



# From pig barn to family apartment?

A Master Thesis on the opportunities and challenges of housing developments on livestock farm locations

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*Graduation organisation: VanWonen*

*First mentor: J.S.C.M. Hoekstra*

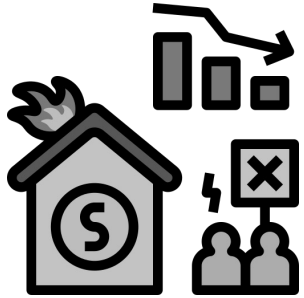
*Second mentor: T.A. Daamen*

# Content

# Content

- Problem statement and research questions
- Research overview and results
- Advisory document

# Problem statement and research questions



## Huren in vrije sector eind vorig jaar op recordhoogte

**Woningmarkt** De stijging zorgt volgens woningplatform Pararius bij alle mogelijke oplevervormen van woningen voor nieuwe piekprijzen, hoger dan vóór de coronapandemie.

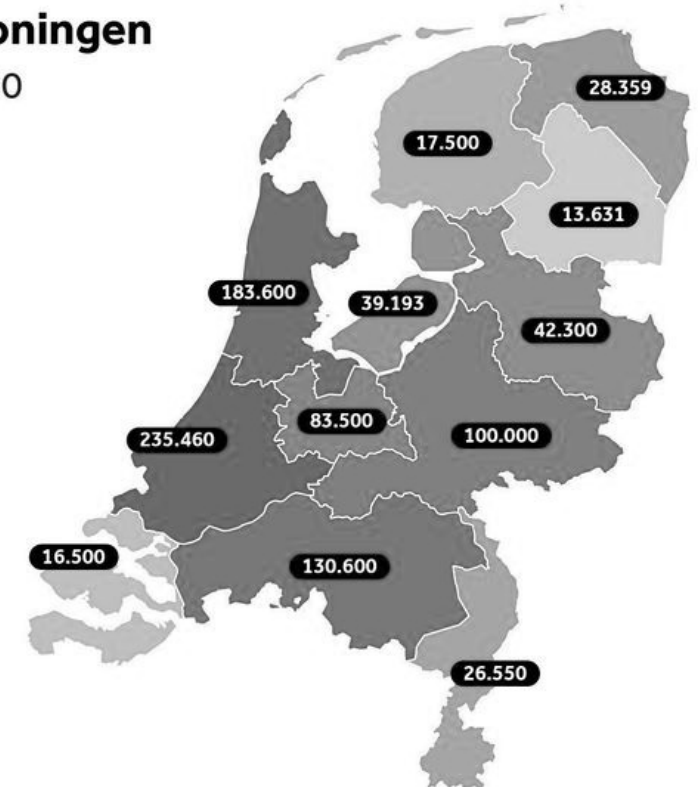
Koen Marée · 18 januari 2022 · Leestijd 1 minuut

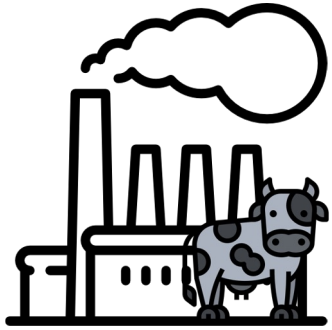


Nieuwe woningen in aanbouw in Amsterdam.  
Foto Lex van Lieshout/ANP

## Aantal nieuwe woningen per provincie t/m 2030

Drenthe	13.631
Zeeland	16.500
Friesland	17.500
Limburg	26.550
Groningen	28.359
Flevoland	39.193
Overijssel	42.300
Utrecht	83.500
Gelderland	100.000
Noord-Brabant	130.600
Noord-Holland	183.600
Zuid-Holland	235.460
<b>totaal</b>	<b>917.193</b>





## Commissie-Remkes: Nederland doet onvoldoende tegen stikstofuitstoot

**Milieu** Nederland moet volgens het Adviescollege Stikstofproblematiek de uitstoot van stikstof halveren en doelen om de natuur te beschermen wettelijk vastleggen.

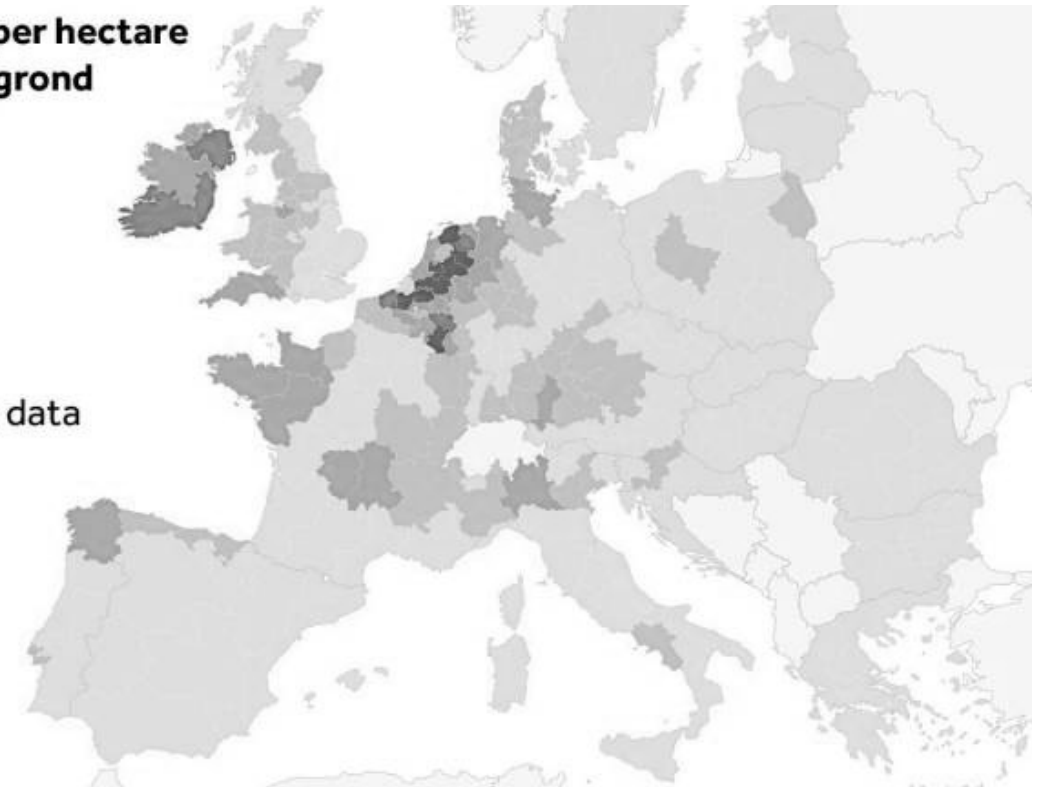
Kasper van Laarhoven · 8 juni 2020 · Leestijd 1 minuut

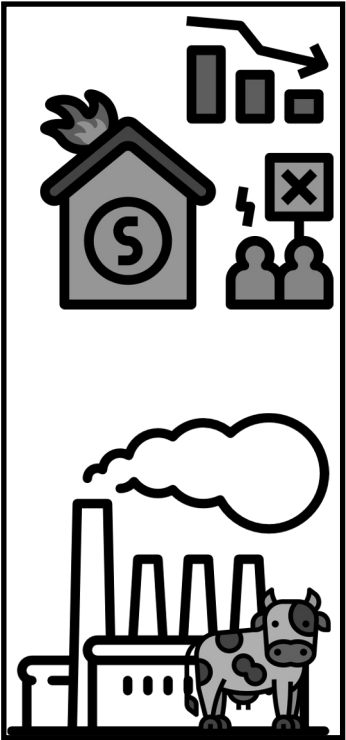


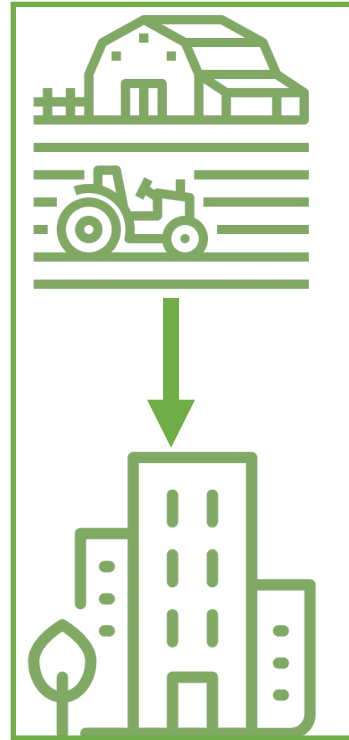
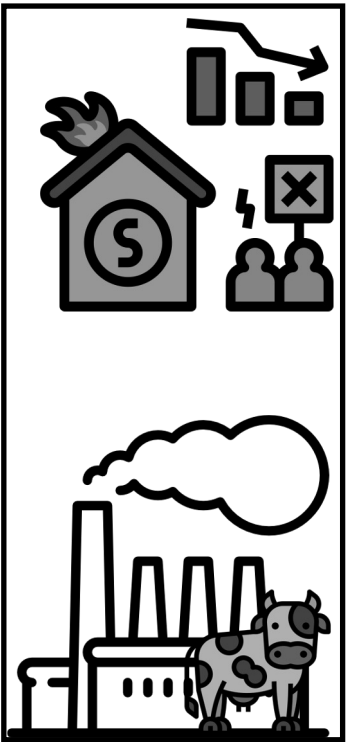
Remkes presenteerde het eindrapport maandag.  
Foto Sem van der Wal/ANP

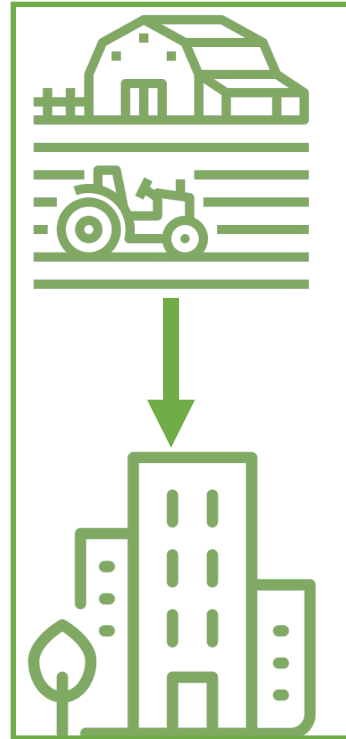
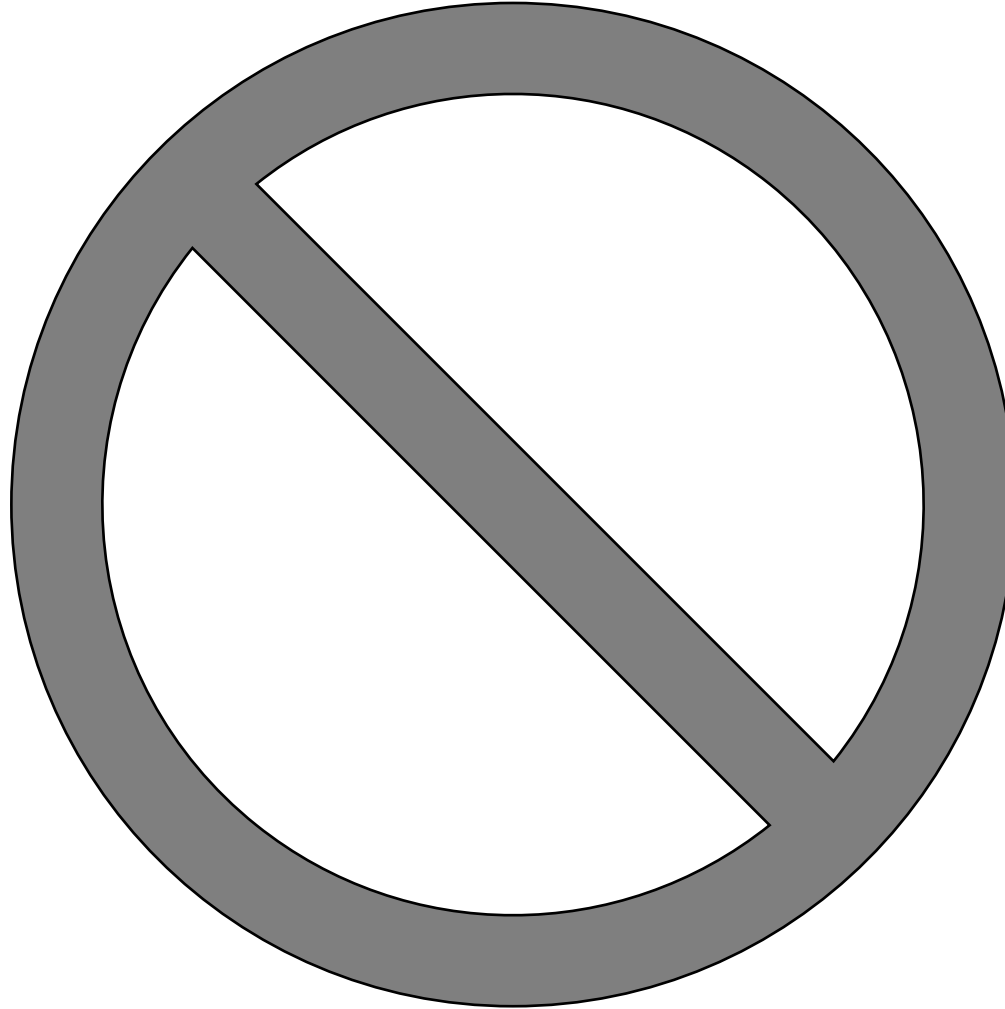
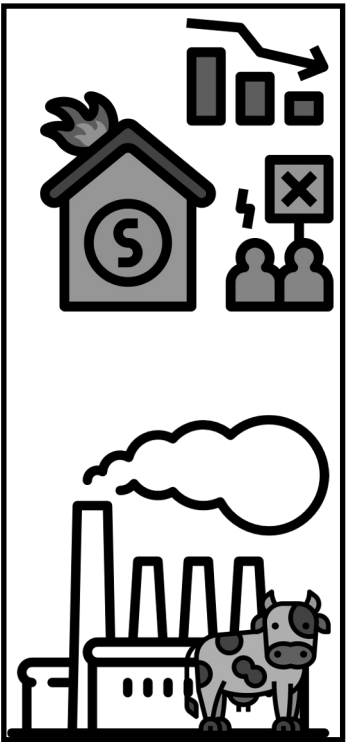
**runderen per hectare  
landbouwgrond  
in 2016**

- tot 0,5
- 0,5-1
- 1-1,5
- 1,5-2
- 2+
- 0 / geen data









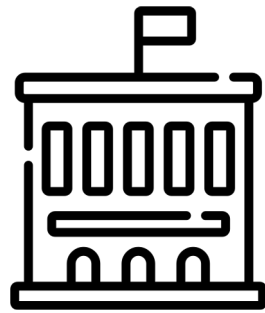
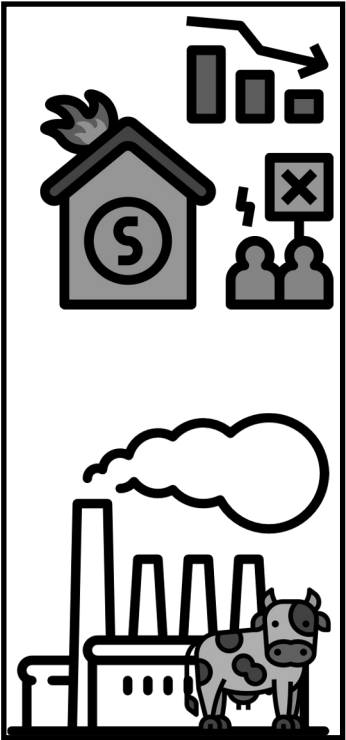
# Main research question

Why are housing developments on livestock farm locations not commonly utilized as a contributing solution to the nitrogen- and housing crisis in the Netherlands, and how can such developments be made more viable for farmers, municipalities and real-estate developers?

# Research sub-questions

1. What are the key conditions and stakeholders for developing housing on livestock farm locations in the Netherlands, and what are the essential aspects in the development process?
2. When developing housing on livestock farm locations, what aspects cause the most challenges and/or delay (risk), and what aspects create opportunities?
3. Under what financial-economic conditions is the development of housing on livestock farm locations viable for property developers, and what risks are involved?
4. What steps can be taken by a real-estate developer to assist a housing development on a livestock farm location into becoming a viable development plan?

# Research overview and results



Municipalities

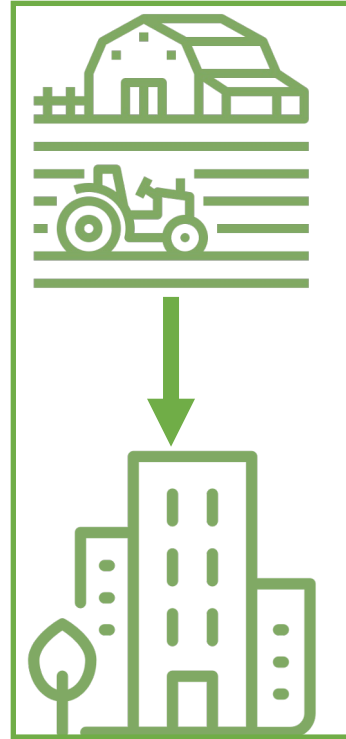


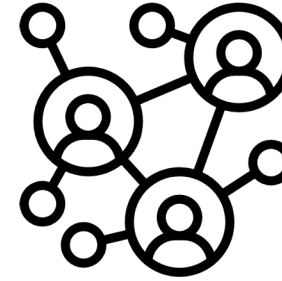
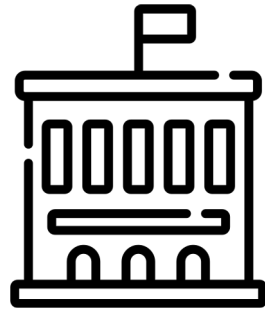
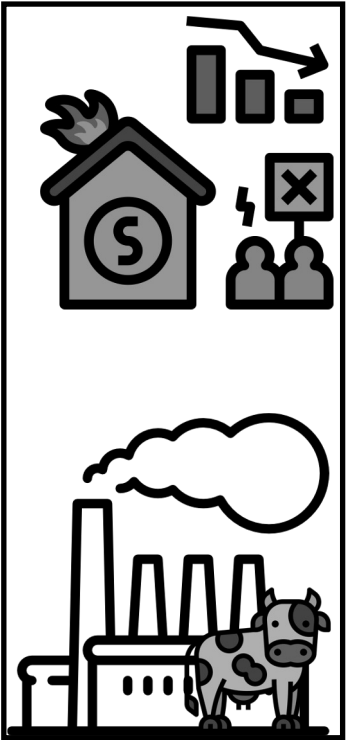
Developers



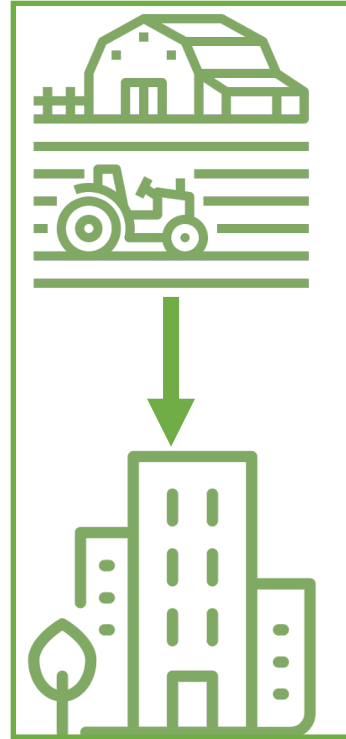
Farmers

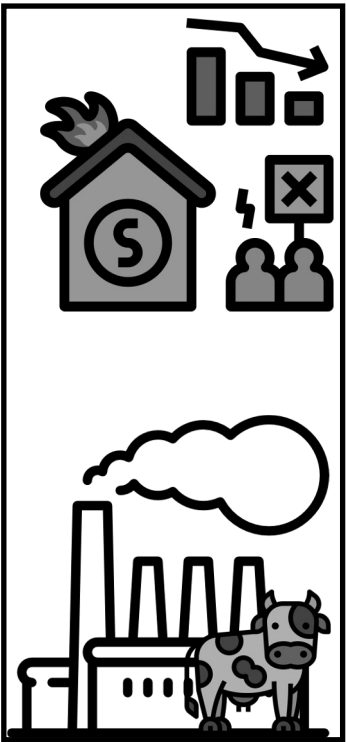
## Key stakeholders





External stakeholders



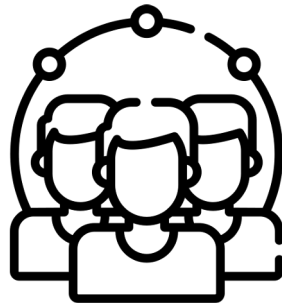


## Essential aspects

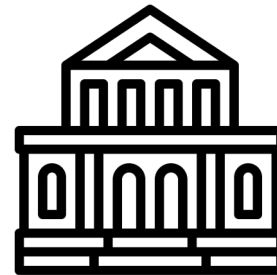
Legal



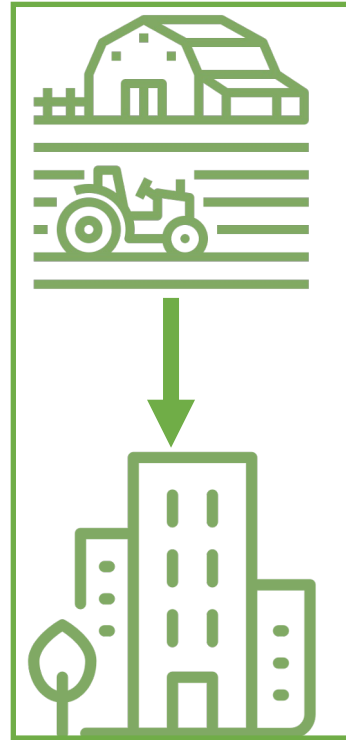
Social

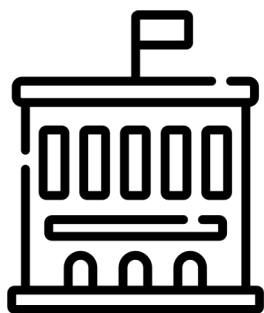


Governmental



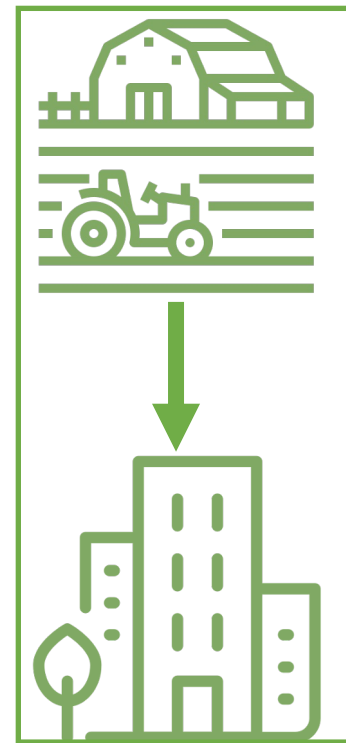
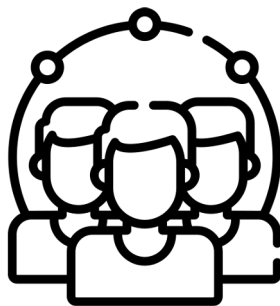
Financial





Challenges and opportunities

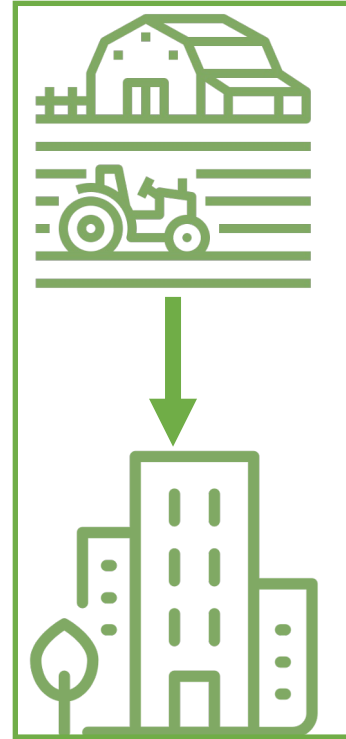
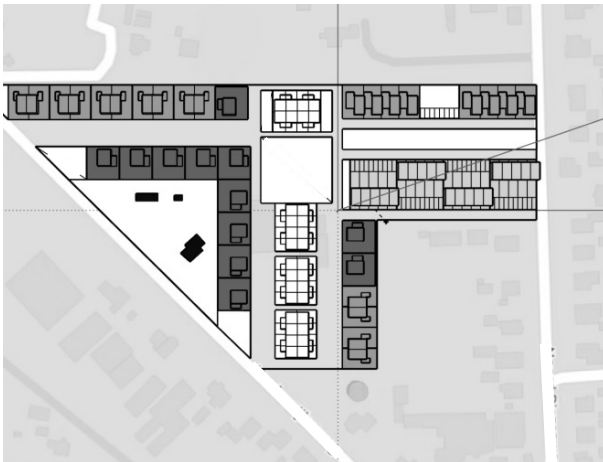
Financial-economic conditions

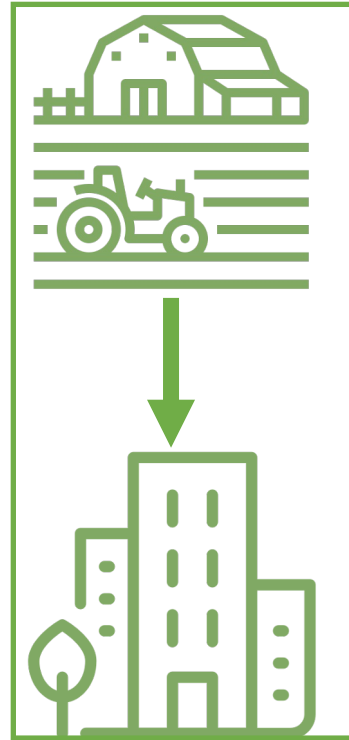
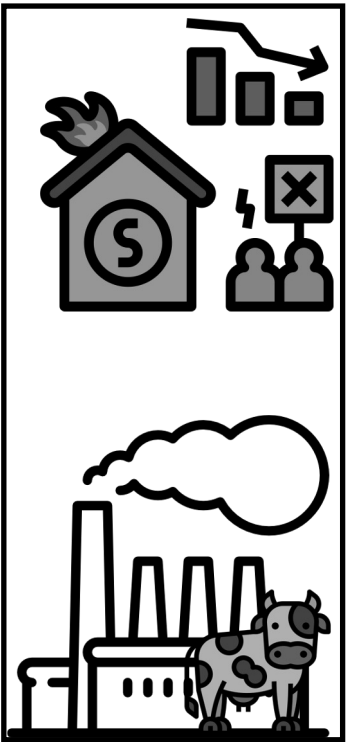


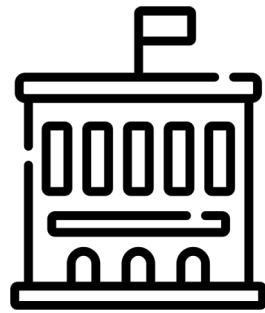
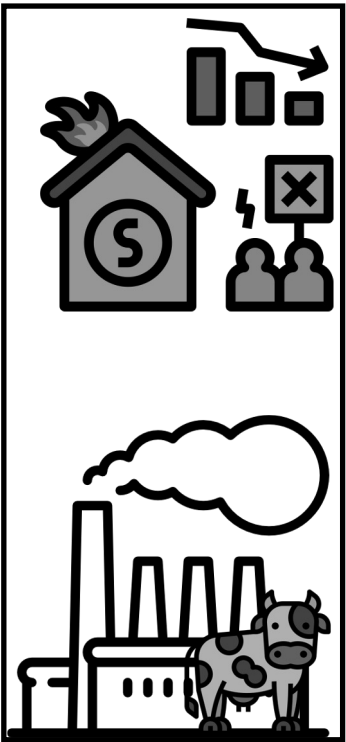


# Challenges and opportunities

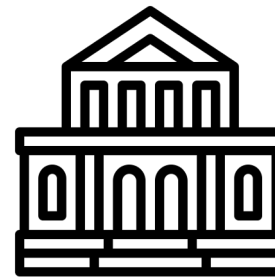
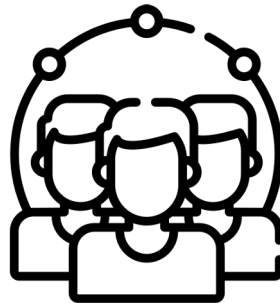
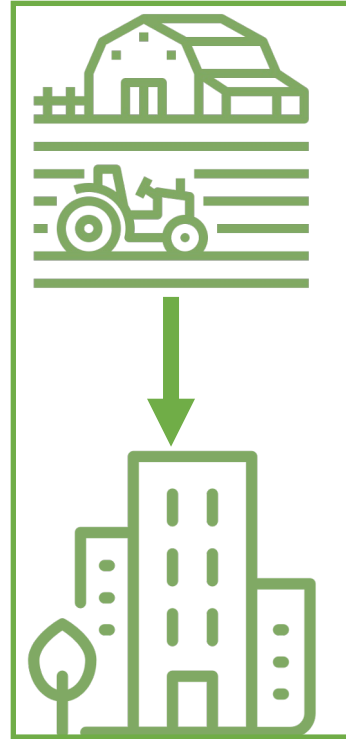
## Financial-economic conditions



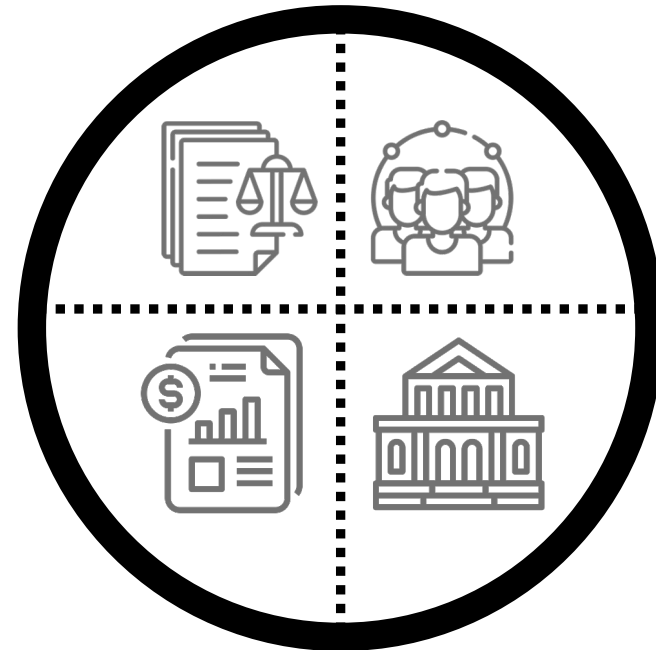


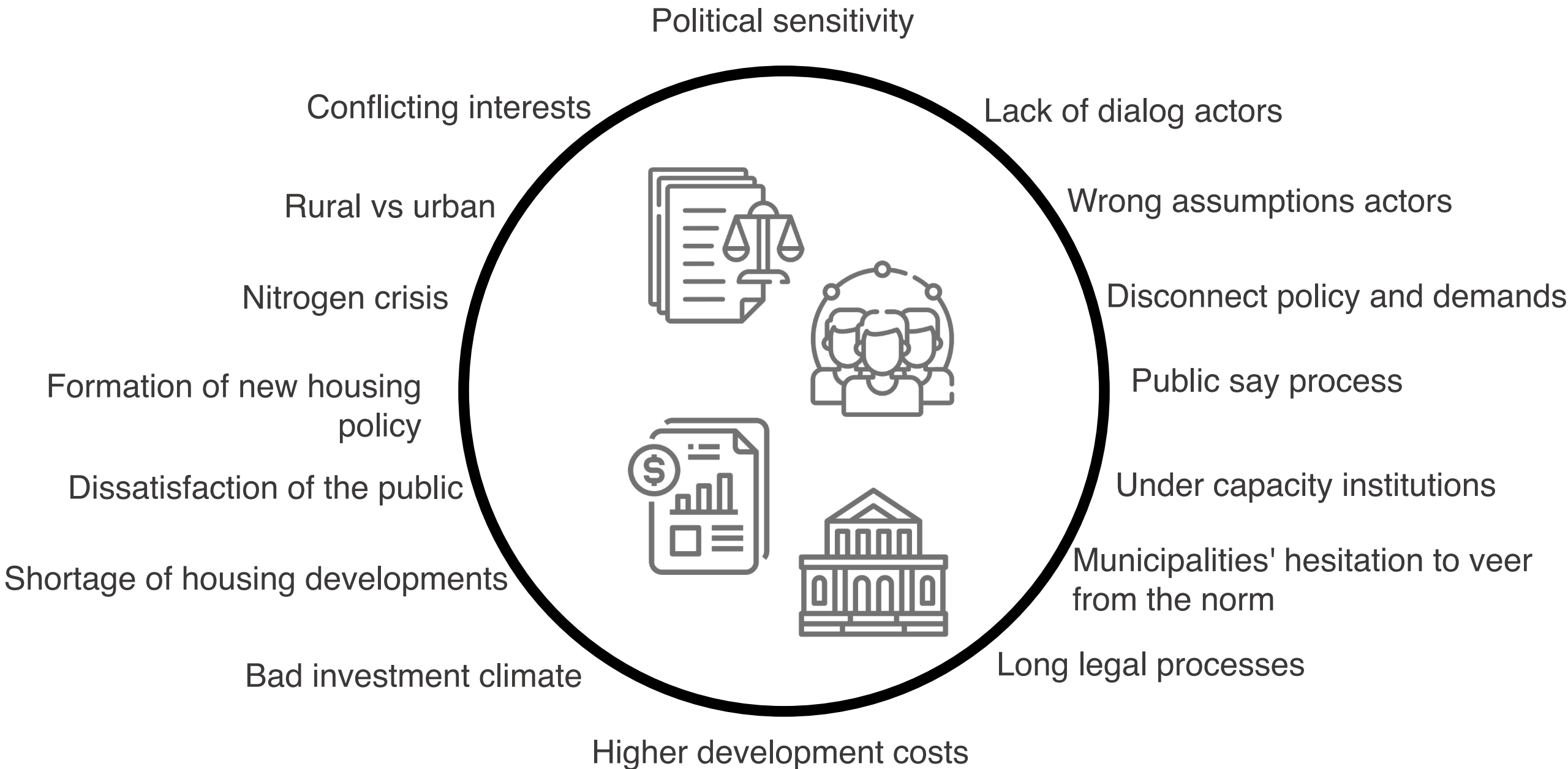


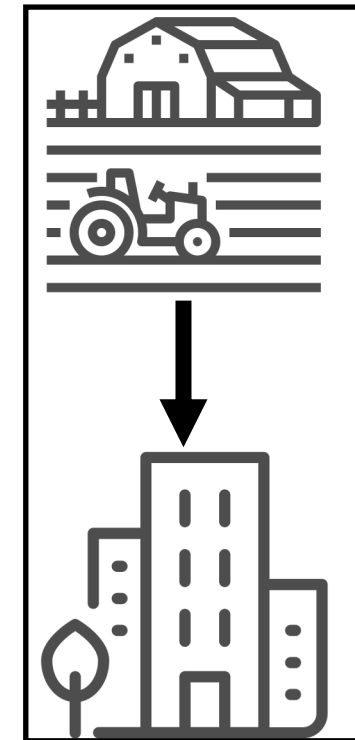
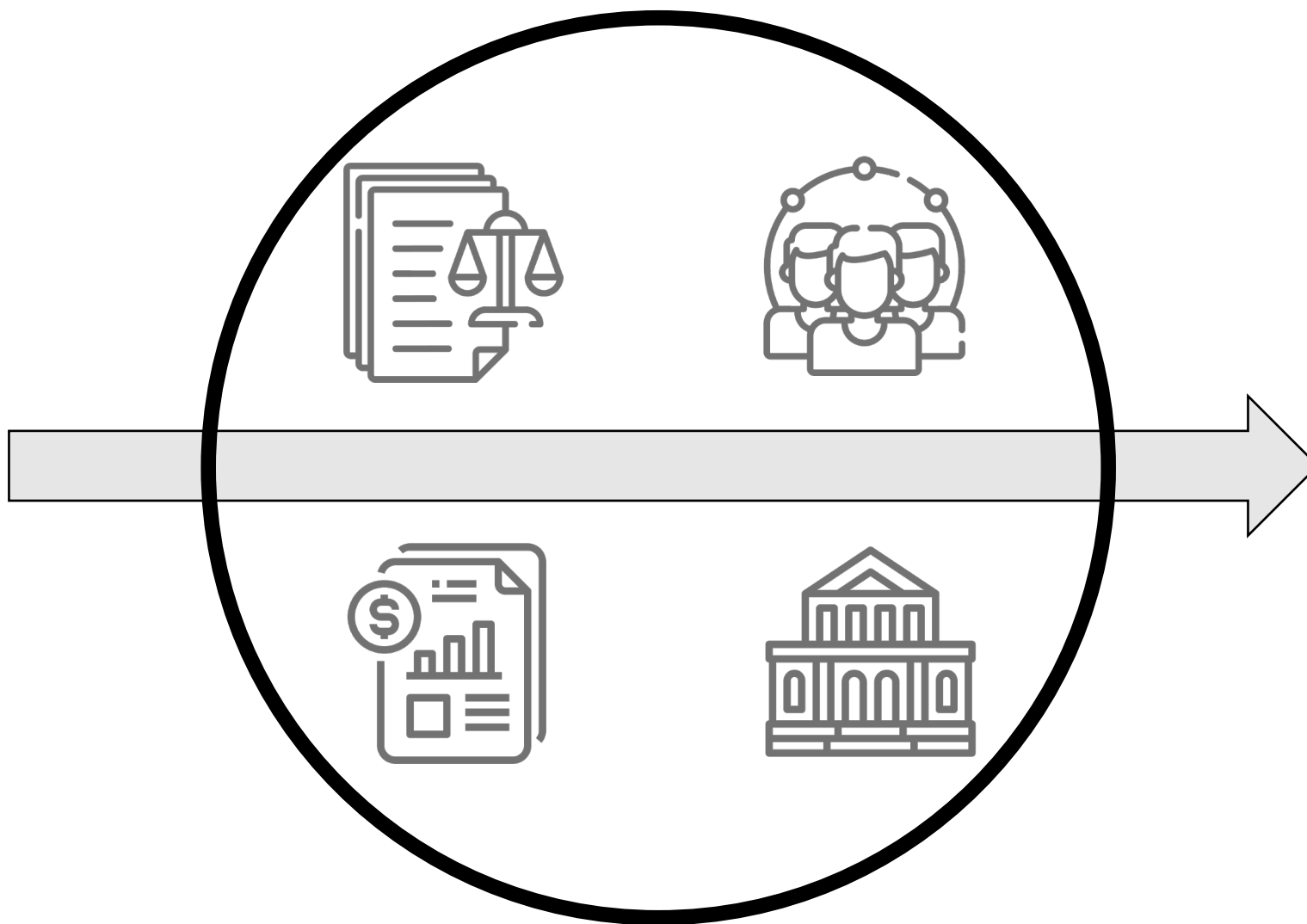
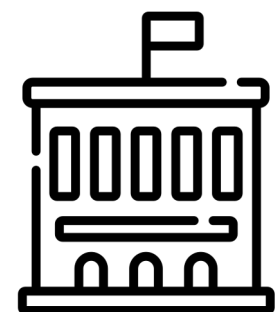
Advisory  
document



Why are housing developments on livestock farm locations not commonly utilized as a contributing solution to the nitrogen- and housing crisis in the Netherlands, and how can such developments be made more viable for farmers, municipalities and real-estate developers?







# Advisory document





## General remarks

- Create awareness of benefits
- Create awareness of possibilities
- Start projects





## **Practical advice for direct implementation**

- Easier land-use plan changes
- Efficient process
- Priorities projects

## **Advice that need further research before implementation**

- Capacity municipalities
- Funding for capacity
- Improvement public participation process
- New land-use plan formats
- Potential legal challenges



## **Practical advice for direct implementation**

- Working relationship
- Perspective farmers
- Farmers should accept situation
- Focus older farmers

## **Advice that need further research before implementation**

- Guidance for farmers
- ‘director’ for development process



## **Practical advice for direct implementation**

- Create awareness
- Capitalize on current situation
- Certainty and clear policy
- Guarding of the public benefit

## **Advice that need further research before implementation**

- Appointing development locations
- Cooperation developers and government
  - Sale of residual nitrogen rights
  - Use of municipal/provincial land companies

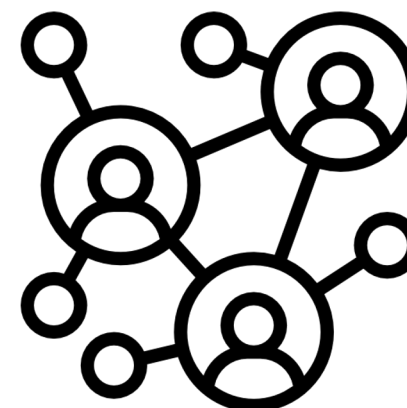
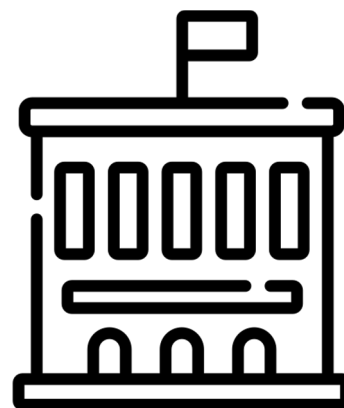


## Practical advice for direct implementation

- Farmers should accept reasonable exit
- Focus on farmers in an unsustainable financial situation
- Lengthy legal procedures

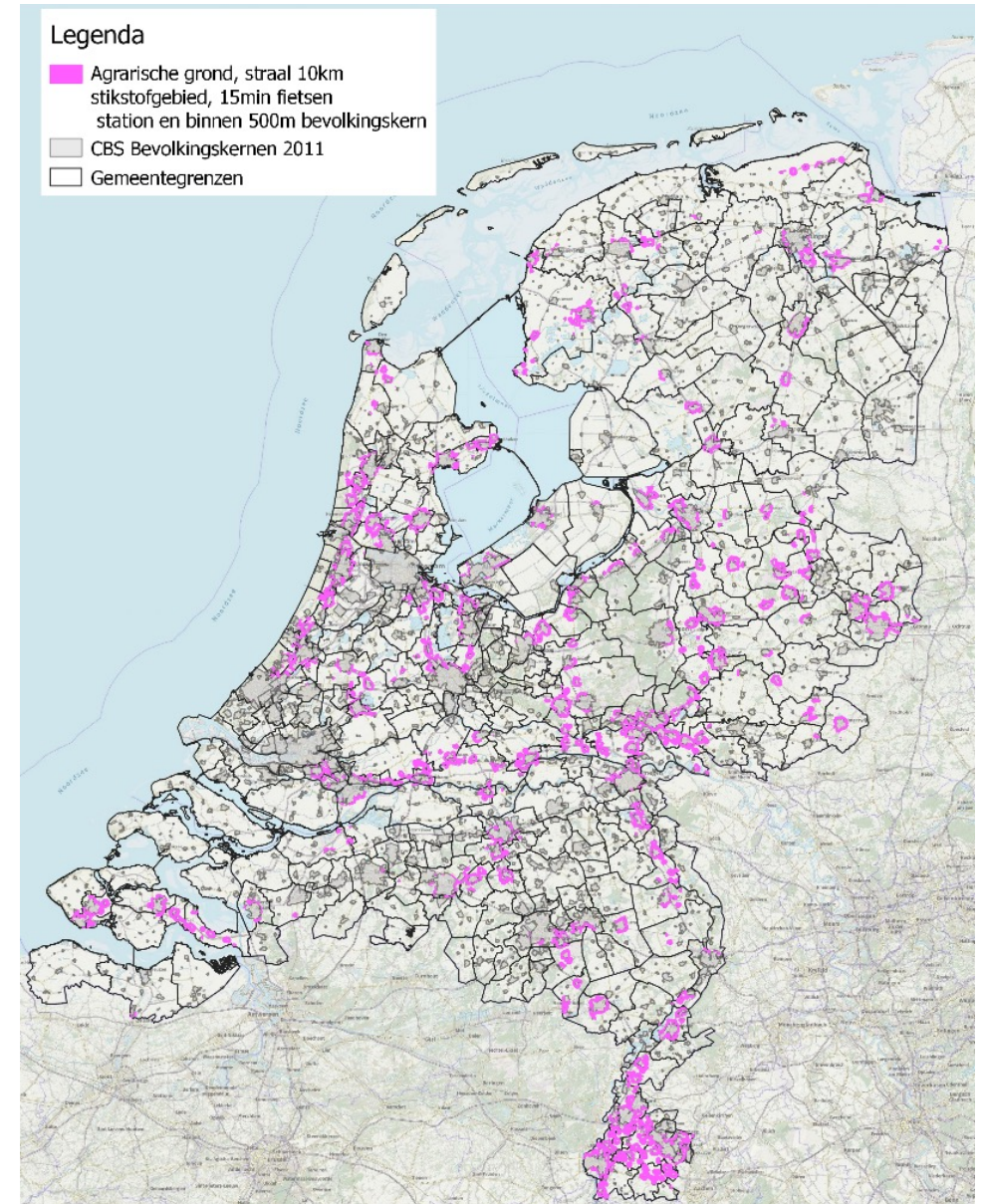
## Advice that need further research before implementation

- Financial waivers
- *Cooperation developers and government*





- Implementation of GIS model





- Implementation of GIS model
- Inputs for developing housing on a livestock farm location



Does the neighbor want to extensivate?



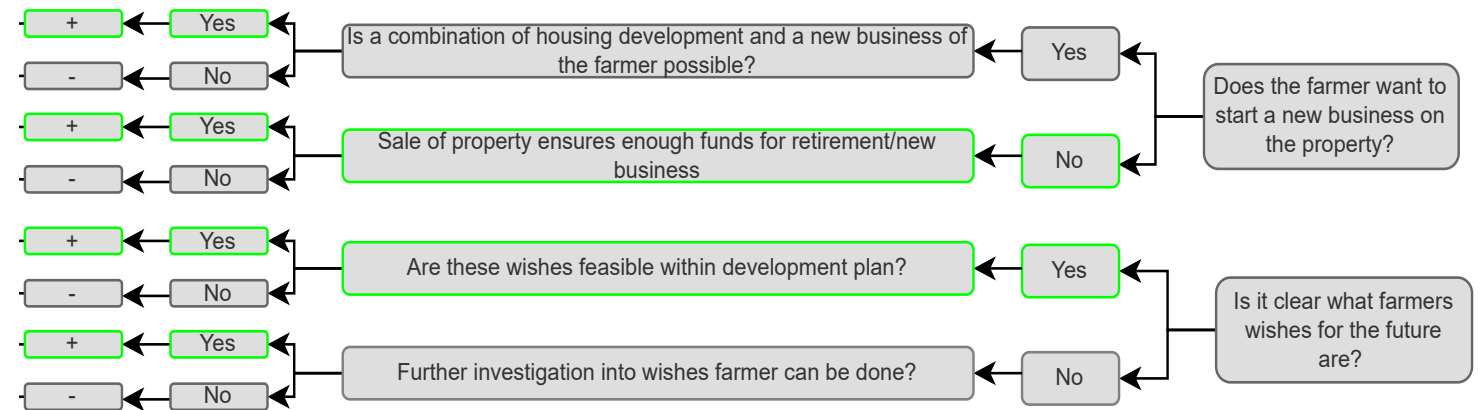
- Implementation of GIS model
- Inputs for developing housing on a livestock farm location
- Risk mitigation when developing housing on a livestock farm location



Changing regulations concerning internally offsetting nitrogen



- Implementation of GIS model
- Inputs for developing housing on a livestock farm location
- Risk mitigation when developing housing on a livestock farm location
- Roadmap for housing developments on livestock farm locations



# Discussion

# Discussion

- Interpretations
- Limitations
- Recommendations

# Thank you!

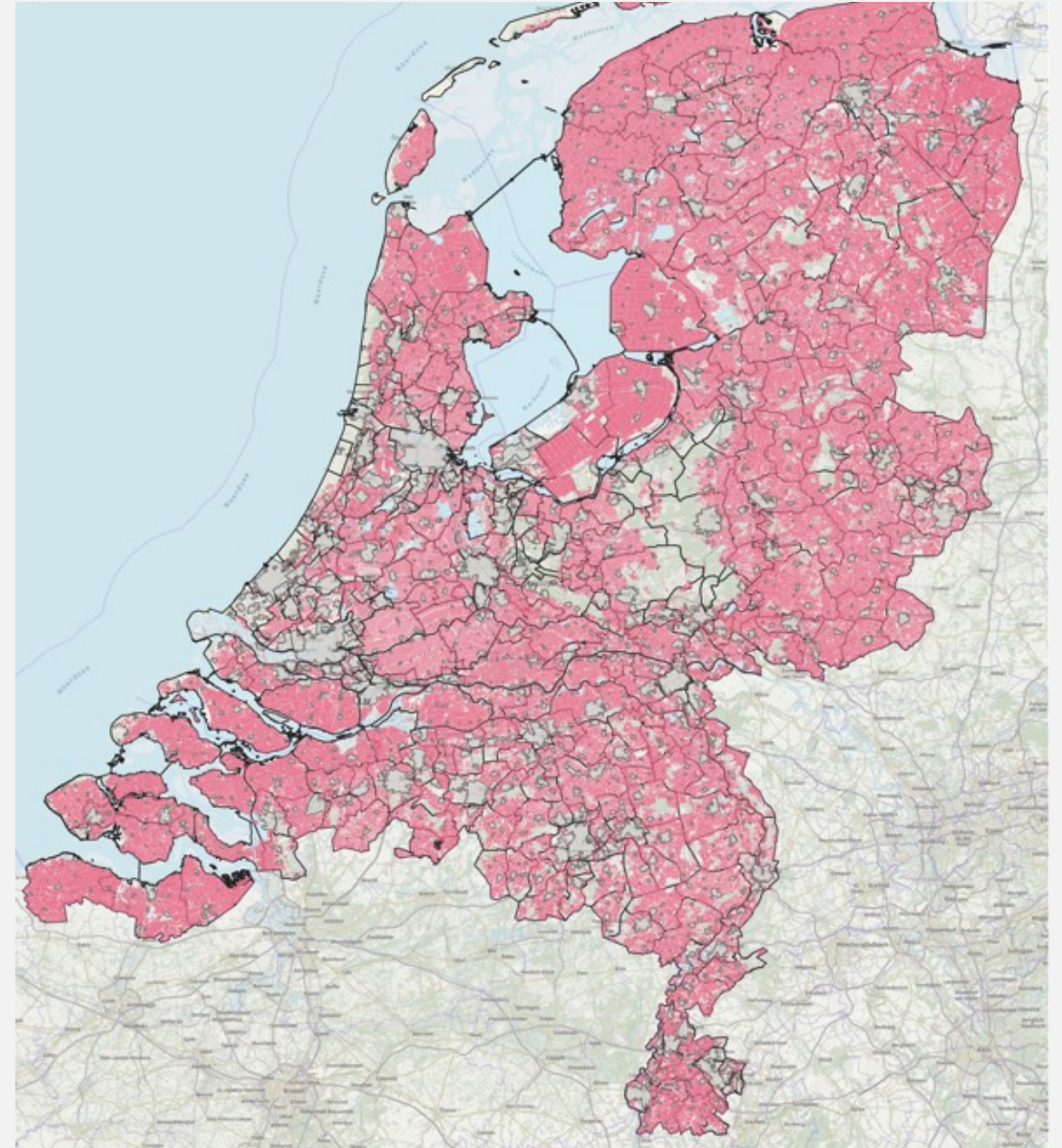


# Questions?



# Questions?

Question for you: what does this map depict?



# Questions?

