



# Corporate pioneers response to climate change impacts

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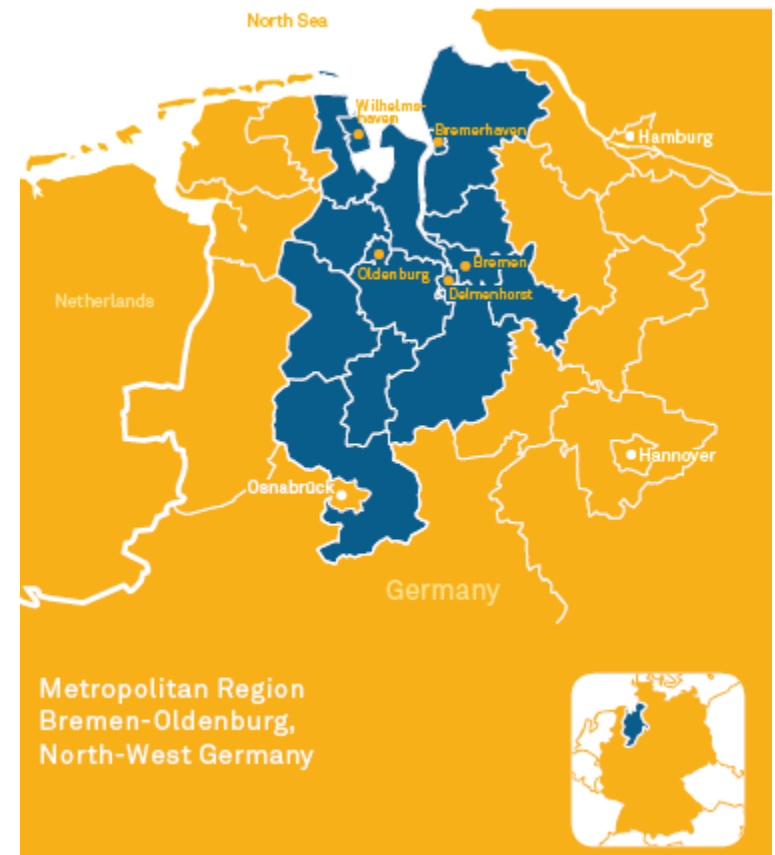
# Agenda

1. Introduction
2. Research question
3. Method: panel study
4. Open questions
5. Method: case study
6. Results
7. Conclusions

# 1. Introduction

## Nordwest2050: Prospects for Climate-Adapted Innovation Processes in the European Metropolitan Region Bremen-Oldenburg in North Western Germany

- ✓ Nordwest2050 is funded by the German Federal Ministry of Education and Research for 5 years (2009-2014)
- ✓ Creation of technological and institutional innovations to strengthen regional resilience in times of climate change



# About the Metropolitan Region Bremen-Oldenburg

Population: 2.4 million inhabitants

Economy: 130.000 business organizations

1.1 million employees in the private sector

7 seaports handling 1/3 of maritime cargo in Germany,  
strong agricultural sector,

high share of wind energy production

Climate: MAT and MAP (Bremen 2010): 8,8° C and 693,9 mm

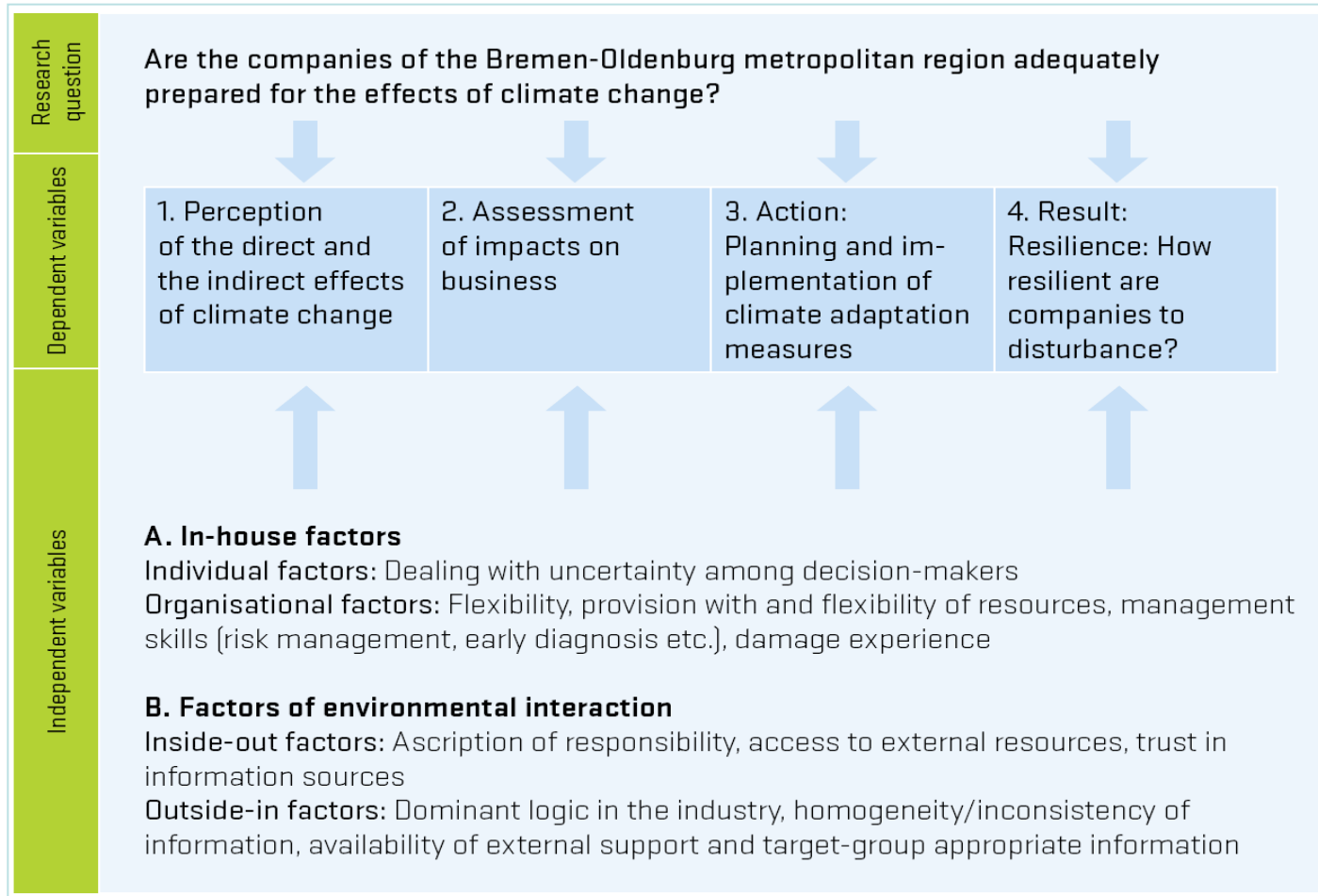
**Selection of expected changes in the metropolitan region (A1B emission scenario, Remo/CLM, comparison of the period 1971-2000 and 2036-2065):** increasing water temperature (+1,5 °C), increasing storm tide (+49 cm), rising number of days with temperature above 25°C (+8,3 days), decreasing amount of snow (-57%), days of precipitation (-4 days).

## 2. Research question

Are the companies of the Metropolitan Region Bremen-Oldenburg adequately prepared for the effects of climate change?



# 3. Method: panel study



n = 4.000, 2010 and 2012, standardized questionnaire

## 4. Open questions

1. What are appropriate indicators to assess and measure corporate vulnerability and resilience?
2. How exactly does climate change influence the value chains of companies?
3. How do key persons in business organizations influence climate adaptation strategies?
4. Are existing management tools (e.g. risk management tools) applied for organisational adaptation to climate change?
5. How does the “dominant logic” in a specific sector and the interaction between companies and sector associations influence climate adaptation strategies?

# 5. Method: case study method

**Research unit:** Pioneers in climate change adaptation (participation in climate change consultancy) → 6 cases

**Interview unit:** 2 strategic manager or operational manager, 1 scientific consultant and 1 industry representative



**Selection of cases:** business organizations belonging to the sectors energy, food, agriculture, transport, construction and printing industry

**Instrument:** structured questionnaire



## 6. Results (1/3)

### 1. What are appropriate indicators to assess and measure corporate vulnerability and resilience?

- Scenario analysis is very useful for the identification of vulnerabilities
  - high vulnerability: doubling of energy costs in ten years (very likely), ICT blackout for one day due to storm (unlikely), absence of 50 % of employees due to freezing rain on high ways (unlikely)
  - low vulnerability: breakdown of key supplier for 4 days (likely), investors demand climate change adaptation strategy (unlikely)
- Respondents name the following indicators for resilience:
  - diversification of suppliers and products/ services
  - implementation of risk management
  - integration of climate change adaptation into the business strategy
  - flexibility and willingness to change
  - creativity

## 2. How exactly does climate change influence the value chains of companies?

The effects of climate change on the value chains are diverse:

- supply chain disruption if storage is not available (agricultural sector)
- hail damage when car storage is not roofed (transportation sector)
- extreme storms and lightening can hit windmills (wind energy sector)

## 3. How do key persons in business organizations influence climate adaptation strategies?

- agenda setting in business organisations via strategic management
- respondents expect climate change impacts to increase, unlikely risks are rarely taken into account
- motivation of strategic management: concerns about risks and sustainability and also the search for opportunities/innovations

## 4. Are existing management tools (e.g. risk management tools) applied for organisational adaptation to climate change?

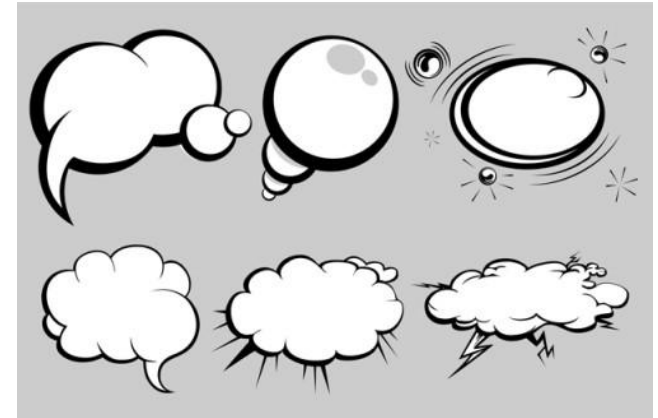
- adaptation has a low to very low significance in comparison to other organizational objectives
- adaptation is organisationally anchored on the strategic level or at the sustainability division

## 5. How does the “dominant logic” in a specific sector and the interaction between companies and sector associations influence climate adaptation strategies?

- respondents trust in science
- chambers of commerce play a minor role in agenda setting. They need information and training themselves.

# Quotations (1/2)

*„Our organization is located in 20 countries. We work under ice age conditions in Canada, in typhoon affected regions in Taiwan and in the heat of South Africa. Climate is very important for our business case...“  
(Founder and chairman of the board, wind energy organization)*



*„We don't have problems due to climate, we solve problems caused by climate.“  
(Founder and chairman of the board, wind energy organization)*

## Quotations (2/2)

*„To be honest, climate change adaptation is not a number one objective. It will always play a subordinate role. Demographic change and the threat of losing employees is a major risk for us.“ (Bord of management, wind energy organization)*

*„...climate change can effect our employees , e.g. skin cancer and other deaseses because they mainly work outside.“ (Manager, construction organisation)*

*„We depend on private transportation. Our employees will be unable to go to work, if petrol stations would run out of petrol for 5 days.“ (Manager sustainability, printing organization)*

# 7. Conclusions (1/2)

- Demand for adaptation products and services will increase in future but today business organisations do not see a need for adaptation action
- Respondents trust in science
- Intermediary organisations are needed that translate scientific results into business language → chambers of commerce lack competencies

# Conclusions (2/2)

## **Innovation and Entrepreneurship Center for Climate Change Adaptation** in the Metropolitan Region Bremen-Oldenburg

- support of existing business organizations
  - support of start-ups
  - support of chambers of commerce and promoters of trade and economy
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- Expected start: July 2013
  - Kick-off conference: planned for november 2013
  - Coordinated by the University of Oldenburg, Prof. Dr. Klaus Fichter and Prof. Dr. Reinhard Pfriem

# Thank you for your attention!

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