

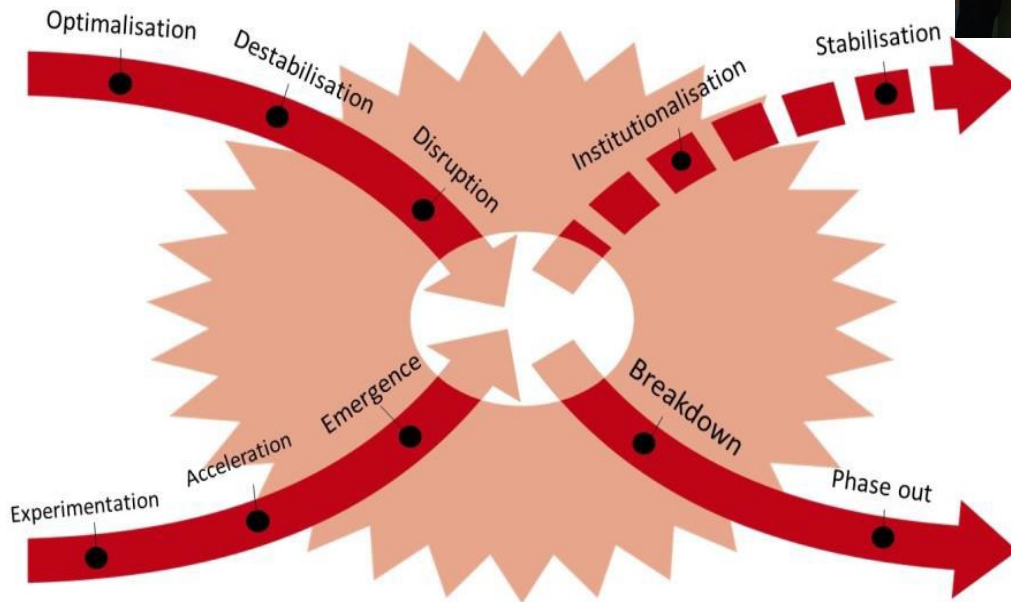


**Rijkswaterstaat**  
*Ministry of Infrastructure  
 and Water Management*



# Global Challenges, Local Solutions!

Awareness is needed



Margot de Cleen  
 Co Molenaar

September 19, ENSA Amsterdam, 2019



Co Molenaar and Margot de Cleen  
Ministry of Infrastructure and Water Management  
Core group Initiative on Conscious Use of Soil



## ***A robust soil underneath the SDGs***

Creating public values,  
restoring degraded land

## **Land Stewardship**

**Transition  
thinking**



## North Sea

Inhabitants: 17 Million

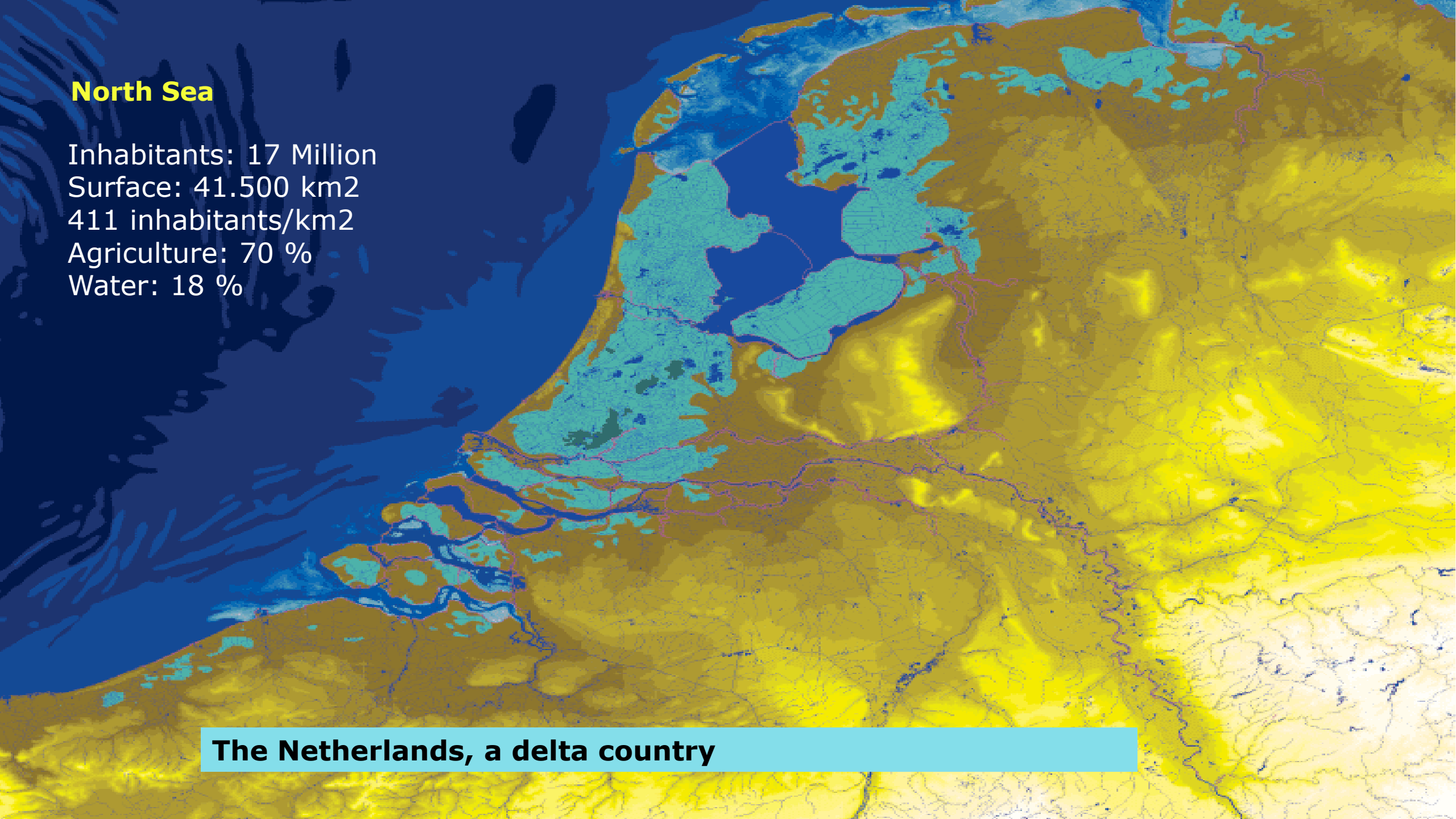
Surface: 41.500 km<sup>2</sup>

411 inhabitants/km<sup>2</sup>

Agriculture: 70 %

Water: 18 %

**The Netherlands, a delta country**





## North Sea

Inhabitants: 17 Million  
Surface: 41.500 km<sup>2</sup>  
411 inhabitants/km<sup>2</sup>  
Agriculture: 70 %  
Water: 18 %

### Our main challenges:

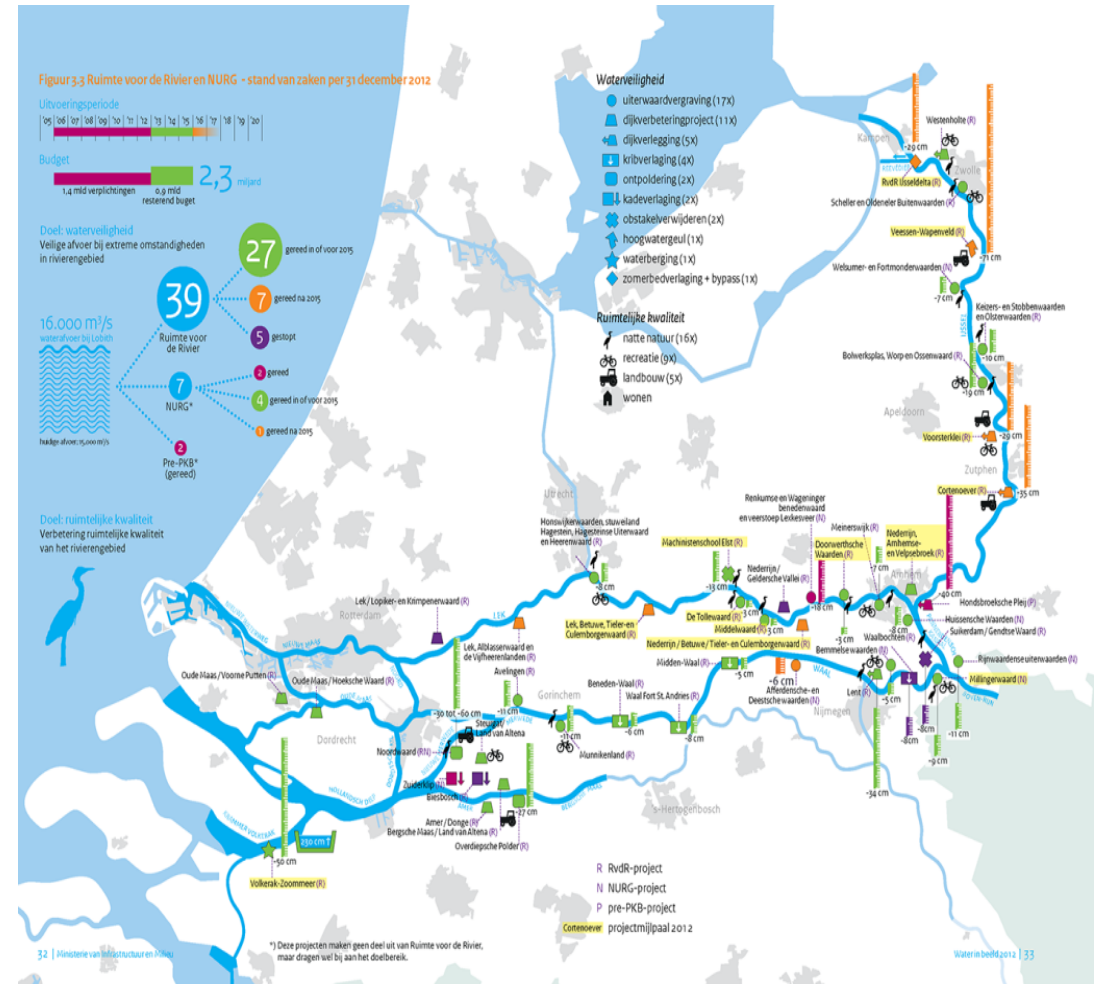
- Climate Change
- Energy production and distribution
- Healthy cities
- Sustainable Mobility
- Sustainable food production
- Circular economy

**The Netherlands, a delta country**





# Climate Change



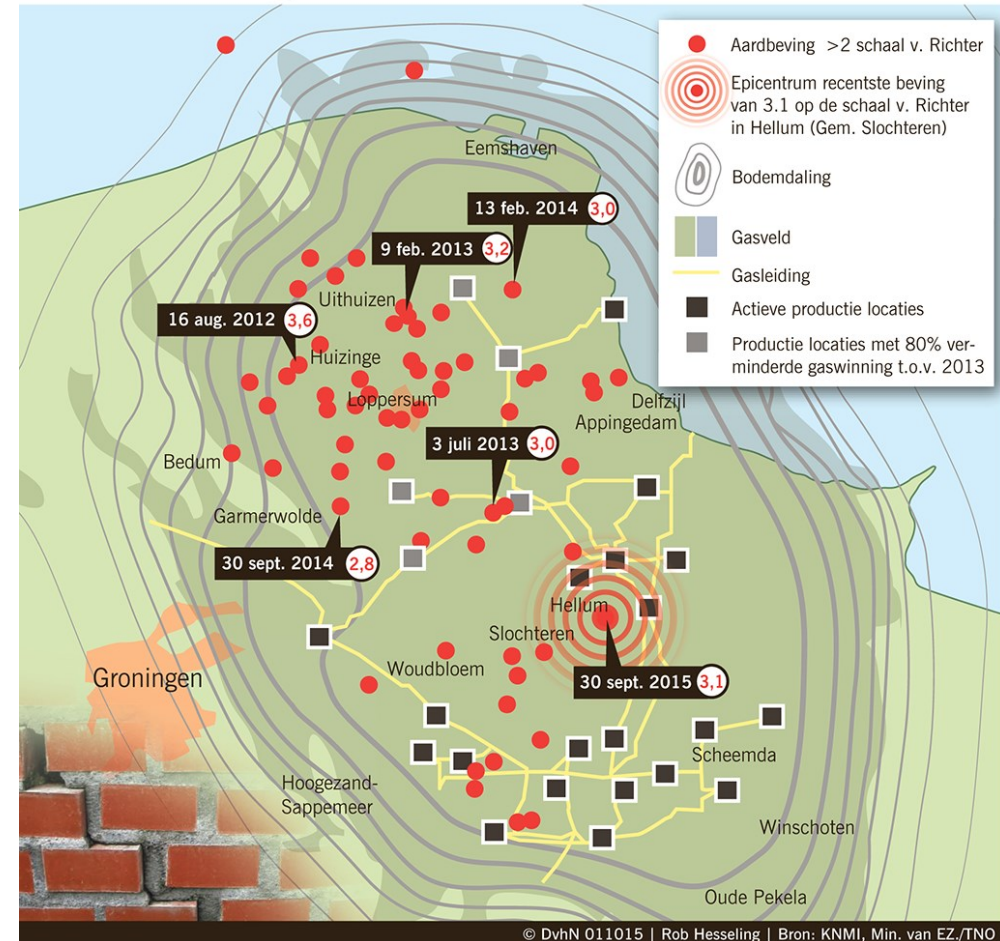




# Earthquakes caused by gas extraction in Groningen



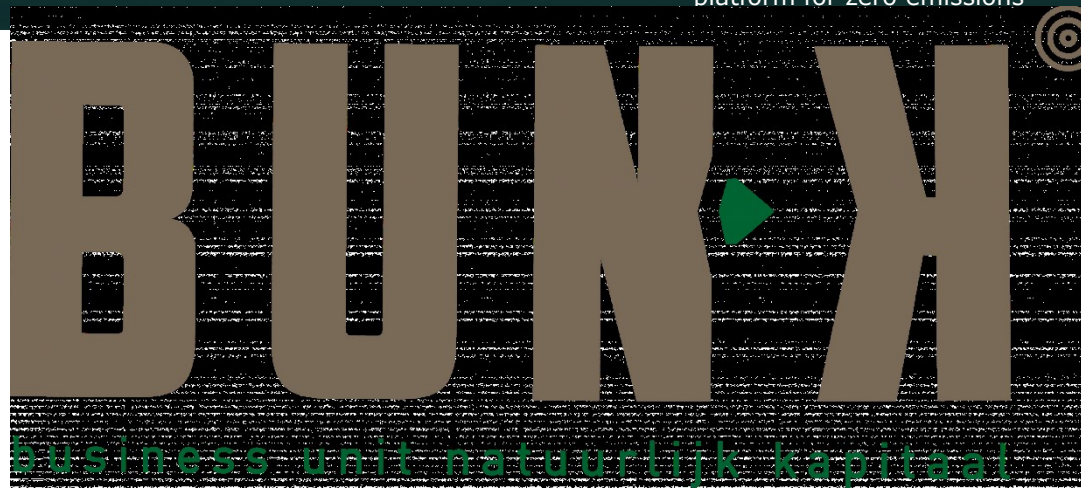
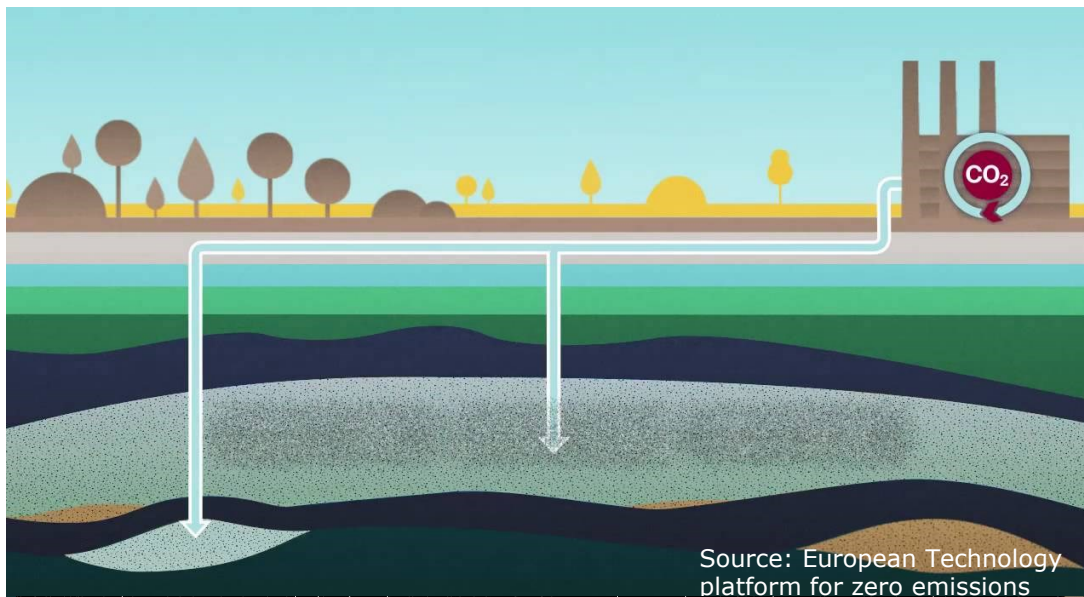
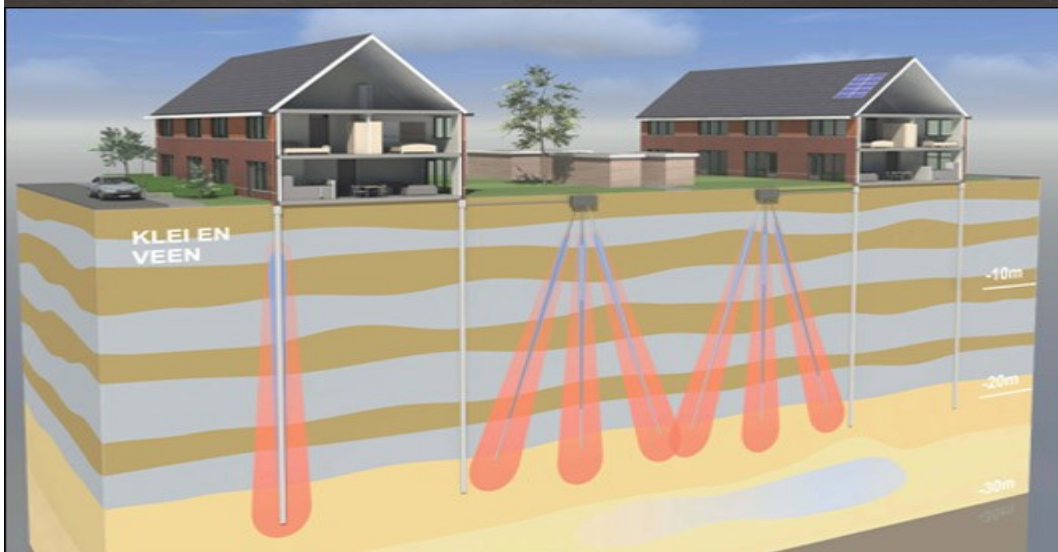
Recente aardbevingen zwaarder dan 2 op schaal van Richter







# Energy transition





# Healthy urban living



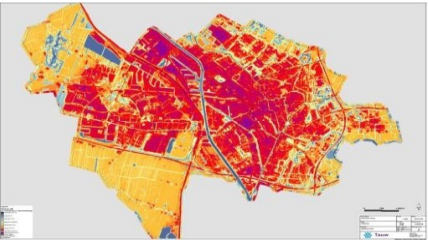
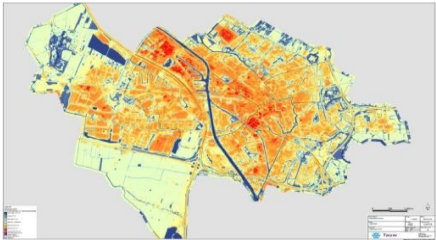
## Steenbreekdeelnemers



Cartografie: Jan-Willem van Aalst, [www.lmrgis.nl](http://www.lmrgis.nl) - Concept: Sjon Heijenga, [www.sjon.nl](http://www.sjon.nl)



Source: City of Rotterdam

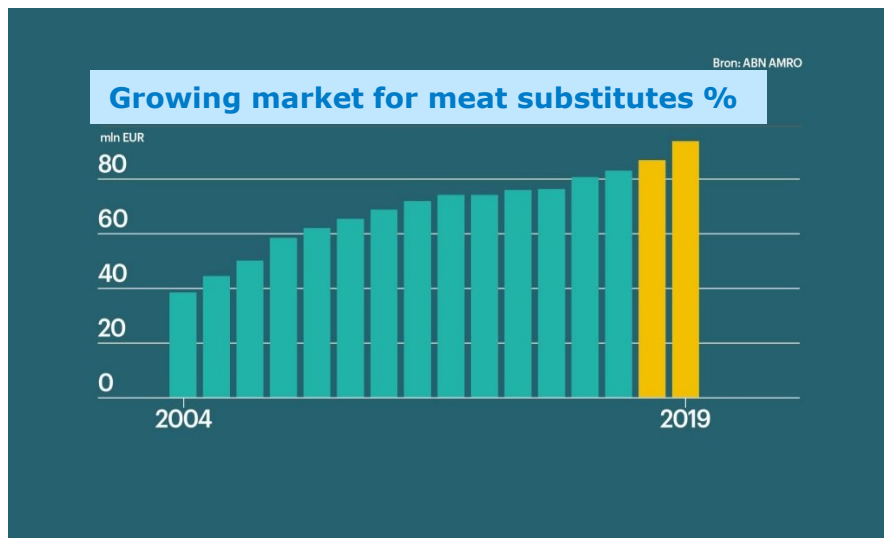


Source: City of Utrecht





# Towards a circular agriculture and food chain



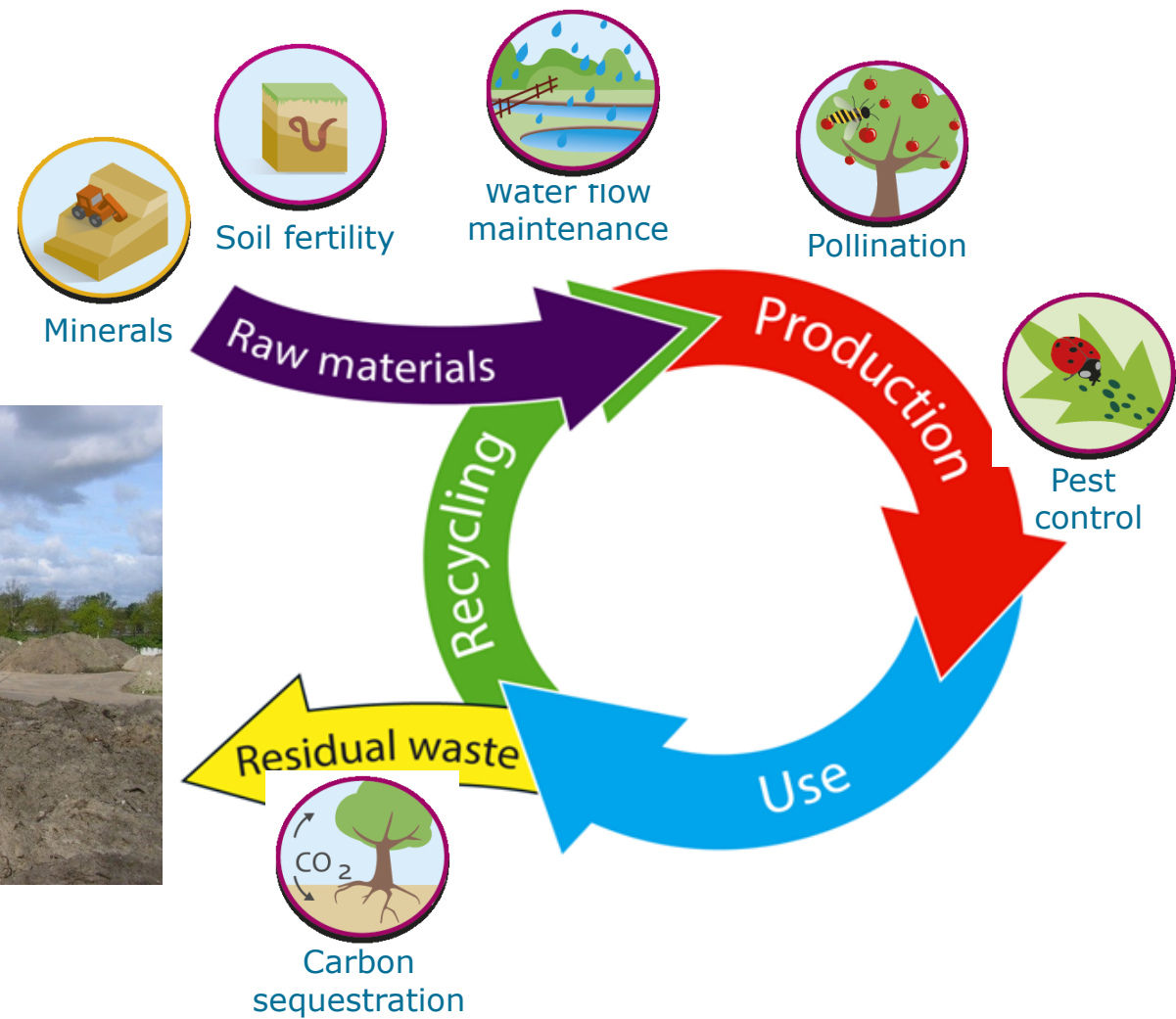
**Agriculture, nature  
and food: valuable  
and connected**

The Netherlands as a leader  
in circular agriculture





# Circular Economy







# Soil Policy Status Quo vs Challenges

- Historical contamination known and under control,  
**Emerging contaminants and diffuse contamination are the challenge**
- Reuse of excavated soil,  
**Reduction primary materials, value optimization, emerging contaminants**
- Covenant Soil and Subsurface,  
**Connecting with SDGs**
- National spatial plan for the subsurface!  
**Long term regional and local implementation, competing claims**
- Dialogue “a robust soil underneath the SDGs”,  
**Awareness building by connecting sectorial transitions**
- Soil ambassadors,  
**TerrAgenda: Restoration, land use and land management agenda**
- Flexible instruments,  
**Implementation in Environment and Planning Act**



## Current situation: **drivers and pressures**

- **Pressure on land** is increasing
- **Land speculation** due to low interests rates
- **Competing claims** on land
- Soil and groundwater quality **deteriorates**

Year	Price Agricultural land (NL) per Ha
2002	€ 34.000
2003	€ 29.000
2004	€ 28.000
2005	€ 28.500
2006	€ 32.000
2007	€ 33.500
2008	€ 40.000
2009	€ 44.000
2010	€ 40.000
2011	€ 43.000
2012	€ 45.500
2013	€ 46.000
2014	€ 52.000
2015	€ 55.000
2016	€ 57.900
2017	€ 59.500
2018	€ 59.900





## Current situation: **state and impact**

- **Pressure on land** is increasing
- **Land speculation** due to low interests rates
- **Competing claims** on land
- Soil and groundwater quality **deteriorates**
- Policies are **sectorial** and mainly focussed on protection and remediation, land management policy lacks
- **Unconscious use** of the SSW can lead to substantial damage
- **Natural capital**, services SSW, are under used (more than NA)
- Challenge for **multifunctional** use of land
- **Stakeholders** are insufficiently involved

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# Paradigm shift in policy



From

**soil as a slave**

towards

**soil as Mother Earth**

towards

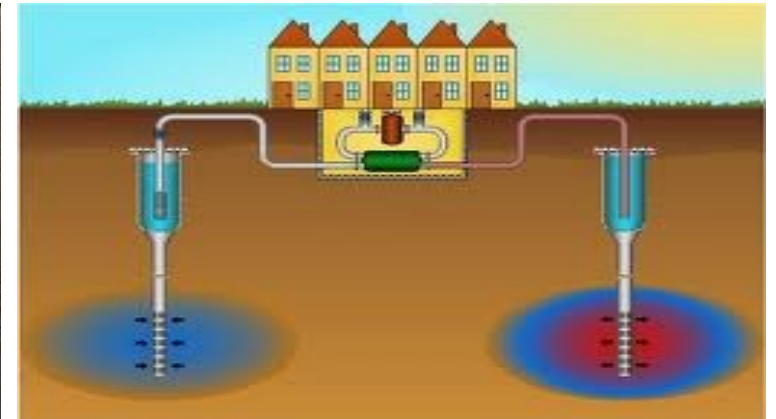
**soil as a partner**





## Show the value of soil for society

- The soil contributes to welfare;
- Revitalization/redevelopment is only possible in case of added value
- Values are worth protecting, sustainable use is value creation
- Sustainable use is value creation: values need protecting
- Unconscious use can lead to substantial damage
- The soil services are underused





# Address the benefits: connect the stakeholders

## Users and beneficiaries

- Developers, farmers, energy companies, drink water suppliers, citizens etc.

## Sharing of revenues

- National interests, regional interests, private interests

## Business development

- Innovation potential and export

Voorbeelden van ecosysteemdiensten Nederland

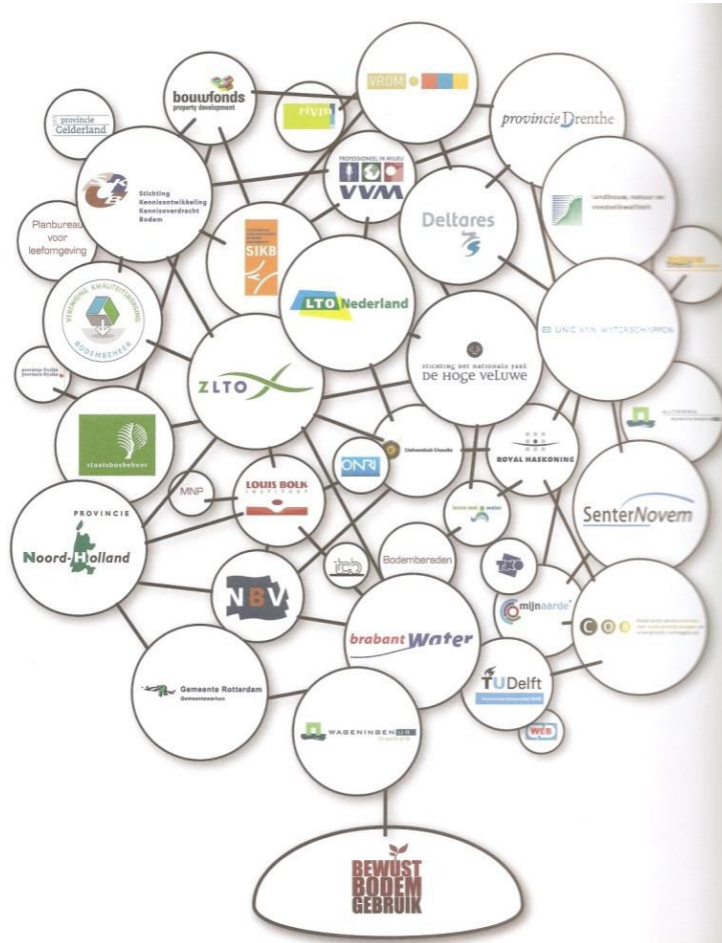


**First come first served?**





# Dialogue: A robust soil underneath the SDGs



Rijkswaterstaat  
Ministry of Infrastructure  
and Water Management



A robust soil underneath the SDGs



City Soil Master



Democracy of the subsurface



Modern land ownership



Land restoring (agriculture)



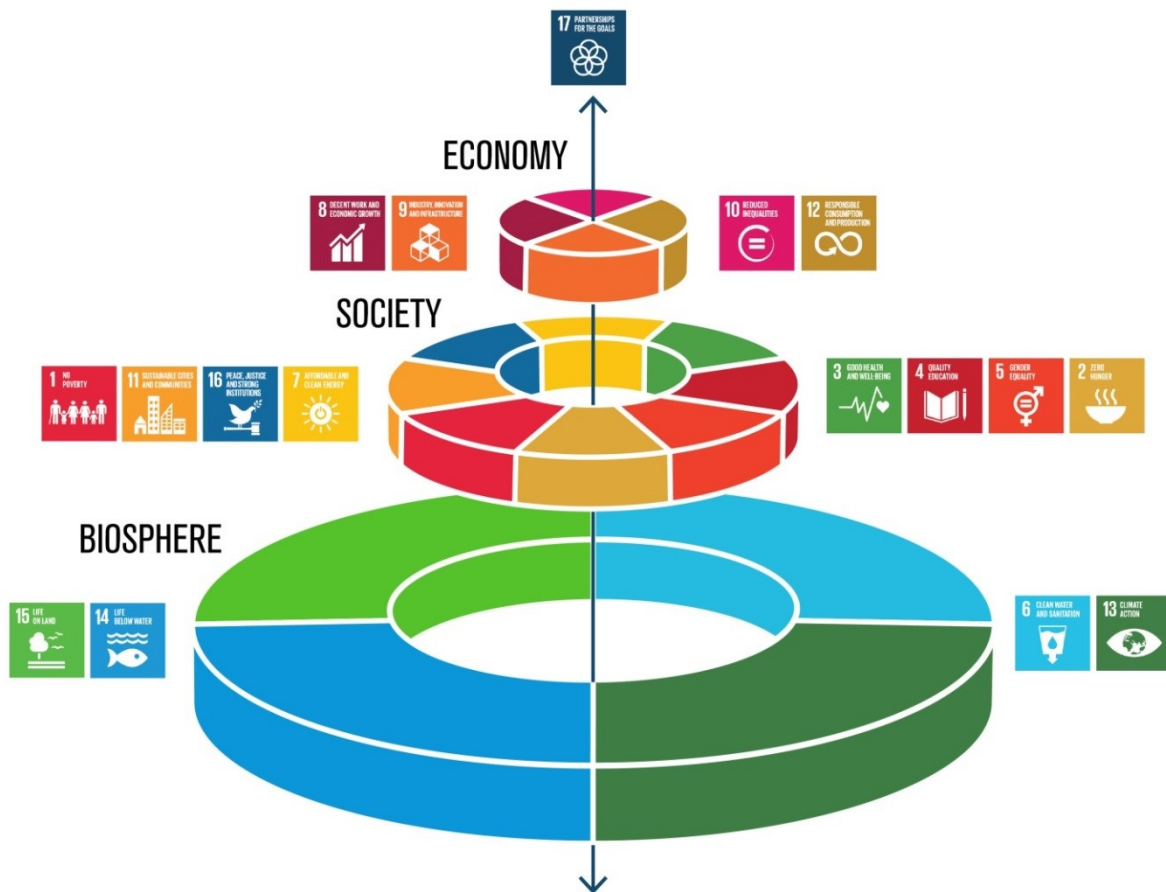


# Soil related SDGs





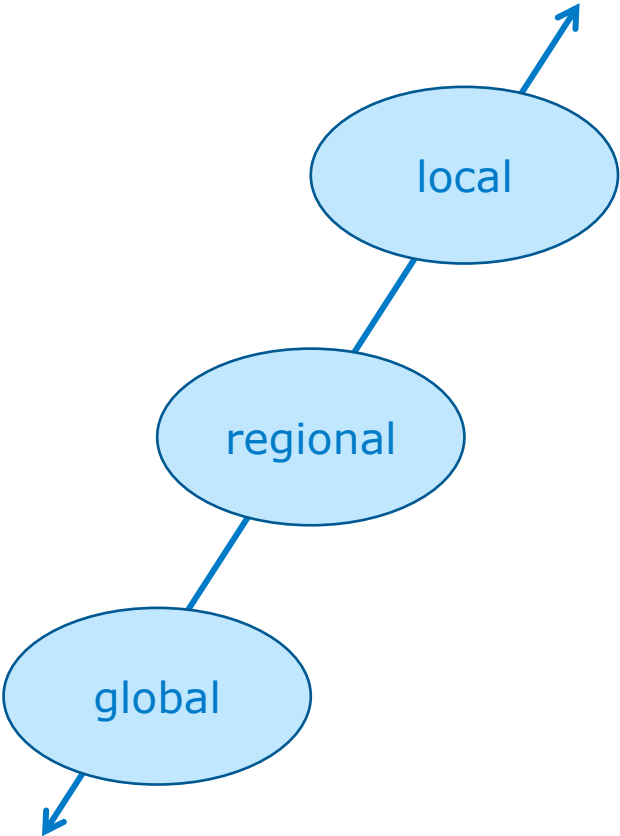
# Imbalance in spheres



**Short term**  
Quick wins  
Value extraction  
for individuals

**Mid term**  
Societal wins  
Cooperative

**Long term**  
Natural capital  
Value creation  
for stakeholders





# Factors influencing balance



## Short term

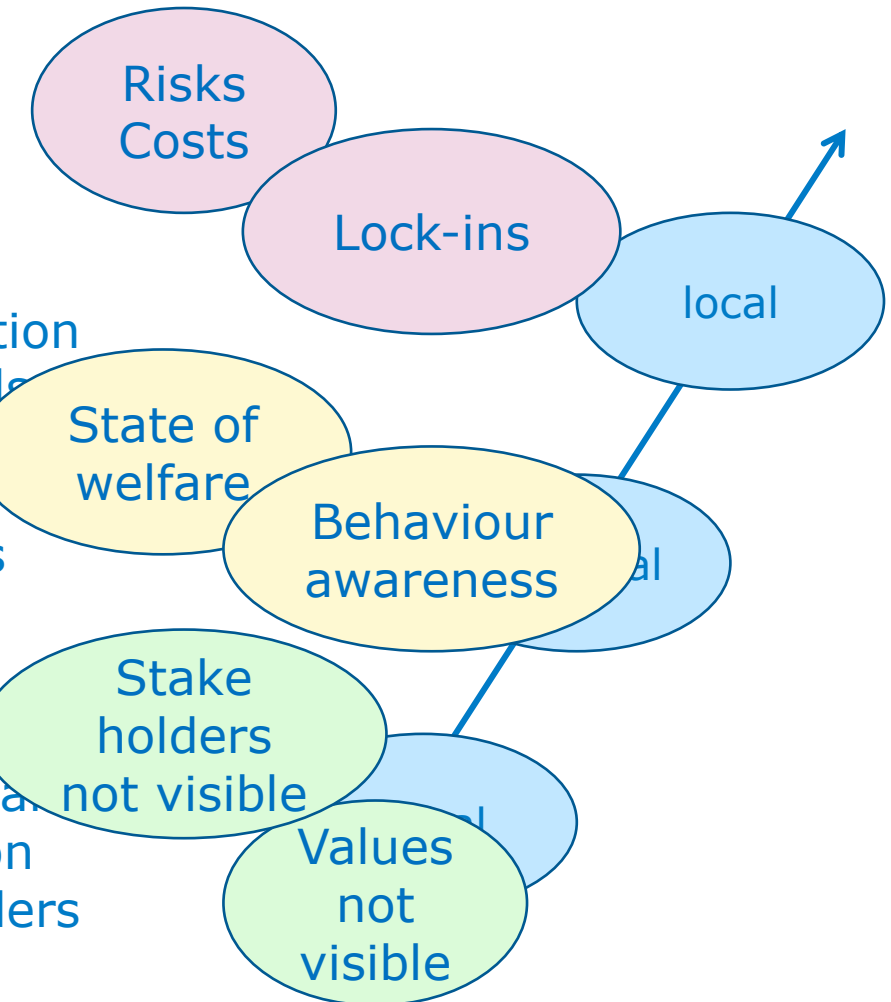
Quick wins  
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## Mid term

Societal wins  
Cooperative

## Long term

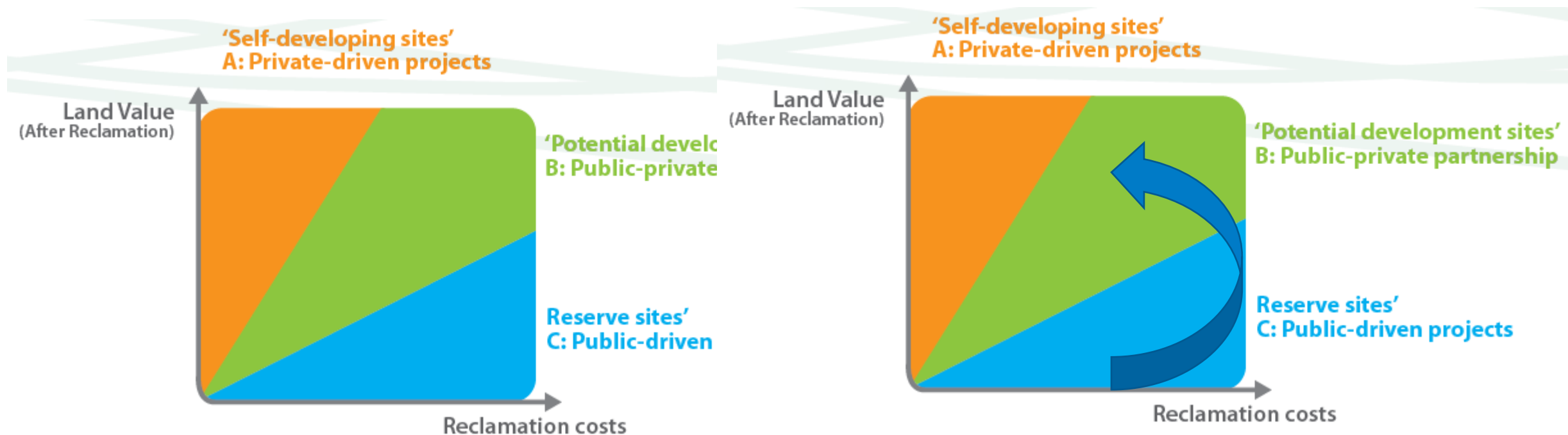
Natural capital  
Value creation  
for stakeholders







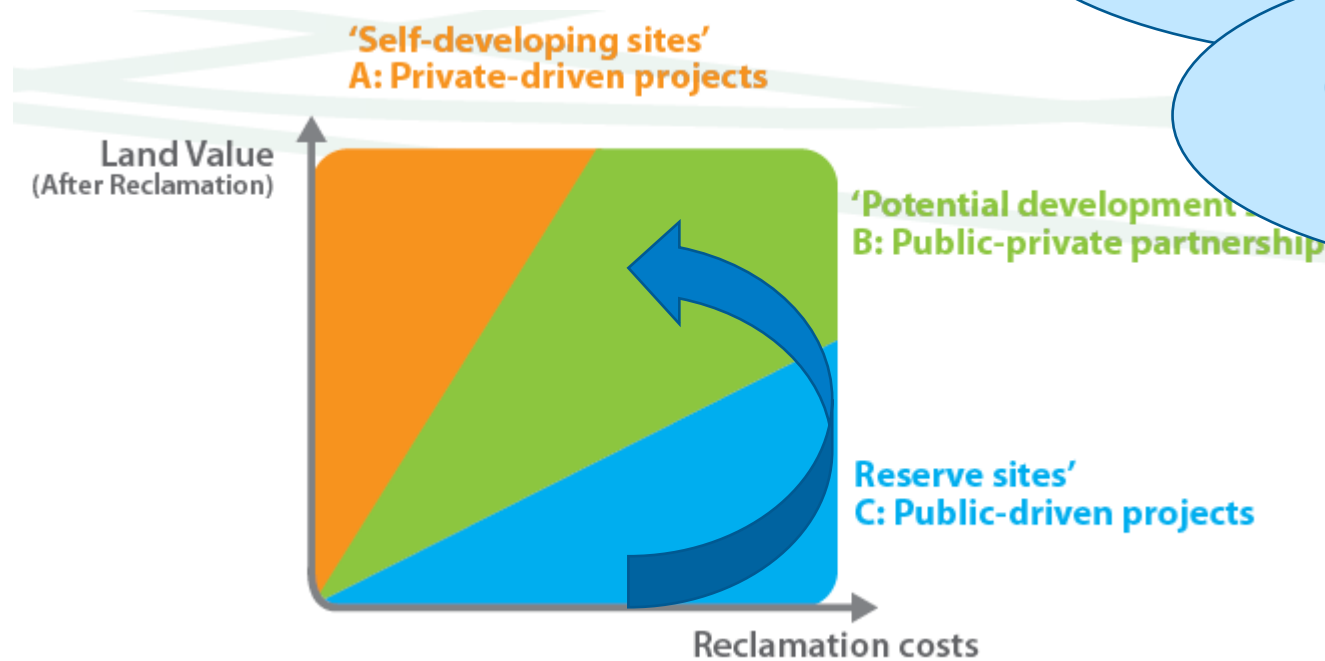
# Example of imbalance



Source: CABERNET A-B-C Model (CABERNET Network Report, 2006)



# Create balance



show value for public and private parties

Connect with societal challenges = SDGs

Connect with stakeholders

Up scaling to area approach

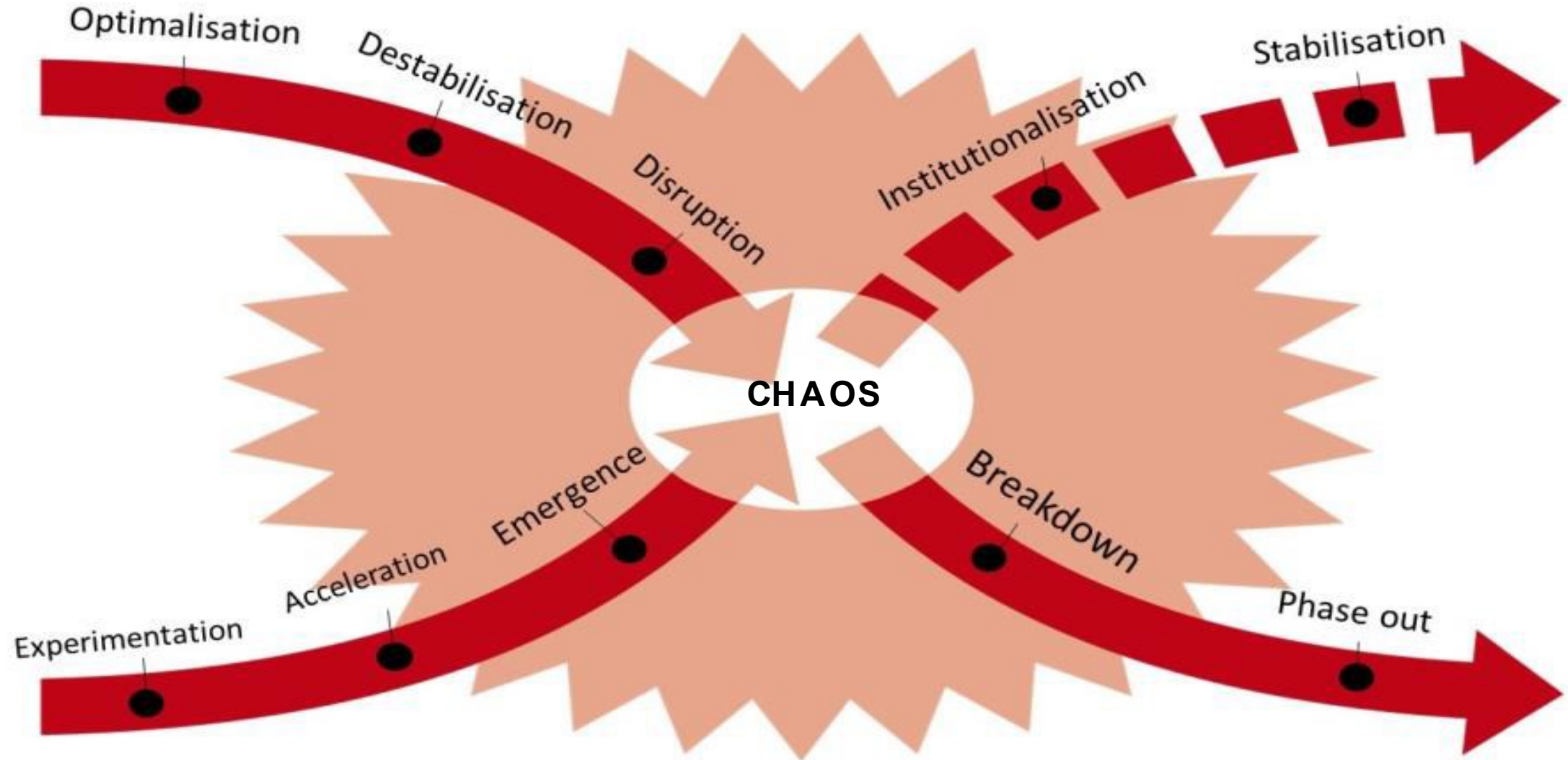
Source: CABERNET A-B-C Model (CABERNET Network Report, 2006)



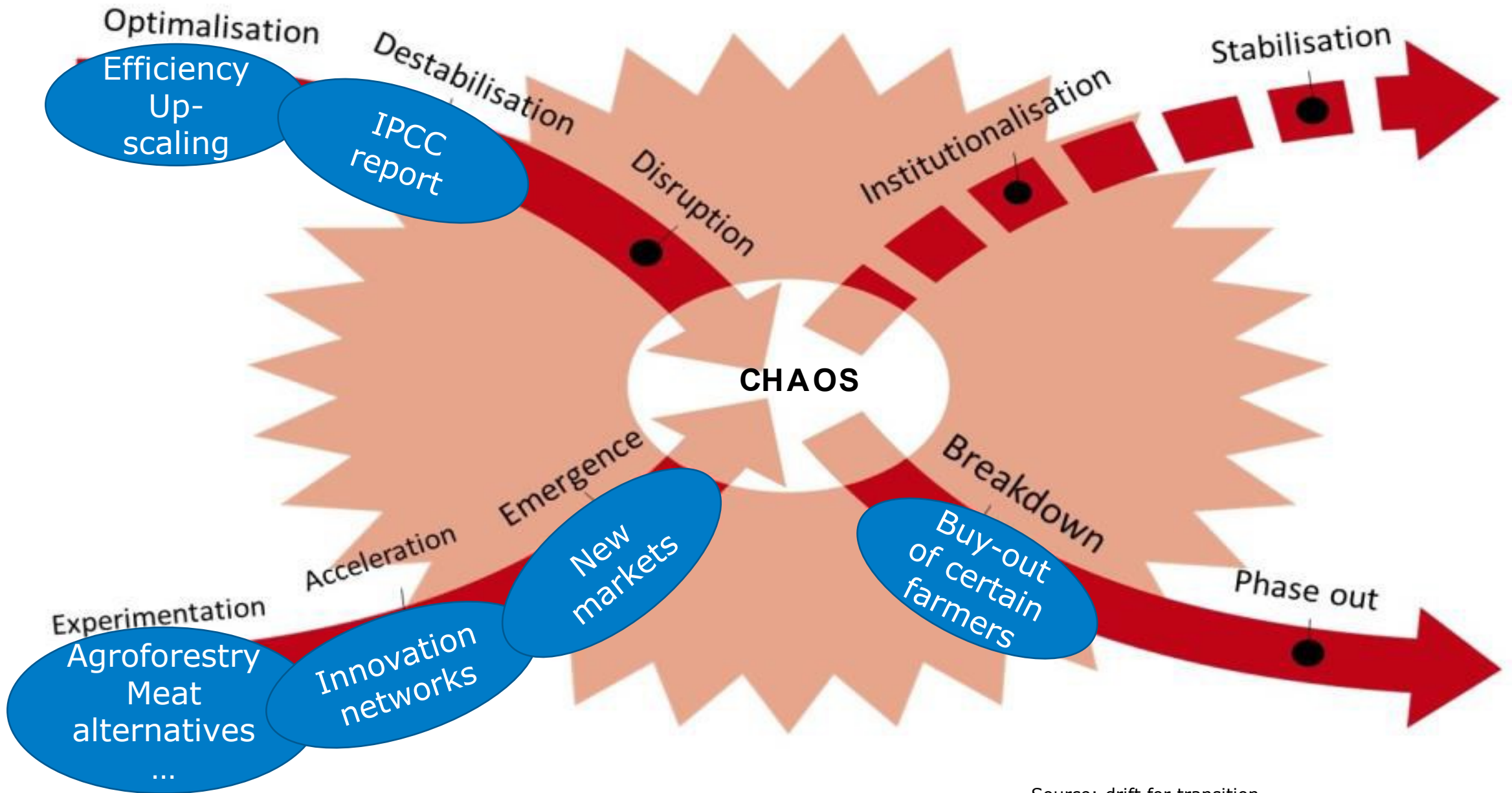
**Transitions are needed**



# Transitions take place, awareness is needed!









## Policy: what's different?

Political context	➡	urgency
Central	➡	decentral
Sectorial	➡	integral
Local	➡	area oriented
Top down	↔	bottom up
Value extraction	➡	Value creation
Functions leading	➡	Natural system leading (NBS)
Chemical and production	➡	soil functions (ESS)
2D	➡	3/4 D
➡ <b>New policy instruments, stakeholder involvement and business models are needed</b>		



# Examples

- Green deal
- 4 Returns Common Land
- Land stewardship
- Nature based solutions
- ....







# Campaign "Soil your Partner"

## Grassroots



## Internalization and institutionalization

Government facilitates network and stimulates citizens by a campaign

Capacity building within (governmental) organizations

Grassroots  
Creating  
networks

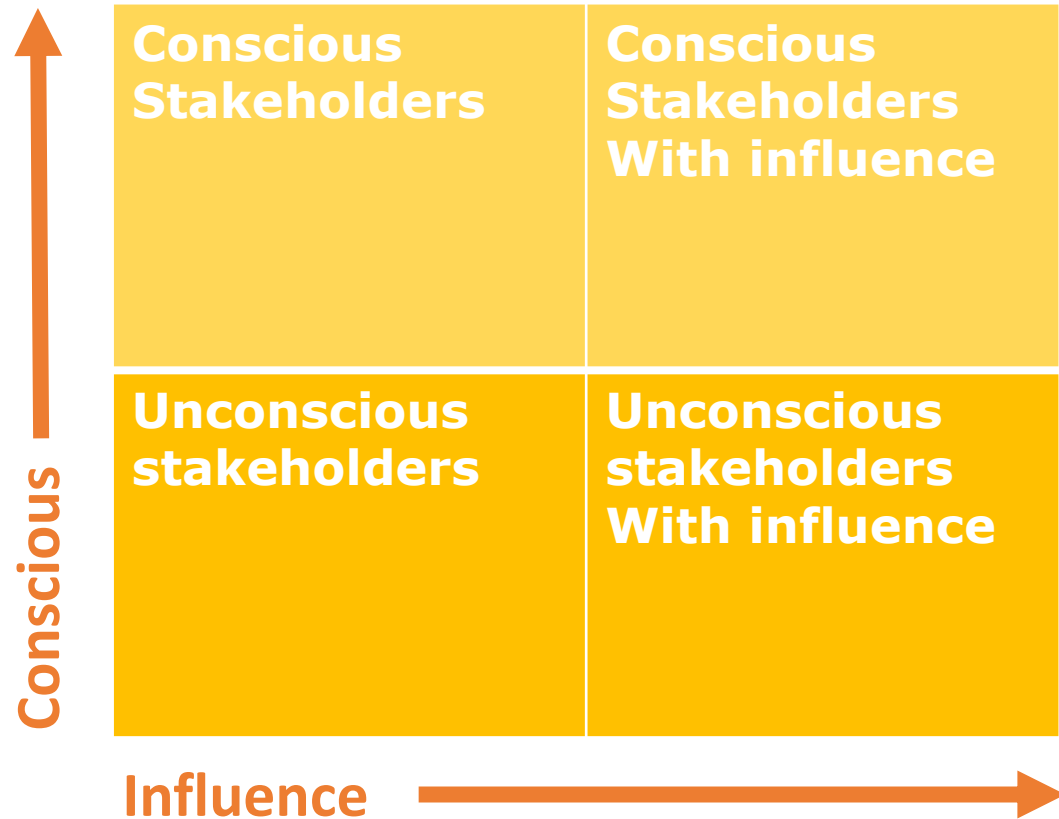
Connect grassroots and organizations

Grassroots stimulate (existing) initiatives in development and connect with society





# Stakeholder analysis



## Example: city of Nijmegen





## What are our hiccups?

- Soil is everywhere and nowhere at the same time
- Giving soil a face and voice
- A simple communication message or indicator like CO<sub>2</sub> for climate change
- Public goals and private means
- Values are not visible
- Connect short term with long term ambitions
- The transitions are in different phases
- Lock ins
- Lack of knowledge in weighing economic, social and natural (intrinsic) values.





If you take care of  
the soil, the soil'll  
take care of you!



[Margot.de.cleen@rws.nl](mailto:Margot.de.cleen@rws.nl)  
[Co.molenaar@rws.nl](mailto:Co.molenaar@rws.nl)