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#### Science System Assessment

### Jovernance of team science

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Wouter Boon | 1

13 June 2012

# **Challenges of Grand challenges**



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- EU Horizon 2020: Grand Challenges
  - E.g. climate change
  - Mission-oriented
  - 'Wicked'/complex/unstructured problems
- Challenges to science and innovation system:
  - Articulating demands on different levels
  - Co-production of knowledge by producers and users

### Knowledge co-production...



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- Co-production of knowledge by producers and users
  - 'Mode 2' science
  - Organisational heterogeneity, more disciplines, contextualised knowledge production
  - Local, context-specific setting (vs. generalisable, global science)





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- Initiatives that encompass a large range of scientists, disciplines and locations (Stokols et al., 2008)
- Teams in projects: autonomous, flexible, innovative, context-specific, delineated goals and time span

### **Research question**



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- There is work on science collaboration and team work
- Gaps (Bakker, 2010): heterogeneous actors and disciplines; longitudinal perspective; autonomy vs. embeddedness
- Focus: teams of knowledge producers <u>and</u> users
- Research question: what conditions contribute to learning in and with these teams?

### Science in teams: characteristics



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- Knowledge boundaries: knowledge differences // potential for knowledge integration and innovation
- Learning boundaries: between project and organisation
  - Teams positioned outside existing organisation ("decoupling")
  - Two principals
- Governance of projects

# Conditions of learning in teams



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- Governance of projects: centered vs. distributed leadership, nature of coordination efforts, task partitioning
- Knowledge integration: team diversity of backgrounds and disciplines, collaborative readiness (absorptive capacity), history of collaboration
- Embedding team ←→ organisations: incentive system, perceptions of each other's norms, representativeness

### Degree of learning in/with teams



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- Learning within team: first-order and second-order
- Learning team-to-organisation

# **Conceptual model**



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### Project governance

Distribution of leadership Coordination efforts Task partitioning

### Knowledge integration

Team diversity Collaborative readiness History of collaboration

### Embedding team

Incentive system Perception of norms Representation

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### Learning

Within team and team-toorganisations

### **Case selection**



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- Knowledge for Climate
- Hotspot Mainport Rotterdam (local, rich, networked)
- 15 projects

### Methodology



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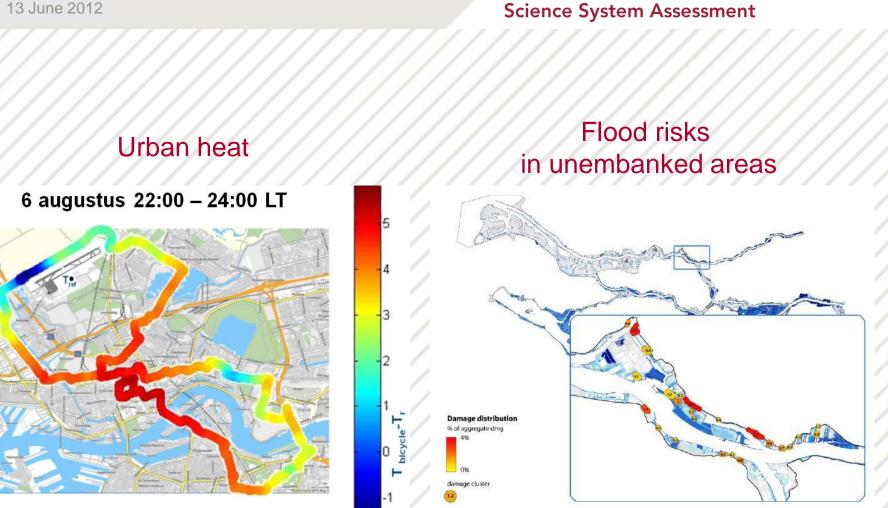
- In-depth interviews
- Document analysis
- Analysis in progress: in-depth results of 2 cases

### **Case introduction**



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Heusinkveld et al. (2011)

Veerbeek et al. (2010)

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# Results (1)



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	Urban heat	Flood risks
Project governance		
- Leadership	Network with hub	Lead organisation
- Coordination	Equality in team	Formal exchanges
- Task partitioning	Integrative	Complementary
Knowledge integration		
- Team diversity	Diverse disciplines	Same disciplines
- Collaborative readiness	Resources to collaborate	Resources to collaborate
- History of collaboration	New subject; new network	String of previous projects

### Results (2)



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	Urban heat	Flood risks	
Embedding team			
- Incentive systems	Home versus team incentives	New knowledge and networks	
- Norm perception	High reflexivity	High reflexivity	
- Representation	Good	Good	
Learning			
- Within teams	New knowledge; no integration	New knowledge; integration	
- Team-to-organisation	New methods, data and networks	Continuous learning	

### Conclusions



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- Urban heat
  - Integrative and equal governance did not lead to coproduction; new field and lots of opportunities created
- Flood risks
  - Previous and continuous collaborations leads to coproduction and continuous learning
- Preliminary conclusion: 'safe haven' does not ease 'home pressure', continuous learning, representation

### Discussion



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- Expansion to other cases/teams:
  - Monodisciplinary teams
  - Other programmes (less 'safe harbour')
  - Other sectors
- Expansion of methods
  - Bibliometrics, CV analysis

### Wrap up



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- Teams of users and producers co-creating knowledge
- Governance of projects, knowledge integration, embedding team ←→ organisations as conditions for learning



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# Thank you for your attention!

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Wouter Boon | 18

13 June 2012