

# Transformative Change towards sustainability

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# Context

# Persistent problems

- our society faces a number of persistent problems
- unsustainability is the symptom of the persistence of these problems
- many examples: climate change, energy supply, water problem, mobility problem, agriculture, health care
- persistence is due to system failures and requires a system break and system shift: transition

# Transition

fundamental change of structure, culture and practices in societal (sub)system

- **structure:** physical infrastructure, economic infrastructure (market, consumption, production), institutions (rules, regulations, collective actors)
- **culture:** collective set of values, norms, perspective (shared orientation), paradigm (defining problems and solutions)
- **practices:** routines, behaviour, ways of handling, implementation at the individual level

incumbent structure, culture and practices are broken down, which requires time to overcome resistance

# Why do transitions often fail?

*game, rules and players*

transition requires a new structure, culture and practices

transition requires new rules, new players and new game

dominant players have too many interests to defend and  
don't want to change the rules drastically

only new players can 'break open' the game and change  
the rules

*more, different, better*

# Examples of transitions

- from coal energy supply to gas energy supply
- from extensive to intensive agriculture
- from an industrial - to service - to knowledge economy
- from fossil fuel based energy supply to renewable energy supply

(see: [www.energietransitie.nl](http://www.energietransitie.nl) )

# Sustainability as orientation

sustainability serves as guiding orientation for transition

sustainable development is a socially and scientifically contested notion: *no unique definition and approach*

*approach*

organize reflexive search and learning process with stakeholders [frontrunners] to assess what sustainability is in a particular context

# Dynamics of transitions

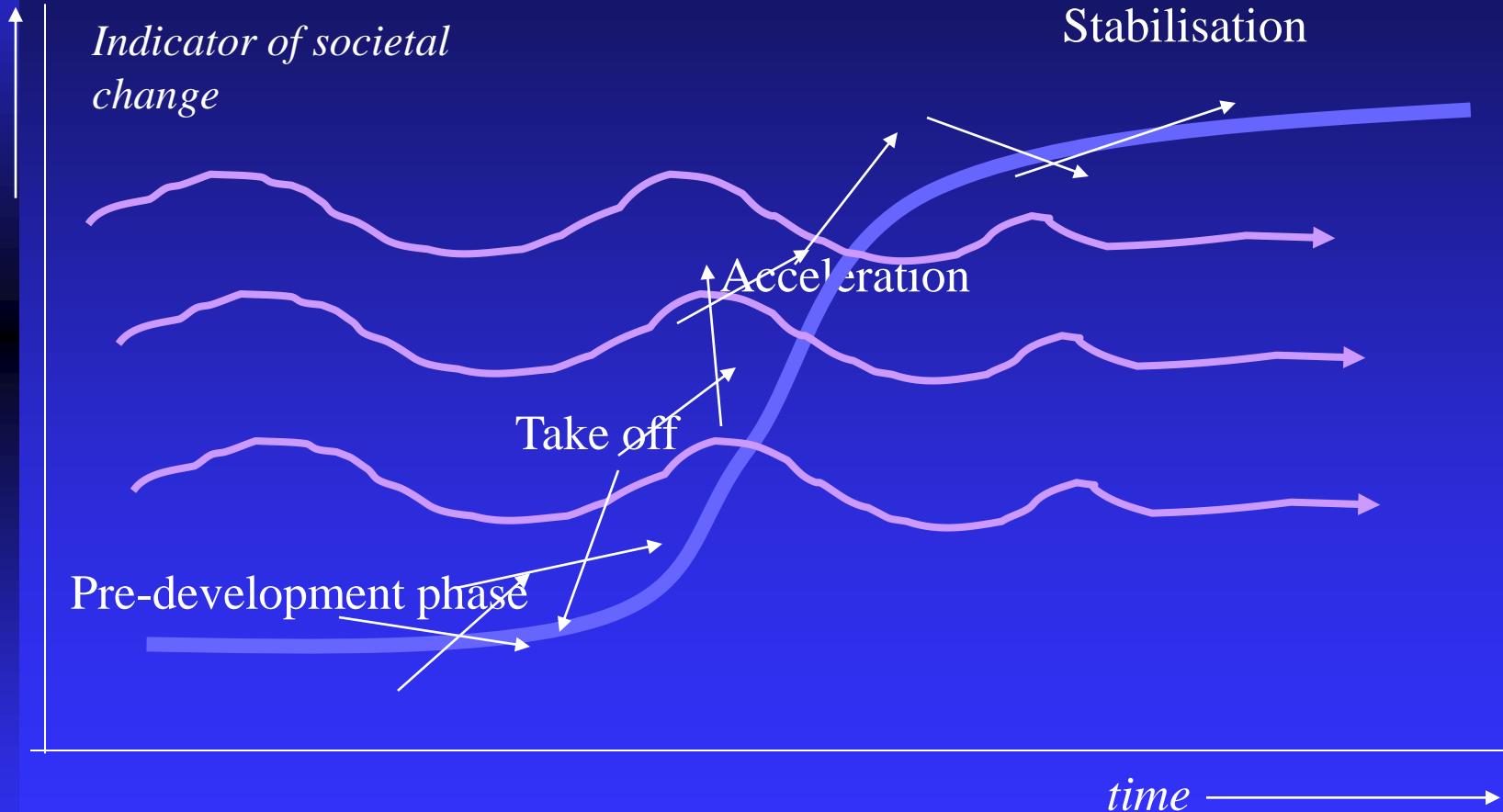
# Transformative Change

sweeping change

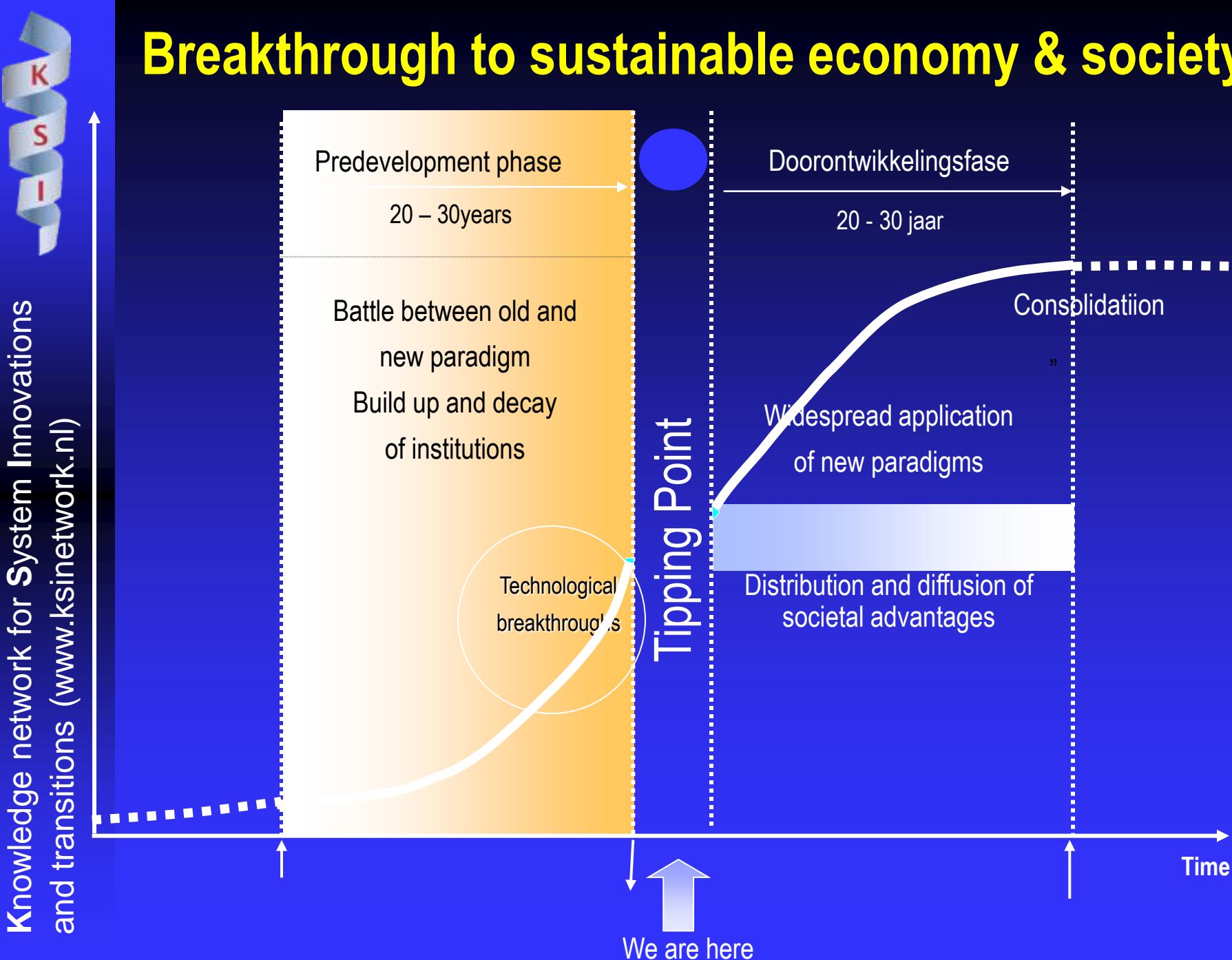
describes the dynamics of transitions in time as a sequence of *alternating* phases of relatively *fast* and *slow* dynamics, which together forms a strongly non-linear pattern, with a shift from one dynamic state of *equilibrium* to the other

creeping change

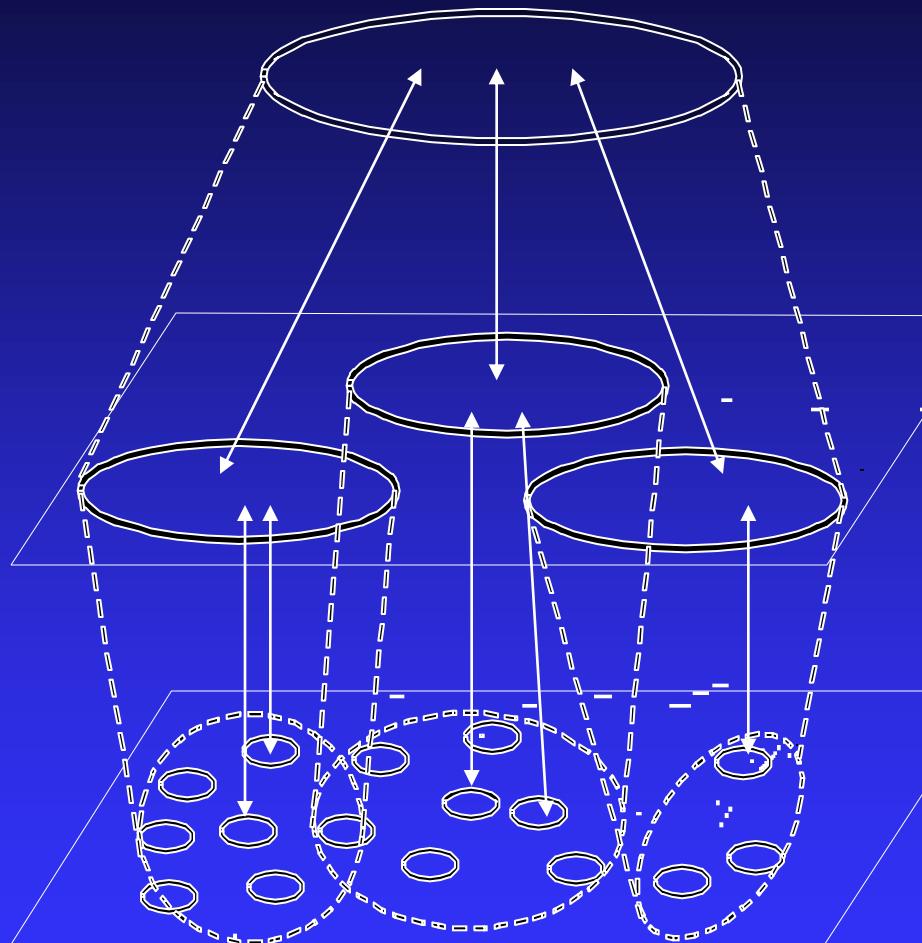
# Multiple Phases



# Breakthrough to sustainable economy & society



# Multiple Levels



## Macro-level

autonomous trends, paradigms,  
slow developments

## Meso-level

regime: dominant structures, cultures  
and practices (but also niche regimes)

## Micro-level

fast developments: innovative ideas,  
projects, techniques, niche actors

# Multiple Patterns

Transformative Change arises from

small, emerging changes at the micro-level

*bottom-up*      *Creeping*

induced changes at the meso-level

*in between*

a massive, fast change at the macro-level

*top-down*      *Big Bang*

# Transition Governance

# Transition management concept

rooted in

complex systems thinking

new forms of governance

# Managing complex systems

## insights

- command and control management is useless  
*forced steering is counterproductive*
- longer term goals need to be flexible and adjustable
- a combination of top-down & bottom-up might work
- creating space for entrepreneurs is crucial

*adaptive and anticipatory management*

# New forms of governance

## insights

- interactive network approach
- pluralistic approach
  - value- and perspective based*
- multi-level approach
- learning is important
  - uncertainty and complexity*

*no central actor in charge, multiple actors steering*

# Transition governance

## rules of thumb

- long-term thinking as the basis for short term policy
- think in terms of multiple domains (multi-domain), different actors (multi-actor), different levels (multi-level)
- learning as an important aim for policy ('learning-by-doing' and 'doing-by-learning')
- orient policy towards system innovation besides system improvement
- keeping options open (wide playing field)



# Can we manage transitions?

No

we cannot command and control transitions  
*too many uncertainties and surprises*

Yes

we can influence transitions  
*direction and pace of transitions*

# Transition approach

## core

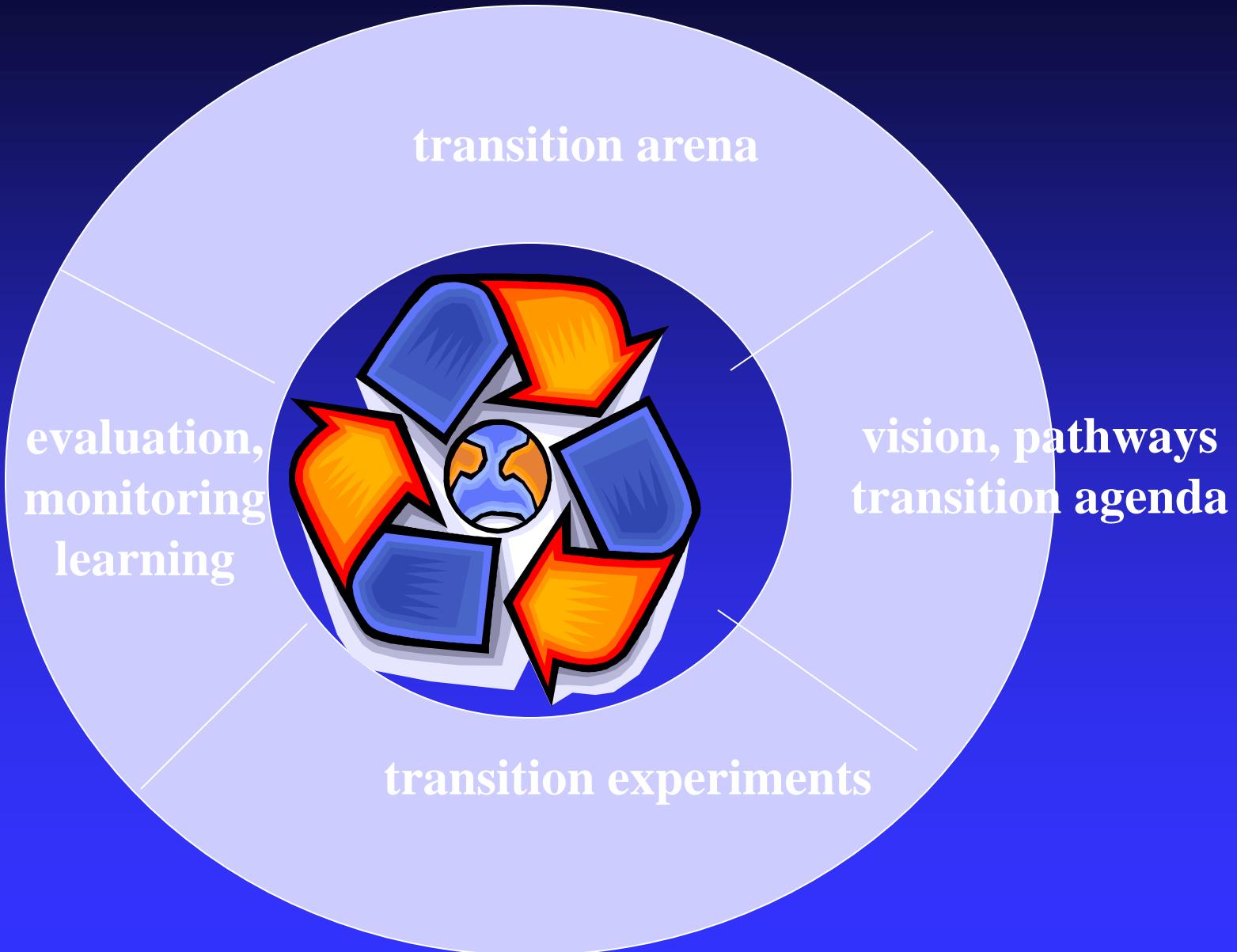
- acknowledge that there is a persistent problem  
*shared problem perception*
- the solution does not exist  
*large-scale definitive choice is too risky*
- transform problem into visionary challenge  
*multiple futures with multiple pathways and options*
- start portfolio of experimenting into the same direction  
*postpone choices till enough has been learned*

# Transition approach

## principles

- put energy in frontrunners and not in peloton
- bring frontrunners together in protected spaces
- develop a long-term sustainability vision + pathways
- start with portfolio of transition experiments
- create new coalitions around pathways & experiments

# Transition approach cycle



# Transition approach

- identifying frontrunners [movers and shakers]
- establishing transition arenas [protected spaces]
- formulating a joint, long-term strategic agenda
- designing small-scale transition experiments
- scaling up most successfull experiments
- forming new coalitions/networks around experiments

*searching, learning and experimenting*

# Transition experiment

	<i>Innovation experiment</i>	<i>Transition experiment</i>
<b>Starting point</b>	making innovation market ripe	societal challenge
<b>Characteristic of problem</b>	certain and a priori determined	uncertain and complex
<b>Perspective</b>	short- and medium term	long-term
<b>Goal</b>	innovation	sustainable system innovation
<b>Method</b>	testing, demonstrating	exploring, searching, learning
<b>Learning</b>	1 <sup>e</sup> orde, technical learning	2 <sup>e</sup> orde, social learning
<b>Actors</b>	researchers / engineers	societal complete alliance
<b>Management context</b>	innovation project management	transition management

# Transition experiments

societal experiments with high risks (chance of failure)  
and a high potential to contribute to a transition process

how to manage portfolio of transition experiments?

- *deepening* [learn as much as possible from an experiment]
- *broadening* [repeating an experiment in a different context]
- *scaling up* [anchoring of an experiment in the regime]

# Examples

# Transition Experiments

- energy delivering greenhouse
- rush hour avoidance
- floating pavilion
- CCS close to residential area
- sustainable roofs
- people movers

# Transition Experiments

- agro-industry parks
- electric cars
- local energy cooperations
- climate-neutral districts / streets
- climate-deltatechology campus
- neighbourhood care

# Transition Experiments

a transition experiment is a success if:

- it is scaled up at a higher level
- it is replicated and claimed by many stakeholders
- new coalitions arise around an experiment
- much can be learned from its failure

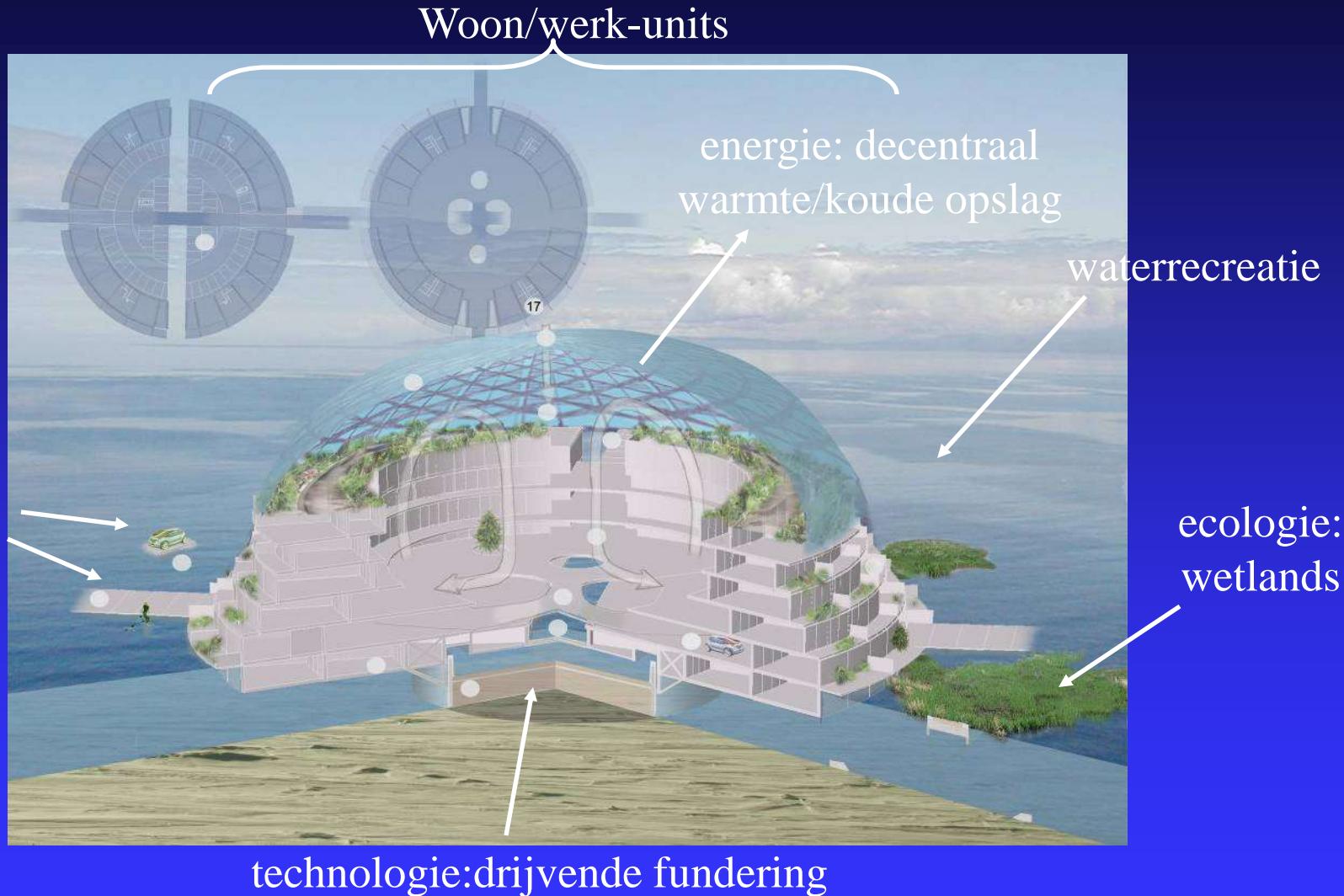
# Floating Pavilion



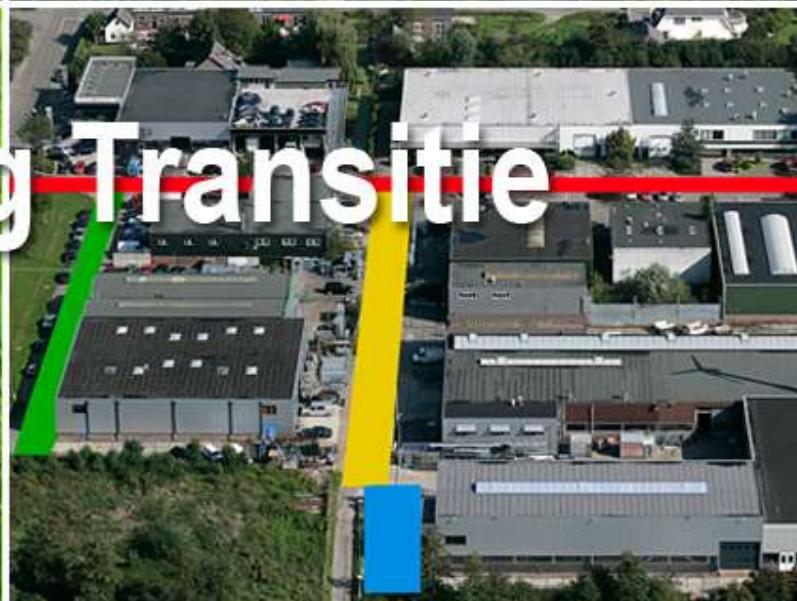
# Floating City



# Floating City



# Ontwikkelend Denken naar Transitie



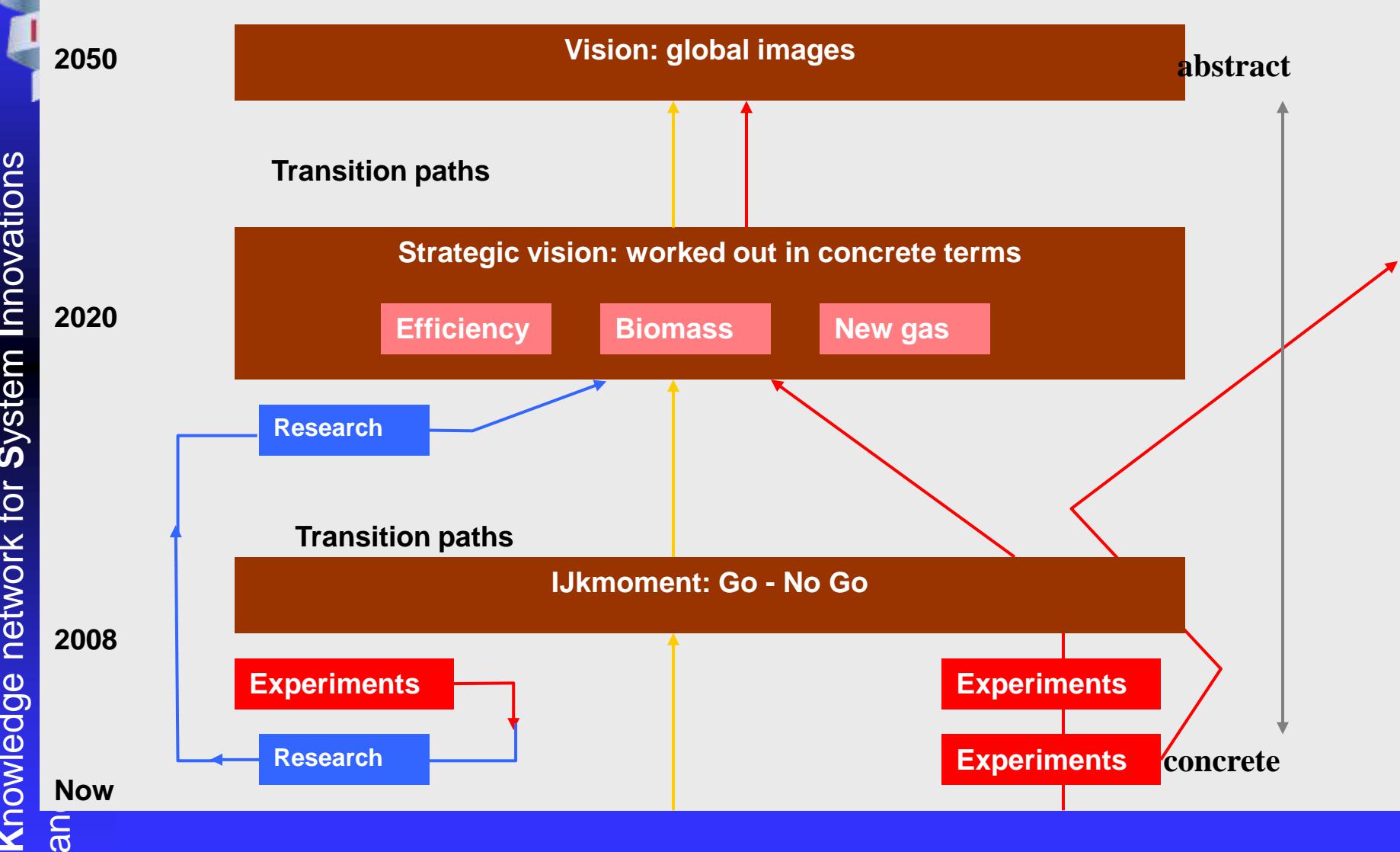
# Ongoing transition processes

- six Dutch ministries have official transition policy
  - Water transition
  - Energy transition
  - Construction sector transition
  - Mobility transition
  - Biodiversity transition
  - Health care transition
- regional governments experiment with transition policy
  - Provinces Zeeland, Flevoland, North-Holland
  - Regions such as Zuidvleugel, Texel, Haarlemmermeer, Twente
  - Cities such as Almere, Rotterdam

# Energy transition

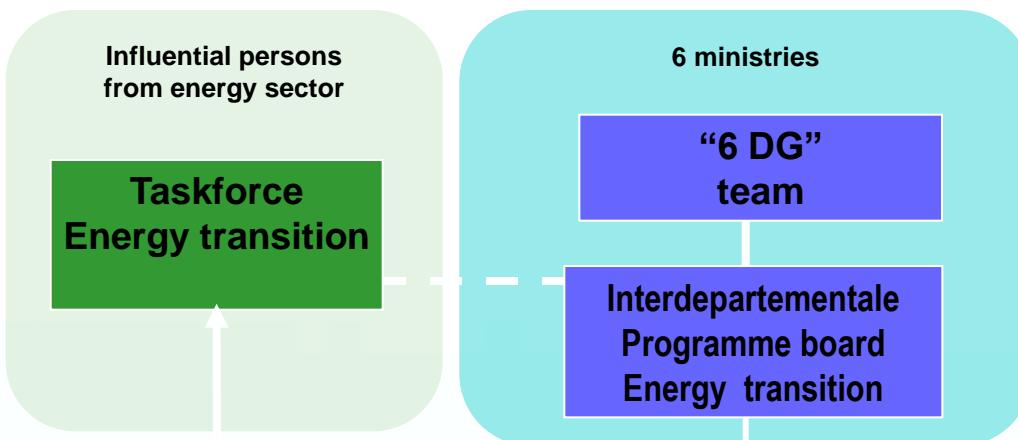
- in 2001 initiated by the ministry of Economic Affairs (EZ)
- started with a niche (small group of frontrunners within EZ)  
evolved into a movement with companies, NGOs, knowledge institutions and individuals
- vision has been developed [‘where do we want to go?’]
- 7 main themes chosen [platforms or arenas]
- 23 transition paths formulated [‘how to go there from here?’]
- 100 transition experiments set up [‘how to implement paths?’]

# Energy transition approach



# Energy transition

1  
Long-term  
vision

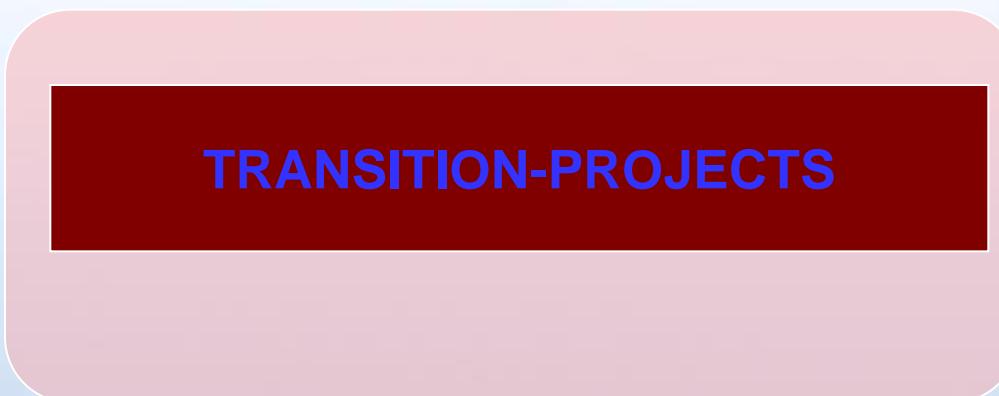


7  
Transition  
themes



23  
Transition  
-pathways

100-en  
Transition  
experiments



(Ministerie van EZ)

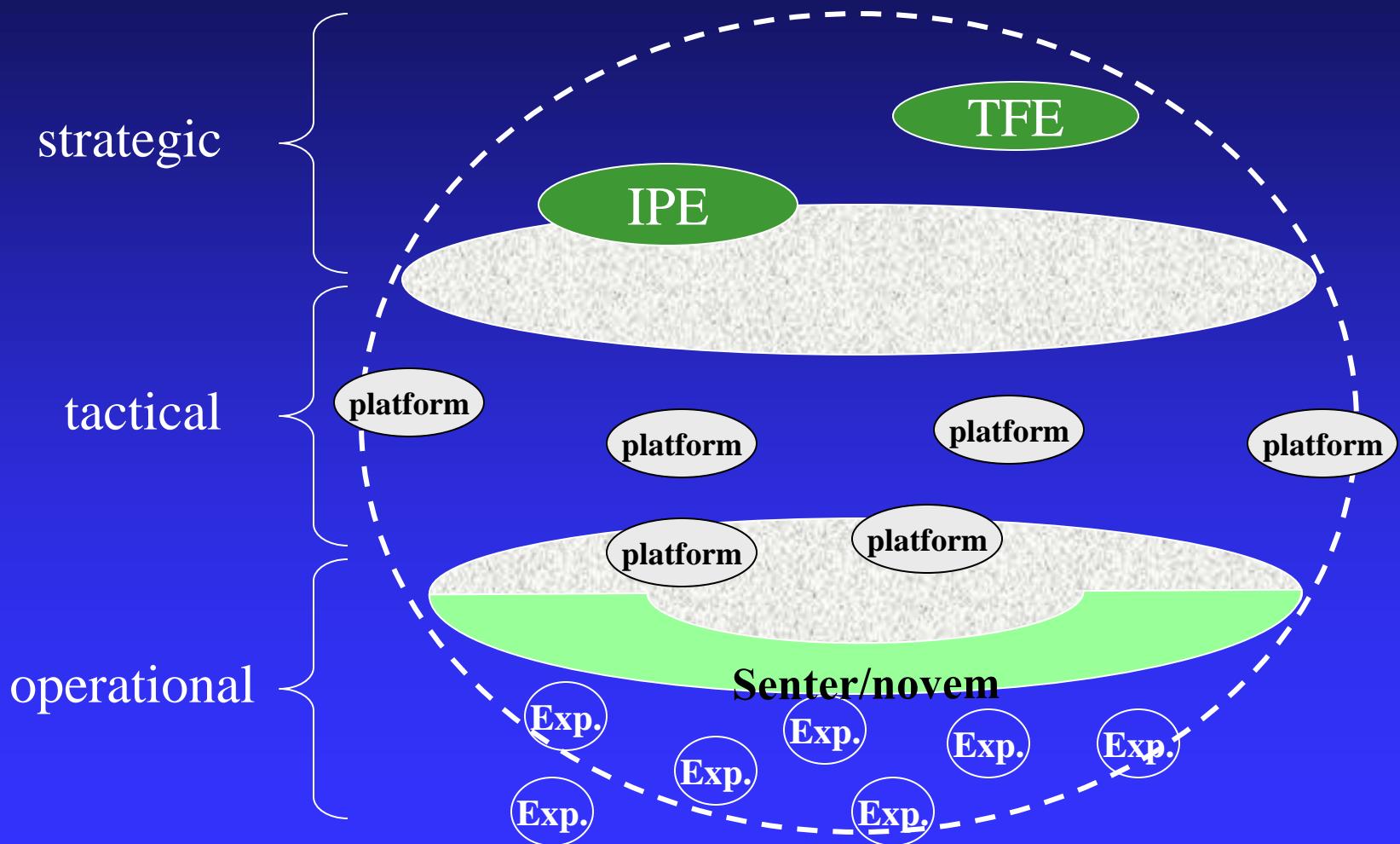
IPE  
Supporting staff

SENTER NOVEM  
Platform-secretaries

UKR-support

Frontrunners office

# Structure energy transition



# What has been achieved?

- sense of urgency, high ambition level
- new discourses, agenda of reform, breakthrough projects
- broad movement with 1000 people involved
- high amount of time, manpower, energy put into process

# Shadow side

- process under threat of being institutionalized
- still more regime players involved than niche players [Shell, Nuon, VW, Eneco]
- evolves into a practical execution process rather than searching, learning and experimenting

# Roles of actors

# Role of government

not in a directing role

but

- a facilitating, enabling, stimulating role
- still an active but different role
  - formulating vision and high ambition level
  - creating space for frontrunners
  - stimulating and enabling transition experiments
  - removing barriers for sustainable innovation

# Role of intermediaries

- co-designing role
  - co-develop transition instruments
  - initiating transition experiments
- monitoring role
  - monitoring progress of transition process
  - evaluating transition experiments



# Lessons Learned

# Successes and Failures

## Successes

energy transition

health care transition

*real breakthrough still to be realized*

## Failures

mobility transition

biodiversity transition

# Lessons

- the regime always strikes back
- the first period is relatively easy, thereafter arise winners and losers
- natural tendency of the government to fall back in the command-and-control mode
- space for frontrunners is of crucial importance [financial, organizational, juridical, mental space]

# International Context

- in Belgium two transition processes are running
  - sustainable housing, sustainable energy & materials
- in Finland transition programme for health care
- in other European countries growing interest
- in Australia city transition programme
  - Melbourne, Sydney, Brisbane, Cairns
- in Japan experiments with transition policy

# Insights, no Answers

- transition approach is promising new governance mode
- principles underlying transition approach are universal but the application is context-specific
- no evidence yet that it works but the results so far are promising and stimulating
- traditional governance approaches do not seem appropriate for transitions required