

# Linking systems and actors to understand policy games in the management of delta infrastructures

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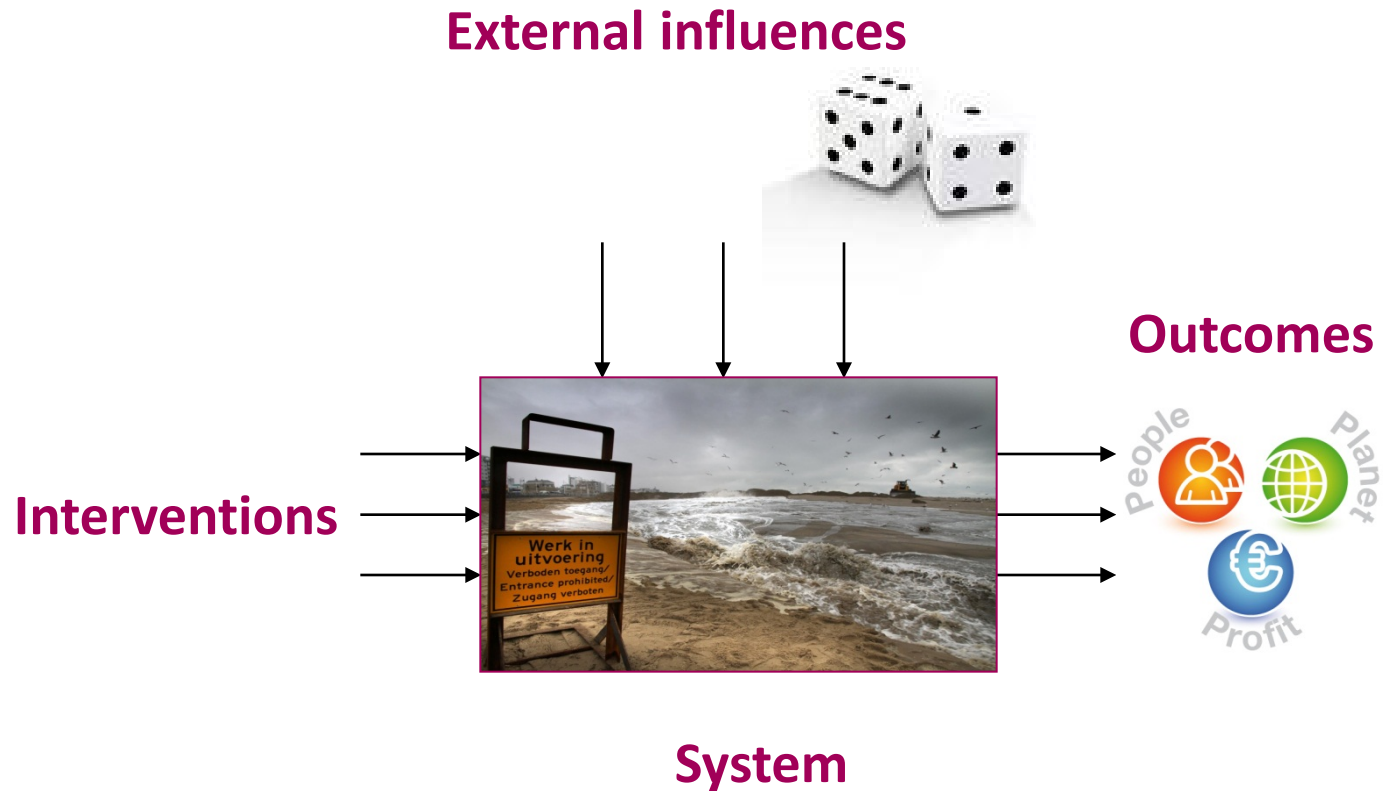
# Outline of presentation

1. Introduction
2. A systems perspective on the coast
3. An actor perspective on the coast
4. A linked actor-system perspective on the coast
  - Great Brak Estuary in South Africa 1980 – 2011
  - Coastal policy in the Netherlands 1985 – 2010
5. The policy game
6. How can you influence the game?
7. Discussion...

# Introduction

- Next Generation Infrastructures
- South African Netherlands Partnership on Alternatives in Development (SANPAD)
- Aim
  - Exploring the use of game theory in the analysis of policy evolution and implementation
  - Focus on coastal infrastructure

# A systems perspective on the coast



# An actor perspective on the coast

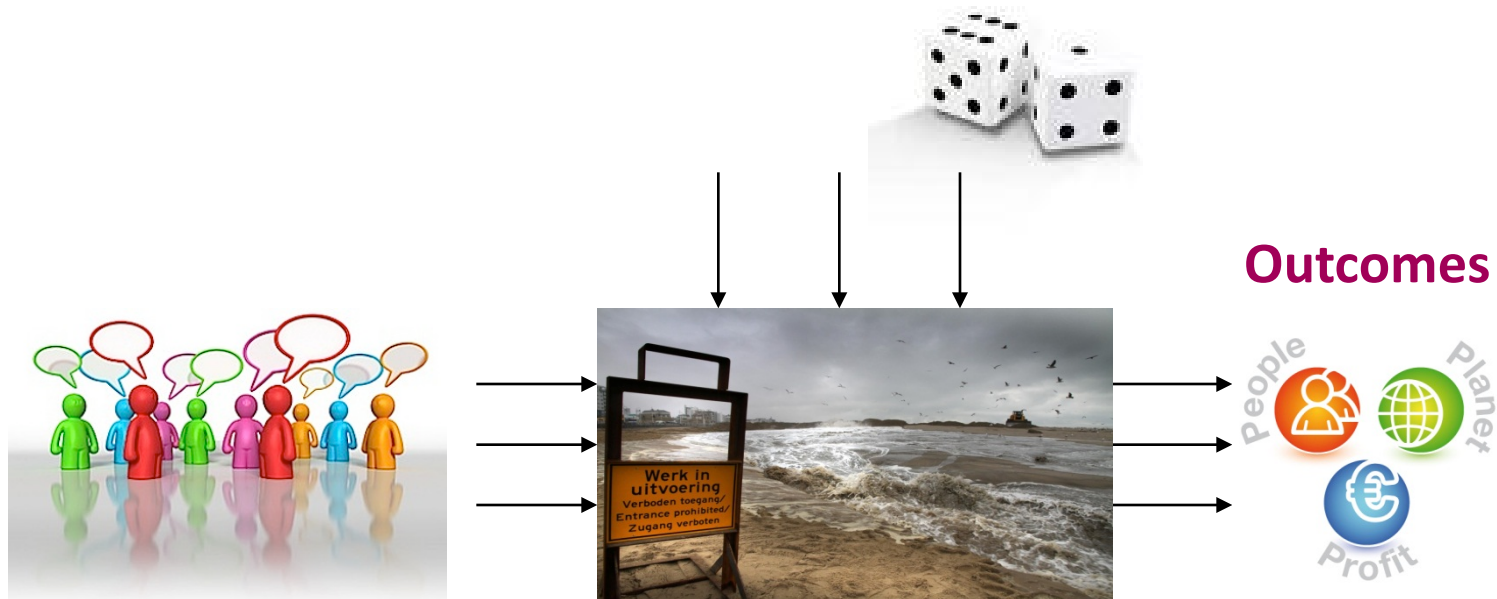
- For each actor
  - Interests (revealed as goals)
  - Means or resources → potential intervention
  - Beliefs or perceptions → assumptions
- Multiple stakeholders/players/actors
- Rules governing interactions
- Results in decisions



Picture: <http://www.razorleaf.com>

# A linked actor-system perspective on the coast

## External influences



Actors

Interventions

System

Goals



# Great Brak Estuary in South Africa (1980 – 2011)

Establish whether  $1 \times 10^6$  m<sup>3</sup> per annum sufficient for downstream estuary



**External influences**  
Floods and Droughts



**Expanded goal set:**  
 Maintain healthy estuary  
 Maintain local quality of life  
 Safety from flooding  
 Supply PetroSA & Mossel Bay with water

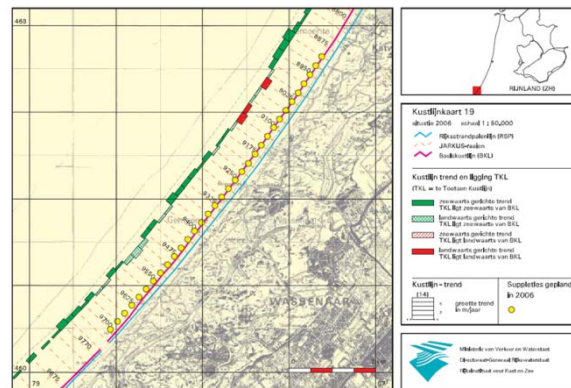
**GEC**      **Interventions**      **System**      **Goals**

Community involvement

Monitoring programme

# Coastal policy in the Netherlands: (1980's – 2011)

- Pre-1990: Developing a coastal policy for the Netherlands
- 1990 – 2000s: Annual programming sand nourishments
- 'current': Long-term strategy for coastline (2010: sand motor)

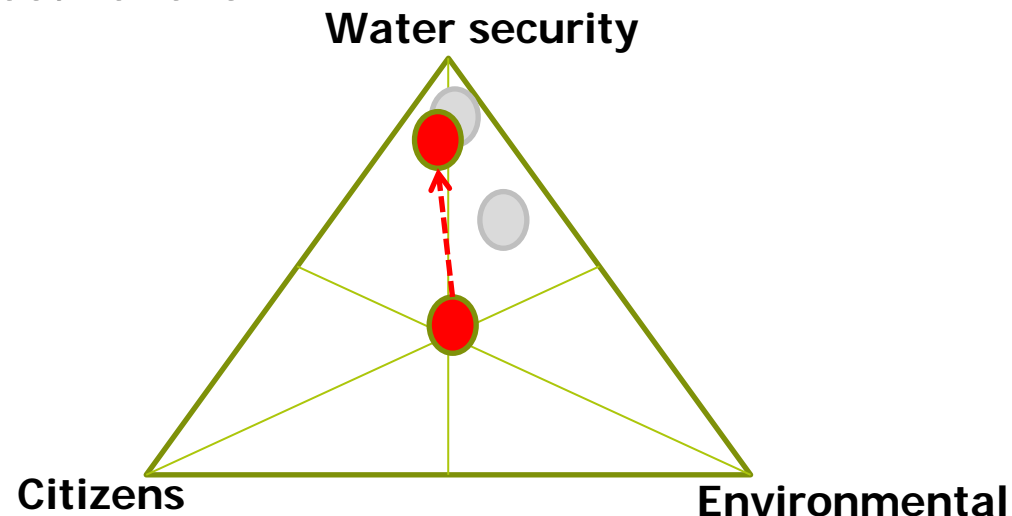


Pictures: Ministerie van Verkeer en Waterstaat; Deltaprogramma



# The policy game

- Policy process from conception, through implementation to outcomes (and delivery on stated values) – the playing field
- Game theory provides a reflective lens



- Game theory provides a strategic lens....

# How you can influence the policy game

5 & 6



Actors

Interventions



External influences

2



Outcomes

3

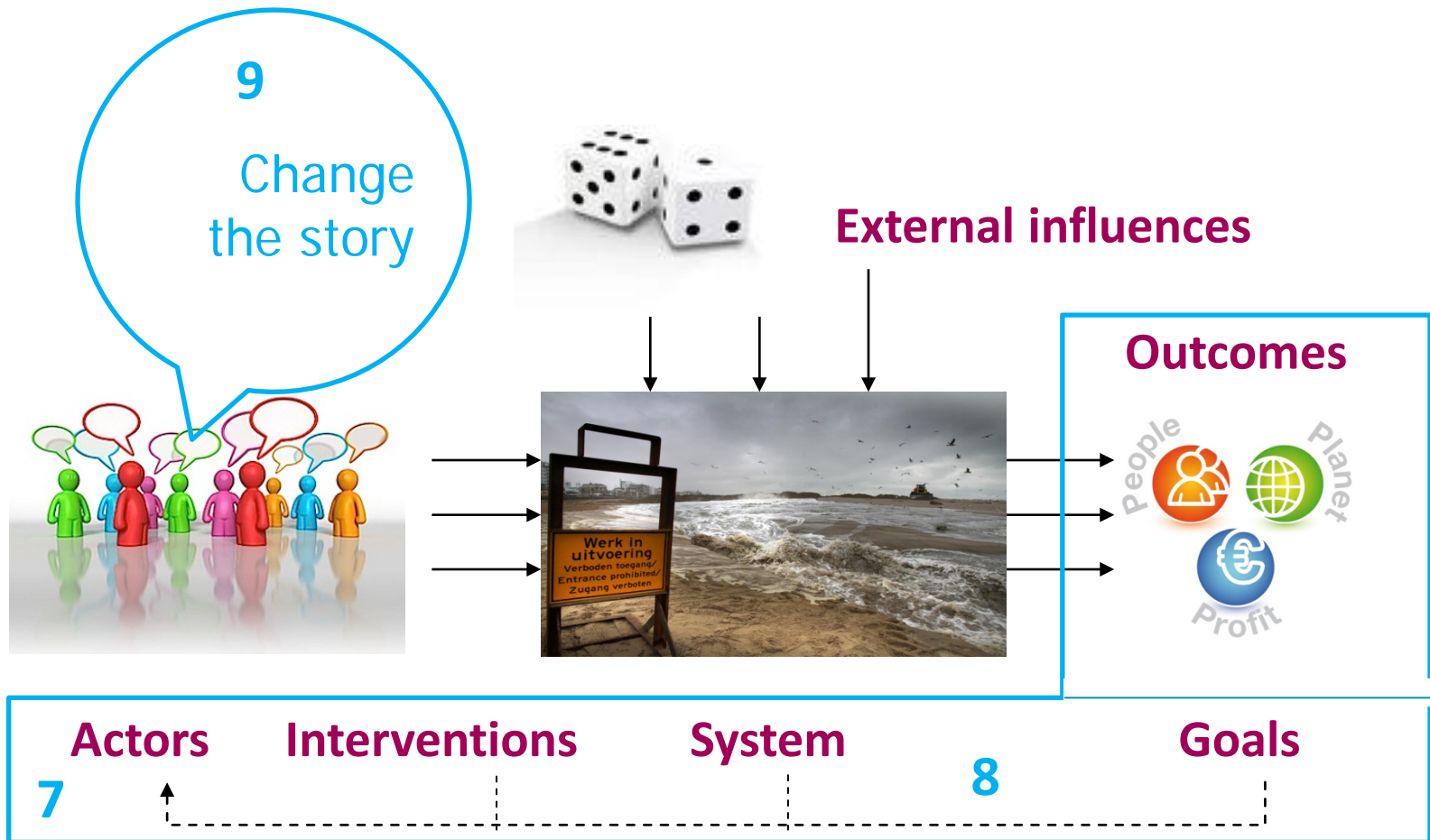


System

Goals

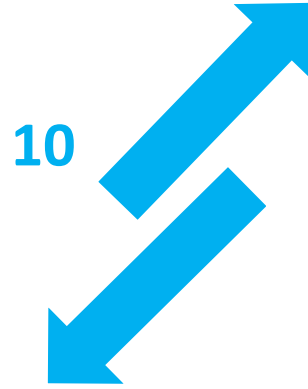


# Learning and adapting



# Learning and adapting

11



External influences

Outcomes



Actors

Interventions

System

Goals



# Discussion

- Can this work for you?
- How does it relate to your experiences in coastal policy and management?

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Picture: <http://www.razorleaf.com>

A related working paper can be downloaded from:

<http://www.nextgenerationinfrastructures.eu/index.php?pageID=19&itemID=58090>