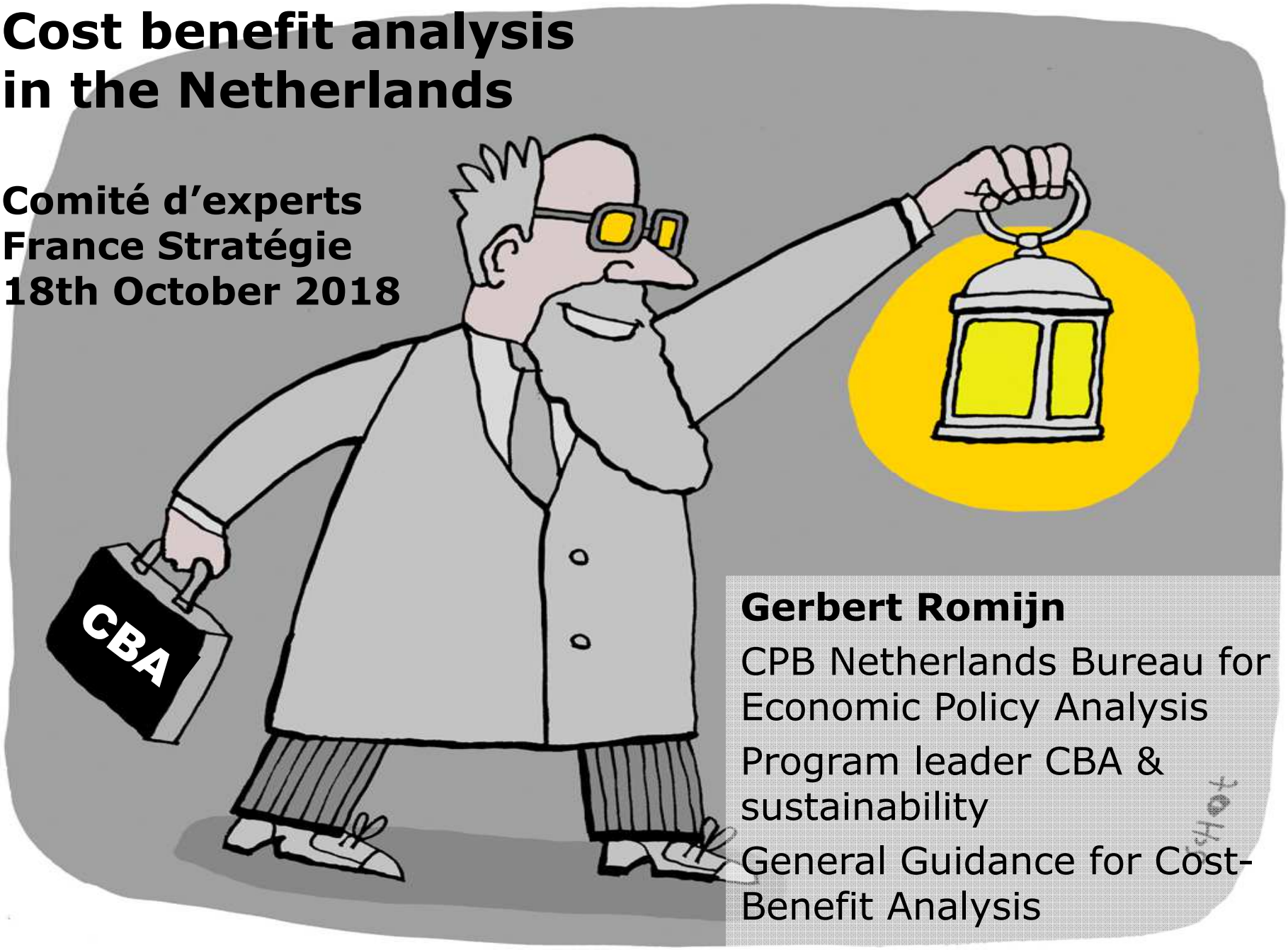
Cost benefit analysis in the Netherlands

Comité d'experts
France Stratégie
18th October 2018



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General Guidance for Cost-Benefit Analysis

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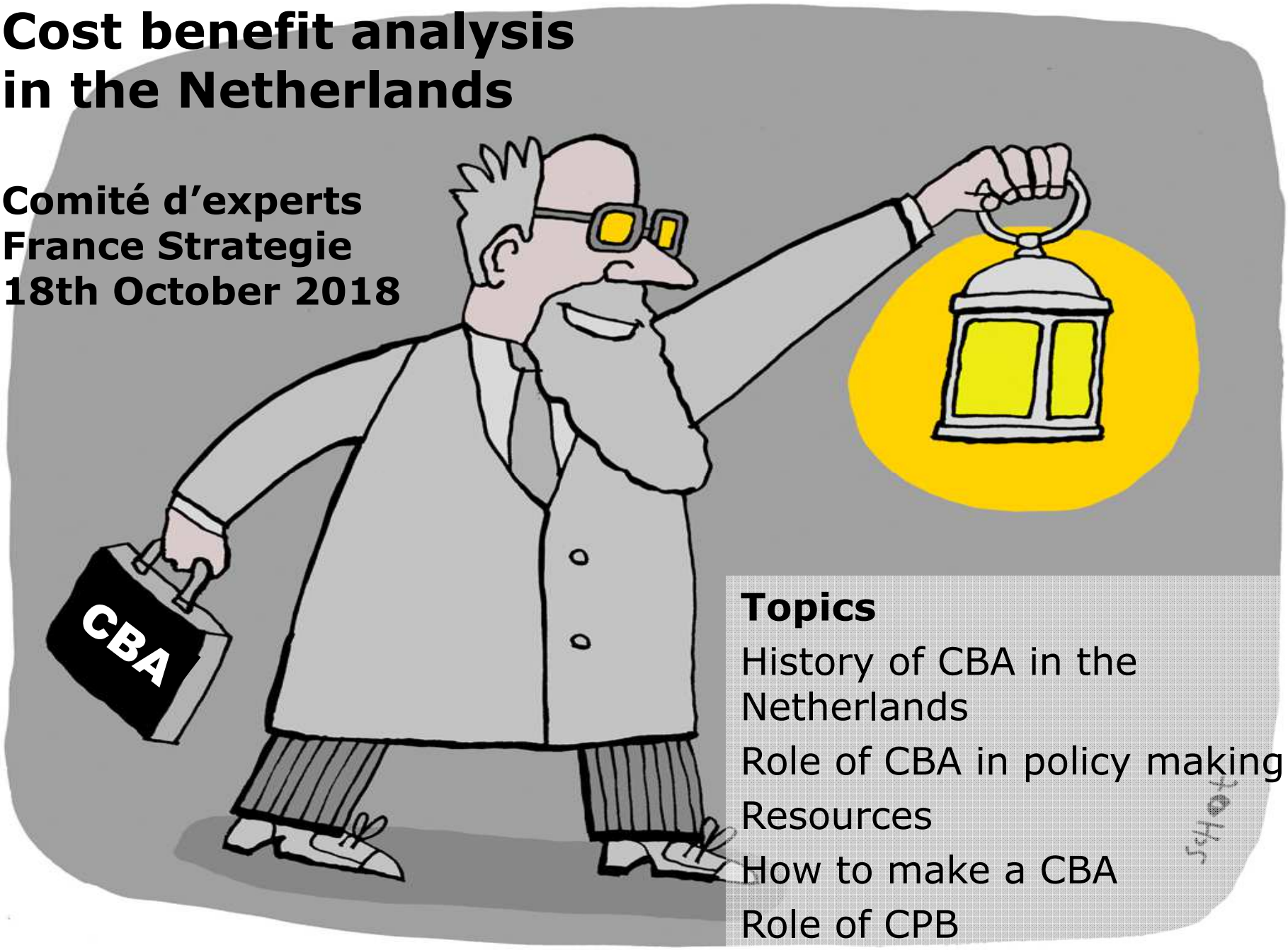


Topics

History of CBA in the Netherlands

Role of CBA in policy making

Resources

How to make a CBA

Role of CPB

History of CBA in the Netherlands

- Since 1901: CBA's of major flood risk investments:
  - Benefits for Dutch society larger than costs?
  - What is most efficient way to reduce flood risk?
  - Input for public decision-making: tool for joint fact finding and reaching consensus on 'best' solution
- Since 1959: CBA's on other public investment, e.g. high ways, railroads, airports, fighter planes, windmills

CPB Netherlands Bureau for Economic Policy Analysis
PBL Netherlands Environmental Assessment Agency

- 2000:
  - CBA obligatory for major transport infrastructure projects
  - National guidelines on transport CBA: OEEI
  - Overview Economic Effects Infrastructur

- 2013-now:
  - 2013: General guidance for CBA
  - CBA extended to all policy areas
  - Gradual increase in use of CBA outside infrastructure
  - Development of specific handbooks
  - Comptability law (1/1/18)

Policy evaluation with CBA

- Ex ante evaluation
- Support policy preparation and decision making
  - What is the problem?
  - What are the roles of markets and government for solving the problem?
  - What are the most promising policy options?
  - Which policy option to choose?
- *Evidence based* decision making
  - What do we know about the effectiveness and cost?
  - Can we improve effectiveness or reduce cost?
  - What are the uncertainties?
  - What you don’t know is just as important as what you do know.

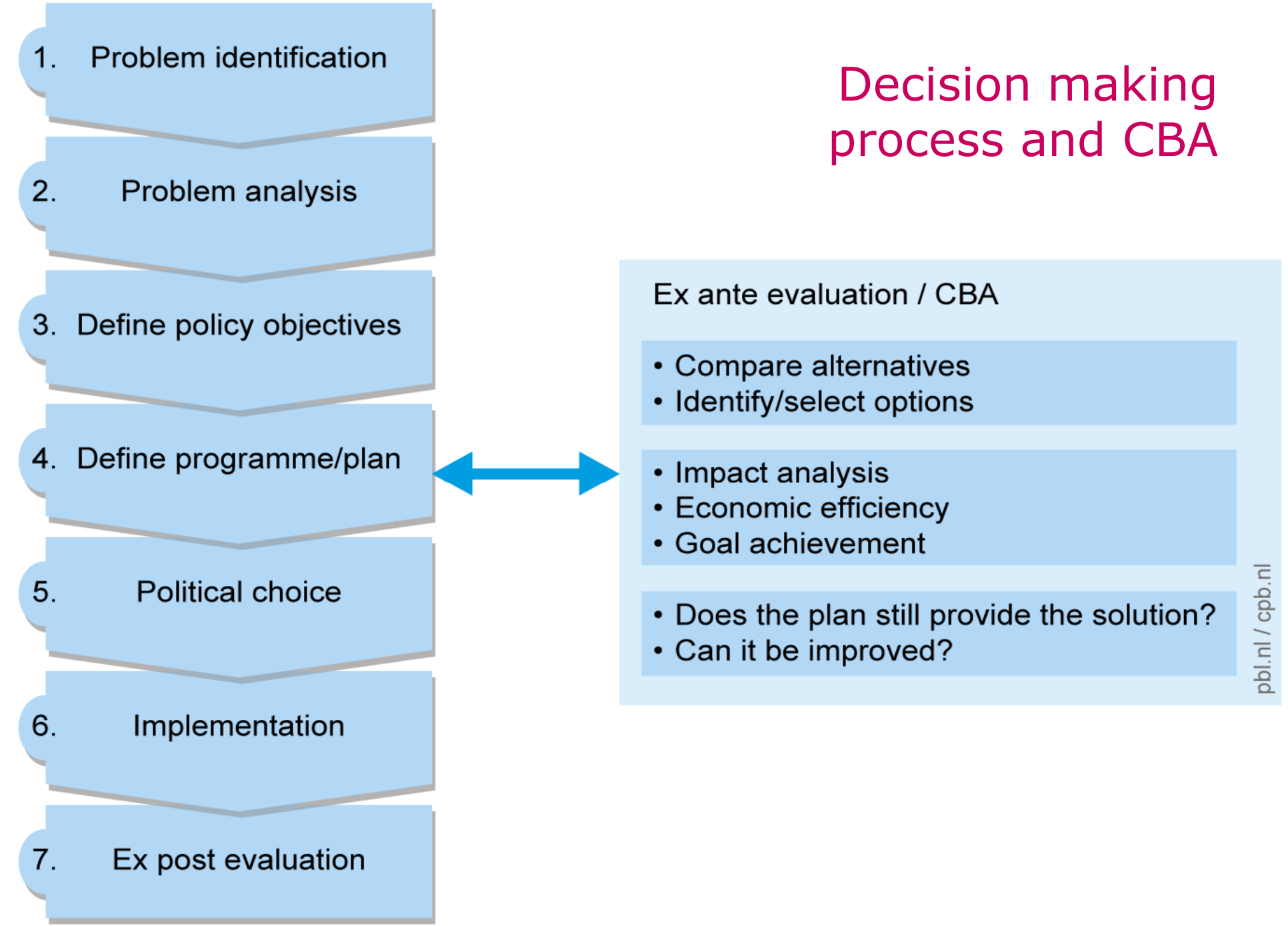
Wat does a CBA offer?

- CBA offers an overview
  - of all (relevant) effects of a measure
  - the risks and uncertainties of a measure
  - and the resulting advantages and disadvantages

- CBA
  - quantifies and values effects as much as possible
  - provides insight into the effect on social welfare
  - uses a broad welfare concept
  - presents distribution effects in addition to the balance of benefits and cost

"There is currently no more complete way than a CBA to demonstrate the social advantages and disadvantages of a policy proposal."
(Cabinet letter to parliament dated 6 December 2013)

Decision making process and CBA



Source: CPB/PBL. 2013

Connecting CBA to decision making

- Tradional role: determine whether benefits exceed cost at end of decision making process
- Searching for a better role: helping the process
  - Use CBA framework and knowledge early in proces
    - Problem analysis
    - Definition of null alternative/policy alternatives
    - Legitimacy of government intervention
  - Improving policy alternatives
  - Interpretation of CBA results
- Influence of CBA (Rienstra, 2008)

	MKBA Positive	MKBA Negative
Go decision	47%	30%
No-go decision	5%	18%

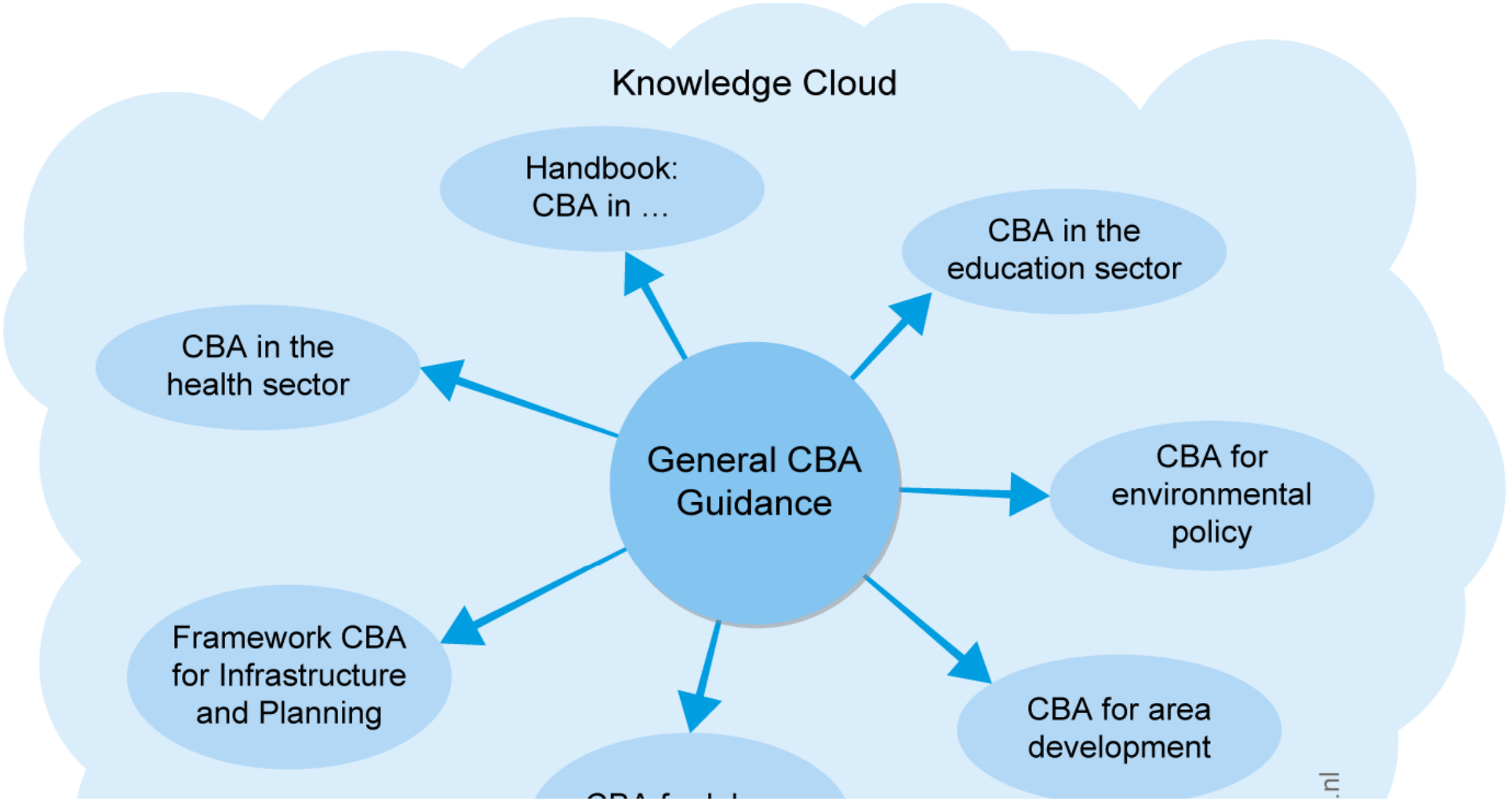
When can CBA help?

… and when better not use CBA

- Important effects cannot be measured or valued
- Ethical issues, human dignity, like slavery
- Research effort large in relation to importance of policy decision
- But:
  - Indicator CBA
  - Quick scan CBAMKBA
  - CBA *light*

Resources for CBA

- Guidelines and handbooks
- Methods
  - Determination of effects: models, experiments, index numbers
  - Valuations: market prices, inferred prices, valuation indices
  - Scenario's
- Methodological support
  - Discount rate
  - Marginal cost of public funds
  - Redistribution
- Support for Economic Evaluation (SEE): Rijkswaterstaat, CPB, PBL
- CBA Committee
  - Most departments and CPB, PBL
  - Reports to council of ministers
- CBA Community: government, consultants, academia, research institutions



Handbook CBA social policies – labour market, health, education
Handbook CBA environmental policy and environmental prices
Handbook CBA for nature
Handbook CBA for e-government
Handbook CBA MIRT: infrastructure, regional development & transport
Handbook CBA climate and energy
Handbook CBA taxation

Quality assurance

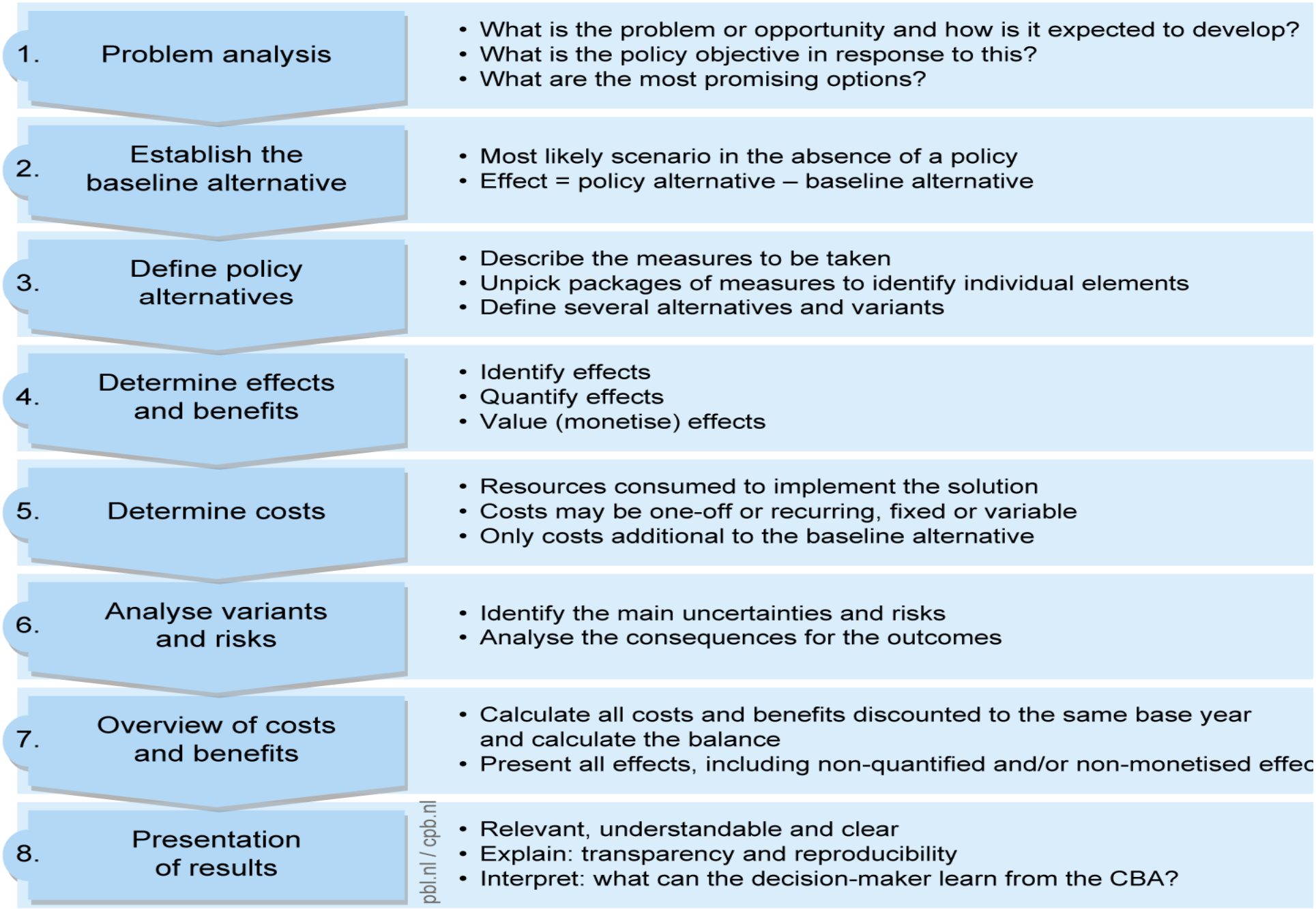
- Cost-benefit analist is responsible: reputation
- CBA is a craft not a science: knowledge of the policy area is essential as well as knowledge of welfare economics
- CBA involves making choices: transparancy and accountability are important
- Explanation of research steps
- Balanced presentation and interpretation of results
- Independence of cost-benefit analist; no pressure by principal
- Guidelines and handbooks
- Second opinions

Role of CPB

- CPB acts as guardian of the correct aplication of CBA
- Guidelines and handbooks: uniform use of CBA, best practices
- Policy effectiveness studies (ex post analysis) and overviews

- Investigates methodological issues
  - Discount rate
  - Marginal cost of public funds
  - Redistribution
  - Environmental quality
  - Long term national scenarios on economic growth, spatial development and climate change (2030, 2050, 2100), input for CBA

- Undertakes major CBA's
- Provides second opinions



Source: CPB/PBL, 2013

1. Problem analysis

- What problem or opportunity presents itself and how is it expected to develop?
  - Will the problem solve itself or get worse?
  - Does market failure play a role? In which way?
  - Is there a role for the government or do markets solve the problem?
- What policy objective can be derived?
- Which policy options are promising?
  - The problem is the starting point
  - Not the solution (tunnel vision)
  - Find promising solutions; drop unpromising solutions
  - Government failure!

2. The null alternative

- Effect policy measure = policy alternative -/- null alternative
  - Benchmark
  - Equally important as policy alternative
- Development on relevant markets when policy measure are is not implemented
  - Exogenous factors (demographics, GDP, regional development → scenario's)
  - Existing policies
  - Highly likely policy intentions
  - Limited policy interventions to mitigate problem (→ null plus)

3. Policy alternatives

- Which policy interventions are considered
  - Pitfall: no attention for other policies, other projects or alternative definitions of a project
  - Define more than one: think of alternatives and variants
  - Postponement, phasing, flexibility

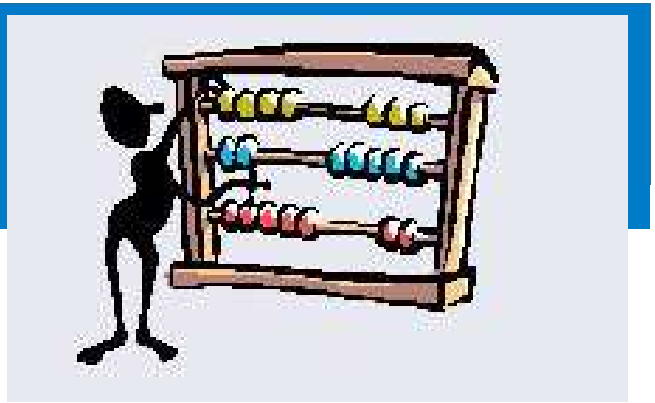
- A positive net benefit doesn't mean a welfare improvement if a better alternative exists

- Policy packages or programmes
  - Distinguish into functionally and economically separate projects
  - Analyse separate projects separately and together

    to establish "synergy"

    to isolate bad parts

    to optimize



4. Determine effects and benefits

- Identify relevant effects
  - all effects exactly once = no double counting + no omissions
  - direct and indirect effects
  - estimate effects: models, experiments, literature, index numbers
- Valuation
  - properly functioning market: willingness to pay = market price
  - no market → no price → alternative valuation methods
- Methods for determining and valuing effects
  - Scientifically rigorous
  - Regularly checked and updated
  - Transferrability?
- What if effects cannot be reliably estimated or valued?

5. Cost

- Theory:
  - Sacrificed resources to implement policy solution
  - Valuation: best alternative use of these resources
  - All cost: one-offs, recurrent, fixed or variable
  - Only extra cost relative to null alternative

- In practice
  - Benefits generate lot of attention → cost are equally important
  - Margins of error: +/- 50% no exception;
  - Later design alterations (integration, compensation, mitigation)

7. Uncertainty

- Knowledge uncertainty
- Policy uncertainty

Sensitivity analysis

- Uncertain future developments
  - General economic development: bandwidth in results → scenario's
  - Specific risk: probability x consequence
  - Macro economic risk: risk premium in discount rate
  - Value of flexibility (real options)

8. Overview of cost and benefits

- Convert all cost and benefits to same base year
  - intra- and extrapolation
  - Net present value (NPV)
  - Discount rate?

- Show all effects and cost
  - Including effects that could not be quantified or valued
  - What you DON'T know is just as important as what you DO know

9a.Presentation of results

- Balanced
  - All policy options are equally important
  - Show uncertainties and bandwidths
  - Also show effects that could not be estimated or valued

- Accessible
  - Not everything fits into 1 table
  - Core message of the CBA must take central stage

- Accountable
  - Craftsmanship of cost-benefit analist
  - Make choices explicit and transparent; and explain them

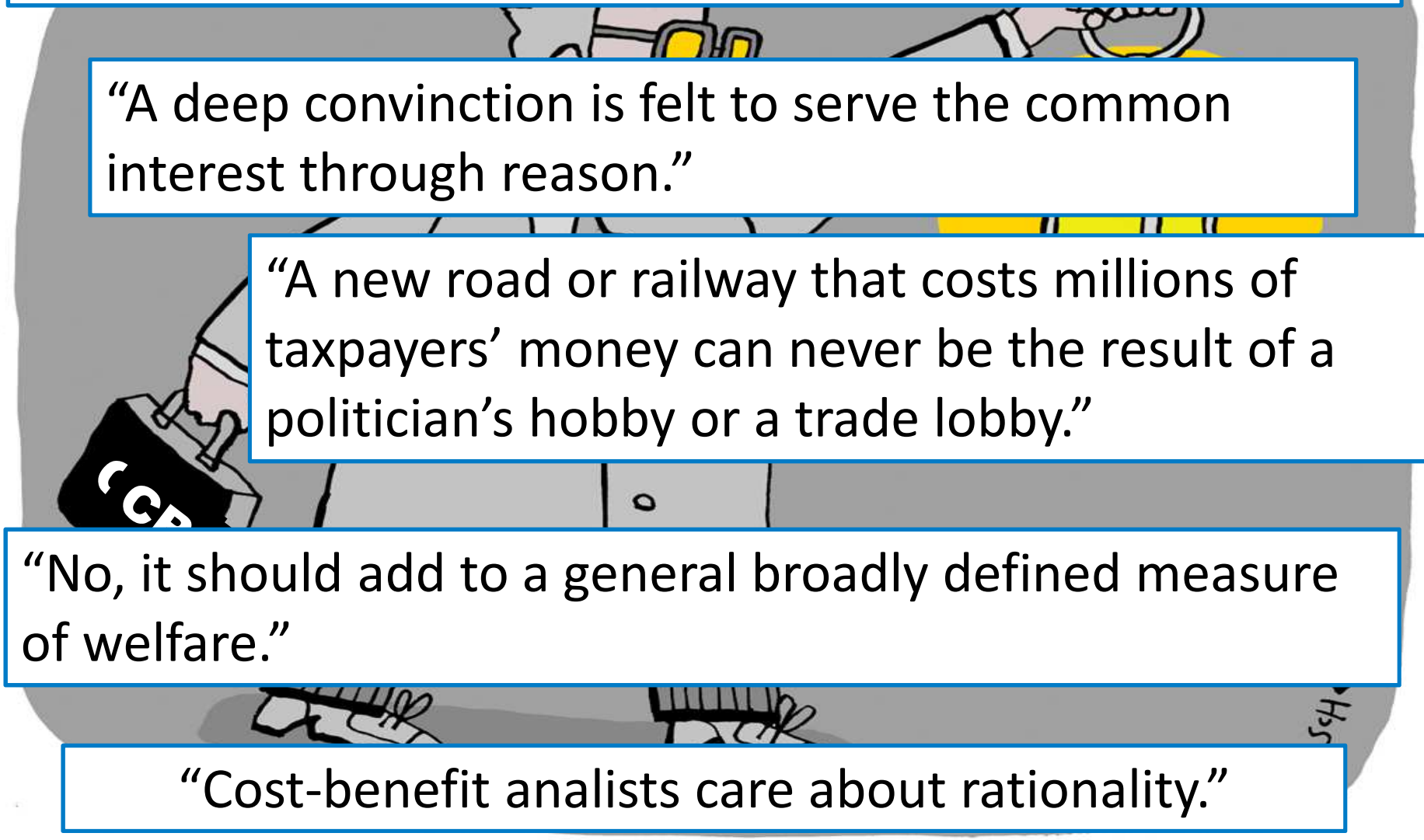
9b. Presentation of results

- Explanation of the results
  - Which factors drive the results?
  - What are the most important uncertainties?

- Interpretation of the results
  - What do the results imply for the policy decision?
  - Which optimizations are possible?

“More beautiful than the method is the passion that underlies it”

Kees Kraaijeveld VN, 5 nov 2014



“A deep convinction is felt to serve the common interest through reason.”

“A new road or railway that costs millions of taxpayers’ money can never be the result of a politician’s hobby or a trade lobby.”

“No, it should add to a general broadly defined measure of welfare.”

“Cost-benefit analists care about rationality.”