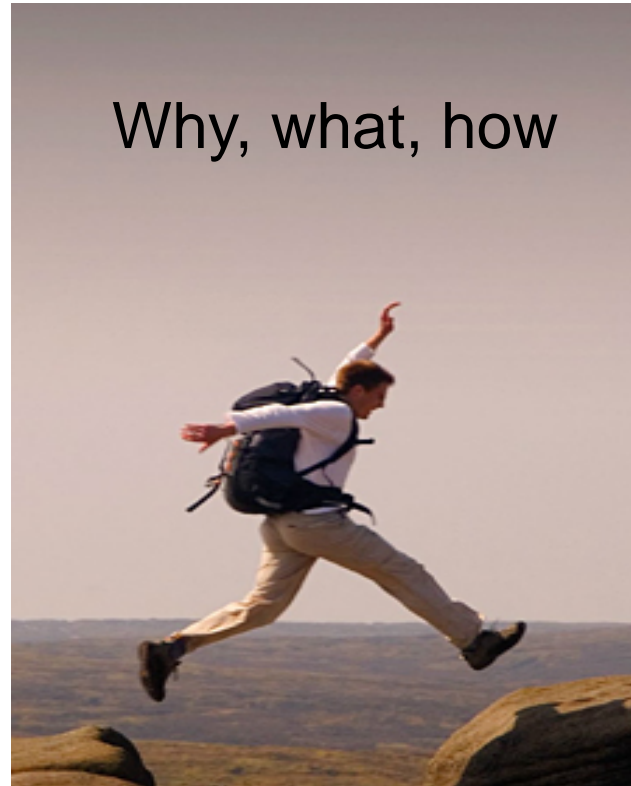




Systemic innovation



Roald Suurs, Elsbeth Roelofs
March, 13, 2014



Set up presentation

Why?

- › Why systemic innovation is needed?

What?

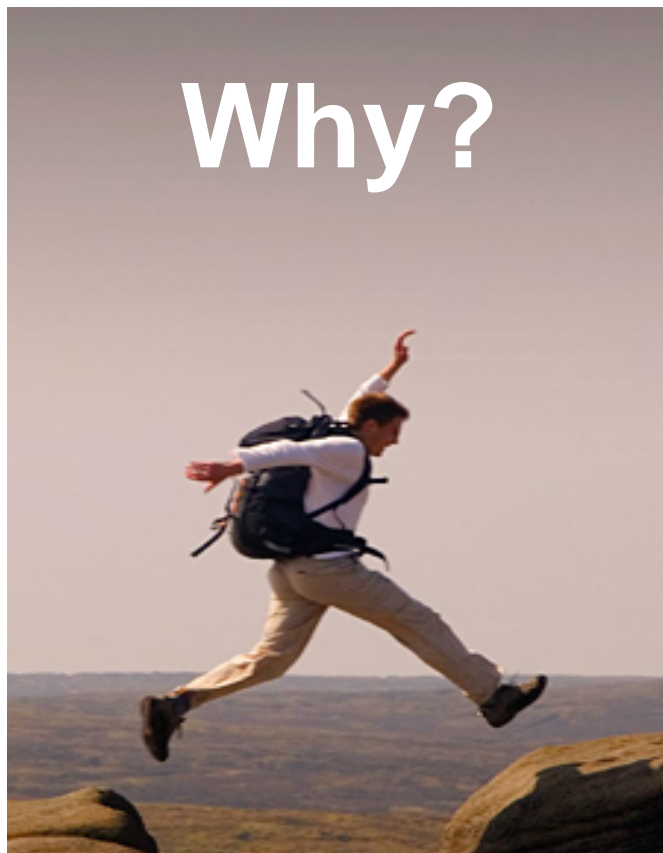
- › A definition of systemic innovation
- › Multi level model

How?

- › Methods for analysing and influencing systemic innovation

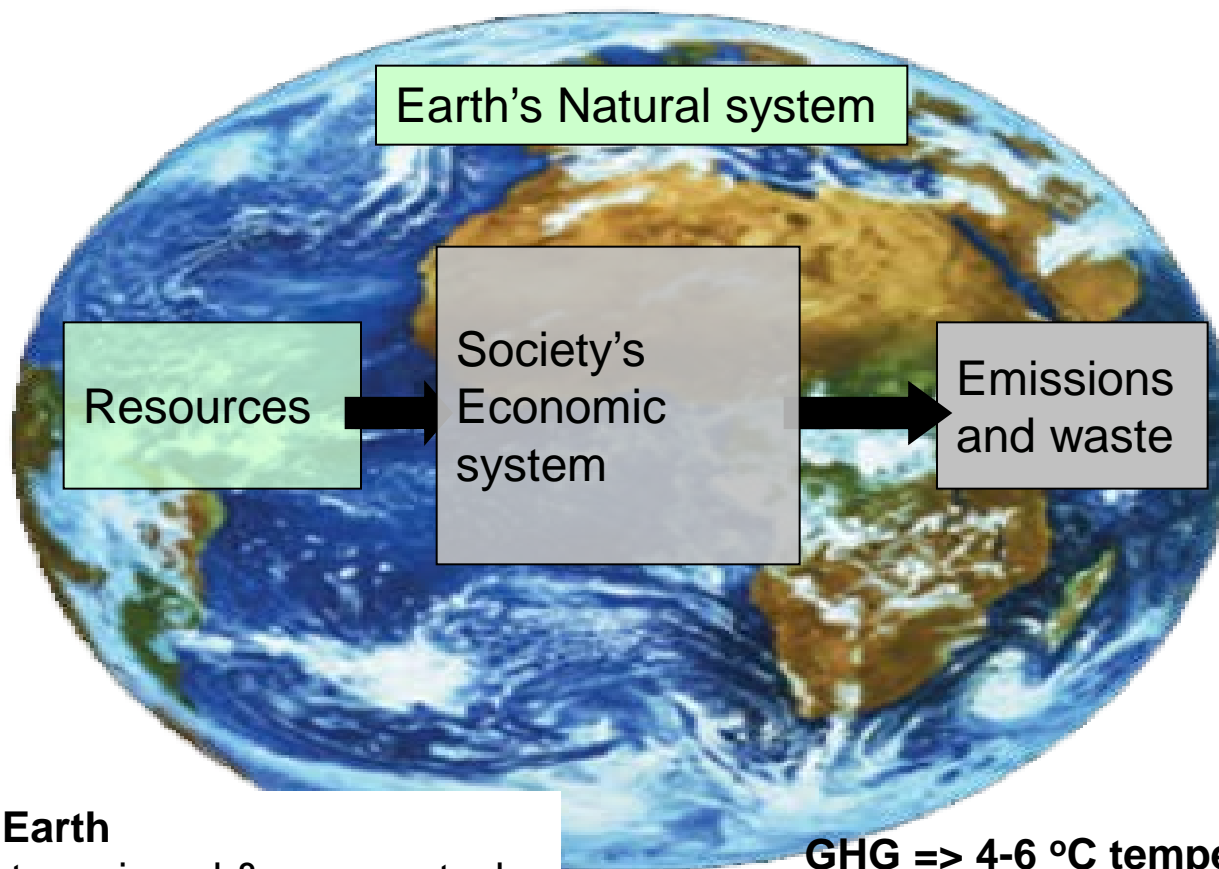


Why?





The sustainability problem



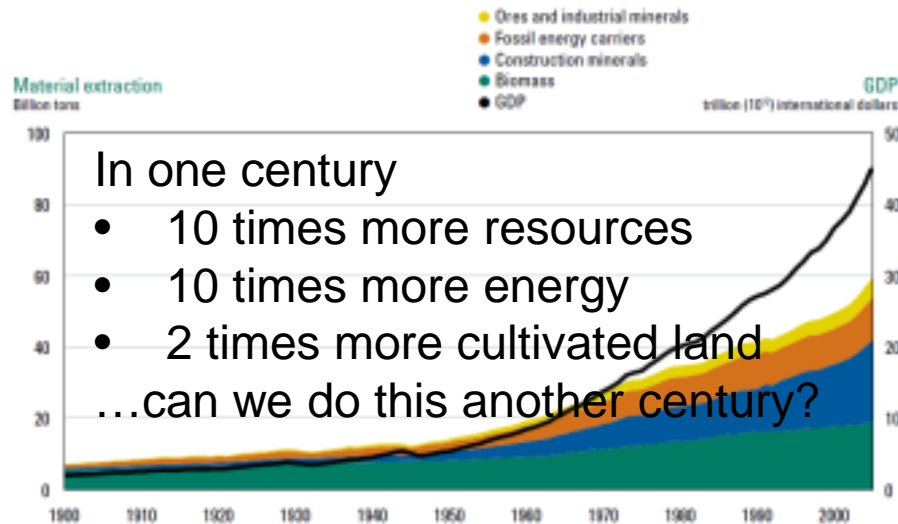
Footprint > 1 Earth

We deplete water, mineral & energy stocks
We use 35 % of biomass production
We have depleted fish stocks

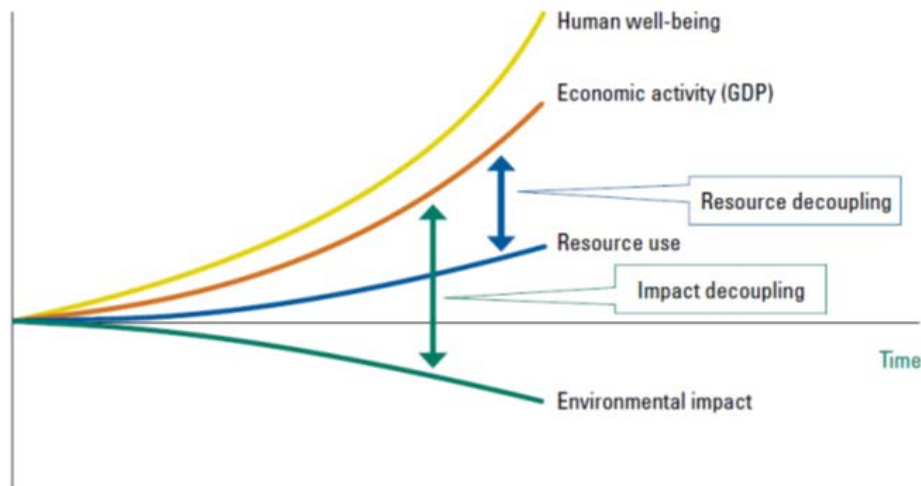
GHG => 4-6 °C temperature rise
Environmental consequences of
traffic, industry and other activities ...



Resource and sustainability problems



Source: Krausmann et al., 2009



Required:

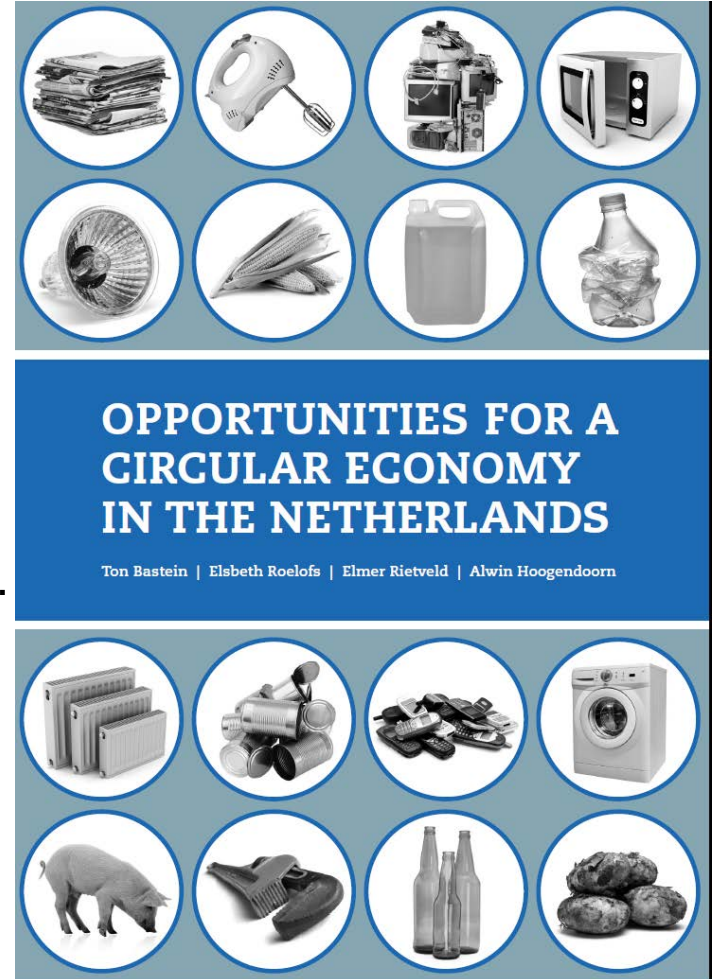
- A new generation of environmental policy focuses on promoting systemic innovation.
- Aimed towards transforming the socio-technological systems producing persistent societal problems.....
- Instead of mitigating effects (1st generation) and dealing with sources of environmental degradation (2nd generation).



Opportunities for a circular economy in the Netherlands

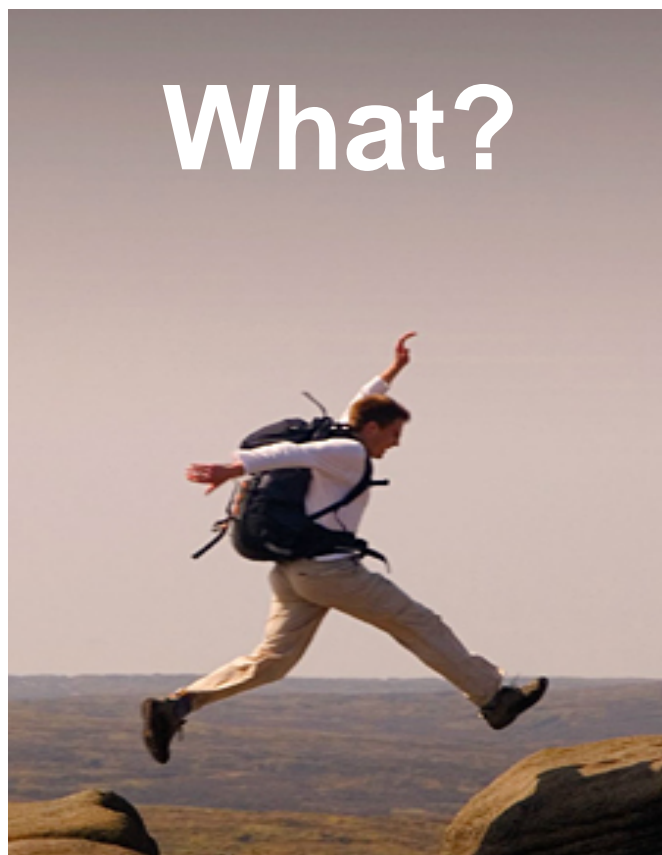
Thorough translation of global analysis of Circular Economy report of Ellen McArthur foundation

Opportunities for system innovation: quantitative, economic analysis and qualitative, innovation system analysis.





What?





Definition of Systemic Innovation (1/2)

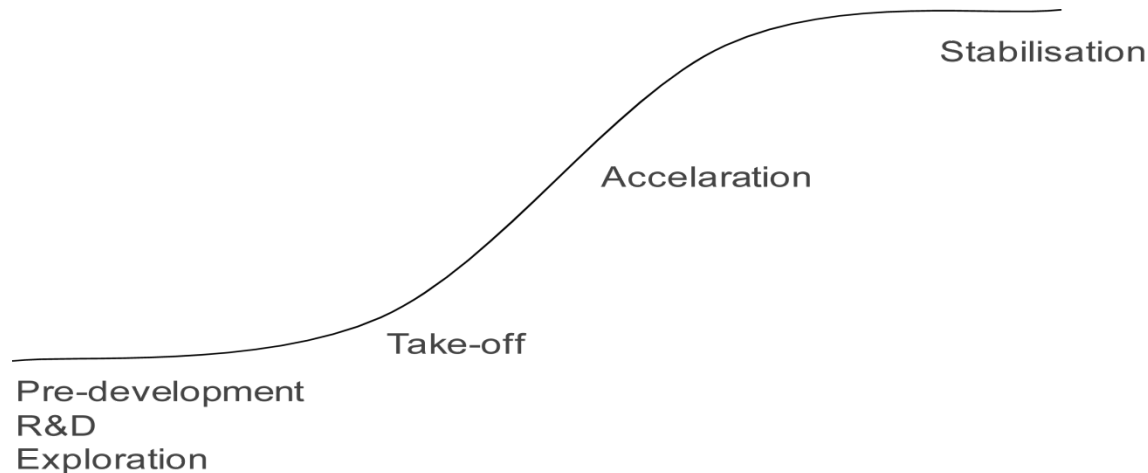
- › “(...) *large-scale transformations within society or important subsystems during which the structure of the societal system fundamentally changes.*”
- › *Examples are the shift from an industrial to a service economy, from extensive to intensive agriculture, and from horse-and-carriage to individual car-mobility (Geels, 2002).*





Definitions (2/2): some characteristics

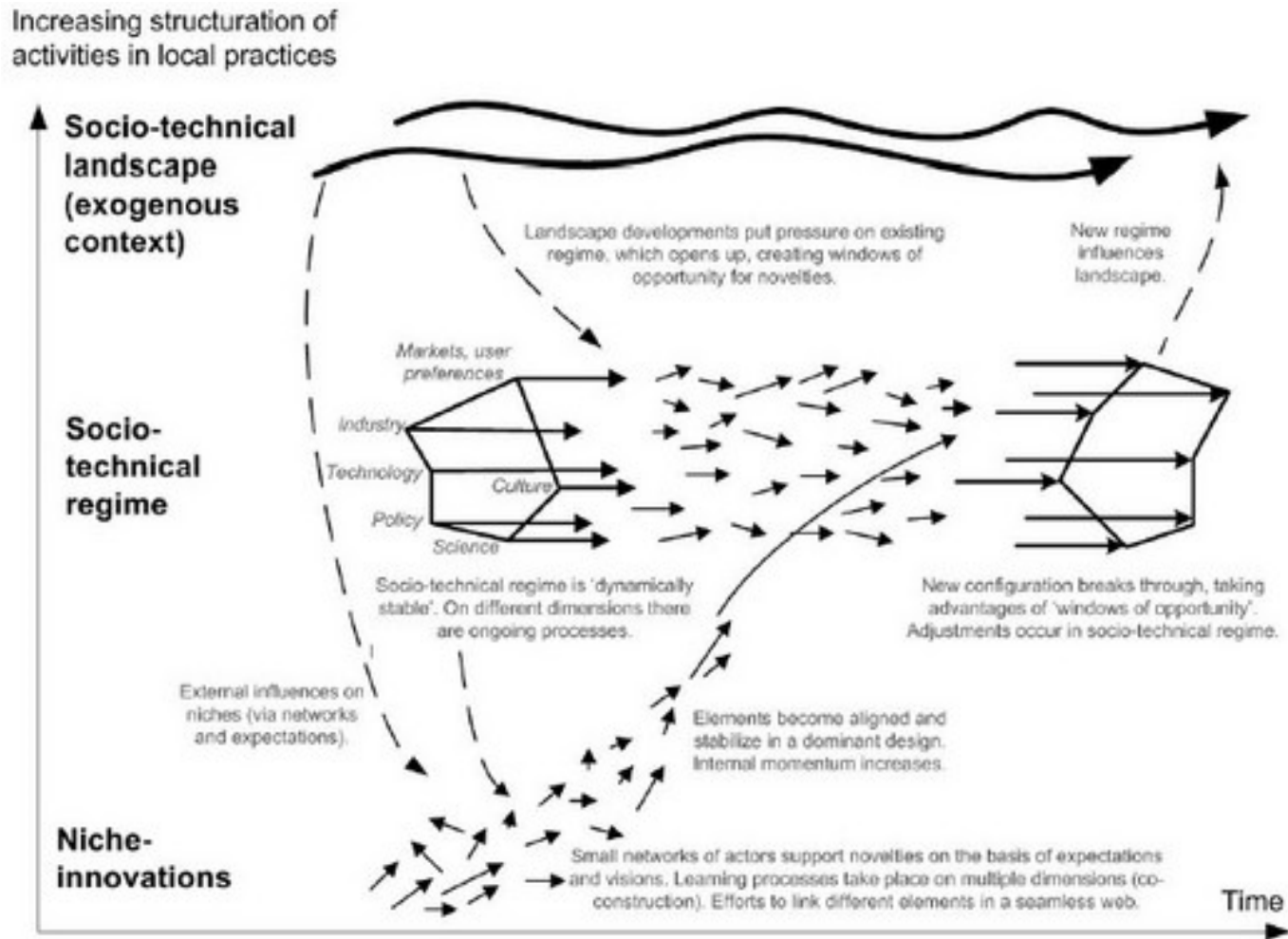
- › *Transitions comprise the shift of a relative stable system (dynamic equilibrium) that undergoes a period of rapid change, during which the system reorganizes irreversibly into a new (stable) system again (Rotmans, 1994).*
- › *Transitions involve **multiple stages**:*



- › *Transitions involve changes in **multiple socio-technical domains**.*
- › *Transitions are **multi-actor processes**, involving a large variety of actors.*
(Grin, Rotmans and Schot, 2010)



The multi level model as an analytical framework

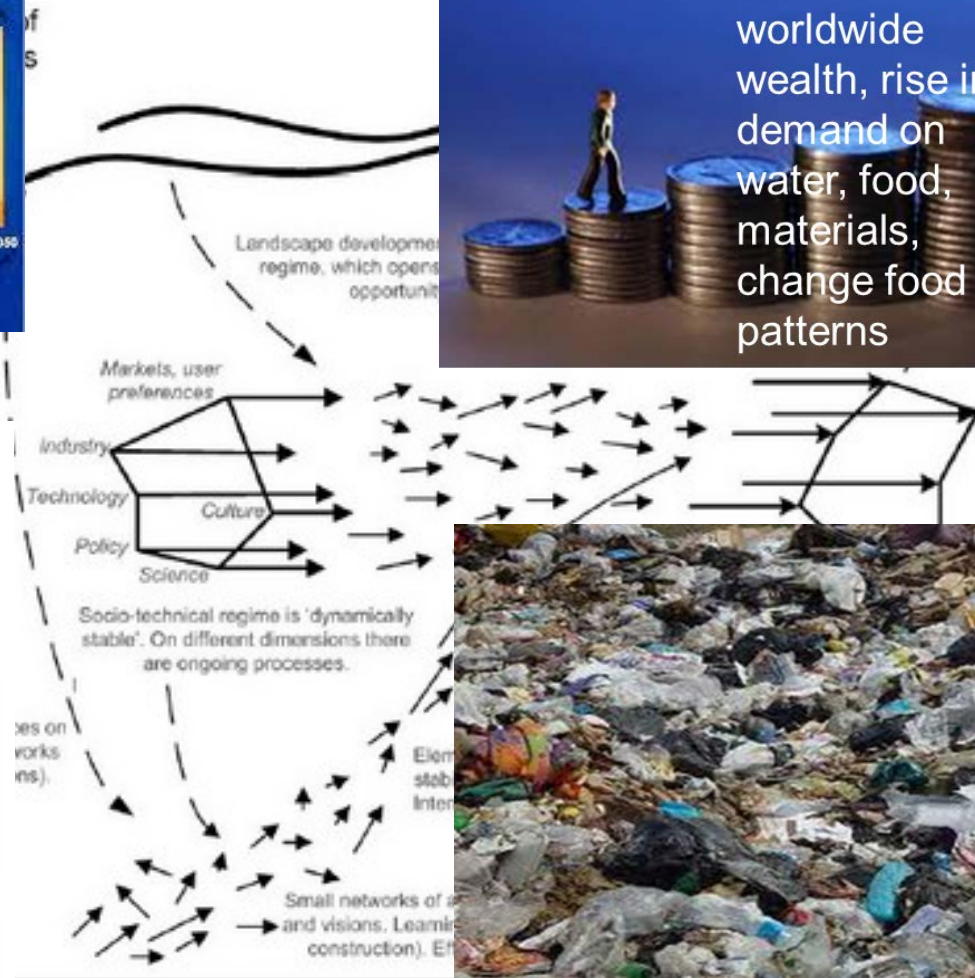




Landscape developments



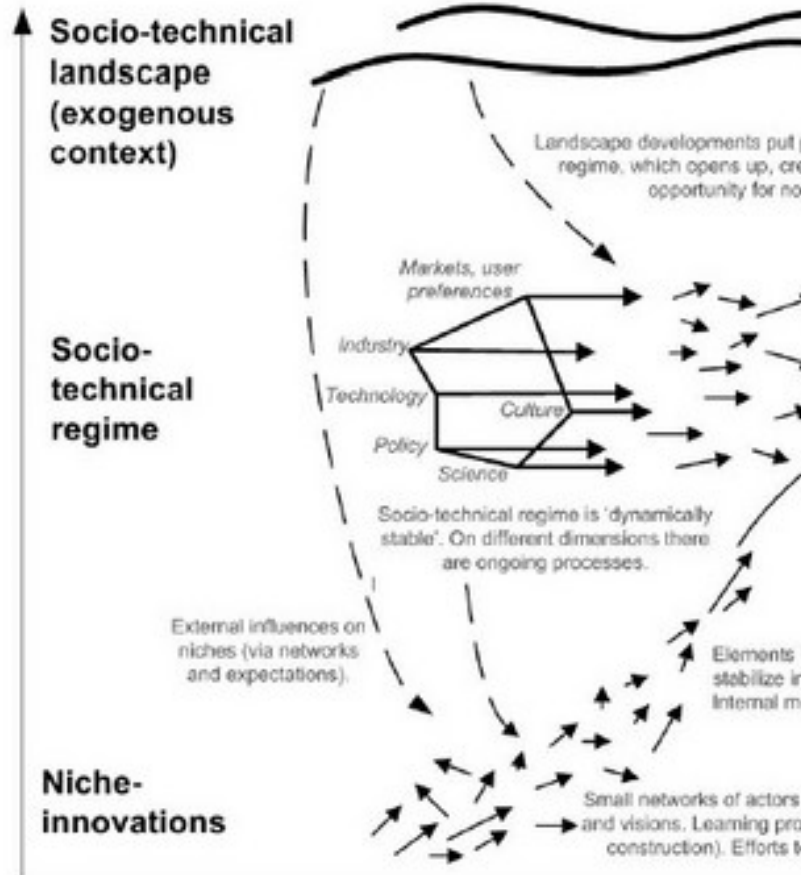
More bilateral agreements, importance open multilateral trade





Meso level: socio technical regime

Increasing structuration of activities in local practices





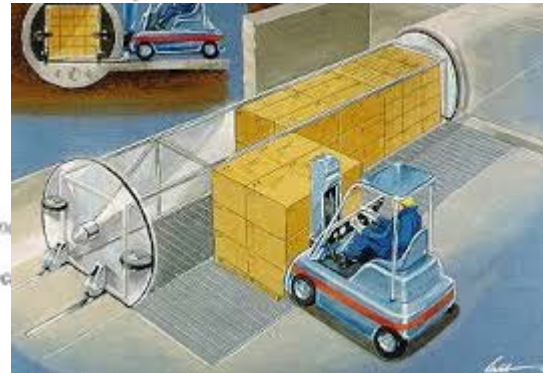
Micro level: niches, innovation projects

Increasing structuration of activities in local practices

↑ **Socio-technical landscape (exogenous context)**

Socio-technical regime

Niche-innovations



Socio-technical regime is 'dynamically stable'. On different dimensions there are ongoing processes

External influences on niches (via networks and expectations)

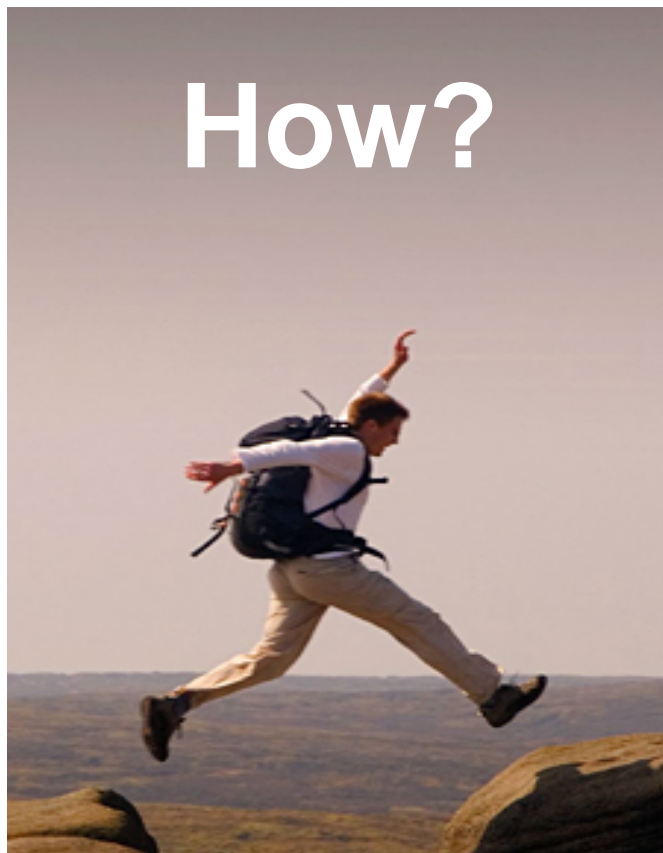


... on the basis of expectations ... face on multiple dimensions (co-construction). Efforts to link different elements in a seamless web.

Time →



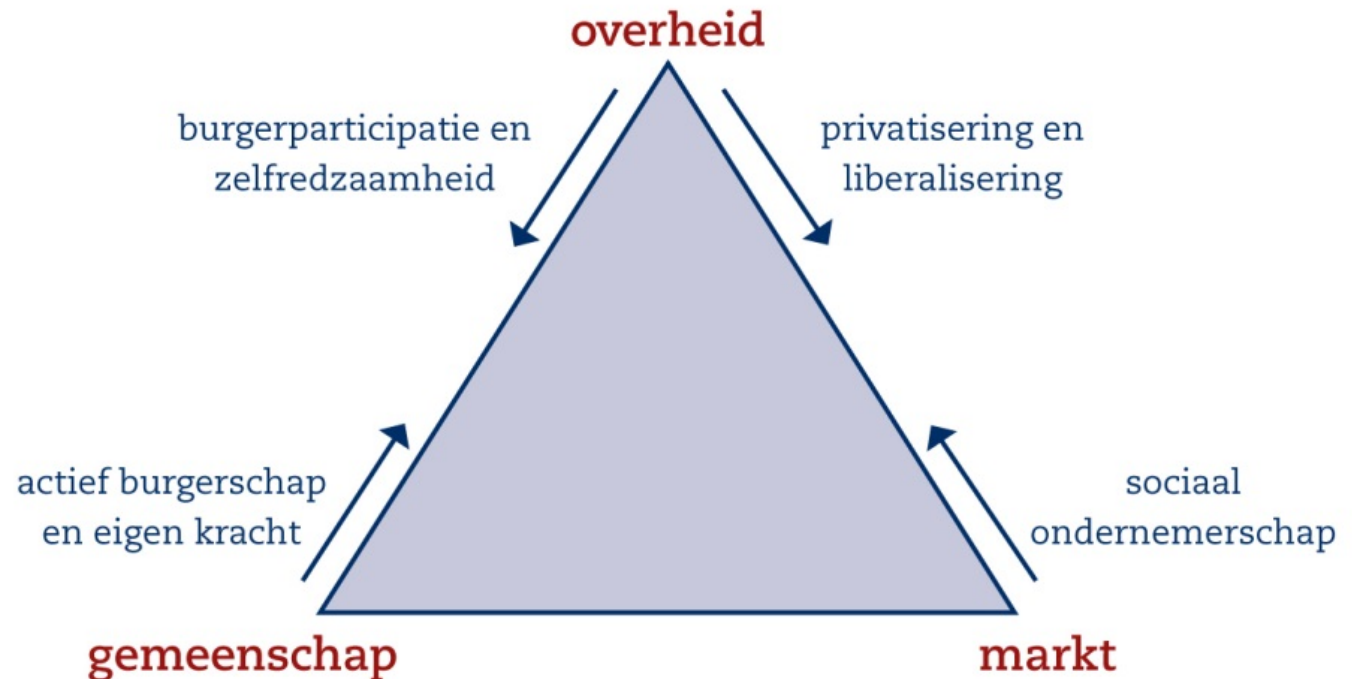
How?





Role of government is diversifying (NSOB, 2013)

- › Rise of network governance besides Public Administration and New Public Management
- › Public Private Partnerships / Green deals.
- › Citizens acting as entrepreneurs.



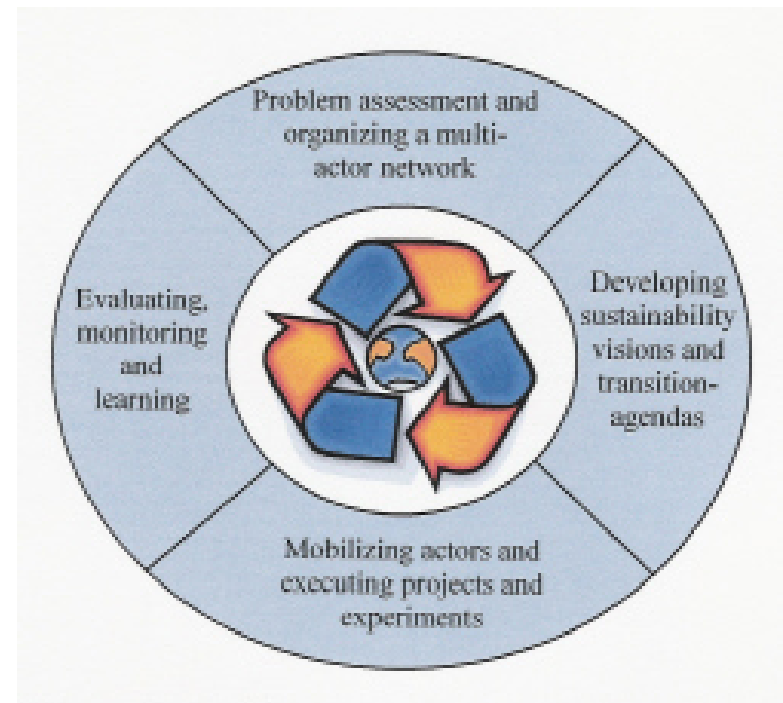


Transition ‘management’ as a policy perspective

- › Is it possible to steer the direction and speed of a sustainability transition?

Not exactly ...

- › Though it is possible to
 - › Understand societal challenges better by **acknowledging complexity** characteristics
 - › Develop a policy agenda that builds on **involvement** and **participation** and of actors
 - › Encourage actors to experiment. Encourage **bottom-up dynamics**.
 - › Monitor and evaluate for outcomes as well as for **valuable lessons**.

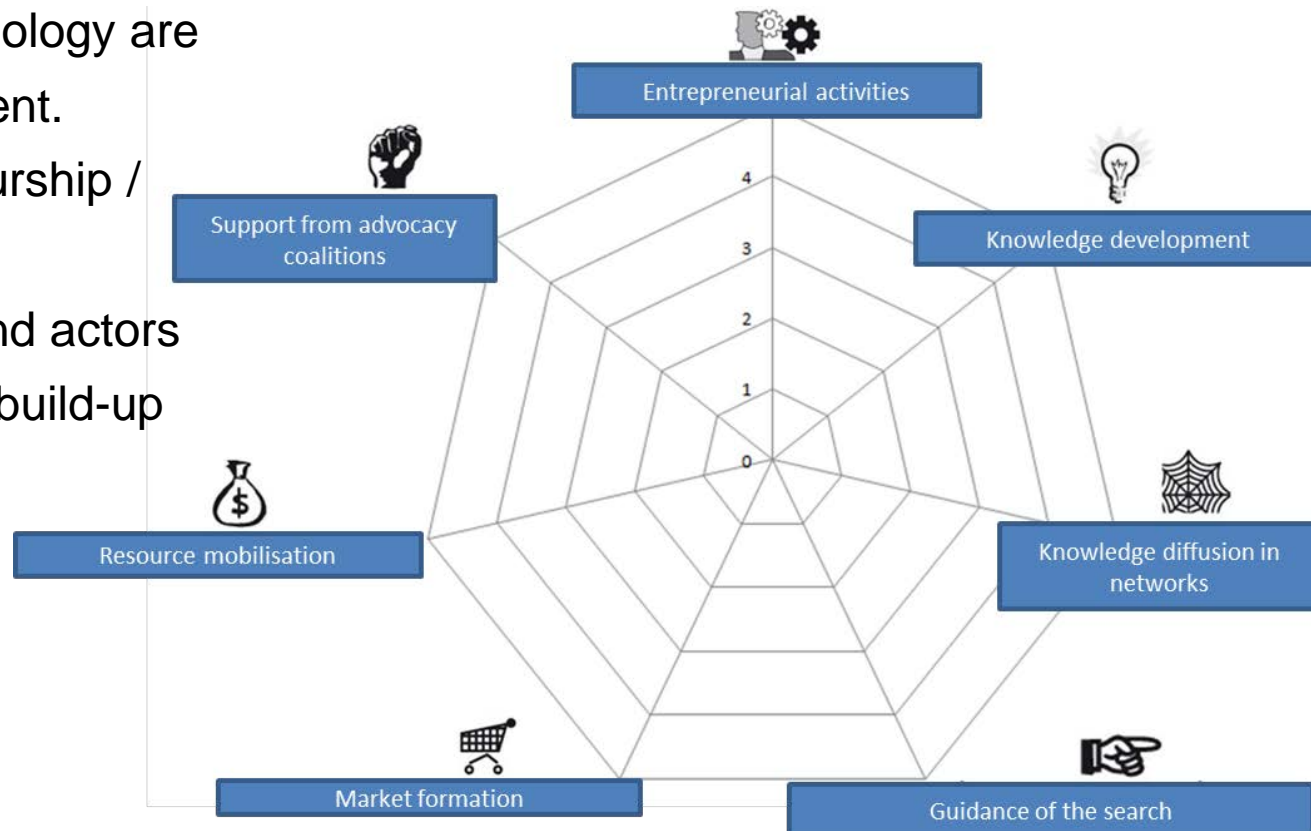


“Wheel of Loorbach” (2007)



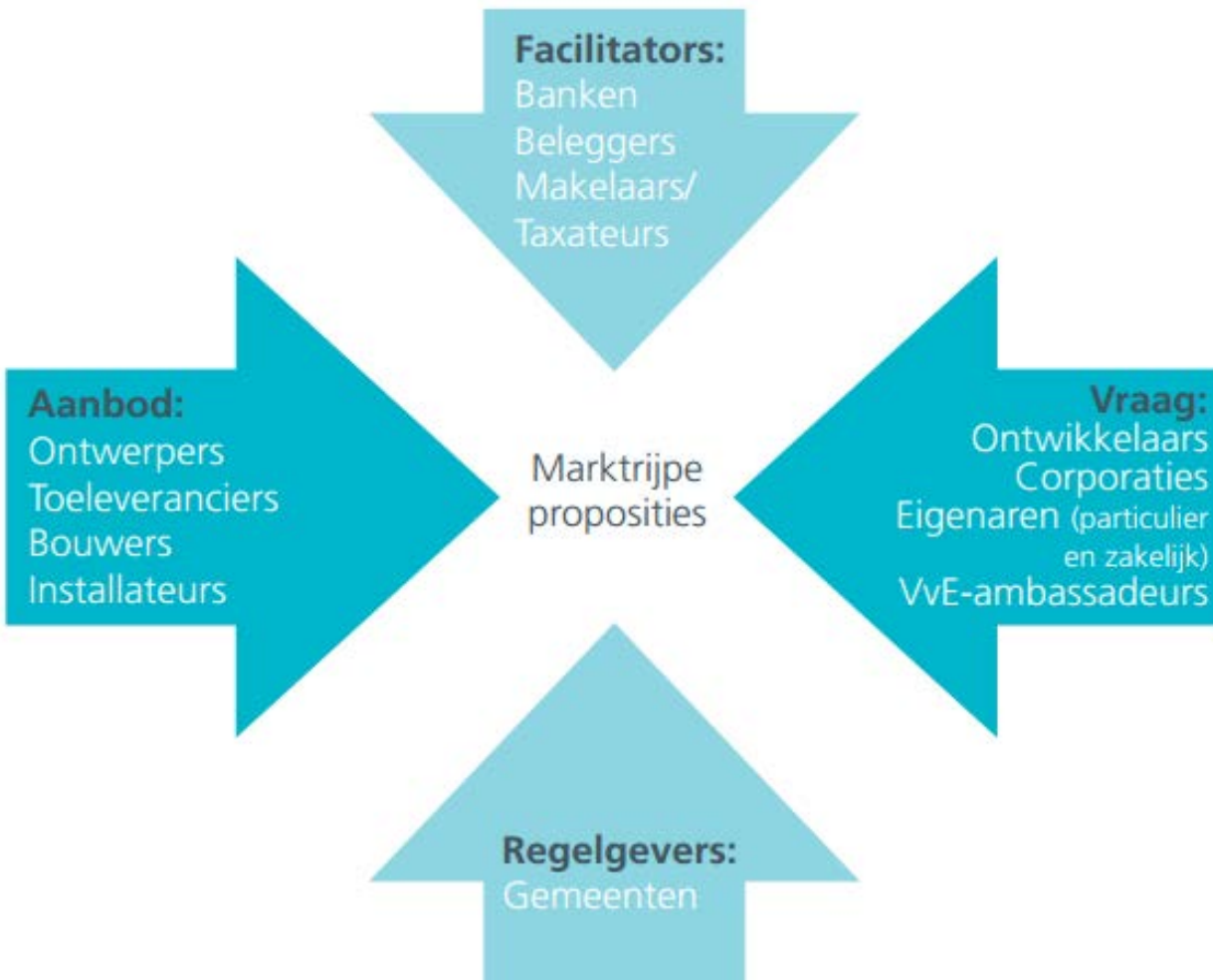
Example 1: Problem assessment by Innovation System Analysis

- Knowledge and technology are necessary, not sufficient.
- Focus on entrepreneurship / experimentation
- Focus on networks and actors
- Focus on dynamics / build-up





Example 2: Visioning / Agenda setting as executed through the Dutch 'Energiesprong' programme



- The construction sector has to become driving force.
- Multiple target audiences
- Multiple domains (e.g. residential, commercial)
- Multiple levels of government / governance (e.g. municipalities, state)
- A large part of the projects follow an experimental set-up (e.g. Communities of Practice)



Example 2: Visioning / Agenda setting as executed through the Dutch 'Energiesprong' programme

Deelprogramma's & Projecten

Slim en Snel						
Regelingen W-bouw						
Regelingen U-bouw						
Regeling Gebiedsontwikkeling						
Lokaal alle lichten op groen						

Doelgroepen

Corporaties	Eigenaar-bewoner (in en ex VE)	Projectontwikkelaars woningbouw	Huurders / Gebruikers	Utiliteitsbouw exploitanten	Projectontwikkelaars en Beleggers U-bouw
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Versterkende deelprogramma's

Leren door kennisdeling en kennismobilisatie
Van ketens naar innovatieve coalities
Waardesturing
Prestatiesturing

- The construction sector has to become driving force.
- Multiple target audiences
- Multiple domains (e.g. residential, commercial)
- Multiple levels of government / governance (e.g. municipalities, state)
- A large part of the projects follow an experimental set-up (e.g. Communities of Practice)



Example 3: Evaluating and monitoring by using Learning Histories

Layer 1: Facts

In January 2008 the policy makers decide to make diagnostic innovation system analyses for all Dutch innovation programs.

Layer 2: Perceptions

Secretary X:
“The innovation system analysis helped in the decision making process. Key policy actors reacted: Well this is apparently well founded in scientific theory....”

Layer 2: Perceptions

Member Y:
“The innovation system analysis was not suitable for the built environment. It is designed for single technologies not for sectors.”

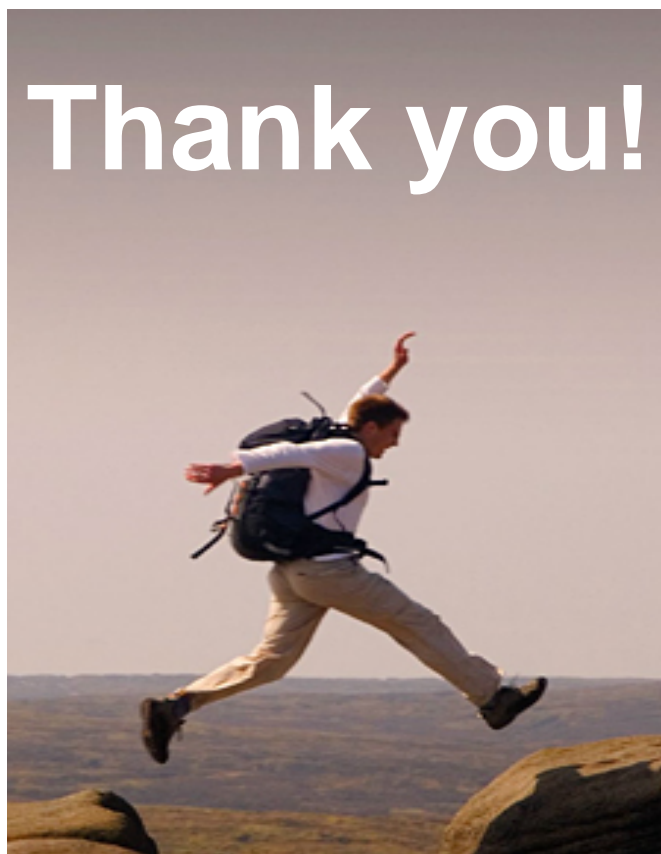
Layer 3: Reflections

How can the innovation system analysis be broadened to cover multiple technological systems?

Purpose: to make lessons learned of an important period explicit within a group of stakeholders to learn collectively and make them transferable to others.



Thank you!

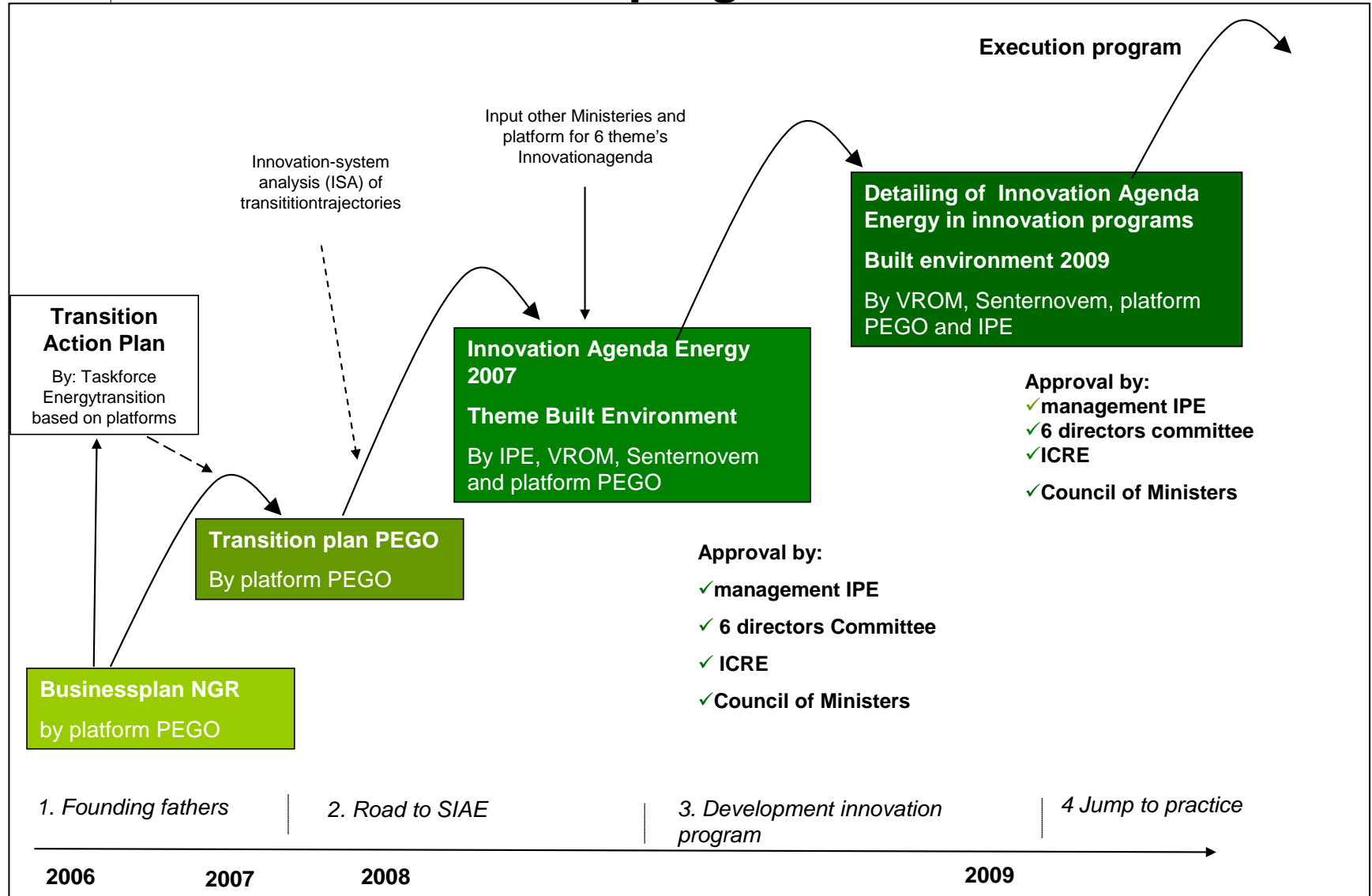




REST



Timeline innovation program Built Environment





Roles of government in transitions (NSOB, 2013)

