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Norway's most threatened fields

Potential need of farmland conservation areas due to risk of development

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Photos: Oskar Puschmann



Photo: Wenche Dramstad

Agriculture in Norway

- > Farmland only ca. 3%
ca. 1,000,000 ha
- > Annual loss ca. 1,000 ha
- > ... but also gain
- > «On the move»
- > Political goal of reducing the annual farmland loss



Agriculture in Norway

- > Importance of soil resources:
 - > Low self-sufficiency (ca. 50%)
 - > Limited compensation capacity (ca. 1,200,000 ha)
 - > Soil quality

- > Much farmland close to built-up areas

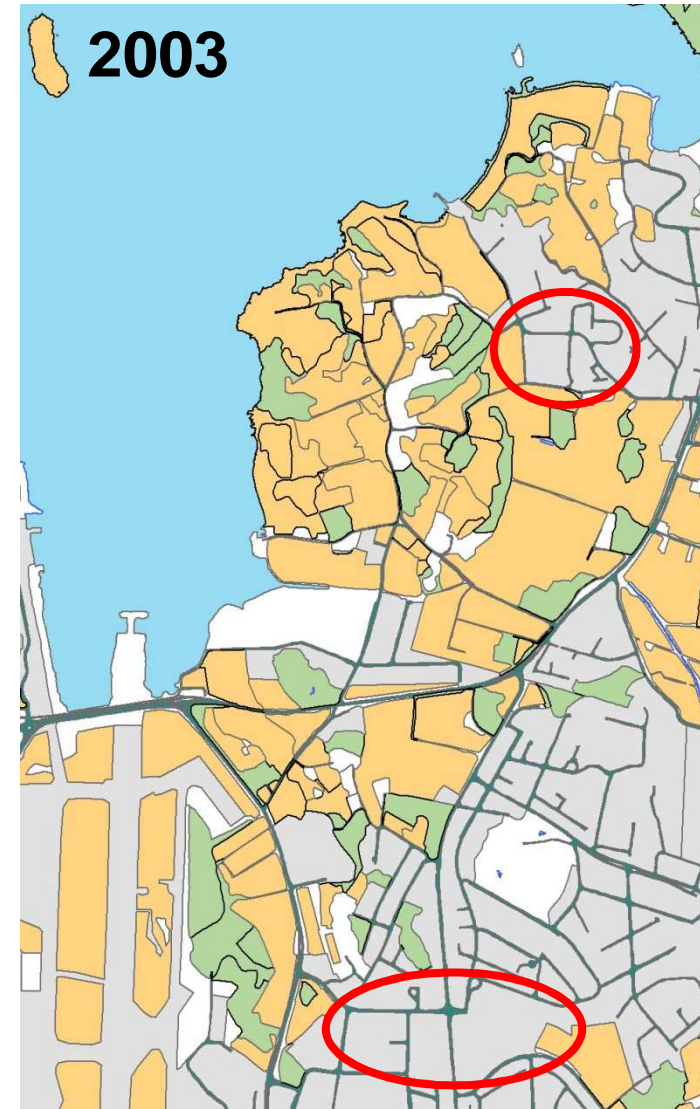


Soil sealing in Sola



Fertility map 1:20,000 (BK20)

c.500 m



Land resource map 1:5,000, generalised (AR5)



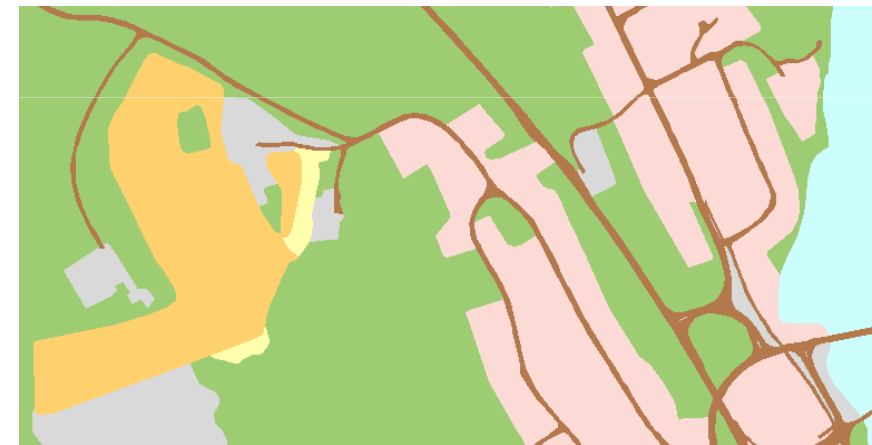











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Method: Data

- > Land resource map 1:5000
(AR5, Norwegian Forest and Landscape Institute)



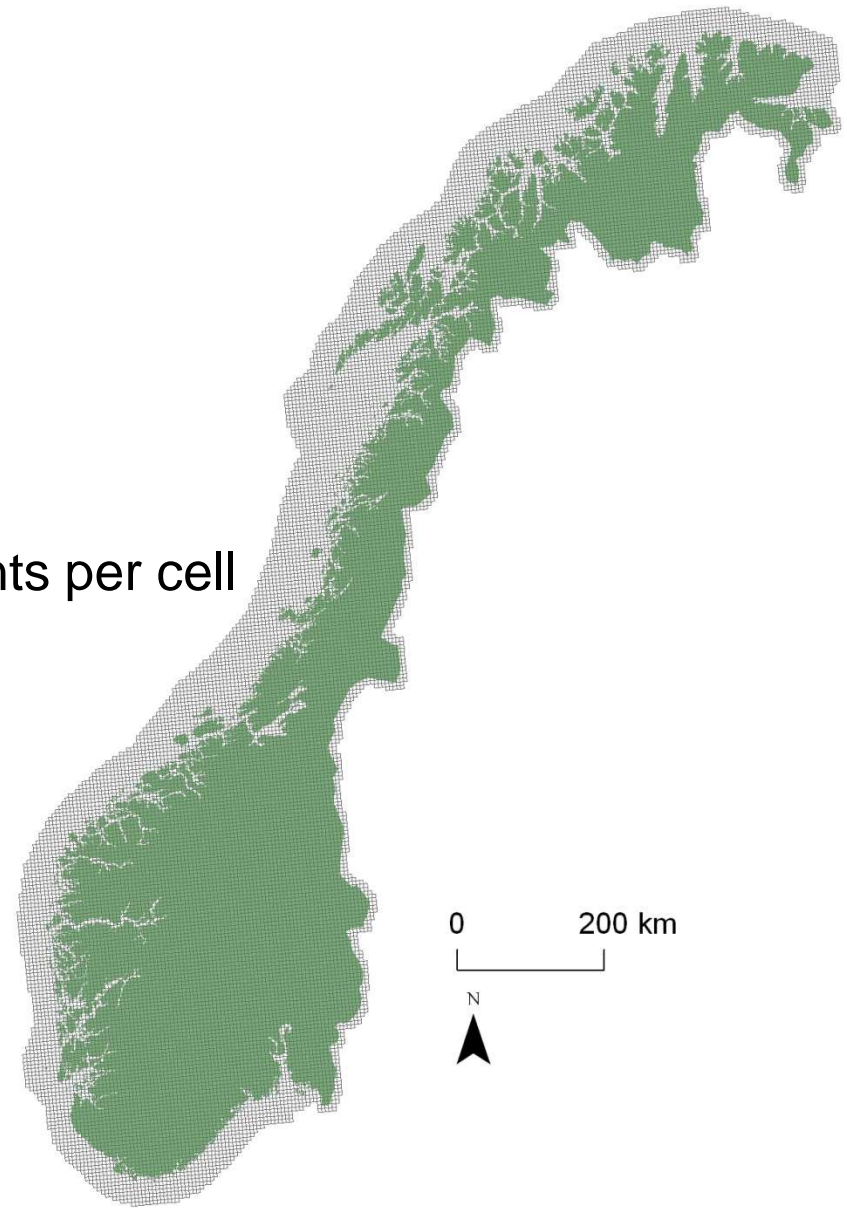
	Fully cultivated land		Other land area
	Surface-cultivated land		Surface water
	Fenced-in pasture		Built-up areas
	Forest		Transport infrastructure
	Wetland		

Method: Data

> Grid of 5 km x 5 km cells

(SSBgrid, Statistics Norway)

> Registered number of inhabitants per cell

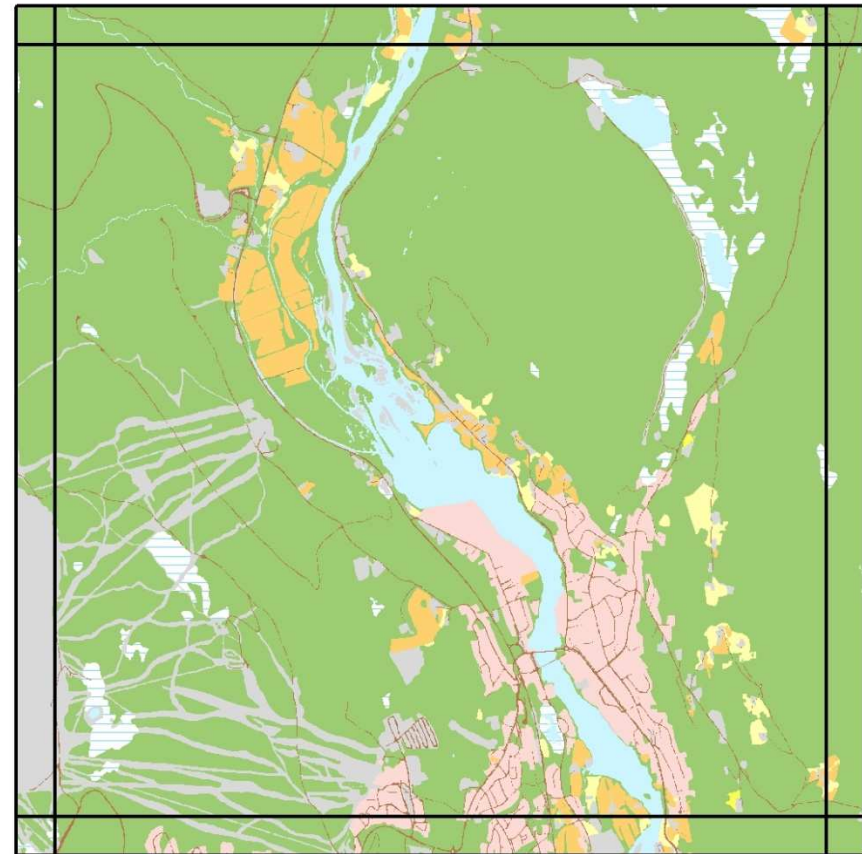
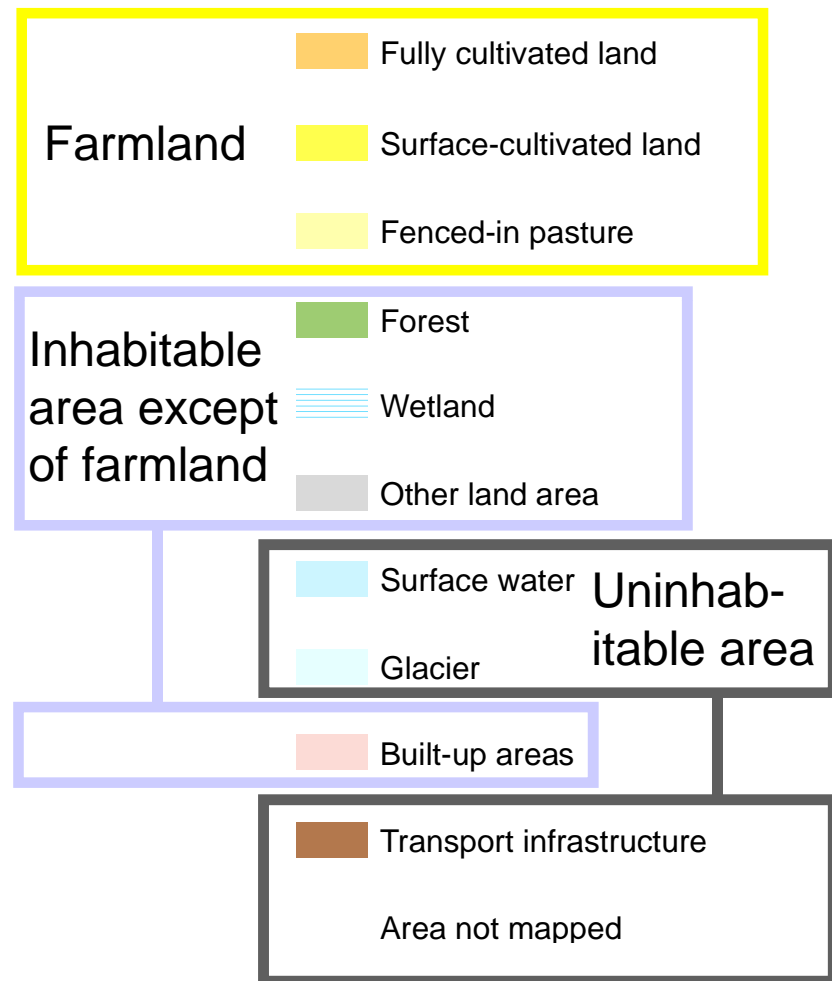




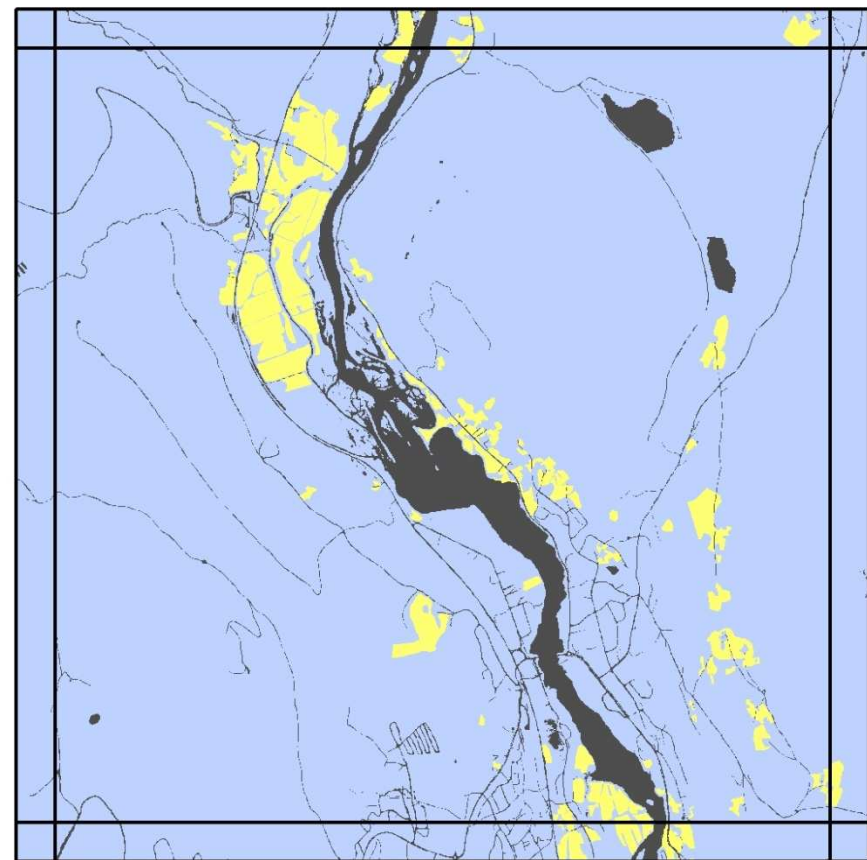
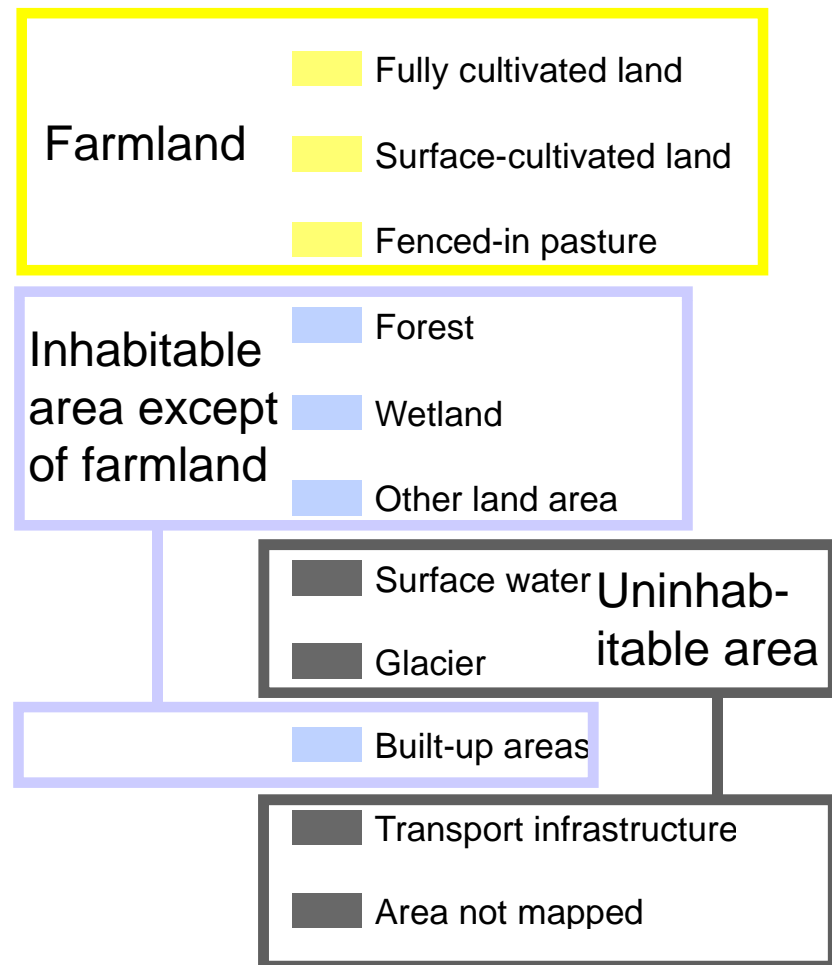
Method: Re-classification of map data

- > The 11 land use categories were re-classified into three new categories:
 - > Farmland
 - > Inhabitable area except of farmland
 - > Uninhabitable area

Method: Map data before re-classification



Method: Map data after re-classification



Method: Parameters for calculation of pressure on farmland

- > For each grid cell (5 km x 5 km), the total area of each new category was summarized
 - > a_j : Farmland
 - > a_b : Inhabitable area
 - > a_u : Uninhabitable area
- > In addition
 - > P : Number of inhabitants per cell
 - > A_t : Total area per cell (25 km²)

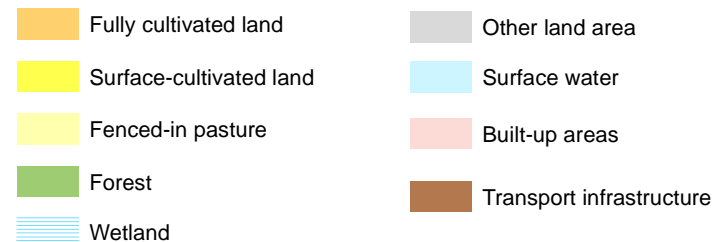
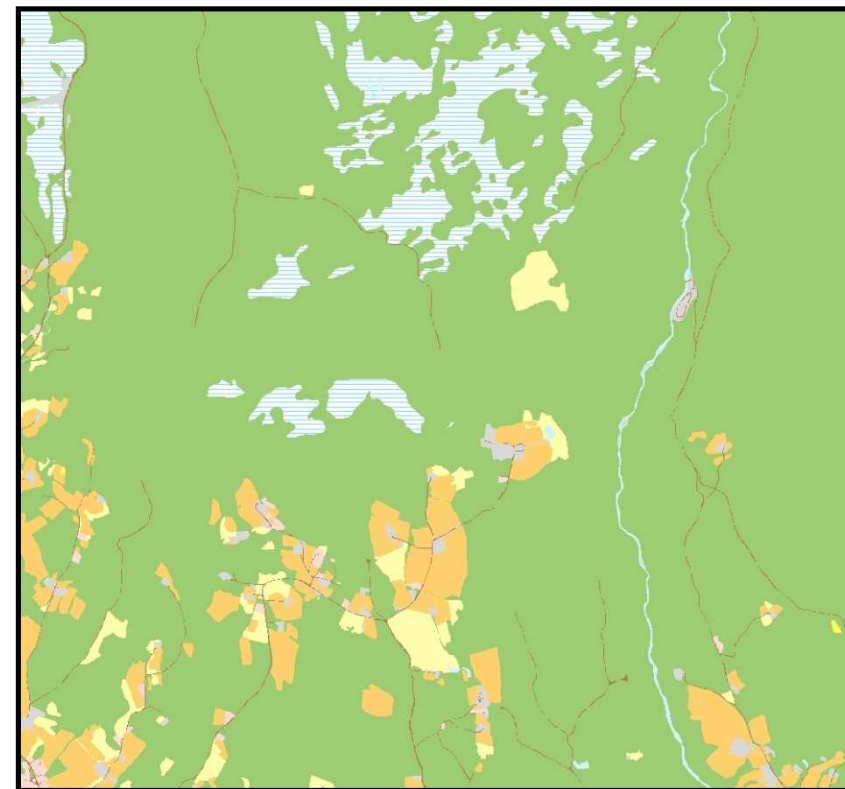
Method: Calculation of pressure on farmland

> Risk of development \approx pressure on farmland

$$\frac{P}{a_b} = \frac{P}{(A_t - (a_u + a_j))}$$

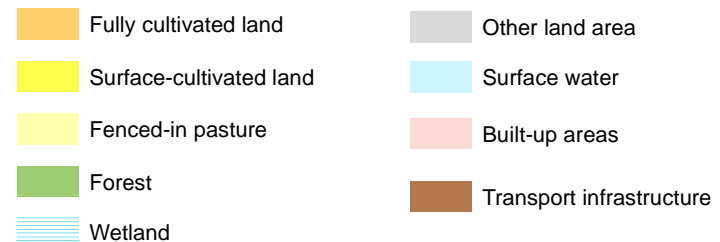
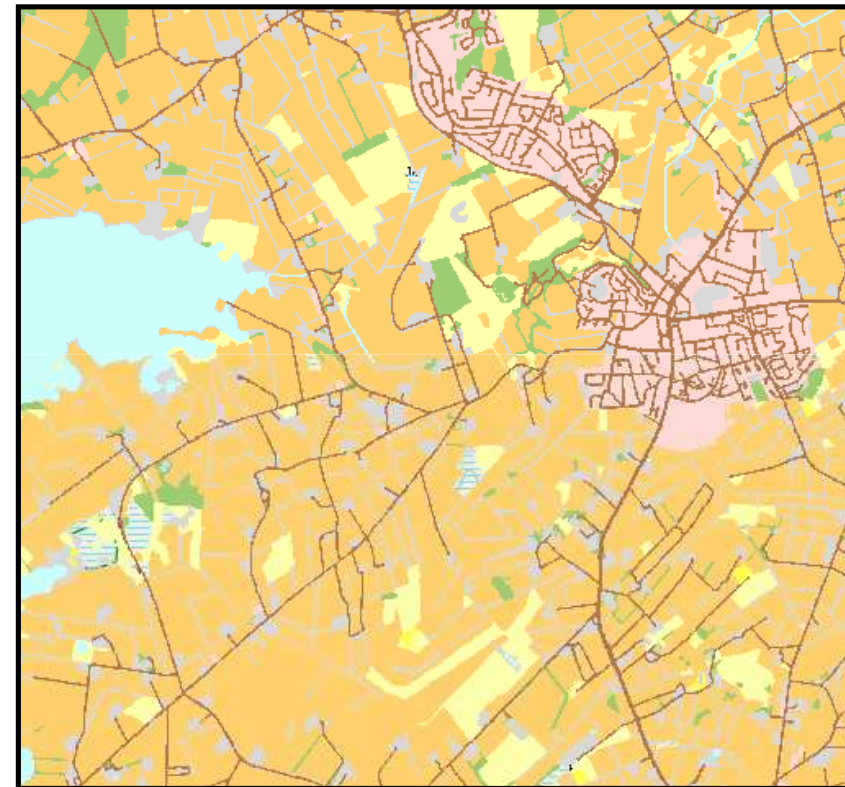
Results: Cell with low development pressure on farmland

- > Not much farmland:
0.2 km² (out of 25 km²)
- > Few inhabitants registered:
340
- > Much inhabitable area except
of farmland: 22.4 km²
- > Low number of inhabitants per
km² inhabitable area
except of farmland: **15**



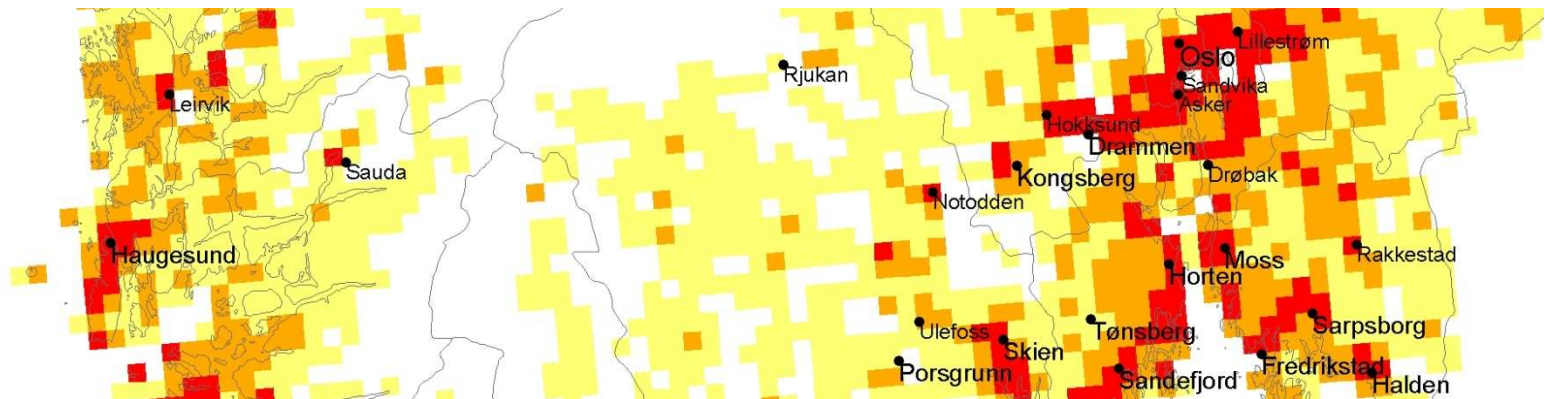
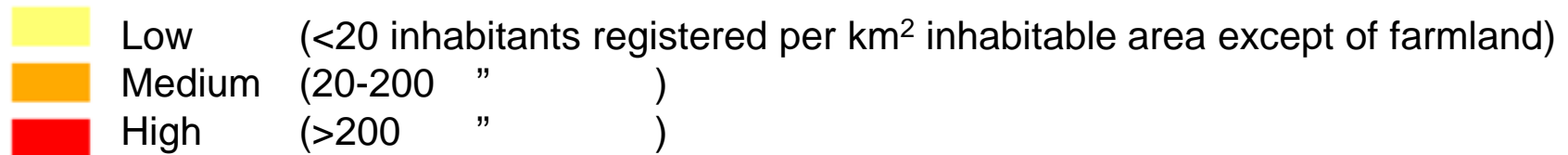
Results: Cell with high development pressure on farmland

- > Much farmland:
18.3 km² (out of 25 km²)
- > Many inhabitants registered:
7475
- > Not much inhabitable area
except of farmland: 4.8 km²
- > High number of inhabitants per
km² inhabitable area
except of farmland: **1543**



Results:

Pressure on agricultural land



> Potential need of farmland conservation areas?

