM data
2. Add more monitoring locations for groundwater level
3. Inventory of the existing wells
4. More and less vulnerable nature
5. Scenario calculations including the impact irrigation 2019.

t results in regulations



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Stakeholder involvement

Project team: regional water authority, province, experts, farmers chosen expert

Consultation group. State forestry, Farmers organisation, Farmers/Nature organisation, Drinking water companies, farmers, Environment Federation

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Topsoil indicator

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Goal:

Irrigation possibilities in 20% of the area without harming nature

Result first phase topsoil: 24 %

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Questions

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1. Are there any examples of irrigation regulations based on the actual situation (strict in dry years and less strict in normal years)

2. How to make farming less dependable of irrigation because otherwise climate change will force us in that direction and will an increasing demand for water.

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Thank for your attention