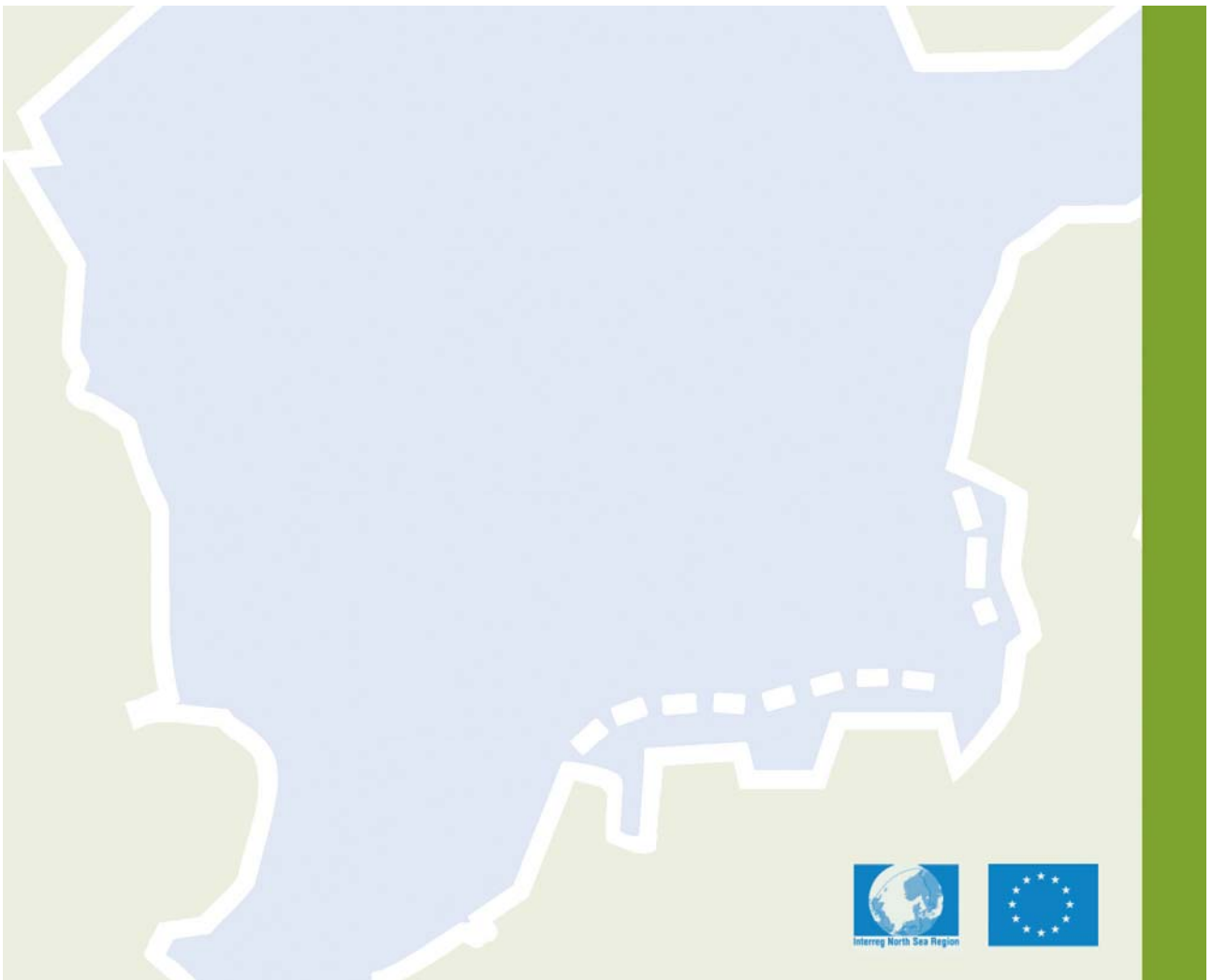


State of the art Comparison UK & the Netherlands





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The ComCoast project is carried out in co-operation with ten partners.

- Rijkswaterstaat (NL - leading partner)
- Province of Zeeland (NL)
- Province of Groningen (NL)
- University of Oldenburg (D)
- Environmental Agency (UK)
- Ministry of the Flemish Community (B)
- Danish Coastal Authority (DK)
- Municipality of Hulst (NL)
- Waterboard Zeeuwse Eilanden (NL)
- Waterboard Zeeuws Vlaanderen (NL)

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1. Comparing Impact Assessment and environmental valuation in the UK and the Netherlands

In this key note an overview is given of the differences and similarities in impact assessment in the UK and the Netherlands. Since valuation of impacts is an important part of impact assessment, the use of valuation methods is also compared.

1.1. Comparing the basic principals of impact assessment

The UK has a longer history of using socio-economic cost benefit analysis (CBA) as part of integrated impact assessment than the Netherlands. The UK's integrated impact assessment consists of three categories of impacts: economic, environmental and social impacts. The economic impacts are summarised in a CBA which includes welfare effects that can readily be expressed in monetary terms. Environmental and social impacts that cannot be expressed in monetary terms, are expressed in their own units. All impacts are integrated by means of multi criteria analysis (MCA), in which the economic impacts gets 46 % and the environmental and social impact category each get 27 % of the total number points available. In this way the project alternative with most points will be the preferred option.

Integrated impact assessment in the Netherlands also includes economic, environmental and social impacts, though the latter two categories are quite new and sometimes skipped. Since the year 2000 economic impacts are determined by means of CBA¹. Since 2004 impacts on the natural environment (read: nature, water and soil) are also included in CBA. This is done by translating the physical impacts as mentioned in the Environmental Impact Assessment (EIA) into welfare effects. This translation is done by distinguishing between conditional functions (e.g. carbon sequestration or nursery function) and resulting goods and services (the final welfare effects for humans, e.g. protection against climate change and fish harvest). Since 2006 also other spatial qualities (green, blue and social qualities), such as heritage, social cohesion etc. are included. This is done by distinguishing qualities (e.g. social cohe-

¹ Before that it was all MCA.

sion) and welfare effects (reduced cost of moving). Table 1 gives some examples of the welfare effects included in CBA and the argumentations.

Table 1. Identification of welfare effects to include in CBA

	Measure	Physical effect (conditional function affected)	Welfare effect (good/service)
Ecosystems	Cutting of a water course	Migration function	More Fish: market price
	Planting reed	Nutrient purification	Clean water: reduced water treatment costs
	Enhancing mud flats	Sedimentation function	Shipping possibilities: reduced dredging cost
	Building houses and roads	Sponge function soil	Ground water nuisance: damage costs
	Measure	Physical effect (quality affected)	Welfare effect (good/service)
Spatial Qualities	Beaken	Orientation	Travel time saving
	Meeting point	Social control	Less criminal offences: saved costs
	Extra city green	Shelter	Saved energy costs
	Monument restoration	Historical architecture	Higher real estate values

CBA is a welfare analysis, so welfare effects are explicitly included in CBA. This leaves no room to include the same welfare effects also in other impact assessments such as EIA in their own units. That would lead to double counting. In case welfare effects cannot be expressed in monetary terms, these are still included in the cost benefit table and added up to the net present value in their own terms. As a result the environmental as well as the social impact assessments are supposed to only include non-welfare effects that are important to decision makers. The non-welfare effects are not weighted in the Netherlands. The major difference in the integrated impact assessment between UK and the Netherlands therefore is that in UK the possibility to monetarize an impact determines its place in the assessment, whereas in the Netherlands the type of effect (welfare or non-welfare) determines its place in the assessment. In UK weights are used, in the Netherlands this is left to politician. Figure 1 illustrates the integrated assessment practice in UK and the Netherlands.

Figure 1. Including economic, environmental and social impacts in impact assessment in UK and the Netherlands

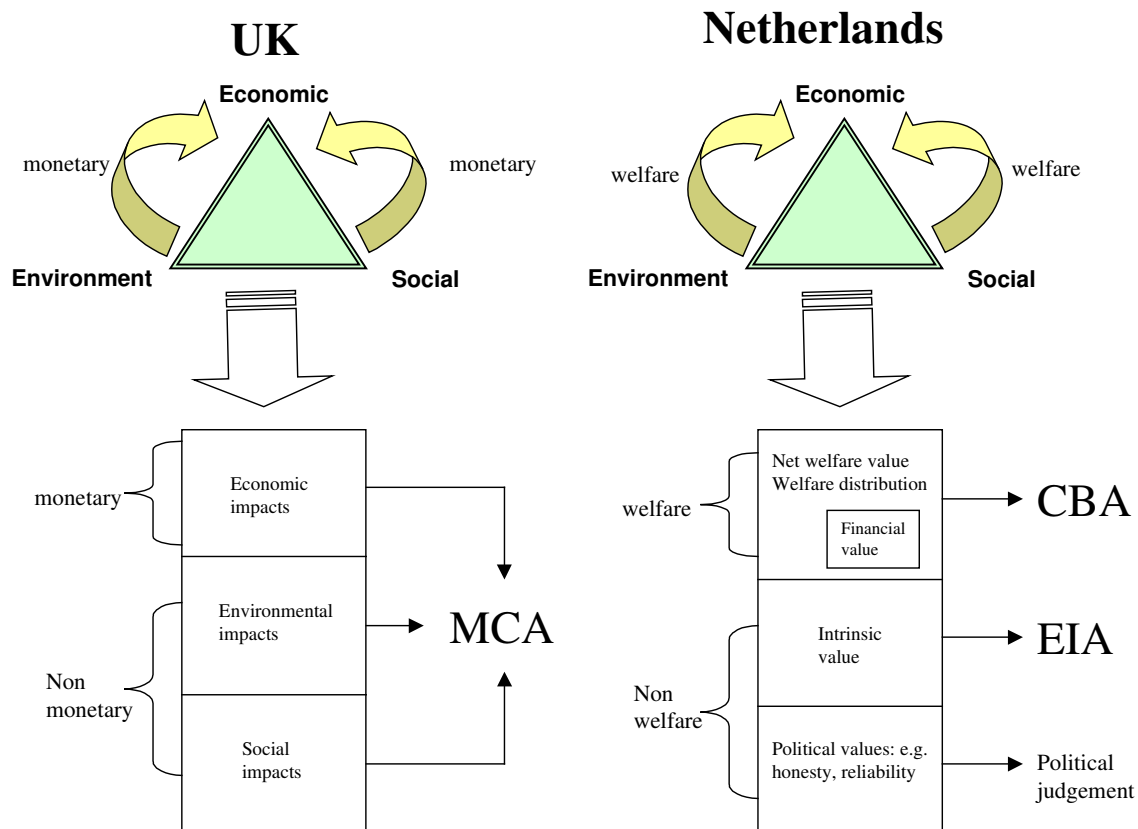


Figure 1 also shows that both in UK and in the Netherlands CBA entails more than just the financial impacts. In both countries CBA includes social-economic i.e. welfare effects, if possible in monetary terms. This means that the economic value of the natural and social environment is recognised. Appendix 1 presents a more extended summary of the comparison between the UK and the Netherlands.

1.2. Guidelines and anchoring

Both UK and the Netherlands have guidelines for performing impact assessments and CBA as part of impact assessments. In UK the 'Green book' for CBA on government policies, programs and projects is a general applicable guideline. 'FCDPAG² 3' is a special CBA guideline for coastal defense, and 'FCDPAG 5' is a special guideline for environmental impact assessment.

In the Netherlands the OEI-guideline is the national guideline for CBA. Initially this guideline was written for infrastructure (roads and railroads), but it is now being used much wider (water quantity, water quality, nature development, housing and business, such as harbor and industrial developments). In the original guideline environmental impacts were not included, as they are difficult to express in monetary terms. For these effects reference was made to the EIA, even though effects mentioned in EIA are often not welfare effects. By the end of 2004 a supplement to the OEI guideline was launched: Valuation of Nature, Water and Soil in CBA. Recently an extra supplement for the valuation of (other) spatial qualities was finished: Including Spatial Qualities in CBA. Both supplements have been applied for approximately 30 projects now.

² Flood and Coastal Defence Project Appraisal Guidance (FCDPAG)

The UK's green book and 'FCDPAG 3' are comparable with the Dutch OEI guideline. A difference in use is that CBA is mostly used at strategic and scheme level and hardly ever at a single measure level in the Netherlands. In the UK CBA is used at strategic and scheme level. The UK's 'FCDPA 5' is comparable with the Dutch guideline for the Valuation of Nature, Water and Soil in CBA. The main difference between the two, is the explicit translation from physical effects (in their own units) to welfare effects (in Euro) in the Dutch guideline. Both the UK and the Dutch guideline recognize the welfare value of the natural environment and the need to express those values in monetary terms if possible.

In the Netherlands a special effort was made to anchor the supplement for the Valuation of Nature, Water and Soil in existing regulations. Since environmental valuation has always been a sensitive issue in impact assessment (several earlier attempts had failed), anchoring was considered utmost important to ensure the inclusion of environmental values in actual economic decisions. Anchoring was realized by following both an administrative policy route and a political route. The policy route entailed recognition of the guideline by several ministries (V&W, EZ, LNV, VROM, FIN³) through co-authorship. The political route entailed discussion in and approval by the Cabinet of ministers and by the house of parliament.

1.3. The use of valuation methods and particularly 'CVM'

Both in the UK and in the Netherlands various ecosystems' functions are valued: production functions such as fish, regulation functions such as carbon storage and nutrient recycling, information functions such as recreational benefits and non-use values, such as existence values. The way in which these values are expressed in monetary terms slightly differs. The UK seems to use more 'cost based'-benefit estimates than the Netherlands. For example: in the UK the non-use value of ecosystems is estimated on the basis of the property value of grazing land or the lowest of protection and replacement cost, while in the Netherlands this is done on the basis of willingness to pay⁴. In the UK heritage is valued at the lowest of retaining, replacement or relocation costs, whereas in the Netherlands this is done on the basis of willingness to pay or hedonic prices. Reason that this is not done in the Netherlands is that one cannot use replacement cost to determine whether something is worth replacing: than the costs are always equal to the benefits!

An important difference in the use of valuation methods seems to be the acceptance of the Contingent Valuation Method (CVM). In the Netherlands this method is accepted for the valuation of travel time and recreation visits, but not for the valuation of non-use. In fact, the non-use value is not always recognized as a welfare effect. In UK the non-use value and CVM seems to be more accepted.

1.4. Authorised values

Both UK and the Netherlands make use of benefit transfers, i.e. the borrowing of valuation study results obtained elsewhere, to save study costs. In the Netherlands relatively few empirical valuation studies have been carried out (maybe 25 studies since 1973). Almost all CBA's fully rely on transfers. This means that we need to have consensus on what values to use. This being the case, a national authorised value book, which matches with the guideline on Valuation of Nature, Water and Soil, will become available in September 2006. This book uses a classification of nature types, water types, soil types. The book does not only contain price tags of many different welfare effects, but it also includes quantifications (numbers per hectare of calculations methods) for all these welfare effects. For example: the book indicates how many kg N a reed land remove from the water and what the value of one kg N is; it also provides a calculation method for changes in recreational visits plus a price per visit. In UK there are also authorised values e.g. for intangible benefits of flood risks.

³ Ministry of Transport Public works and Water Management (V&W), Ministry of Economics (EZ), Ministry of Agriculture Nature and Food quality (LNV), Ministry of Housing Spatial Planning and Environment (VROM), Ministry of Finances (FIN)

⁴ Or it is not done at all, which is often the case.

1.5. Conclusion

The most important similarities of UK and the Netherlands are the recognition of the welfare value of environmental impacts within CBA, the use of guidelines and the need for authorised values. Appendix 1 shows some more similarities such as the use of a similar interest rate and time span. Most important differences are distinction between monetary and non-monetary effects in UK versus welfare and non-welfare effects in the Netherlands and the extent to which CVM is accepted. Appendix 1 shows some more differences, such as the notion that the UK uses more cost based benefit estimates than the Netherlands.

Appendix 1. Summary of the UK-Netherlands comparison

Comparison on:	UK	Netherlands (NI)	Differences / Similarities
Impact assessment			
Impact assessment: complete picture	<p>1. economic impacts: welfare effects in monetary terms.</p> <p>2. environmental impacts: habitat and heritage changes.</p> <p>3. social impacts: unclear.</p>	<p>1. economic impacts: all welfare effects, including natural and social environment.</p> <p>2. intrinsic ecological impact: non-welfare effects</p> <p>3. political impacts: non-welfare effects such as promises made.</p>	<p>In the NI all welfare effects from environmental and social changes are in (1); (2) and (3) are free from welfare effects. In UK (2) and (3) may contain welfare and non-welfare effects</p>
Relation EIA and CBA	Economic (CBA), Environmental (EIA), and Social appraisal resulting in MCA with weights adding up to 44 points.	CBA parallel to EIA resulting in IA on the basis of costs and benefits, without weights.	In NI environmental and social effects are translated to welfare effects: even if not expressed in money!
Use of CBA at different levels	<p>1. at strategic level: defense strategy on large scale (estuary).</p> <p>2. at scheme level: a set of defense measures on a local scale.</p> <p>3. at measure level:</p>	<p>1, 2 at strategic and scheme level: choosing optimal protection standard.</p> <p>3. at measure level: not evaluated by CBA, but by CEA.</p>	In NI CBA is hardly used on measure level.
Included externalities	Habitat (biodiversity) Heritage (Archeology, Buildings and Landscape).	Nature, Water, Soil Other Spatial Qualities (heritage, social cohesion, architecture etc.).	NI are trying to broaden IA with new externalities. UK has more experience in heritage valuation.
Guidelines	Green book for all government policies: FCDPAG3. FCDPA 5 for environmental appraisal specially for flooding.	'OEI' guideline is especially for roads, but use much wider; no guideline for flooding. Supplement for Nature, Water and Soil. Supplement for Spatial Qualities coming.	Green book and FCDPAG3 comparable with OEI. FCDPAG 5 comparable with OEI supplement.
Anchoring	Approved by Ministry of Agriculture, Fisheries and Food.	Approved by several ministries. Discussed in National Cabinet of ministers and parliament and approved.	NI and UK have institutionalized CBA including environmental impacts.

Comparison on:	UK	Netherlands (NI)	Differences / Similarities
Valuation			
Included values	Ecosystems: function values (regulation), option values an existence values (non-use). Heritage: non- use and recreational values.	Ecosystems (nature, water & soil): production, regulation, information and non-use values (not fully accepted!). Heritage: recreation, housing comfort and bequest values. Other spatial qualities: various values.	NI and UK are trying to include more than just ecosystems' values.
Valuation methods	Ecosystems: property value of grazing or the lowest of protection and replacement cost (as proxy for non-use value) Heritage: the lowest of retaining, replacement or relocation costs as proxy for non-use value, and recreation value on basis of wtp.	Ecosystems and heritage: Production functions: market prices Regulation functions: Abatement costs avoided. Information functions: hedonic prices, travel costs, wtp. Non-use functions: wtp (CVM not accepted!). Other Spatial Qualities: avoided costs of movement, criminality etc.	UK uses more cost based benefit estimates than NI. CVM seems more accepted in UK than in NI.
Applicability	Not applicable when: 1. replacement costs do not match importance of the site. 2. irreplaceable. 3. question is whether replacement is worth the costs.	Always applicable, except for abatement cost avoided; that's not applicable when the question is whether abatement should take place.	Cost based benefit estimated have a limited applicability compared to true benefit estimates.
Authorized values	Available for immaterial effects of flood risk.	National authorized value book for all functions of nature per type of nature (water,soil).	Both UK and NI use benefit transfers to prevent high study costs.

Comparison on:	UK	Netherlands (NI)	Differences / Similarities
Technical CBA details			
CBA stages	1. identify options. 2. eliminate unreasonable options: how? 3. carry out CBA for reasonable options.	1. identify options. 2. eliminate unreasonable options by AV-CBA 3. carry out CBA for reasonable options.	UK and NL have comparable stages.
Reference option	'do nothing'	'most likely development': 'do nothing' is not considered a serious option.	NL and UK use a different reference option.
Period	50 to 100 years	50 to 100 years or infinite	
Interest rate	6 % (1999) 3,5 % descending with period (2003)	4 % for market external effects 7 % for market internal effects	comparable rate
Indirect effects	included	included (only first order effects)	same
Transfer payments	excluded	excluded, though this is difficult with recreational benefits!	same
Benefit transfer	yes	yes: national book with authorized values!	NI relies more on transfers than UK.
Inclusion of existence value	Included in money if: 1. it is the only benefit. 2. regular benefits are insufficient to cover costs.	Not included, though we try, with population size being the main bottleneck.	CVM is a bigger problem in NI than in UK .

Acronym: wtp = willingness to pay, CVM = Contingent Valuation Method, a survey technique to measure willingness tot pay. AV = Authorised Value