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Scope for Cost-Benefit Analysis in a Changing Environment of Climate Change and Infrastructure

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  b. *Dutch Climate Strategy – Between Ambition and Realism*
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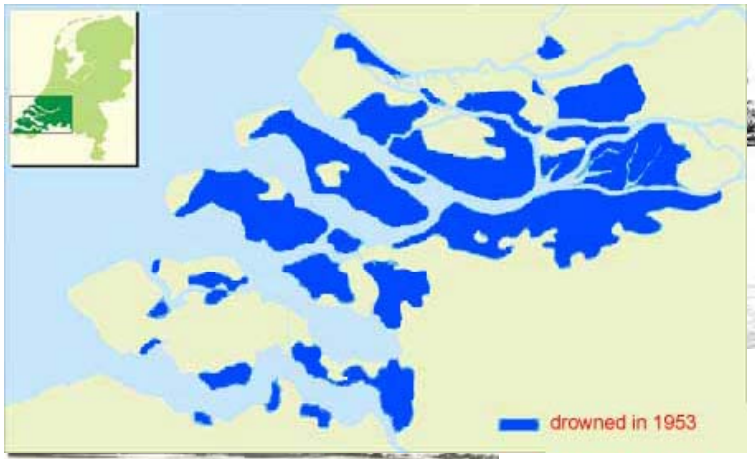
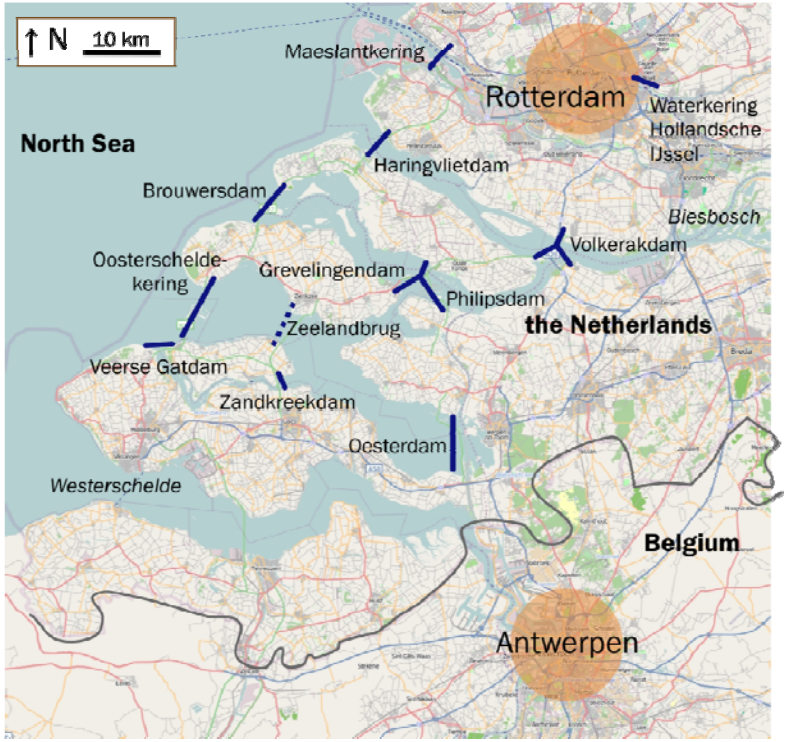
Delta works revisited (Don & Stolwijk, 2003)





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Delta works revisited (Don & Stolwijk, 2003)

- CBA ex-ante conducted in 1953 by Tinbergen
- 2003 – ex-post CBA
- Main differences:
  - Costs highly underestimated – factor 6
  - Unforeseen benefits (economic development)
- With the present knowledge and insights: the same or another decision could have been taken !
- Pls note: flooding risk was taken as exogenous

Scope Cost-Benefit Analysis (CBA)

a. *Stern report and critics*

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Stern report and critics (1)

Main conclusion Stern report 'Economics of Climate Change':

"*The benefits of strong, early action on climate change outweigh the costs*"

Illustration of the dilemma on the use of CBA:

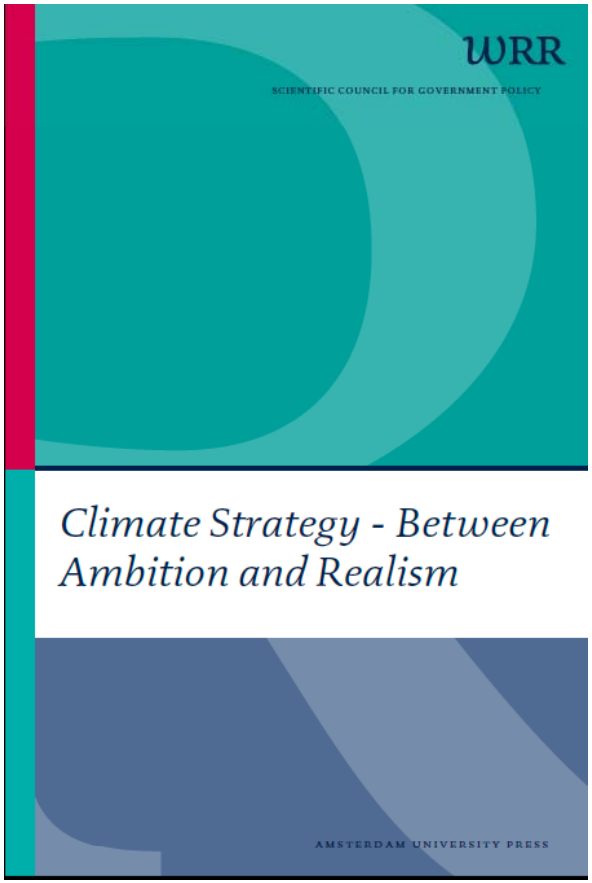
- CBA provides a clear unambiguous conclusion; vs.
- CBA hides uncertainty and subjectivity

Stern report -
main points of critique (a.o. Baer, P. and C. Spash (2008)

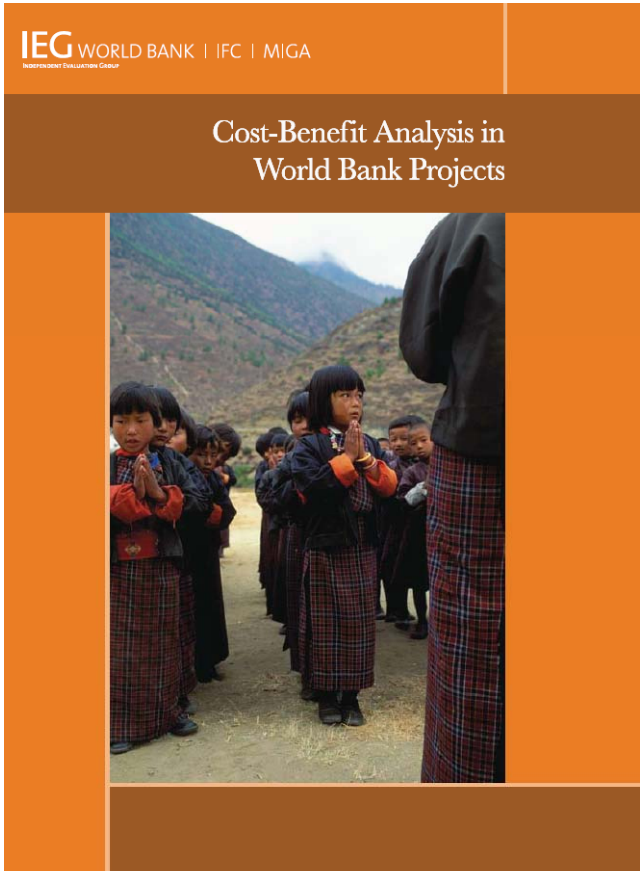
- 'Optimism' bias
- Debatable and hidden judgments and assumptions
- Mix ethical and empirical claims
- Subjects:
    - Future generations – discounting
    - Risk and uncertainty
    - Extreme and catastrophic impacts
    - Intra-generational ethics
    - Incommensurability (e.g. human live vs. goods)

Dutch Climate Strategy – Between Ambition and Realism

difficult choices



Cost-Benefit Analysis at World Bank



Use of CBA for infrastructure projects in the Netherlands – findings from a survey - Background

- Since 2000: revival of CBA
- Introduction of standardized CBA guidelines for large infrastructure projects
- Broadened to other sectors (area/urban development, nature, wider policies interventions) and other levels (regional and local)
- Several methodological modifications introduced
- Name ‘Overview Economic Effects Infrastructure’ (OEEI) → ‘‘Overview Effects Infrastructure’ (OEI)

Regarding climate change:

- Mitigation: Explicit valuation of CO2 emission reduction/ increase
- Adaptation:
  - CBAs incorporate changes in water levels/flooding probabilities due to climate change
  - Attempts to calculate optimal risk levels (CBA)
  - Assessments of alternative measures given a certain risk level (CEA)

Use of CBA for infrastructure projects in the Netherlands – findings from a survey

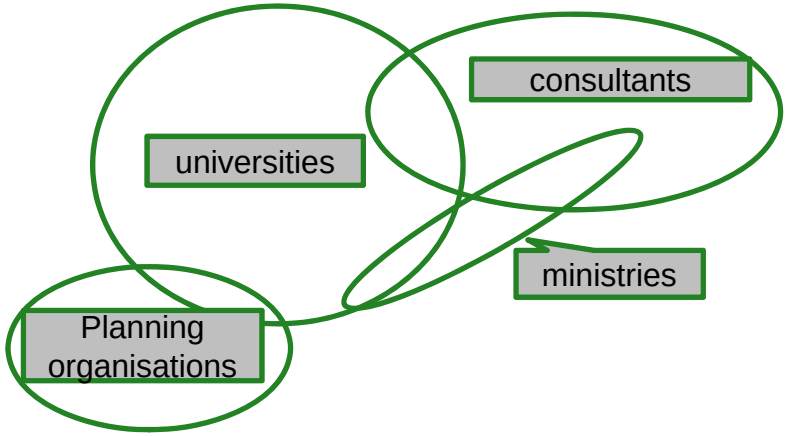
Starting point was the tension between :

- Enthusiastic and widespread use of CBA

- Continuing critical remarks on CBA method and results

Use of CBA for infrastructure projects in the Netherlands – findings from a survey - Approach

- round of open interviews/meetings with 25 academicians, professionals and policy makers



- Findings structured and analyzed using principles of *Grounded Theory* – inductively developing insights and theory

- More than 160 concepts/labels → 23 main issues

Use of CBA for infrastructure projects in the Netherlands – findings from a survey - Results (3)

- Different views on the role of CBA
  - Objective evaluation (societal welfare)
  - Justification for decision to be taken
  - Structuring for design and decision
  - 'Just a tool'

- Limited time and resources to undertake CBA with in-depth research → mechanistic exercise *('spreadsheet logic')*

- Dual role of consultants implementing CBA studies

Use of CBA for infrastructure projects in the Netherlands – findings from a survey - Results (2)

Substantial issues –

Fundamental issues:

- Underlying models & effect studies
- Valuation 'soft' values
- Distribution
- Discounting
- Indirect effects
- Uncertainty

Most issues are difficult and will remain difficult ! – including the *basic principles:*

- With-without
- Scale of analysis
- Temporal dimension
- Avoidance of double counting
- Consumer preference as counterpoint

continuous struggle

Use of CBA for infrastructure projects in the Netherlands – findings from a survey - Results (3)

- Black box character

- CBA world quite separated from EIA world (and *vice versa*)
- CBA disconnected from evaluation in a broader sense and complementing evaluation tools (e.g. MCE)

- Timing and scope of the CBA
- Rigor and quality of CBAs is a concern

- Different positions:
  - CBA adepts
  - CBA pragmatists
  - CBA criticasters

Use of CBA for infrastructure projects in the Netherlands – findings from a survey - Conclusions

- Ongoing dispute on the role of CBA
- Trend of 'economization' of decision-making ('*economic imperialism*') –
  - Emphasis on efficiency as the only criterion
  - Attempt to capture and value all efficiency effects
- Substantial CBA issues get relatively a lot of attention to get "solved"
- Issues on the process get relatively less attention
  - Black-box character
  - Timing and scope
  - Relation between CBA and EIA
  - CBA in the evaluation and assessment framework

Use of CBA for infrastructure projects in the Netherlands – findings from a survey - Recommendations

- Further research into the interface between CBA and the decision making process
- Enhance the role of CBA in a broader evaluation framework, including strengthen linkages with:
  - linkage with SEA/EIA processes
  - linkage with other evaluation methods, incl. MCE, indicators
- Substantial issues to be addressed in relation to CBA
  - Discounting
  - Distributional effects
- Keep up the quality of CBA studies (e.g. review, 2nd opinion, ex-post analysis)

Scope for Cost-Benefit Analysis in a Changing Environment of Climate Change and Infrastructure - Conclusions

- In view of increased complexity and uncertainty, longer time horizons and more extreme potential impacts →
  - Careful application and interpretation
  - Limits to valuation in monetary terms
  - Look critically at CBA outcome and figures and don't take them too absolute
- Still need for analyzing and understanding trade-offs (between measures, over time, space and between groups) - CBA: *you cannot do without it* !
- Quality and rigor of CBA is vital
- Enhance the role of CBA in the decision-making process, use critically and place in a wider assessment framework

Way forward for CBA in general and for climate change in particular .... questions

- What is the position and scope of CBA in infrastructure assessment and climate change?
- How to transform CBA into a learning tool ?, rather than
  - an objective measurement tool; &/or
  - a tool to justify a preferred solution
- How to apply CBA with caution, in a lite manner (CBA-lite) ?
- How to bridge the worlds of CBA and IA-SEA-EIA ?

Thank you !