Netherlands Commission for Environmental Assessment

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Views and Experiences from the Netherlands Commission for Environmental Assessment 2009

Some facts on the Netherlands Commission for Environmental Assessment (NCEA)

The NCEA is a private foundation, funded by subsidies from the Dutch government. In the Netherlands it acts as an independent expert committee and has mandatory involvement in all environmental impact assessments for projects (EIA) and a substantial amount of strategic environmental assessments for plans (SEA). The NCEA advises competent authorities at two stages of the assessment process: the scoping exercise to identify the required content of the environmental studies and the review of the quality of the information compiled. When providing advice the NCEA takes public comments into account. In developing countries with which the Netherlands has a formal cooperation relationship, the NCEA provides the same services, in addition to capacity development on both EIA and SEA and advice on strengthening EA systems. All advisory reports are published and available via NCEA's website.

The NCEA's work is founded on two principles: expertise and independence. It is the combination of these two that allows the NCEA to provide an unbiased review of environmental and other information. The NCEA is a statutory body and its duties are laid down in the Dutch Environmental Management Act. It's secretariat is staffed by 24 technical secretaries and 28 supporting staff (situation in 2009), led by a chairman and a three-person management team.

The NCEA can call upon 700 Dutch and international experts with a collective expertise covering all environmental fields, such as air, soil and water pollution, ecology, hydrology, geology, archaeology, radiation, environmental law, noise nuisance and visual landscape impacts, and the technical and physical planning aspects of the activities for which an EA is required. Where needed, the NCEA can call upon experts in non-environmental disciplines, including social issues and economics, and technical expertise on subjects like land reclamation and consolidation, transportation, waste disposal, energy generation and consumption, environmental health etc. In short, the NCEA is able to field any expertise required for an EA. Both for NCEA's Dutch and international work.

Both in the Netherlands as in the official partner countries, the NCEA establishes working groups of experts for each individual EIA or SEA. In the Netherlands, the law stipulates that the NCEA has the final say on the composition of the expert groups, recognising that this is a prerequisite for its independence. Nevertheless, for each project in the Netherlands and in the partner countries eligible for development cooperation, the NCEA provides the competent authority with a list of members of the working group. The competent authority has the right to raise objections to the inclusion of one or more experts in the working group if it has good reason to doubt their impartiality with regard to the activity or the decision concerned. If there appear to be solid grounds for objection, the NCEA usually takes action and replaces the person or persons concerned.

Each working group is chaired by the NCEA's chairman or one of its deputy chairpersons. The chairperson of a working group must see to it that the experts focus their attention on the essential (environmental) issues of the project or plan concerned, stay within the NCEA's mandate and communicates the final advice to the competent authority's representatives. Each expert group is assigned a technical secretary who is responsible for the day-to-day management of the expert group's activities and the preparation of draft advisory reports. The chairman and the technical secretary keep track of deadlines and see to it that the advisory reports are submitted within the statutory period.

On demand, the NCEA also advises on other occasions, for instance for decisions where EA is not required. Furthermore, the NCEA organises expert groups to discuss new developments relevant to EIA/SEA. These groups consist of reputable experts from universities, businesses and governments. They discuss the latest developments and advise on how to deal with specific themes in EIA/SEA. Sharing knowledge and making information available is core to the NCEA's work. Expert meetings, presentations, publications and the website are among the key functions of the Knowledge Platform, both for Dutch and international audiences.

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Foreword

It is with some pride that I present to you this overview of recent experiences and lessons learned on environmental assessment by the Netherlands Commission for Environmental Assessment. It is a good tradition of the organisation that I chair, to record what we have learnt on a fairly regular basis, and make it available to a wider audience. I see this as an important element of our functioning as EIA and SEA knowledge centre, as well as a stimulus for continuous innovation and adaptation.

Since 1994 when we first published our *views and experiences*, the art and science of environmental assessment has evolved and broadened considerably. New issues emerged both in our national and international work, such as climate change and trade negotiations. We have gained new experiences, especially in the field of strategic environmental assessment. After 20 years
of practice, the Dutch environmental assessment system is now being modernised. All of these topics are covered in this publication.

We have tried to give a balanced overview of both our work in the Netherlands and in international cooperation. These two fields cross-fertilize each other. From the outset the international activities benefited from Dutch practice experience. It is now fair to say that the Dutch activities are as much inspired by the international work as vice versa. Particularly because the application of environmental assessment in countries in the early stages of development of their approach, can often be more open and broader than in more developed systems. This is considered the dialectics of progress.

Let me conclude with expressing my hope that this collection of experiences will contribute to ongoing discussion and cooperation with regard to the progress of environmental assessment. In addition, I certainly hope that this publication will give you as much pleasure in reading, as we had in compiling it. Finally, I would like to express my gratitude to the Dutch government, because of their support to our knowledge centre, in particular the Ministry of Foreign Affairs and the Ministry of Housing, Spatial Planning and the Environment, both of which have made publication of this document possible.

Niek Ketting,
Chairman, Netherlands Commission for Environmental Assessment

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Environmental Assessment in the Netherlands: the current situation

In recent years there has been much discussion about the future of Environmental Assessment (EA) in the Netherlands. The government wishes to greatly speed up the decision-making on plans and projects, as there is much resistance to the long running time of projects and plans. Better preparation by government and officials, linked to administrative resolve, are seen as the key to acceleration. This does not alter the need to seek to simplify procedures and research obligations, including in EA.

The system as it is now

The Dutch EA system was fleshed out in 1980. Concomitantly, discussions were ongoing in the EU on the desirability and content of regulations at European level. In the Netherlands a deliberate decision was made to incorporate some extra elements, namely:

1. Scoping, with broad civic participation for everyone, consultation of administrative bodies, and advice from NCEA at the beginning of the EA procedure. It was opted to engage these parties in an early stage in order to prevent certain aspects or alternatives being overlooked, as at a later stage this could lead to delays in the publication of the EA report.
2. The obligation to describe alternatives – including the most environmentally-friendly alternative – plus their environmental impacts. Alternatives were made an essential component of an EA. By so doing, the aim of the legislator was for the initiator of a project or plan to justify environmental impacts as early as the preparatory phase of a project or plan: in this way, the initiator was influenced to make a more environmentally beneficial final choice.
3. The mandatory review of the EA report by an independent advisory commission: the NCEA. At the start in 1980 there was discussion about whether an independent review was necessary in cases other than those that were 'potentially very serious for the environment'. But as this criterion proved to be difficult to flesh out and almost

all those whose advice was sought advocated a blanket obligation, a blanket obligation was incorporated in the legislation.

4. EA would not only be for projects, but also for a number of government plans, such as for the National Structure Plan for the Electricity Supply, the National Policy Plan for Industrial and Drinking Water Supply, and the allocation of residential and industrial areas.

Since then the functioning of the EA system has been independently evaluated several times[1]. All the evaluations reveal that most value the objectifying role of EA and the role the NCEA plays in this. The enlargement of the general support for initiatives is seen as the most important added value. In the evaluations it is emphasised that in a country as densely populated as the Netherlands[2] where there are so many conflicting interests (house building, industry, infrastructure, health, nature conservation, landscape, safety) competing for the scarce space, it is essential for projects to have broad support if they are actually to be realised. An independent assessment of the quality of the environmental information by the NCEA is seen as a hallmark that contributes to that support. Furthermore, it appears that judges attach great importance to the NCEA's opinion of the quality of the information supplied.

But the evaluations also contain justifiable criticism of EA. Some of those involved - administrators in particular – criticise the inflexible procedural requirements, the comprehensiveness of the study and its associated costs in time and money. They argue that in relatively simple projects, EA should be embedded more in the decision making procedure. Describing alternatives is not seen as useful in all cases. In the case of environmental permits, the application of Best Available Techniques (BAT) has already drastically limited the scope for alternatives.

The numerous opportunities for civic participation and the way this civic participation is set up have been under fire for some time. Administrators and public servants see the current inflexible protocol for civic participation as a strait jacket and compulsory exercise. Stakeholders often do not see civic participation as useful, because their perception is that not enough is done with the outcome of the participation and the government has in fact already made its choice. They believe that a great improvement would be to ensure participation from the outset and during the preparation of the plan, instead of via formal civic participation.

In addition, there is a growing political desire to be in step with EU legislation as much as possible and not to lay down obligations unnecessarily in laws and regulations.

The result was years of debate on how to modernise EA. The implementation of Strategic Environmental Assessment (SEA) in 2007 did result in some modifications to the procedural and substantive requirements. The momentum is continuing: a bill proposing modifications to the entire EA system is currently before Parliament.

What the new system is likely to look like

The bill proposing the modernisation of EA makes a distinction between:

- Environmental Impact Assessment (EIA) for simple permits;
- EIA for complex decisions and SEA for plans and programmes.

Simple permits are deemed to be the permit procedures linked to the Environmental Act (these are generally industrial projects) and in which there is no likelihood of possible impacts on Natura 2000 areas. The changes proposed for these relatively simple permit procedures are significant:

- Scoping on the basis of broad civic participation and an advisory NCEA report is scrapped and replaced by mandatory consultation of the administrative organs by the competent authorities.
- The requirement to describe the most environmentally-friendly alternative is scrapped, but the obligation to describe reasonable alternatives remains.
- The mandatory review by the NCEA is scrapped.

All other procedures for obtaining permits, including decisions about spatial planning, air traffic and infrastructure, are designated as complex projects.

In the case of EA for complex projects, plans and programmes there will be fewer changes.

- Scoping on the basis of broad civic participation and an advisory NCEA report on scoping are scrapped and replaced by mandatory consultation with administrative organs by the competent authorities, plus the obligation for the government body to make broad participation possible for everyone from the outset. So, civic participation at the beginning, at one fixed moment, is replaced by the obligation to offer all parties the opportunity to participate in the preparations from the outset. How this participation takes shape is not stipulated: the competent authorities are given free rein on this.
- The requirement to describe the most environmentally-friendly alternative is scrapped, but the obligation to describe reasonable alternatives remains.
- Civic participation in the review of the EA report and an NCEA review of the report remain mandatory.

In the bill the possibility of voluntarily requesting the NCEA for advice is retained, even in the case of simple permits.

The NCEA's view

The NCEA had already advocated the EA system be modified back in 2001. We also advocate making a distinction between EA for simple projects and EA for complex projects, plans and programmes. For reasons to do with the technicalities of regulations, the government has made a different distinction between simple and complex projects than we advocated. Contrary to our preference, some relatively simple spatial planning decisions, such as on cinema complexes in urban areas, are now classified as complex projects. We have no problems with the thrust of the changes, however.

It is our opinion that the following elements are essential in order for EA to fulfil its function properly:
- contribution from stakeholders from the outset;
- independent quality assurance.

These two important elements in the current EA system remain a component of EA in the case of choices with major implications for the environment, in the case of complex projects and strategic plans. In our opinion this is appropriate, because these elements are essential in order to achieve the support necessary for intrusive projects and plans of this type.

Replacing formal civic participation at the beginning by a mandatory participation during the preparation for the EA, makes it possible for more intense involvement of the parties concerned and fits in well with the interactive process that EA should be.

In all EA procedures the scoping phase will be greatly simplified. In all evaluations, scoping is considered to be an important element in order to ensure that not only the sound information for the decision to be made is discussed, but also that not too much information is supplied. However, we would contend that the limited scope for alternatives in EA for permits granted by the obligatory application of BAT, plus the increased expertise in government regarding the description of environmental impacts justify drastically simplifying the scoping obligation for simple projects.

In the case of complex projects and strategic plans, the situation is different and scoping remains very important. It is precisely for these sorts of EA that the different alternatives must remain central. Many parties are affected by strategic decisions, so broad support is necessary in order to be able to actually implement the plans. Experience with SEA is not yet sufficiently widespread: this is an argument for the retention of independent advice.

Broad participation is provided for. The mandatory independent advice on scoping from NCEA is to be scrapped (it was scrapped for SEA in 2007), but the option of voluntarily requesting advice from the NCEA remains. In the past two years we have noticed a clear increase zin the number of requests for voluntary scoping advice. This indicates that the parties involved see the NCEA's advice as added value.

To sum up, we approve the thrust of the bill proposed by the Dutch government. We see the reduction in NCEA's mandatory involvement and the increase in facultative advice from the NCEA as a challenge. In the coming months it will become clear whether Parliament also supports this thrust. We hope that a decision will be made soon and that it will be a good one, so that we can go to work in a new setting.

- *Author: Veronica ten Holder, director at the NCEA.*

(1) The most recent research was in 2003: Novioconsult, Evaluatie m.e.r. 2003, kenmerk 2238/hk-hw commissioned by the Ministry of Housing, Spatial Planning and the Environment.

(2) The Netherlands: 400 inhabitants/km² versus e.g. India: 350 inhabitants/km² and US: 31 inhabitants/km².

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Strategic Environmental Assessment in long-term structural design planning

Strategic Environmental Assessment (SEA) for plans has existed in the Netherlands since as far back as 1987, but most of the Environmental Assessment (EA) procedures related to projects. Changes to the EA legislation since 2005[1] and the new act on spatial planning of 2008 resulted in the emphasis in EA practice shifting from project EIA (Environmental Impact Assessment) to SEA. This article focuses on experiences with SEA in long-term structural design planning.

Since 1 July 2008, all tiers of government in the Netherlands (central, provincial and local) have had to prepare long-term structural design plans for their area containing the main points of the spatial policy. When such plans contain framework decisions for developments or activities for which EIA is mandatory, SEA is mandatory.

Different approaches are possible

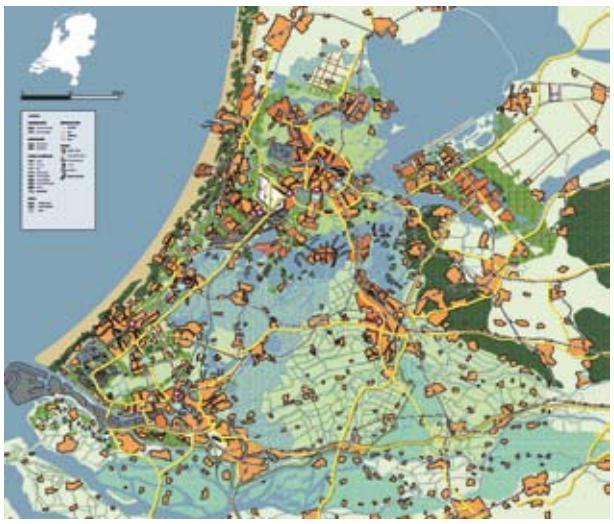
From the little practical experience available on SEA of long-term structural design plans it appears that SEA can deliver added value in different ways. This is illustrated by the following cases.

Comparison of alternative future scenarios for the plan area: the Randstad case[2]

In this case, central government wanted to make all sorts of decisions for the short to medium term about the extent and location of house building, activities and infrastructure in the Randstad (the west of the Netherlands, including the four biggest cities). The administrators wanted to position these decisions in the perspective of a long-term view of a sustainable future for the Randstad. Several fundamentally different alternatives for that future scenario were conceivable.

The SEA report for the Randstad presented three different future visions of the area in 2040 side by side and compared them, using a reviewing framework. In this SEA report an integrated framework for assessing the sustainablity of development was used. It considered more than just the environment (see box 1). The reviewing framework focused on people, profit, planet – now and later. On the basis of this comparison a preferred model was developed. This was administratively specified in the Randstad 2040 long-term

Model World City



Source: SEA report for the structural design plan Randstad 2040. By Oranjewoud and CE Delft, commissioned by the Ministry of Housing, Spatial Planning and the Environment, 2008.

structural design plan which now forms the reference framework for future decisions on concrete projects.

Testing the proposed policy in terms of sustainability targets: the Overijssel case

In Overijssel (one of the Dutch provinces) there was a general idea of what a sustainable province should look like in 2040, but the administrators were unsure whether this was achievable with current policy. They wondered whether sufficient measures were available for guiding development towards the desired future scenario.

The SEA report went into whether the provincial policy as proposed in the long-term structural design plan would be more sustainable than continuing current policy (see box 2). The SEA report revealed that the proposed policy was indeed an improvement, but that problems of traffic nuisance, acidification and desiccation of nature reserves, and of climate change (CO_2 reduction targets) were not sufficiently addressed. Possible supplementary measures are now being sought.

Box 1

Government: Central
Area: Randstad, the area in the west of the Netherlands where four major cities lie around the rim of an area with nature conservation, recreation and agricultural functions.
Long-term structural design plan: Future vision for 2040

SEA report:
The alternatives in the SEA report were developed in design workshops. First, the themes green and water', 'networks' and 'urbanisation' were explored and the outcomes were discussed. On the basis of this, three integral models were constructed according to the principles 'creating space' (Coastal City), 'enlarging space' (World City) and 'going to where space is' (Outer City).

The same indicative specification of the land use for 2040 was incorporated in all three models. Each model contained its own particular vision of the structure of the networks (spider, ladder, archipelago).

- World City is primarily to do with the location of the urbanisation and with how concentrated it could and should be.
- Outer City investigates the pros and cons of urbanisation spreading out from the rim of the Randstad.
- Coastal City investigates the role of the coast as a catchment area to relieve the pressure of urbanisation.

The models were compared using a sustainability matrix (people, planet, profit/here and now, elsewhere and later), in which assessment criteria were filled in per cell more specifically for the SEA report.

	people	planet	profit
Here and now			
Later			
Elsewhere			

The assessment was mostly expressed in qualitative terms, in the form of a motivated expert opinion. It was attempted to combine the best of the models in a 'Cabinet's Vision', which is the basis of the Randstad 2040 long-term structural design plan.

Main message
The main conclusions from the SEA report are that the best alternative to emerge from the comparison is the World City model (concentrating the urbanisation, e.g. by transforming the urban area), with the Cabinet's Vision taking second place. However, the Cabinet's Vision is more adaptable to possible future unexpected developments and fits in better with Dutch people's housing wishes, because it entails less high-rise.

Time and effort
The SEA procedure began in March and the draft EA report was ready in August. It was 80 pages long, plus 40 pages of annexes.

Assessment table 'Here and now': Randstad 2040

		World city	Coastal city	Outer city	Cabinet's vision R2040
Subsurface/water	Flooding & safety; water storage	1	3	1	3
	Extent to which functions fit in with the properties of the subsurface	1	4	2	2
	Probability X as a result of calamity (flooding)	3	4	1	2
Energy & raw materials	Potential to approx. halve CO2 vis-à-vis 1990	1	4	2	2
Mobility	Accessibility of other people & facilities (shops, schools, sport, etc.)	1	4	2	2
	Accessibility of businesses (for people and goods)	1	2	3	3
	Quality and linkage of networks (public transport, cars, bikes)	1	3	3	2
Nature	Conservation of the quality of Natura 2000/ National Ecological Network	2	4	1	2
	Space for new nature in the Randstad	1	4	1	1
Landscape quality	Opportunities for improving spatial quality, restructuring	1	2	4	2
	Opportunities for improving spatial quality, fragmentation	1	4	1	1
	Recognisability of historical landscapes	1	4	3	2
Quality of residential environment	Noise nuisance	4	2	1	3
	External safety (controlling the risks to the environment from the use, storage, and transport of dangerous substances)	2	1	4	3
	Social cohesion/engagement of people in their residential environment	4	3	1	2
	Safe residential environment	4	1	1	3

Source: SEA report for the structural design plan Randstad 2040. By Oranjewoud and CE Delft, commissioned by the Ministry of Housing, Spatial Planning and the Environment, 2008.

Location and routing considerations: the Woerden case

The more traditional approach still remains usable alongside these newer approaches (see box 3). The SEA report then focuses on large new construction schemes in the plan area, goes into their usefulness and necessity, and evaluates alternative locations. That was the main thrust of the SEA report produced by Woerden municipality to accompany the new long-term structural design plan for an industrial area and two large recreational facilities.

The approach works well if there are several relatively straightforward construction schemes planned in the short term (next few years)[3] and otherwise few actual sticking points requiring a drastic change in policy.

New approach to civic participation: the Amsterdam case

The advent of SEA for long-term structural design planning also led to experimentation with new forms of involvement and civic participation. More than previously, stakeholders and the general public are consulted at the start of the process by means of meetings and by actively seeking out people. Their comments and wishes are used as building blocks. On the basis of this information the administrators in Amsterdam defined their ambitions and stakes at the start of the SEA and planning process (see box 4). This made it possible to test alternatives against them in the SEA report (target attainment).

Consulting many parties at an early stage of the planning process proved a success. It led to more support for the final decision.

Box 2

Government: Overijssel province
Area: Overijssel province
Long-term structural design plan: Vision of developments to 2020 with a look ahead to 2040

SEA report:
In the run-up phase all the stakeholders were consulted and the provincial interests were formulated. The key ambition was: 'future-assured growth of welfare and wellbeing with wise use of the available natural resources'. This was worked out as:

Wellbeing	Welfare	Natural resources
• Attractive and varied residential environments that satisfy residential demand. • Conservation and reinforcement of urban quality and the landscapes on the outskirts of towns. • Safe, healthy and clean living, working, leisure and travelling.	• A vital regional economy with sufficient new opportunities for businesses to establish. • Fast and safe journeys by road, water, rail and bike to the urban networks and local centres. • A reliable and safe energy supply with limited emission of greenhouse gasses.	• Conservation and strengthening of biodiversity. • Water systems of good ecological and chemical quality that are climate-resilient and safe in the long term. • Balance between the use and protection of the subsurface.

In the SEA report the autonomous development (continuation of present policy) was compared with the impacts of new policy. It appeared that various new measures would make it easier to achieve the objectives. The new policy contributes to the quality of the landscape, the diversity in residential environments, the availability of industrial areas, and accessibility.

Certain persistent problems remain:
• Noise nuisance from traffic remains too high.
• The environmental conditions in the nature reserves do not improve sufficiently (nitrogen deposition, desiccation).
• The increase in the proportion of sustainable energy is not enough.

Main message
The message for the administrators is that supplementary policy on these points is necessary

Time and effort
The SEA procedure began in February 2008; the writing of the SEA report began in April. The report was completed in November 2008. It consists of 90 pages, including annexes.

Box 3

The more traditional way of assessing locations entails mutually comparing locations or routes for infrastructure, using scores on a series of environmental criteria. In addition a simple or more detailed multicriteria analysis (MCA) is used. For a simple MCA it is sufficient to have a score table of pluses and minuses. The more detailed versions entail using a computer and applying weighting factors, standardisation of scores and sensitivity analyses, etc.
Popular environmental aspects for which criteria are filled in are: soil, water, nature, landscape, cultural history, residential and experiential environment (noise nuisance, air quality, safety), automobility, land use and energy.

When this simple method is used, the consequences of the total plan are not revealed. Instead, the focus is on the components of the plan for which EA is mandatory: the major construction schemes.

Advantages of SEA

Implementing an SEA has advantages: When an SEA report on a long-term structural design plan contains evidence on the usefulness of and need for new developments and also evaluates the locations, there is no need for this to be included in a subsequent EIA report - especially if a certain volume of support has been created by extensive civic participation. At the same time, an SEA at strategic level need not take so much time. As long-term structural design plans present the main thrusts of policy, the environmental impact report can also contain the main thrusts and can be more qualitative. As a result, such reports are quicker to prepare. The assessment of the alternatives comprises an expert and motivated judgement on the basis of good cartographic material, but without extensive calculations. However, this puts great demands on the process. Quality assurance must be good; this is achieved by, among other things, consulting other disciplines (designers, experts in public administration) and stakeholders (administrators, lobbyists).

Box 4

The ambitions Amsterdam's administrators formulated for the long-term structural design plan 2020-2030 after consulting with those involved.

Amsterdam's mainstays:

1. **The city's metropolitan core must be extended further by transformation along ribbons of buildings and the demolition of barriers.**
2. **Amsterdam must offer a broad package of residential environments with an accent on metropolitan (high densities).**
3. **A regional public transport system must be the carrier of the spatial developments (missing connections must be filled in).**
4. **In Amsterdam there must be a clear connection between the structure of the green areas and water, and public space.**
5. **Amsterdam must offer space for varied entrepreneurial activities, with an accent on the knowledge economy.**
6. **The airport and a smart harbour for sea-going vessels are components of Amsterdam.**
7. **Amsterdam must be sustainable, climate resilient and waterproof.**
8. **Amsterdam must be socially sustainable and unsegregated.**
9. **Amsterdam's opportunities for tourism must be good and could be increased.**
10. **Amsterdam must be able to provide space for facilities for the 2028 Olympic Games.**

A welcome spinoff is that the more 'map-oriented/main thrusts' approach brings the discussions of the environmental experts, designers and administrators more into one line than used to be the case.

Conclusion

Various approaches are possible in SEA for long-term structural design plans, depending on the questions at issue. The most important task is to ensure that the research, design, civic participation and administrative processes converge in an intelligent and creative way. SEA can be given the catalysing and structuring role in this, deployed not as a post-hoc motive but as an instrument playing a role in the entire process of creating a plan: it brings groups together and is attuned to the substance and level of detail of the formulation of the problem.

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(1) Under the influence of the European Guideline on SEA.

(2) Randstad 2040: Summary of the Structural vision (in English), 2009, 78 p. Free download: http://doemee.vrom.nl/randstad2040/publicaties/structuurvisie-randstad-2040/randstad-2040-summary-of-the-structural-vision.

(3) When the intended interventions and changes are more intrusive and more intermeshed, it is better to look at the entire plan. A more distant time horizon makes it necessary to apply a 9-cell 'sustainability' matrix instead of a simple environmental assessment.

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The NCEA's recommendations on Climate Change in Environmental Assessment

The climate in the Netherlands is changing – that much is clear – but there is still uncertainty about the speed and extent of the change, and about the magnitude of the impacts: hence the need to test the climate resilience of spatial planning and spatial strategies. The environmental assessment (EA) procedure is potentially very useful in such testing, as it can be used to ascertain the contribution of plans and projects to abating greenhouse gas emissions and the feasibility of responding to the impacts of climate change. This article describes how the NCEA currently recommends dealing with the theme of climate change.

Since the beginning of the previous century the temperature has risen worldwide by 0.74 ± 0.18 ºC (IPCC, 2007). According to a recent KNMI study, the Netherlands has warmed up by 1.7±0.3 ºC since 1900, which is more than twice the global rate (KNMI, 2008). It seems very probable that most of the temperature rise since the mid 20th century has been caused by the rise in the concentration of greenhouse gases in the atmosphere. The repercussions of climate change are also becoming more visible worldwide and in the Netherlands (PBL, 2008). Climate change has thus moved towards the top of the political agenda. In addition to its policy to mitigate greenhouse gases, central government has collaborated with lower tiers of government to draw up a national adaptation strategy

whose title translates as 'Make room for climate change', which describes how the spatial planning of the Netherlands will be made 'climate-proof'. It is generally agreed that it is necessary to test spatial planning and spatial strategies in terms of their climate resilience (EU, 2007; VROM board, 2007; Delta Commission, 2008). The EA procedure is clearly potentially very useful for carrying out such testing, as it can and must explicitly state the impact of the policy strategies.

The NCEA requires that the EA pays attention to mitigation, if the proposed activities contribute significantly to the greenhouse gas emissions in the Netherlands: for example, industrial projects, power stations, infrastructure projects, agricultural projects, greenhouse horticulture projects, housing projects, waste processing projects, groundwater abstraction projects and airport projects.
In such cases, insight must specifically be provided into:
- greenhouse gas emissions (not only CO_2 but also CH_4, N_2O and F gases) and the mitigating measures possible;
- the energy efficiency of the initiative and the feasibility of joining up the functions, i.e. of passing on residual heat and energy to another function. In the case of the building of CO_2 capture-ready power stations, the NCEA requires insight to be provided about the possible location of the pipelines, the storage location, the alternative efficient uses and their environmental risks, and the possible ways these risks could be reduced;
- the contribution made by the initiative towards achieving national, provincial, local and/or sectoral policy aims or target values for reducing greenhouse gas emissions;
- the chain-related aspects, by augmenting the insights into the greenhouse gas emissions directly associated with the initiative with insights into the emissions associated with the inputs and outputs.

Adaptation

When preparing its advice, the NCEA always investigates whether adaptation to climate change is or should be a significant factor in the decisions for the initiative in question. This will depend on the following specific circumstances:
- the local climatological impacts in the long and short term;
- the nature of the area in which the adaptation must take place;
- an estimate of the risks;
- how the additional short-term costs relate to the costs avoided in the longer term, i.e. costs that increase as a result of management and maintenance, costs of later compulsory modifications, and costs incurred because there is now no room for other functions, such as water storage.

If adaptation is deemed to be a factor of significance, the NCEA requires information to be given on how the initiative can best respond to the impacts of climate change: how the risk of damage can be limited, and at the same time how the quality of life, the spatial quality and the safety can be maintained or enhanced. We also require information to be given about whether the project might hamper necessary adaptation measures in the future, for example by taking up space and thereby making it no longer possible to store water. It is also important to know whether the project might aggravate the consequences of climate change. Examples include:
- the repercussions of a dike breach, caused by building in a deep polder that is prone to flooding;
- the repercussions of heat stress caused by felling trees and draining away water in cities;
- the repercussions of flooding caused by enlarging the paved-over area in urban areas.

We advise that spatial modifications be linked to the targets given in the national adaptation strategy, which are:
- increase resistance: required in order to be able to withstand extreme circumstances;
- increase resilience: required in order to be able to recover quickly as soon as circumstances return to normal;
- increase adaptability: required in relation to the uncertainty about the extent and speed of climate change.

A climate-proof spatial development has low vulnerability (high resistance and resilience) and high adaptability. To this end, the following guiding principles are recommended:
- Risk management: dealing strategically with uncertainty and damage mitigation. For example, building a second dike behind the primary dike, or compartmentalising to protect the crucial and/or most vulnerable functions. Other possibilities: reinforcing dikes, enlarging the sluice and discharge capacity, installing emergency pumps so excess water can be rapidly pumped out of economically valuable or ecologically vulnerable areas, and making dwellings and greenhouses floatable.
- Natural processes: exploiting the properties of natural systems and giving these systems space (e.g. the 'Room for the Rivers' idea, and sand supplementation for the coast in combination with nature development). Using natural processes and giving these processes space also creates opportunities for improving the spatial quality of areas. So, in urban areas, large-scale park structures in combination with water can create a more attractive environment in which to live and work and also contribute to improving air quality and provide emergency floodwater storage.

It should be remembered that the need for spatial and technical measures will vary, depending on the type of area. The most important adaptation tasks per type of area are:

The area flanking the Rhine and Meuse

- increasing the discharge capacity;
- enlarging the storage capacity;
- improving dike safety.

Coastal area

- management more attuned to natural processes;
- strengthening coastal defences along the shore or further inland;
- improving dike safety.

Higher-lying areas of the Netherlands

- preventing flooding in river and brook valleys;
- combating desiccation;
- interaction between agricultural and nature targets.

Low-lying areas of the Netherlands

- combating declining safety;
- combating lack of water storage capacity during extreme precipitation;
- combating shortage of good-quality fresh water during extreme drought;
- combating water quality problems resulting from the inflow of chemically alien water from elsewhere and from upwelling saline water;
- interaction between agricultural and nature targets.

Urban area

- increasing the capacity to store and discharge water;
- combating the effects of temperature rise;
- combating the effects of longer periods of drought (shortage of cooling water, repercussions for trees and building foundations).

In its advisory reports the NCEA requires information to be given about how account has been taken of the properties and specific vulnerability of the area in relation to climate change, when choosing the location and the layout. And with regard to possible measures, it advises linking up with the adaptation options as inventoried and assessed for effectiveness in the context of the 'route planner project' (www.klimaatvoorruimte.nl and www.programmaark.nl).

Integrity and synergy

The adaptation to climate change must take place in different sectors and in different places. There is a danger that one measure will negate another, so a complete assessment of the various interests at stake is important and, preferably, it is also attempted to achieve synergy between the different adaptation and mitigation measures. For example: home insulation is not only good preparation for the increasing frequency of heat waves; it also helps save energy and thus reduces CO_2 emissions.

Coping with uncertainty

There is still much uncertainty about the speed and degree of climate change, and the strength of their impacts. The NCEA therefore advises the following:

- To start off with the range of possible effects of climate change established on the basis of the four climate scenarios of the Royal Netherlands Meteorological Institute (KNMI).
- When considering location and design for specific large-scale strategic investments[1], to take account of the possible occurrence of the worst-case scenario of the Netherlands Environmental Assessment Agency, which assumes a sea-level rise of 1.5 metres by 2100[2].
- Wherever possible to opt for no-regret measures. These are measures that are necessary anyway in relation to climate change (even for the least dramatic of the four KNMI scenarios) and measures that are worth implementing because they also serve very different non-climate aims.

To handle the relatively large uncertainty surrounding the climate change issue requires a form of risk management. The NCEA advises that in addition to the decisions of projects and plans, there should also be a set of mitigating measures in reserve, to be deployed in accordance with the impacts that actually occur. In the decision-making stage, there should be an indication of how and in what time frame an evaluation study will be carried out so that the predicted and actual impacts can be compared.

Planning horizon

When developing strategic spatial policy it is logical to consider climate change in association with other spatial aspects. It can be observed that the time horizon of climate change rarely agrees with the planning horizon of current spatial planning policy. The NCEA considers that differentiated planning horizons of 20, 50 and 100 years are essential in order to make it possible to invest intelligently for a climate-proof Netherlands, especially in light of the existing uncertainties. Clearly, the planning horizon also depends on the duration of an initiative.

Manner of presentation

The NCEA's advice is that in principle an EA should contain a separate section on climate change, because the approach of mitigation and adaptation:

- operates on a different scale in space and time compared to the more traditional environmental themes in EIA (water, safety, biodiversity, traffic and transport, the environment (for humans and wildlife), health, energy, etc.);
- demands that managerial considerations transcend and integrate themes.

The climate change theme certainly has to be explicitly dealt with in the SEA report for example for long-term structural design planning and in EIA/SEA reports for industrial projects, power stations, infrastructure projects, agricultural projects, greenhouse horticulture projects, housing projects, waste-processing projects, groundwater abstraction projects and airport projects. In other cases it suffices to give less prominence to the aspect of climate change and, insofar that it is relevant, to deal with it along with the relevant traditional environmental aspects associated with the initiative.

In conclusion

The EA procedure offers good possibilities for obtaining insight into the contribution of plans and projects to mitigating greenhouse gas emissions and the feasibility of responding to the impacts of climate change. The attendant important aspects have been described in this article. An overview – in Dutch – of the scientific insights into climate change and Dutch policy on climate change, as at July 2008, is on the NCEA website (www.commissiemer.nl). The NCEA hopes that the overview will be helpful to competent authorities, initiators of projects and those writing EIA reports. More information on climate change is available in Dutch – via www.klimaatportaal.nl.

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- *Authors: Geert Draaijers and Aad van der Velden, respectively technical secretary and vice chairman at the NCEA.*

- *This article has previously been published (in Dutch) in TOETS magazine, no. 05-08.*

(1) The national adaptation strategy states that central government, together with KNMI and the planning offices, will research a number of yet to be selected strategic issues, to ascertain the threat from more extreme conditions, and will work out which areas and sectors are the most vulnerable.

(2) Based on slightly different assumptions, the Delta Commission arrives at a worst-case scenario of a 1.3 metre rise in sea level by 2100.

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Role NCEA

On a regular basis, NCEA organises working groups to discuss new developments relevant to EIA/SEA. These working groups consist of well known experts from universities, businessess and government. They discuss the latest developments and advise on how to deal with a specific theme in EIA/SEA. In 2007, the working group on Climate Change was called together and in 2008 they issued their advice. The members of the working group were: Pieter Bloemen (Ministry of Housing, Spatial Planning and the Environment), Jos Bruggink (Energy Research Centre of the Netherlands), Ekko van Ierland (Wageningen University Research Centre), Gert de Roo (Groningen University), Joop Oude Lohuis (Netherlands Environmental Assessment Agency), Wim Turkenburg (Utrecht University), Aad van der Velden (chairman) and Geert Draaijers (secretary).

The river Waal, Nijmegen - Mark Wagenbuur

Rob Verheem and Marc Laeven

SEA for flood protection in The Netherlands – A Case Study

Introduction

Nature of the plan

The plan 'Room for Rivers' aims to define the necessary measures to protect The Netherlands against flooding of the river Rhine, now and in the future. During the 90's on two occasions flooding took place nearly and it is expected that the risk of flooding will only be bigger in the future, when more intense rain fall is predicted up stream. More specifically the plan sets a package of measures for the three main branches of the Rhine: the river IJssel, river Neder-Rijn/Lek and the river Waal[1]. Packages are a combination of two kinds of measures:

1. dike improvement or heightening (the traditional approach);
2. creating more space for water discharge or retention in the river foreland or river bed (new approach; hence the title 'room for rivers'), e.g. through removal of obstacles, deepening of the riverbed, creation of retention ponds, relocation of dikes.

Role of the Strategic Environment Assessment (SEA)

Some of the possible measures may be combined with achieving environmental benefits. E.g. the creation of new nature or improvement of landscape. However, these measures can be more expensive or less safe. The SEA was meant to enable planners and decision makers to find the best possible compromise of safety, environmental benefits and costs. Also, the SEA should take an integral view of the entire river system, since the three branches are interconnected and because upstream and downstream measures may affect each other. (Reference: Project Organisation Room for Rivers, 2005).

Integration of SEA into planning

The plan was subject to a legal procedure provided by Dutch physical planning legislation, the so-called 'physical planning key decision' procedure. This procedure provides for decision making in four phases:

- step 1: publication of the 'preliminary key decision' by the Cabinet;
- step 2: public consultation and publication of its results;
- step 3: Cabinet Decision;
- step 4: approval by Parliament.

The SEA was integrated into this process. Effectively this meant that before step 1 some extra procedural steps were included:

- In May 2002 a starting note was published as a kick off of the assessment, followed by a round of public participation, including an advice of the NCEA, on the required content of the assessment.

- Following this, the Terms of Reference (ToR) for the assessment was formalised by government and the assessment was prepared, as an integral part of the preparation of the preliminary key decision.
- In June 2005 both documents were published, being step 1 of the above mentioned 'physical planning key decision' procedure, again followed by a round of public participation, including an advice of the NCEA. In this round comments and advice were given, both on the quality of the assessment and the proposed decisions by government.
- Cabinet and Parliament decided end of 2006.

In the final plan approximately 40 individual projects are proposed. For approximately 30 of these EIAs have been started – or will be started – for the more detailed design and implementation.

Focus of the case study
This case study aims to give a brief overview of methodology applied in this SEA and its final influence on decision making.

Background: context and issues

Due to its character (potential high impact on lives and goods of people) this plan has a high profile in Dutch society and politics. Also, it is controversial, since – although everybody agrees on the safety issue – the potential measures may have significant negative impacts on different groups of stakeholders. E.g. farmers may lose land, landscape and nature may be affected, large budgets are needed, storage facilities for polluted sludge should be created. On the other hand, when designed thoughtfully, the necessary measures may also mean high potential for creating new nature or recreational facilities.

Starting point for this plan was an earlier decision by Dutch government that new measures for flood prevention should as much as possible be based on creating more space in the river foreland, rather than dike strengthening or heightening. Improving the storage and drainage capacity of rivers was considered a more sustainable and more flexible option for the longer future. A side-benefit is that it opens possibilities for combining safety and enhancing spatial quality.

Approach and methods used in the SEA

Information assembly
Aiming to improve the integration of plan and SEA, a dedicated project agency was set up, responsible for both. The SEA was written by the agency itself, although private consultancies were contracted to compile back ground documents or sections of the assessment.
Overall, the SEA is based on existing information tools, although for the design of alternatives and assessment of impact a dedicated computer model was developed.

Development of alternatives
In a first approach it was decided to start with formulating a number of overarching 'strategies' for improving flood security, such as focus on measures within the dikes versus focus on measures outside the dikes. In a second step then alternatives for a whole river branch should be developed, trying to implement as much as possible the chosen focus. However, this approach proved not to be constructive.
In practice, each segment of a river branch turned out to have its own characteristics and limitations, e.g. because of preferences of local population or local physical parameters. For this reason, it was decided to split each river branch in a number of homogenous sections, and then look at alternatives for each of these sections: the 'building blocks'. An alternative for a whole river branch was then created by a logical combination of building blocks.

A number of preconditions were set for each of the alternatives. The most important were:
- each alternative should fulfill legal requirements, both safety and others;
- the current distribution of water between the three branches should not change;
- there should be no effect on the current maritime functions of the river.

In addition to the preconditions, a number of starting points were defined, such as:
- sufficient support by local government and other stakeholders;
- in line with current government policy;
- in line with international agreements of flood prevention;
- in line with existing or already planned projects in the river basins;
- production of polluted soil to be stored should be minimized;
- highest possible cost effectiveness of measures.

The above process led to the final development of 4 alternatives:
1. reference: creating safety, solely through dike strengthening and improvement;
2. alternative 1: creating safety, without trying to combine safety with better spatial and environmental quality[2];
3. alternative 2: creating safety, combined as much as possible with achieving spatial and environmental quality[3];
4. on the basis of a first assessment of alternatives 1 and 2, a so-called 'preferred alternative' was constructed by selecting the best scoring elements of both alternatives. In the SEA this alternative turned out to be (for each of the three branches):
   - for river IJssel: preferred alternative is almost identical to alternative 2;
   - for river Neder-Rijn/Lek: preferred alternative is combination of alternative 2 with dike improvements;
   - for river Waal: preferred alternative is combination of alternative 2 with removal of obstacles such as groynes.

Selection of issues and indicators
Both for the development of the alternatives, and for the assessment of the impacts of these alternatives, the following issues were selected. For each of these issues a number of indicators were defined (see Box 1).

Methods for impact analysis
Assessment of high water levels and climate change
As a basis for the development of alternatives, first the high water levels to be expected in the near future (2020) were calculated. This calculation included possible developments in the upstream sections of the river in other countries, e.g. in Germany.

Then, for the longer term (2100) the expected future high water levels in the river were calculated on the basis of the 'medium' scenario of the Intergovernmental Panel on Climate Change. In this scenario it is expected that in the

Box 1: issues & indicators in the SEA

Issue	Indicators
safety management & maintenance	impacts of measures on lowering of expected high water levels need for dredging operations
spatial quality	utility value of the area perceived quality of the area (on the basis of objective criteria) robustness to change/flexibility
relation with long term vision	in/not in line with long term vision timing (how easy is it to delay measure?) no-regret (how easy is it to 'undo' the measure later?)
(polluted) soil	feasibility to carry out operation within planning term transport hindrance capacity needed in existing storage facilities new storage facilities needed production of usable raw materials: clay and sand improved soil quality: vulnerability to pollution and cleaning of existing polluted spots
nature	impact on protected areas under European regulation impact on other protected areas and species contribution to realization of the Dutch 'ecological main structure' increase of nature areas use of ecological potential
landscape	spatial appearance landscape quality
cultural history	damage to valuable cultural or historical elements or areas damage to the coherence of the cultural/historical structure of an area
functions	housing industry size of agricultural areas influence on agriculture potential, opportunities and risks recreation maritime functions (depth of the river)
ground- & surface water	production of drinking water from ground water impact on ground water management production of drinking water from river water
perception (on the basis of perceptions of people)	perception of nature and (cultural) landscape beauty perception of river dynamics perception of opportunities for recreation

year 2100 average temperature will rise with 2 degrees Celsius and sea level will rise with 60 cm.

Assessment of alternatives
Assessment of the impacts of alternatives took place as follows. For each indicator an appropriate methodology was chosen. Within the context of this case study it is not possible for each of the indicators to fully describe the methodology used. Therefore, below only the main contours of the methodology used are described.

First, as a reference, the existing situation is described, including the flood prevention projects that have already been decided or planned (the so called 'autonomous development'; in other SEAs often called 'o-alternative'). Impacts of alternatives are compared to the impacts of this reference.

Impacts have been predicted per segment of the river, i.e. the combined impact of all the measures proposed for that segment. As much as possible, impacts were described quantitatively. The impact analysis focused on permanent impacts, with the exception of soil operations, where also the hindrance during operation was described.

Also, the impact analysis focused on the direct impacts of alternatives, and less on the 'opportunities' that the newly created situation in the river area created. E.g. the potential for nature to develop autonomously in the years to come. For this reason, the impact description, especially as to nature issues, should be regarded as 'worst case'.

After estimating the quantitative impact, for each indicator a tailor made methodology was established to 'value' the impact, on the basis of expert judgment. Should it be regarded negative or positive? Should it be regarded substantial or insignificant? Basic criteria in this were:
- is the expected development (in the o-alternative) positive or negative, and how will the impact influence this?
- will the impact of an alternative be positive or negative, and what is its magnitude?
- how sensitive is the area to this impact?

The impact prediction is given on a 5-point scale: very negative, negative, neutral, positive or very positive. This with the exception of maritime and perception impacts, where a 3-point scale was used. For each indicator it is explicitly explained and substantiated how an impact is valued within the 5-point scale. For example, as to safety (the first indicator in the box on the left):
- if measures will result in lowering or fixing high water levels in 80% of the river branch or more: very positive;
- the same in 60-80% of the river branch: positive;
- the same in 40-60%: neutral;
- the same in 20-40%: negative;
- the same in less than 20%: very negative.

Cost benefit analysis
For this plan, also a cost benefit analysis was done, although not in the traditional way (Reference: Central Planning Agency, 2005). Traditionally, a cost benefit analysis for main infrastructure in the Netherlands gives a full overview of all costs and benefits (both monetarised and non- monetarised, quantitative and qualitative, economic, social and environmental costs and benefits). However, due to the scale of this plan, this was judged impossible nor strictly necessary.

For this reason the following cost benefit analysis was made:
1. For each segment of the river it was estimated:
   - what the costs would be of flooding;
   - what the costs were of the expected measures to prevent this.

   If costs of flood prevention were less than flood damage, the cost-benefit ratio was judged as positive.
2. For each measure in a segment of a river the 'cost effectiveness' was estimated, i.e.:
   - what is the cost of the measure;
   - what is the increase in safety, nature (in hectares), spatial quality and options for recreation.

Methods to compare alternatives
In the SEA the alternatives are compared, using a number of methods:
1. Per indicator: for each segment of the river, the SEA compares per indicator the scores of the alternatives, using the 5-scale.
1. Overall, qualitatively: each alternative is qualitatively described as to its main strong and weak points, compared to the reference and the other alternatives.
3. Overall, quantitatively: for each alternative the main quantitative figures as to measures realized and resulting impacts are given in separate boxes.
4. In order to decide which of the alternatives is best from an environmental viewpoint, the alternatives are compared to each other in a separate table, using their scores on the 5-point scale, on the issues that were regarded most important from an environmental perspective:
   - contribution to improving spatial quality (qualitative);
   - nature: impacts on protected area and increase in ha of nature area;
   - landscape improvement (qualitative);
   - impact on cultural history (qualitative);
   - soil: necessary excavation, improvement of soil quality (qualitatively), number of necessary new deposits;
   - in/not in line with long term vision government.

Sensitivity analysis: for each of the alternatives it is judged separately, which measures would be possible to further improve the environmental performance of alternatives, and whether these could change the ranking of alternatives on environmental aspects.

Public participation
Public participation took place during both the early stage of planning and a later stage. A first round of participation focused on the information the SEA should contain, e.g. what alternatives to examine and what impacts to assess. A second round of participation took place after the SEA and the draft plan were ready and focused on the quality of the SEA and the proposals in the draft plan.

The organisation of each of the two rounds of participation was as follows:
- At 15 locations along the river branches full day meetings were organised, where everybody willing so could participate.
- The first part of the meeting was a so-called 'information market', where each citizen could ask questions, get explanations, information, etc.
- The second part of the meeting was then the formal 'hearing session', during which everybody willing so could make formal comments, to be recorded and responded to in the SEA or the final decision.

In addition to this, continuous participation took place during plan and SEA preparation. The most involved (local) governments, agencies and organized NGOs (e.g. agriculture, environment) were continuously consulted during the development of alternatives. For this, two regional 'steering groups' were established. As much as possible the design and selection of measures was done jointly. In this, local stakeholders appeared to be concerned most of all with the selection and construction of sites for deposit of polluted soil.

Quality review
Part of the Dutch SEA process is a legally mandatory quality review of the SEA by the NCEA. This Commission is a private foundation, with no ties to government or any of the other stakeholders in plan or project decision making, subsidized by government. In its review of the SEA the NCEA concluded that overall the SEA was clear and of good quality. However, on one aspect the SEA contained an omission that was regarded by the NCEA as an essential one.

Looking at the alternatives, the NCEA concluded that all alternatives focused very strongly on measures that tried to combine flood prevention and improvement of spatial quality. Although this was only logical in line of the previous government decision that combination was the preferred option, in practice this had a significant down side. Combination measures are relatively expensive: the overall budget for each of the alternatives was around 2.2 billion Euros. Both the NCEA and the cost benefit analysis concluded that for this money a better alternative existed. If 1 billion would be spend on dike strengthening, this would leave 1.2 billion for measures specifically aiming at improving spatial quality. Overall, this alternative would be equally safe, with a bigger contribution to for example nature, landscape and recreation in the river area. This alternative, however, was not examined in the SEA (References: Netherlands Commission for Environmental Assessment, 2005; Central Planning Agency, 2005).

Results and lessons

Contribution to decision making
The conclusion of the comparison of alternatives 1 and 2 was that, overall, alternative 2 proved to be the best combination of providing security and improving spatial quality. However, the cost-effectiveness of alternative 2 could be further improved by incorporating certain elements of alternative 1 into alternative 2. Particularly dike strengthening and removal of obstacles in certain segments of the river.

The cost benefit analysis showed that for most segments of the river the costs of measures were reasonable, when compared to the flood damage that was prevented. However, for a number of segments improvement of cost effectiveness was possible, though choosing a different package of measures. In particular, in these segments it could be economically more wise not to select measures that combined safety and spatial quality, but formulate a package of measures aimed specifically at safety (such as dike strengthening) and spatial quality (e.g. nature and landscape development and recreation facilities).
On the basis of both comparison of alternatives 1 and 2, the results of the cost benefit analysis and the comments of regional and local stakeholders, a 'preferred alternative' was developed and assessed. During decision making a formal decision was taken to implement almost 100% of this alternative.

All in all, this decision was accepted by all parties, without much controversy. This with the exception of the siting of some deposits for contaminated soil, which raised much resistance, especially where these were not combined with nature and landscape improvement.

Outcome: influence of the SEA
The influence of the SEA is uncertain. On the one hand, the fact that the alternative developed in the SEA was finally almost 100% formally adopted indicates that the SEA had a big influence on decision making. On the other hand, the ministries responsible for the plan took a very open, transparent and participative approach to the development of the plan from the start. It's hard to judge whether such approach in the absence of SEA would have been chosen, and if so, whether this approach alone would then have had the same environmental results. (Reference: Runhaar & Driessen, IAPA, 2007).

The recommendations of the NCEA and the Central Planning Agency (who conducted the cost benefit analysis) to take a closer look at an alternative with a potentially bigger contribution to spatial quality, was not taken up by govern-

ment. One of the main arguments for this was the fact that this alternative was not in line with the approach formally established earlier by government that measures should aim at the creation of space rather than dike improvement. To develop an alternative approach in a relatively late stage of planning might hamper the credibility of government to stick to its decisions. A second argument was that government was not convinced such alternative overall would have a bigger contribution to spatial quality, because of the negative impacts of dike improvements to, in particular, landscape quality.

Conclusion: lessons for SEA good practice

This SEA shows that it is possible to organise an open and participative integrated SEA/planning process to successfully develop a highly controversial plan, that takes environmental issues fully into consideration. Also, it is clear that this SEA has influenced significantly the finally adopted plan. One of the main reasons for this was the fact that SEA and plan were developed interactively and in parallel with the negotiations between stakeholders. Another reason was the creation of a so-called 'project-directorate' within the ministries, responsible for both SEA and plan development, and in which the main responsible ministries worked together.

It's hard, however, to identify exactly how influential the SEA was. The 'open' and positive attitude towards participation and environmental integration of the main responsible ministries clearly also contributed significantly to the final outcome.

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Role of the NCEA

- **The NCEA advised on the Terms of Reference of the SEA for the Spatial Plan Key Decision 'Room for the River' in 2002.**
- **The NCEA reviewed the quality of the SEA report and issued her advice in 2005.**
- **In 2005, the government agreed on the Spatial Plan Key Decision 'Room for the River'. This plan is followed in 40 projects. In most of these cases the NCEA has or will review an EIA, preceded by an advice on the Terms of Reference.**

- *Authors: Rob Verheem and Marc Laeven, respectively deputy director and director at the NCEA.*

- *This article has previously been published in International Experience on SEA, Centre for SEA for China, June 2008.*

(1) The plan also looks at a small part of the River Merwede; this, however, is not discussed in this case.

(2) This included measures such as removal of obstacles in the river foreland , deepening of the river bed and dike improvement.

(3) This included measures such as broadening river forelands by relocating dikes, creation of extra river beds, creation of retention ponds of deepening of river forelands.

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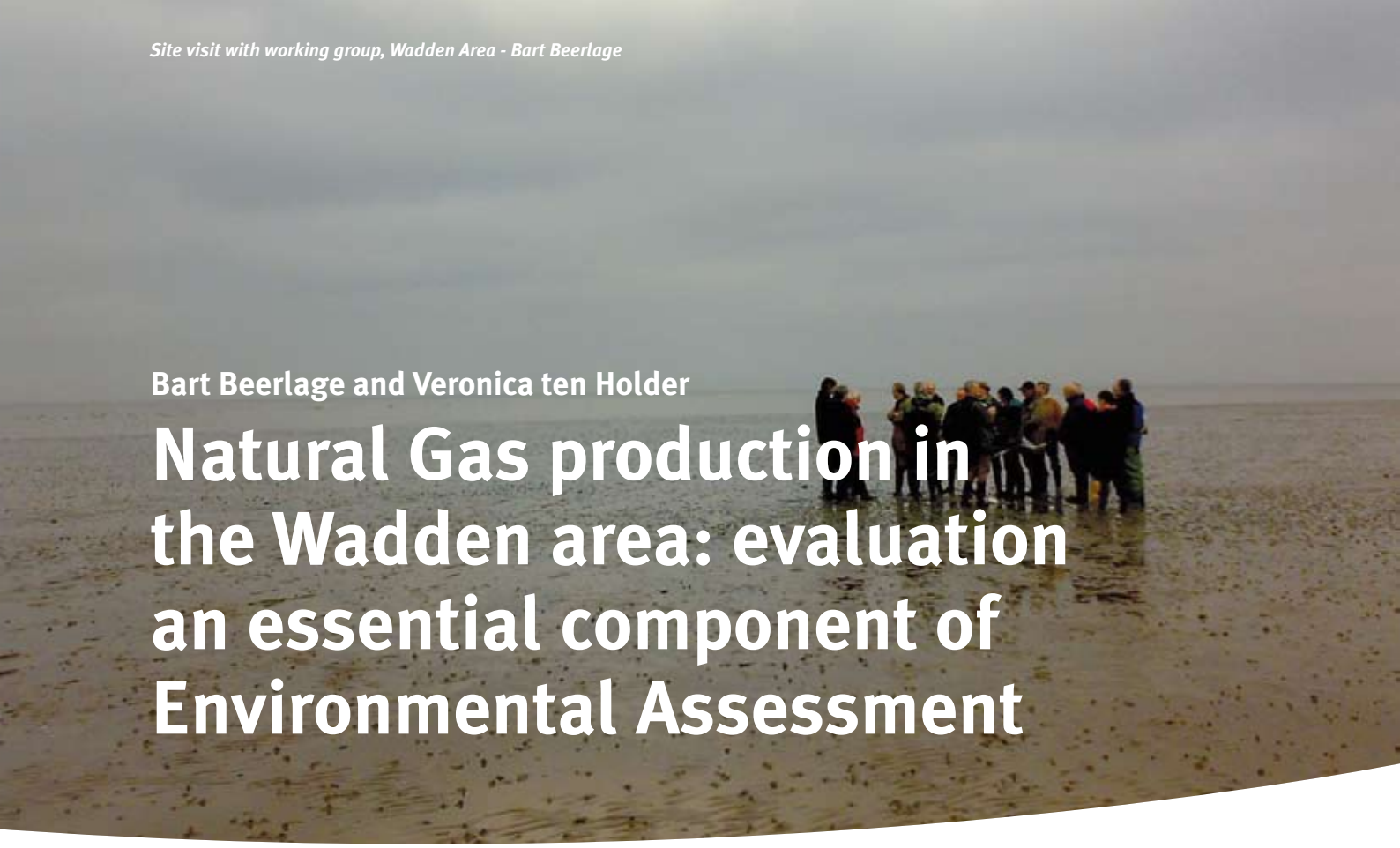

Site visit with working group, Wadden Area - Bart Beerlage

Bart Beerlage and Veronica ten Holder

Natural Gas production in the Wadden area: evaluation an essential component of Environmental Assessment

In 2006, after years of discussion of whether or not to extend natural gas production in the Wadden area, the Dutch government granted Nederlandse Aardolie Maatschappij (NAM) permission to produce natural gas from three existing locations in six gasfields under the Wadden Sea, under a strict stipulation. The gasfields were estimated to have exploitable reserves of about 40 billion m^3 gas.

The strict stipulation was that the dynamic ecology in and around the Wadden Sea would not suffer damage from the subsidence resulting from the gas production. Should such damage occur, then the gas production would be restricted or halted. This is known as the 'hand on the tap' principle. In order to ascertain whether the precondition is being met, NAM measures the subsidence, monitors features of ecological value and reports on this to the government every year. NCEA acts as independent auditor and advises the ministers annually on NAM's report, by means of an advisory report that is publicly available.

To date, evaluation has been treated as somewhat of a poor relation in the Dutch Environmental Assessment (EA) system. The Wadden project is the first in which evaluation has played a decisive role in EA, the decision and the legal procedure relating to this decision. This contribution describes the case and the experiences of the audit, and looks ahead to the possible future role of evaluation in EA.

The impacts of producing natural gas

The subsidence resulting from the gas production may have adverse impacts on nature because the features of ecological value (e.g. bird populations) in the Wadden area are largely determined by the availability of food on the mudflats exposed at low tide. If there is subsidence, the area of such mudflats shrinks and hence the features of ecological value decrease. So, the Environmental Impact Assessment (EIA) report published in 2006 had to answer the following questions:

- How much subsidence is occurring as a result of gas production?
- What is the anticipated – possibly accelerated – rise in sea level?
- To what degree will natural processes such as accretion of sand and silt compensate for these impacts?

The EIA report gives detailed information on the morphology of the Wadden Sea, sea level rise and subsidence.

The sea level rise/subsidence component is broken down into:
- The scenarios for sea level rise for the next century, assuming a worst-case scenario with a rapid rise.
- The autonomous subsidence in the study area: for many centuries there has been a net import of sediment to the Wadden Sea from the North Sea. Despite the rise in sea level that has occurred, the area of the characteristic sandbanks and saltmarshes in the Wadden area has not shrunk.
- The subsidence bowl and the annual subsidence that will occur:
  - solely as a result of gas extraction via the new wells;
  - as a result of the gas extraction via new and existing wells.

On the basis of the historical natural developments and assuming additional sand supplementation, the EIA report concluded that the import of sediment in the area influenced by the gas wells is high enough to somewhat retard the combined impact of subsidence and sea level rise (also the accelerated sea level rise in the future). The EIA report refers to this as the natural limit. Natural limits were formulated for two areas:
- a maximum of 6 mm / year for the Pinkegat area;
- a maximum of 5 mm / year for the Zoutkamperlaag area.

This natural limit determines the scope there is – including the autonomous subsidence and the sea level rise – for subsidence resulting from new and existing gas wells. As soon as the monitoring clearly shows that there is a risk of the natural limit being exceeded, the gas tap must be adjusted or turned off.

In its review of the EIA report the NCEA opined that these natural limits were arrived at very plausibly, as they were based on the most recent and best scientific insights. The NCEA also deemed as plausible the conclusion that on the basis of the research conducted and the 'hand on the tap' principle, new gas wells would themselves not have any significant impact on the Natura 2000 area.

The government's decision and the Supreme Court ruling

In 2006 the Dutch government decided to permit gas production at the three locations on the basis of the 'hand on the tap' principle. In the decision it is stated that the hand on the tap principle is primarily guided by the rate of subsidence resulting from the gas production and that the monitoring of the abiotic and biotic parameters serves as an additional warning signal.

The decision assumes:
1. that it is expected that impacts on the ecology can occur only if the natural limit (= critical subsidence) is exceeded;
2. that the monitoring must be set up in such a way as to establish whether there is a threat of damage to the natural characteristics and valuable features of the Wadden Sea from the gas production alone or in combination with other influences.

The way in which subsidence must be measured is described in the subsidence measuring plan. The monitoring programme focuses on the ecologically valuable features (abiotic and biotic parameters). Thus, the measuring plan states how measurements of subsidence must be taken, and at what frequency.

Numerous abiotic and biotic parameters are included in the monitoring programme (see the box on the next page), such as:
- sedimentation and mudflat area;
- water quality and quantity;
- saltmarsh vegetation;
- sediment dwellers;
- breeding birds;
- waders and waterfowl.

NAM is responsible for implementing the measuring plan and the monitoring, and carries out some of the research itself. The remainder of the research is done by research institutes commissioned by NAM. In addition, there are links to existing monitoring programmes.

Every year, the results of this monitoring are submitted to an independent audit committee. The government requested the NCEA to fulfil this role. This was laid down in the decision.

Some environmental organisations appealed against the government's decision to allow the gas production. They argued that on the basis of the EIA report it was impossible to be certain that there would be no significant consequences. In August 2007 the highest court of law in the Netherlands, the Council of State, ruled on this. It dismissed the objections as unfounded. The following considerations were important for the court:
- The best available scientific knowledge was used in the research and from this it could be concluded that no significant consequences could be expected.
- Even though the subsidence cannot be predicted with 100% certainty, the 'hand on the tap' principle provides an additional guarantee that the natural characteristics of the Wadden Sea will not suffer any damaging consequences.
- The decision provides for an extensive evaluation programme that is subjected to independent audit.

So, in the court ruling the corrective mechanism whereby adequate measures can be taken in the case of adverse environmental effects also played an important role. This was thus a unique ruling.

The experiences in the audit

The gas production started in 2006. So far, the audit

committee has twice issued advisory reports.
According to the NCEA, the set-up and implementation of the measuring of the subsidence produce the appropriate information to be able to ascertain whether the subsidence lies within the natural limits of 6 and 5 millimetres per year. These limits were not exceeded in 2007. The early warning measurements did not indicate that the gas production had consequences for the ecological features.

The audit committee was critical of the determination of the baseline situation and the set-up of the early warning measurements. It opined that the baseline situation should consist of more than one measurement taken prior to the gas production. The baseline situation must also shed light on trends in previous years.

The early warning measurements still lack some of this information. The basis for the set-up of the programme for early warning measurements lies in a sound analysis of the relations in the successive links of the biological chain. The decision to include certain parameters in the programme but exclude others was not sufficiently substantiated. It has not yet been adequately worked out in what way and to what degree changes in these parameters can be related to gas production. This analysis is crucial. After all, the decision does say that the gas tap must be adjusted or turned off if a negative change in a parameter is observed, unless it can be convincingly demonstrated that this has not been caused by the gas production.

In its reaction to Parliament the government announced that the baseline measurement of the programme of early warning measurements for the year ahead would be improved.

For other projects too?

This was the first project in which evaluation was an essential component of the impact assessment and the decision taken. It has since been followed by another major project, the seaward extension of Rotterdam harbour. In that project the ability to meet the air quality standards was an important aspect in the EA report. In that project too, the most recent and best available scientific knowledge was used when describing the impacts in the EA report. But it was also acknowledged that models have large margins of

Box: Measuring plan and monitoring

Measuring plan	
Subsidence	**Measuring frequency**
Rate of subsidence	12x / year
Gas pressure	12x / year
Production volume	12x / year
Modelled subsidence volume	1x / year
Biotic monitoring	**Measuring frequency**
Erosion/sedimentation Wadden Sea	1x / 5 – 6 years
Erosion/sedimentation North Sea coast	1x / 5 – 6 years
Sedimentation measurements - saltmarsh - mudflat transects - Wadden area measuring stations - location near Moddergat and Ameland-Oost	 2x / year 2 / 2 - 3x / year 1x / 3 years continuous
Areal measurements Wadden Sea (incl. cliff erosion)	1 - 2x / year
Abiotic monitoring	**Measuring frequency**
Saltmarsh vegetation	1 - 2x / 2 years
Sediment dwellers - All species plots monitoring network - Shellfish	 2x / year 1x / year 1x / year
Breeding birds (incl. spatial distribution of nesting sites)	1x / year
waders and waterfowl	3 - 5x / year

Source: NAM monitoring protocol and Nature Conservation Act permission.

uncertainty. Extra mitigating measures were described that can be applied if evaluation reveals that norms are indeed exceeded. The monitoring is anchored in the land-use plan. In an 'air agreement' for this land-use plan, the municipality, province and central government commit themselves to taking these measures if required.

Meanwhile, NAM is preparing the EIA procedure for new gas production under the Wadden Sea, and for this is also drawing on the experience acquired to date.

At present there is much debate in the Netherlands on the wisdom and folly of extensive model-based calculations and descriptions of impacts. Administrators want to speed up the preparation of plans, but at the same time want to be sure that their projects will not be dealt a death blow by the judge. Stakeholders want to be certain that they will not be confronted with adverse consequences. Scientists cannot guarantee 100% certainty: they can indicate which impacts are probable. This dilemma could be resolved by an effective evaluation that is linked with the taking of additional measures if necessary. In the near future it will become clear how this will be put into effect in EA practice.

Role of the NCEA

- **The NCEA advised on the Terms of Reference of the EIA for gas production in the Wadden Sea in 2005.**
- **The NCEA reviewed the quality of the EIA report for gas production in the Wadden Sea and issued its advice in 2006.**
- **The permits for the gas production stipulate that an evaluation report will be submitted to the NCEA every year. The NCEA, as an independent audit commission, will issue an advisory report once a year.**
- **Since the start of gas production in 2007, the NCEA has issued two advisory reports.**

- *Authors: Bart Beerlage and Veronica ten Holder, respectively technical secretary and director at the NCEA.*

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Rob Verheem

15 years of international work by the NCEA: What have we achieved and what are our plans for the future?

In the early 1990s the Directorate-General for International Cooperation of the Ministry of Foreign Affairs (DGIS) and the NCEA achieved consensus about the potential of environmental assessment (EA) to make an important contribution to implementing DGIS policy. The importance of the support to EA practice in the approximately 40 'partner countries' singled out for Dutch aid was, moreover, confirmed by the prominence assigned to EA in the Rio Declaration of 1992. Poverty reduction was one of the key objectives in sustainable development even then.

EA's prominence has not diminished, as evidenced by the explicit attention it received in the Paris Declaration on Aid Effectiveness (2005). EA – particularly strategic EA (SEA) – was also seen as one of the most important instruments for achieving MDG7: the integration of sustainability into strategic policy-making. It is for these reasons, for example, that at the request of DGIS the NCEA has invested much time in the OECD DAC SEA Task Force: an international network of SEA experts that is attempting to strengthen and harmonise the application of SEA in international cooperation.

The consensus in 1992 led to the first agreement between DGIS and the NCEA[1]. We are now halfway through the second agreement, which runs to 2012. In this agreement the objectives have been extended. In addition to the activity which started it all – improving EA reporting by means of independent advice from the NCEA – another important objective has been introduced: capacity development. In this way we contribute to improving existing EA practice and legislation in partner countries and to enlarging the capacity for strategic environmental assessment.

Being a relatively small organisation we must, moreover, make choices; so the following priority points have been incorporated in the agreement:

- capacity development in the Great Lakes, Horn of Africa and Congo Basin regions;
- the mainstreaming of the environment in the water sector;
- safety and reconstruction in conflict areas;
- the integration of biodiversity into strategic planning;

EA for decision-making in Georgia
The NCEA gave advice at five points during the decision-making process for the BTC oil pipeline in Georgia. The advice led to more attention being paid to participation and compensation for the local population and more safeguards to prevent oil leakage in sensitive areas.

EA training in Bolivia
In Bolivia the NCEA carried out 'training on the job' by advising, together with a team from the Ministry of Environment, on the procedure and content of an SEA for the development of the Pantanal. This yielded the insight that the large-scale development of susceptible areas is only sustainable if planning is transparent and includes the participation from all those involved. The Ministry subsequently applied this approach to a second planning procedure, carrying out all the preparations autonomously.

EA for poverty reduction in Ghana
At six points in time the NCEA gave advice on an SEA for the poverty reduction strategy (PRSP) in Ghana. This SEA report resulted in a PRSP 2006-2008 in which environment was more integrated. Implementation is currently ongoing. In addition, eight ministries are now applying the practical experience gained from the SEA to their policy, new budget lines have been opened for environmental goals, and in five ministries environmental units have been created. In 120 districts SEA is being carried out for the long-term development plan.

EA and safety in Rwanda and Congo
At the request of the Rwandan government the NCEA facilitated a workshop in which parties from both sides of the Rwanda–Congo border were brought together to discuss methane extraction from Lake Kivu. The aim of the meeting was to solve the existing impasse on how to monitor the gas extraction. Monitoring is essential for the safety of the extraction and to prevent conflicts between both countries. The workshop was a success: Both governments signed an MoU for collaboration. The Netherlands subsequently decided to provide funding for this and the NCEA was requested to provide technical recommendations for the methane extraction and to carry out the monitoring.

EA and wastewater in Colombia
The NCEA advised on the route of a new channel linking the lagoon near Cartagena, Colombia, with the sea. This channel is intended to reduce the pollution in the lagoon, through regular replenishment with clean seawater. The EA report was to underpin the best route chosen. However, the NCEA pointed out that it was necessary to concomitantly tackle the source of the pollution: the inflow of wastewater into the lagoon. This has been taken on board and work is currently in progress on measures to tackle the source of the pollution.

EA and biofuels
During the COP9 at the Biodiver¬sity convention in Bonn the NCEA – together with GTZ and the Swiss Intercooperation Foundation – presented the new factsheet 'SEA & biofuels '. The factsheet will form part of the OECD DAC SEA guidance that aims to achieve the SEA objectives stated in the Paris Declaration.

EA and good governance in Mozambique
The NCEA issued advice on the new EA regulations in Mozambique, with particular attention to the guaranteeing of transparency (for example, the publishing of decisions) and the creation of opportunities for participation. The advice was taken on board. And in an evaluation of the new regulations, the Ministry of Environment concluded that in certain aspects the regulations had indeed been greatly improved.

Supporting civil society: the Central Africa programme
It has recently been realised that sufficient EA capacity within the civil society in partner countries is essential for both the continuity and quality of EA systems. For this reason, DGIS recently augmented the existing agreement with the NCEA with a programme to support 'EA associations' in eight countries. In this instance, the NCEA is experimenting in managing the budget for the associations, in addition to managing the budget for its own activities. The support to the associations is linked to the capacity development of the governments of the countries concerned.

EA and good governance in Indonesia
- To prevent Jakarta being flooded, a project is being carried out which entails resettling the people living illegally on the canal banks, dredging the canals, storing the dredged material and making a maintenance plan. The NCEA has advised on the EIA carried out for this.
- WALHI is Indonesia's largest forum for environment NGOs. It is an important critic of the Indonesian government. As part of the modernisation of EIA and the introduction of SEA in Indonesia, a delegation from WALHI was trained by the International Institute for Geo-information Science and Earth Observation (ITC) and the NCEA. Part of the training was a discussion between the government and WALHI on improved participation in the new EA regulations. This was the first ever such strategic discussion on EA. Previously, WALHI had mostly operated reactively.

- the harmonisation of EA methods and toolkits;
- a knowledge centre for embassies, DGIS and partner-countries.

Results

In terms of concrete output, the results are clear. Fifteen years of agreement (with a budget of approx. 1 million per year, at current price levels) has led to:

- some 100 independent advisory reports on over 70 projects and plans, 70 advisory reports on EA systems, 150 advisory reports on subtopics being issued by the secretariat (usually at the request of an embassy) and 30 training events (requested by partner countries);
- capacity development in 7 regions in four continents: 20 countries in Asia, 25 in Africa, 12 in Latin America and 2 in Europe.

However, strengthening EA capacity and practice in partner countries is not the final objective of the agreement. As the diagram below shows, as well as improving the environment, the NCEA's work must ultimately lead to poverty reduction, more economic growth and better governance.

So, achieving the NCEA's goal entails many links. As a result, it is not always easy to establish a direct correlation between the input of the NCEA and – for example – poverty reduction and improved governance. There is nevertheless much to say about 15 years' cooperation between DGIS and the NCEA. For example, there are many examples of successes, some of which are mentioned in this article. Others can be found in the independent evaluations of the NCEA's work commissioned at various points in time by DGIS. Independent evaluations of the agreement by DGIS also indicate that the demand from countries and embassies for support to EA is undiminished, and that the services supplied have been found to be effective and efficient.

Ideas for the future

The world does not stand still: hence the need for the NCEA's work to be continually renewed. In the first place, because it may emerge that actions could be more effective. For example, we have learned that recommendations about a concrete EA are much more effective when linked to a programme for capacity development, and that a focus on the aspects of partition in EA contributes more to poverty reduction than a total focus on the environment. Where do the economic benefits end up? Where are the environmental disadvantages? And what most benefits the poor?

A second important basis for new ideas is the search for dovetailing of our work and the long-term policy of DGIS which is, of course, continually evolving. In 2008, for example, this led to NCEA and DGIS jointly naming of five priority topics for the application of EA in coming years: biofuels, climate change, valuation of ecosystems, local government, and conflict and safety.

In conclusion

EIA and SEA are emerging rapidly around the globe as important tools to help governments achieve sustainable development in their countries, both locally and nationally. We are delighted to be part of this process and look forward with energy and enthusiasm to the years ahead. This gives us the incentive to continuously seek to introduce innovations into our practice, based on our own experiences and those of our partners and colleagues around the world. Key to this is knowledge sharing. We hope that the case studies included in this publication will inspire others to document their own ideas and lessons learned.

• *Author: Rob Verheem, deputy director at the NCEA.*

1 *In this article we discuss the international work done by the NCEA under the agreement with the Ministry of Foreign Affairs. A small proportion of our international activities is funded from other sources, e.g. by other ministries, multilateral organisations and development banks.*

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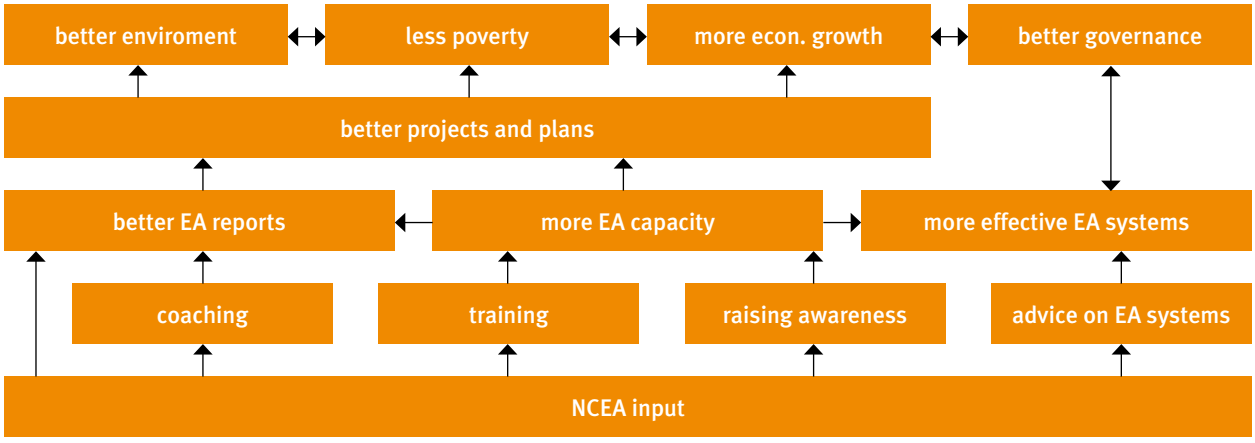
Advice on specific EA reports



Banana plantation, Costa Rica - Jan Sochor

Ineke Steinhauer

SEA for the Association Agreement between Central America and the European Union

Since 2001, NCEA has been involved in a regional project of the Central American Commission for Environment and Development (CCAD) and IUCN (World Conservation Union). The following countries are participating: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama, with the aim of harmonising and strengthening Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) practice in the region. NCEA has contributed to several SEA workshops and facilitated the selection of an SEA pilot: an SEA for an association agreement between the European Union and Central America, which started in 2007 and is discussed below. An association agreement is a combination of a trade agreement and an agreement on future cooperation and dialogue. The pilot also intends to contribute to SEA capacity development and to analysis of the link between environment and trade.

Design of the SEA process: theory

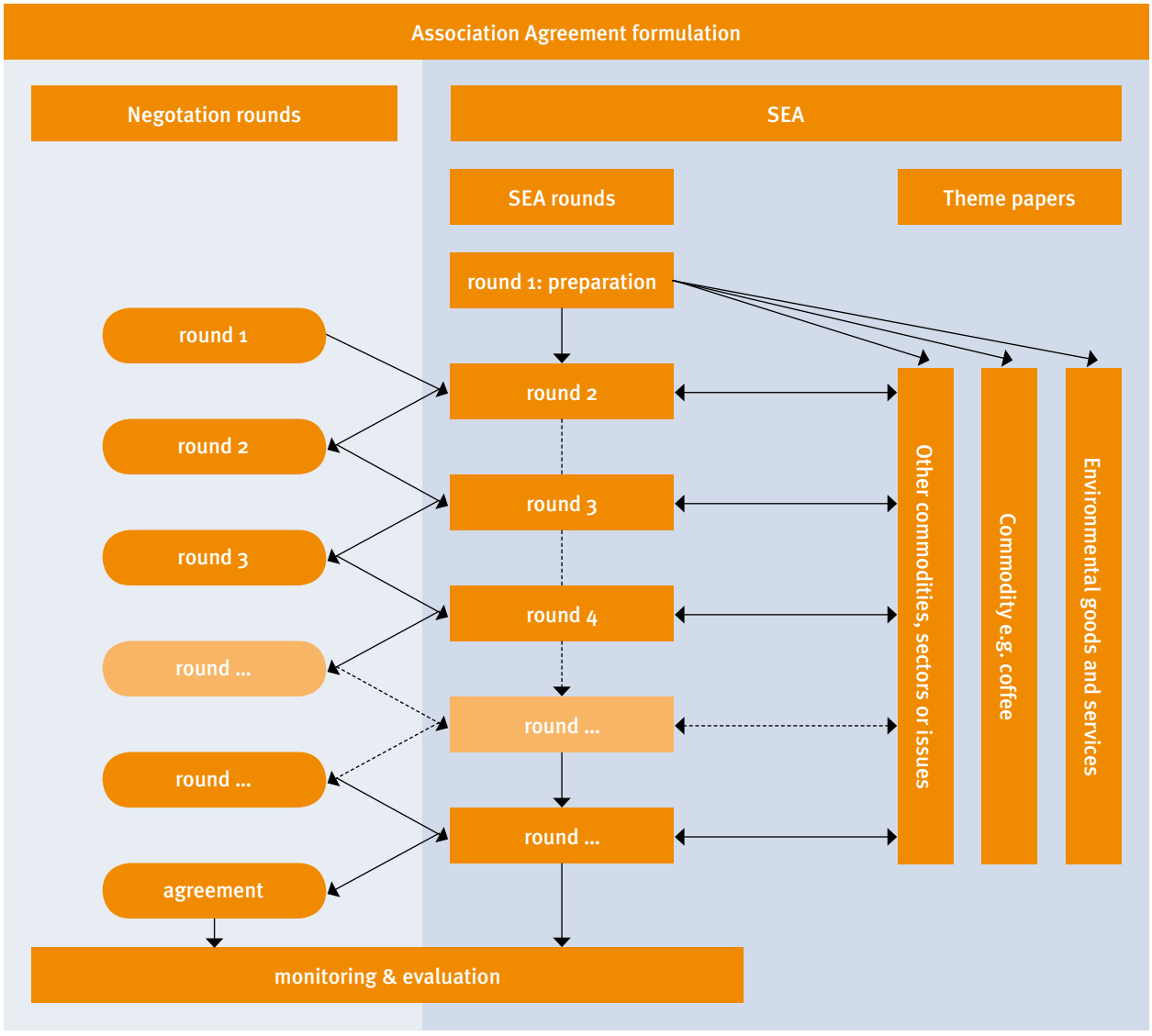
Association and trade agreements have two specific characteristics: there is much uncertainty on how the negotiation process will unfold, and a substantial part of the negotiations is bound to confidentiality. Therefore, typical SEA approaches – based on transparency and the assessment of well-defined alternatives – are less effective for assessing such agreements. For this reason the NCEA was

asked to develop a dedicated SEA approach which complements the dynamics and characteristics of the negotiations, including: negotiation rounds, the speed of these rounds, the variety of themes, the national negotiation period preceding the rounds, the Central American rounds, the bi-regional rounds, the post-round periods. The diagram below illustrates how this SEA approach would follow the agreement formulation process.

Overview of the components of an SEA embedded in negotiations

By comparison with more traditional SEA approaches, three features of the 'trade SEA' approach stand out:

1. The SEA is carried out in 'rounds', which match the rounds in the negotiation process. Each SEA round includes:
   - identification of the proposals likely to be discussed in the upcoming round and assessment of their environmental and social (including poverty) consequences;
   - recommendations for the next negotiation round, e.g. on better options (if available), flanking measures, mitigation and possible compensation.
2. Impact assessment and stakeholder discussion are concentrated within a regional working group in which the most important stakeholders are represented: environmental ministries, civil society, the private sector and negotiators. The group has overall responsibility for the SEA, assesses the negotiation proposals (on the basis of 'theme papers'- see next bullet), and communicates the results of the assessment to negotiators and the general public. Another aim of the regional working group is to establish personal relationships, both between the members of the group, and with key 'high-level' persons in foreign affairs, trade and environment.
3. The assessments taking place in the regional working group are facilitated and guided by 'theme papers' that are scientifically up to date, prepared by consultants and describe the potential implications (both impacts and opportunities) of proposals for a commodity or a sector. They may also include issues such as intellectual property rights or investment rules. The papers contain specific recommendations for the regional working group.



The papers are continuously updated throughout the negotiation process, to incorporate new developments that come up during the negotiations.

Application of the SEA process: practice

Creating transparency

As a start, the SEA approach elaborated by the NCEA expert group was adapted to customise it for the Association Agreement between Central America and the European Union. This resulted in a brochure on the SEA, announcing the initiative to the trade and environmental authorities and to civil society in Central America and the EU. A synthesis document was also prepared, and a dedicated website was launched to publish documents, results, news etc. After this, the first regional working group session took place.

First meeting of the regional working group

The first regional working group meeting and kick-off of the SEA took place in Guatemala in October 2007, just before the first round of negotiations between Central America and the EU. The approximately 25 participants reached consensus on the importance of SEA for the Association Agreement and approved the SEA approach and methodology. Although only 2 negotiators from Guatamala were present, there was important interaction between them and environmental representatives. At this stage, the SEA was successful in carrying out a broad inventory of environmental issues in the Association Agreement. Also, it resulted in agreement on the tasks, mandates and 'rules of play' of the regional working group, and the selection of topics for theme papers and a guidance document for the preparation of theme papers. However, the meeting failed to formally establish the regional working group, as this required the approval of the Ministers of Trade and Foreign Affairs from each of the countries involved. Without this, the participants were unable to confirm their continuing participation in the group. The idea as developed by the NCEA of organising a regional working group meeting just before each negotiation round proved to be too ambitious. It is difficult to get full disclosure and broad participation and commitment of stakeholders closely related to the negotiations, and moreover, it is expensive to organise these meetings. Therefore the original design of the SEA approach was modified:

1. More emphasis was put on first developing theme papers, thus showcasing the products that the SEA would deliver. It was hoped that this would be sufficiently convincing and attractive to ensure broader participation in the working group. Also, it was decided it would be more logical to only organise regional working group meetings when a negotiation round was scheduled to take place in Central America. (The venues of the negotiation round alternate between Europe and Central America).
2. More emphasis was given to building political commitment for the SEA. Several meetings were held with Vice ministers and negotiators from the Ministries of Trade, Economy and Environment in Central America, especially those involved in the 'Trade and Sustainable Development Table'. Tight coordination was established with CC-SICA, the official and recognised consultative institution of the Central American Integration System and concomitantly the official counterpart of EU civil society. These activities aimed to achieve commitment to interaction between preparatory activities and the results of the negotiations and the SEA process, and to get the responsible people in the negotiations to participate in the regional working group.
3. Finally, it was decided to simultaneously put more emphasis on raising regional awareness amongst various public and private sectors and civil society in Central America of the importance of the SEA and the link between trade and environment. This was done through disseminating reader-friendly and publicly accessible summaries of the negotiation rounds, publishing articles in newspapers and specialist magazines and issuing an E-bulletin on the SEA initiative.

Follow-up to the first meeting

The idea of informing negotiators during the negotiation rounds by offering them informal briefings on the objectives and set-up of the SEA was launched. This was achieved through a presentation on the SEA initiative to a number of negotiators, such as Foreign Relationship Ministries and Trade authorities from the EU and Central America during the third negotiation round in El Salvador (April 2008).

In parallel, the proposed content of new, yet to be developed theme papers was changed. Initially these papers were envisaged as being a response to concrete demands from negotiators, who were expected to be interested in and confronted with sustainability issues associated with certain themes. However, as no such demands have yet been made known, the focus has been shifted from supplying information to state-of-the-art knowledge and raising awareness of impacts related to the negotiations, so as to strengthen the capacity of civil society, academics, productive sectors and the general public.

Theme papers showing the disadvantages and obstacles in terms of market access have been elaborated on various products that have a regional coverage plus high export potential and thus imply environmental impacts and opportunities. In addition to the theme papers on bananas and sugar/ethanol, experts have prepared theme papers on environmental goods and services, food security and wildlife.

The NCEA has provided written guidelines for the selection of theme papers and their contents. Theme paper elaboration implies feedback from the productive sector and civil society, in order to guarantee an integral vision of the scenarios for the product within the negotiations and innovative considerations of the link between production, commercialisation and environment. The involvement of the

productive sector has helped enhance mutual trust between two distant sectors: commerce and environment.

Second meeting of the regional working group
The second meeting of the regional working group took place in September 2008 in Guatemala. Several topics were discussed, such as international trade and agriculture, fair trade and green certification, trade in endangered species, and the position of civil society in negotiations. More specifically, two draft theme papers were analysed on the link between the potential negotiation scenarios for sugar/ethanol and bananas and the associated environmental risks and opportunities. This information was intended to be used in the negotiation round which took place in October 2008 in Guatemala. However, the meeting failed to achieve real interaction between the negotiators present (1 from Guatemala and 1 from Costa Rica) and the other participants. The negotiators' attitude was one of just listening: there was no dialogue. In their defence, the negotiators argued that everything was confidential. Moreover, the working group was reluctant to publish the theme papers because some members felt that the EU might see/discover these documents and would use them to improve their negotiating position ('the theme papers also describe the negative aspects in terms of environmental and social impacts of the sector and might lead to a decision by the EU not to negotiate e.g no bananas at all').

Strategy for 2009
The results of the second meeting again led to a modification to the SEA approach: rather than trying to inform negotiation through discussions and assessment within the regional working group, influence is now being sought by putting more effort into creating transparency. Instead of operating through the working group, whose activities have been put on hold, what IUCN is now aiming for is an opening up, to be achieved in two ways: first of all through publishing the theme papers and secondly through partnership with CC-SICA, as they are the official counterpart of EU civil society. A meeting will be organised with the 'environmental negotiators' of the countries involved (those participating in the Trade and Sustainable Development Roundtable), including capacity building on trade and environment, and also negotiation skills. For this, use can be made of the theme papers.

Summary of results so far
- Bringing sectors together: in this pilot process, key stakeholders have been brought closer together and alliances have been formed, e.g. between representatives of the ministries of economy, trade and environment.
- Strengthening civil society: CC-SICA (part of the regional working group) is the official channel for civil society representation in the negotiations. The SEA helped to strengthen links and to mutually reinforce efforts, especially on the theme of environment and trade.
- Environment and trade theme: this theme has been raised to the highest level of decision- making.
- Public participation: the SEA has provided a channel for the constructive impact of civil society.
- Active involvement of the productive sector: the elaboration of the theme papers helped the productive sector to understand that these can provide them with relevant inputs to strengthen the negotiation position of Central America.

In a way, the strategy that has now been chosen is closer to a 'traditional' SEA approach, whereas the approach originally intended proved to be too dependent on the commitment of all parties to cooperate within the regional working group.

Preliminary conclusions and results
As yet it is too early to draw final conclusions, as the negotiations have not yet been finalised (they are expected to be finalised mid-2009). Nevertheless, some positive results can already be summarised. The NCEA will continue to closely monitor the development of this SEA.

Finally
The initiative for this innovative SEA was taken by a non-EU partner in an agreement, and as such is the first of its kind. IUCN, CCAD and NCEA have proposed a theoretical approach for such an SEA, which is delivering successes but is also facing some difficulties. Despite this, important results have been achieved that may be used in the EU's mandatory Sustainability Impact Assessment for Free Trade Agreements or in similar agreements that have recently been started.

Acknowledgments

The generic SEA approach is based on recent experiences with impact assessment of trade- related policies contributed by experts from the following organisations:

- The Impact Assessment Research Centre (IARC; University of Manchester, UK);
- Recursos e Investigación para el Desarrollo Sustentable (RIDES, Chile);
- The Commission for Environmental Cooperation (CEC), under the North American Agreement on Environmental Cooperation;
- AIDenvironment, The Netherlands.

Role of NCEA

- **An NCEA working group discussed the latest developments concerning SEA and the role it could play in Free Trade Agreements. A brochure and a key sheet were published in June 2007.**
- **NCEA participated in the first meeting of the regional working group in Guatemala in October 2007.**
- **In November 2007, NCEA advised on the Terms of Reference for regional working group tasks and mandates.**
- **NCEA issued a guidance document for preparing theme papers in April 2008**
- **During March 2007 until October 2008, NCEA facilitated informal contacts between EU (DG-Trade) in Brussels and IUCN.**
- **NCEA assisted in the development of a strategy for approaching negotiators during negotiation rounds (February 2008)**
- **As part of an ongoing process, from March 2007 onwards, NCEA commented on several documents such as the communication strategy, E-bulletin and presentations, and reviewed theme papers on sugar/ ethanol and bananas.**

Recommended websites

www.eia.nl
(also for the keysheet on SEA and Free Trade Agreements)
www.eia-centroamerica.org
www.aacue.go.cr
www.ec.europa.eu/trade
www.cec.org
www.ictsd.org
www.sed.manchester.ac.uk
www.sia-trade.org
www.trade-environment.org
www.oecd.org
www.iisd.org/trade/environment

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SEA of Montenegrin National Spatial Plan – A Case Study

This SEA case also features in the OECD DAC Publication 'SEA in Pratice in Development Cooperation'.

Montenegro is a very rich country in terms of landscape, biodiversity and natural resources and has one of the strongest development potentials among the Balkan economies. Located in a region characterised by a tradition of central planning, Montenegro has kown a regular cycle of national spatial planning. In 2002, the Montenegrin government commenced preparations for the development of the next national spatial plan. This plan has a broad scope; it is not limited to spatial interventions, but also encompasses socio-economic development, environmental conditions, cultural heritage, etc. The plan is intended to direct spatial development until 2020 and the key issues that need to be addressed in that timespan include energy generation, major infrastructure expansion, tourism development and regional disparities in population and economy. The national spatial plan is the country's most important strategic planning document, and takes primacy over other strategies and plans.

Role of the SEA
The Montenegrin government initiated a Strategic Environmental Assessment (SEA) for the national spatial plan for two reasons: firstly, to build capacity within Montenegro for SEA application, and secondly to identify opportunities to improve the plan. There was a clear added value that the SEA could have for the planning process, since discussion on the plan content had already identified a number of key environmental, social and economic issues that were of public concern.

The SEA was proposed by the Ministry of Environmental Protection and Physical Planning, (now the Ministry of Tourism and Environment). It formed part of a capacity-building programme for SEA which was funded by the World Bank through the Bank's Netherlands Partnership Program. The Netherlands Commission for Environmental Assessment (NCEA) provided expert advice to the Montenegrin government during the process.

Integration of SEA into planning
When the SEA was initiated in 2006, the planning process for the national spatial plan was already well under way. Preparatory work on the development of the plan had formally started in 2002 with a substantial programme of data collection. Preparation of the draft text of the plan followed in 2004. By the time the SEA activities commenced, a full draft had already been prepared. As a result, the SEA was not well integrated into the plan drafting stage. However, the SEA was part of the consultation on the plan that followed, and both the SEA and plan were addressed in the political arena and simultaneously in public discussions. The plan that was finally adopted incorporated some revisions based on insights from the public discussions and the SEA.

Background: context and issues
In the past few years, the Montenegrin government has begun to align its policies and regulations with the EU, with a view to becoming an EU member state. This alignment includes the EU SEA directive. At the time the national spatial plan SEA was initiated there was no legal requirement to undertake such an SEA, but it was carried out in anticipation of the new Montenegrin law on SEA which had been enacted in 2005 and was scheduled to come into force on 1 January 2008 (by which date it was assumed that the plan and SEA would have been completed). This SEA requirement has implications for Montenegrin planning practice. It introduces new elements to planning, such as the emphasis on alternatives, and also reinforces existing planning elements, including participation.

Approach and methods used in the SEA

Scope of the SEA
The understanding of the scope, purpose and role of the SEA changed over the course of the SEA process. The initial brief and Terms of Reference envisaged by the NCEA proposed a fully integrated study involving several government departments and specialists, with an external international expert acting as facilitator and trainer, working over a six-month period. It was proposed that the SEA should focus on a few key environmental issues (infrastructure and energy, in particular) and demonstrate the likely outcomes of alternatives so as to assist decision-makers in making choices. However, due to presumed lack of capacity and time, it was decided to contract the SEA work to consultants. By the time a consortium of UK and Montenegrin consultants was awarded the contract, less than four months remainedto complete the SEA in time to meet the Spatial Plan's finalization schedule. In addition, it became clear that all government resources were being devoted to preparation of the draft plan and there were limited prospects for the consultants' team to create active working links with individual ministries.

The shape and substance of the SEA also differed from the initial brief. The Terms of Reference that were finally agreed stated that the SEA should examine all aspects of the spatial plan, rather than concentrating on selected key issues. By doing this the SEA was responding to the plan structure, which consisted of a large set of proposals, rather than a consistent set of distinct strategies. In the way it was finally presented, the SEA followed the plan structure, describing the background of each plan element under examination, discussing the social, environmental and economic issues raised by the plan proposals and, where appropriate, giving recommendations.

Methods for impact analysis
Both the plan and the SEA were predominantly based on expert analysis. A relatively complete set of in-depth baseline studies had been carried out preparatory to the plan: 20 sector studies had been conducted by the University of Montenegro, each containing an environmental section. However, lack of good quality data often limited the usefulness of these studies. Montenegro has a strong academic tradition and a wealth of data has been collected by universities and various government institutions. However, Montenegro's isolation during the Balkan hostilities resulted in the collapse of most systems for data gathering. As a result, vital information on recent trends is often missing. The most critical omission for spatial planning is the lack of records on new building development (most of this development is informal i.e unauthorised).

Maps were available on e.g. environmental protection areas, technical infrastructure and transport, network of settlements and key development zones in the country. Modelling for spatial planning is at a fairly rudimentary level of development, but with the assistance of different donors efforts to develop a national GIS database have begun.

Public participation
As the process got under way, the SEA rapidly attracted attention from the wider public and media. National

television channels broadcasted significant sections of the SEA and plan workshop discussion and subsequent regional meetings. The national press also published extensive articles and interviews on the whole spatial planning process. The SEA became an important topic in the widespread programme of public consultation on two consecutive drafts of the spatial plan. Consultation on the SEA was not separated from the main planning discussion. The SEA seemed to be effective in anticipating the issues that were likely to be important to the public and articulated those issues well. This helped prepare participants, especially NGOs, for discussions with the government on effects and possible solutions. In some instances, these NGOs even quoted sections from the SEA verbatim.

Monitoring and follow up

As a pilot exercise, the SEA did not go through a formal procedure for approval by the national competent authority, which would have been the Ministry for Tourism and Environment, after a restructuring that shifted spatial planning competences to the Ministry of Economic Development. The SEA made recommendations for monitoring activities, but did not include the development of a systematic monitoring scheme. As a result, the monitoring and evaluation system for the implementation of the national spatial plan has not been defined. The need for one is recognized in the final plan that was adopted, which includes a requirement to develop a monitoring scheme as part of plan implementation.

Quality review

The Montenegrin Law on SEA that is now in place is particularly strong on the need for formal review of SEAs and future monitoring, although at the time of writing, the resources for undertaking this work were limited. The SEA pilot was not subjected to such formal review because it was conducted prior to the SEA law coming into force, but an informal review of the draft SEA report was undertaken by the NCEA.

The main critique the NCEA expressed of this early draft of the SEA related to its lack of depth and the absence of any real examination of alternatives. These shortcomings were acknowledged by the SEA team, although it was argued that given the time horizons it was difficult to avoid them. It was also necessary for the SEA project team to move with some caution in highly contentious areas, including a debate about future energy sources, the status of the national transport strategy, and prospects for national tourism.

Results and lessons

Contribution to decision making

The SEA influenced both the structure and the content of the plan, albeit modestly. In its original form, the draft national spatial plan was long, discursive and failed to identify any specific policies or actions. It simply covered every aspiration of the contributing ministries, even though many of these were directly in conflict with each other in terms of demands for space and resources. The SEA put considerable emphasis on these shortcomings, and was reinforced by the messages emerging from the public debates. The redrafted plan had a simplified structure: perhaps the most significant change was the inclusion of policy statements.

As to the content of the plan, the most important influence of the SEA was the substantial revision and clarification of the tourism policies. The final plan recognised that the accommodation capacity in the coastal region needs to be carefully planned since the carrying capacity of the area has almost been exceeded. It also recognised the risks related to the development of ski tourism and proposed a more cautious approach in developing this form of tourism. In general, the final plan supports the development of a more diversified tourism offer, safeguarding environmental and landscape qualities.

However, the tourism sector was an exception; most other elements of the plan remained largely unchanged in the subsequent redraft. This, despite the fact that many participants in the public debate were critical of the intended direction of the spatial plan, including its endorsement of large-scale hydro power as the mainstay of a future energy strategy; also criticised were the ineffective measures it proposed for controlling illegal development and unconstrained expansion of road transport. These issues were highlighted in the SEA as being inconsistent with the country's stated goals for sustainable development.

Given the late stage at which SEA was introduced into the plan process (in the last four months of a four-year programme) it is perhaps not surprising that the government found it difficult to reverse the already defined policy directions.

In conclusion, it can be said that the SEA for the national spatial plan was very successful in two ways: one was by raising awareness (at all levels) on the SEA process and its purpose, as well as on the forthcoming Montenegrin legal SEA requirements; the other was the highly valuable contribution the SEA made to the public discussion that was part of the plan development. The SEA also affected the attitude and capacity of some of the stakeholders, most notably of the civil sector that played a prominent and constructive role in the process. On the other hand, the SEA did not impact substantially on the development of institutional capacities and – with the exception of tourism policies – it did not have a major impact on other sectoral solutions endorsed by the plan.

Lessons for SEA good practice

This SEA case presents a range of valuable lessons:

- The SEA was undertaken in a transparent and participative way. The SEA information was made widely available, while at the same time SEA awareness-raising activities

were taking place, albeit at a modest scale. As a result, the SEA enjoyed wide uptake in the participation surrounding the plan, and was central to the public debate.

- The development of the plan took longer than anticipated, and major planning milestones were postponed several times. The SEA, however, had to be finished before a certain date, because of contractual commitments. This put severe constraints on the alignment of both processes and the effective use of SEA results in planning. The SEA would probably have been more effective if it had truly developed in parallel with the plan process: this has been a repeated message from SEA practice.
- The pressure to complete the SEA also limited the effectiveness of the independent quality review undertaken by the NCEA. At the time the review was provided, the SEA team had very little time to incorporate the review findings. Consequently, the recommendations that were relatively easy to follow up can be more clearly recognised in the final SEA than those that were more far-reaching.
- There was also a difference in SEA conceptualisation between the review advice (both at the ToR stage and the review stage) and the SEA team. The NCEA's advice strongly emphasised the value of SEA in exploring and evaluating suitable strategic planning alternatives. In the SEA itself there was less emphasis on this development of alternatives. Instead, the SEA was used to assess an existing set of policies, plans and programmes, to point out the consequences of each policy, and indicate ways in which the policy could be enhanced. The benefit of this broad approach is that the plan was dealt with in its entirety, all policy proposals were analysed, and the associated environmental risks and opportunities indicated. However, at the same time it was not possible to go into the major issues in depth, particularly the impacts and possible alternatives for the proposed energy, tourism, and transport policies. The SEA team chose the broad policy assessment approach in response to changing conditions, treating the SEA as a dynamic process which should follow broad principles but has the freedom to diverge from established norms and guidelines as appropriate. However, which of the two approaches (broad versus more focused) best serves a planning process of this abstraction level remains a point for discussion.
- Finally, a lesson can be learned on the involvement of local consultants in the SEA. Originally it was intended that the SEA would be undertaken by a consortium of Montenegrin and foreign consultants. This set-up was attractive, since the external expert team was more experienced, and had more standing, but the local team was better aware of political issues and available information. Unfortunately it proved unfeasible given the timeline for the SEA. The Montenegrin consultants, being new to the topic, needed more lead-in time to be able to complete the tasks required, and as a result the majority of the work was done by the UK-based consultancy, Land Use Consultants.

It is too soon to tell if these lessons learned have benefitted subsequent SEA practice in Montenegro. What is clear is that since the Montenegrin SEA Law came into force, SEA experience in the country has been growing. SEA is now being applied to spatial planning at local level, as well as to national level policies. And perhaps with more pronounced outcomes. So far, the application of SEA to the National Energy Strategy has resulted in significantly enhanced policies on wind energy, solar energy, and biomass energy from waste, while the SEA of the National Tourism Master Plan led to a Government decision to prepare a Tourism Strategy to better steer development.

Role of the NCEA

- **The NCEA carried out a needs assessment on SEA in November 2005.**
- **An NCEA working group issued an advisory report on the Terms of Reference for the SEA in April 2006.**
- **The NCEA organised a 4-day workshop on SEA together with REC Albania in November 2006.**
- **In December 2006, the NCEA reviewed the draft SEA.**
- **The NCEA assisted in drafting a multi-year SEA capacity development strategy in June 2006 and January 2007.**
- **As part of an ongoing process, in 2006 and 2007 the NCEA contributed to discussions with stakeholders on SEA introduction in Montenegro.**

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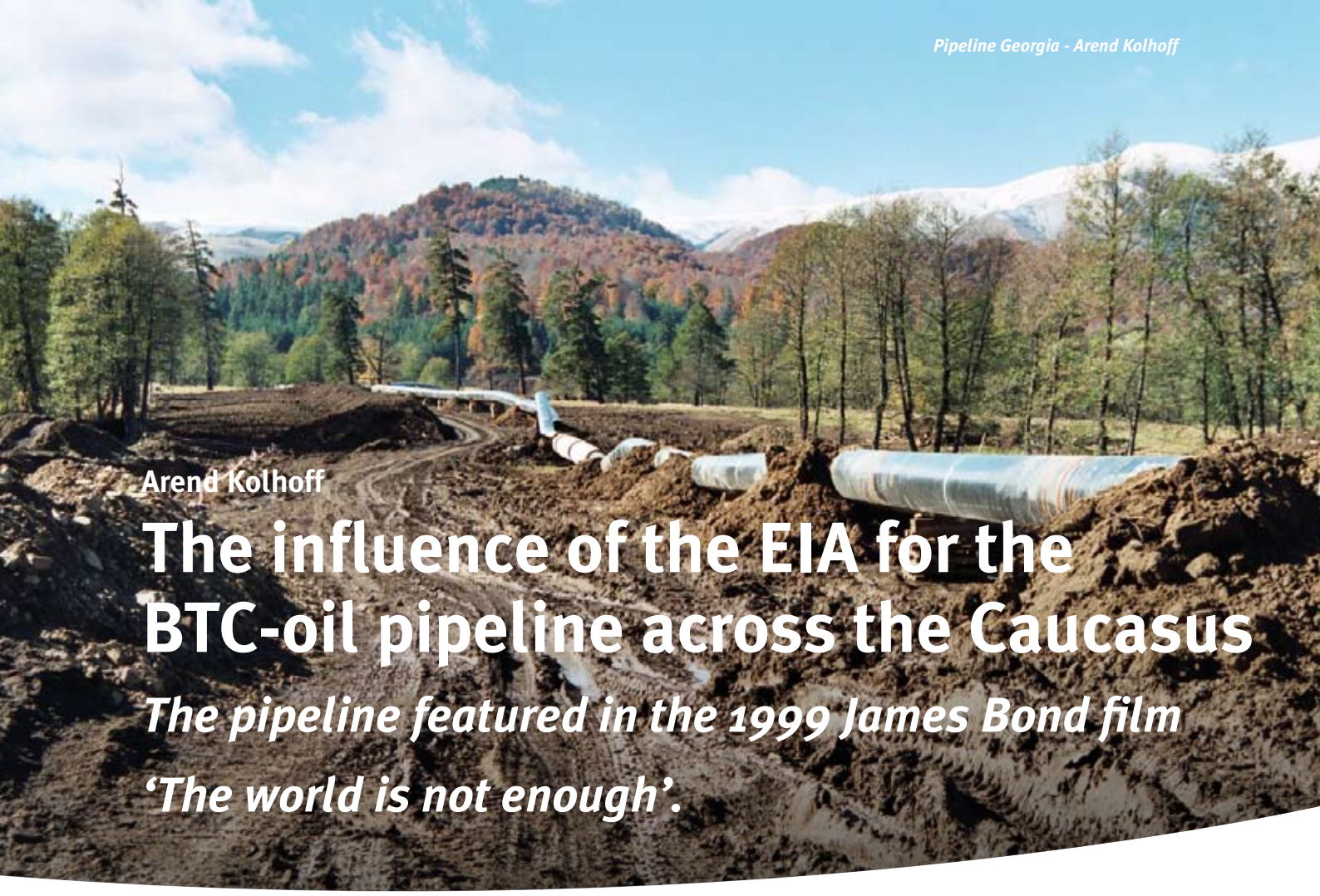

Pipeline Georgia - Arend Kolhoff

Arend Kolhoff

The influence of the EIA for the BTC-oil pipeline across the Caucasus

The pipeline featured in the 1999 James Bond film 'The world is not enough'.

Introduction

In June 2006, 12 years after the start of the BTC project, the first tanker was loaded with oil at the Ceyhan terminal on the south coast of Turkey. The oil had been extracted in Azerbaijan and conveyed to Turkey via Georgia through a 1760 km long underground pipeline. This pipeline has strategic importance and is the only pipeline to have starred in a James Bond film – which implies that the project was far from boring. An Environmental Impact Assessment (EIA) was carried out for the project and the Minister of the Environment in Georgia invited the Netherlands Commission for Environmental Assessment (NCEA) to advise on the EIA study and the EIA process. This article outlines the influence of EIA and independent quality review on the process of designing the pipeline, making decisions about it, and installing it. The results are based on a documents that are publicly available and interviews of representatives of the Ministry of Environment and NGOs in Georgia. The article is restricted to Georgia, as though the project covered the entire region, this was the only country in which the NCEA was active.

The context of the project

In 1990 the Soviet Union disintegrated; shortly afterwards Georgia and Azerbaijan became independent states. Georgia and Azerbaijan opted to orient themselves towards the West, whereas Armenia remained strongly oriented to Russia. The Clinton administration made the first plans to develop an energy corridor jointly with the presidents of Azerbijan, Turkey and Georgia. The corridor would give the West the opportunity to convey strategically important oil from the oilfields in the Caspian Sea area to the West, through friendly countries. In the early 1990s the magnitude of the oil reserves of the Caspian Sea area was considered to be second only to those of the Persian Gulf. The Western countries wished to reduce their dependency on the Gulf States and Russia and so supported the development of the corridor, which at the time consisted of two oil pipelines and one gas pipeline. There were plans for laying a third oil pipeline.

Prior to creating the present-day corridor, three alternative corridors were considered. One running via Iran to the Persian Gulf was not acceptable to the USA. A corridor via Armenia to Turkey was unacceptable to Turkey and Azerbaijan: for Turkey because of the strained relations brought about by the genocide in 1915 and for Azerbaijan because of the conflict over Nagorno-Karabakh. In 1996 the presidents of these three countries, supported by the USA, decided to develop the corridor we know today. No EIA was carried out for this.

In 2000, the governments of Georgia, Azerbaijan and Turkey signed an Inter-Governmental Agreement (IGA) for the development of the oil and gas pipelines (the BTC project) within the chosen 10 km wide corridor. The same year, Georgia, Azerbaijan and Turkey initiated the Georgian Host Government Agreement (HGA) that defined the environmental standards of this project. The HGA stated that the environmental standards of the Netherlands and Austria and

also the EC Directive 85/337/EEC would be applied. Dutch standards were adopted because of their excellent international reputation; Austrian standards were adopted because of Austria's experience in constructing pipelines through mountainous areas.

Two different consortiums, both led by British Petroleum (BP), were the proponents for the oil and gas pipelines. In this article we focus on the oil pipeline. The length of the pipeline running through Georgia is about 250 km. In addition to constructing this 250 km pipeline, the project included a number of permanent facilities in Georgia such as pumping stations, an optical fibre communication system and a computer-based integrated control and safety system. Construction was scheduled to start in spring 2003; total investments in the BTC project were estimated at around 3.6 billion US $. In addition to the BP-led consortium, the International Finance Corporation (IFC), European Bank for Reconstruction and Development (EBRD) and a number of commercial banks were involved in the funding.

The EIA: design, decision-making and implementation

EIA for oil pipeline projects

In general, selecting the route of a pipeline is one of the most important issues studied in EIA because this offers an opportunity to avoid environmentally sensitive areas as well as to consider other aspects such as safety and economic costs. Three levels of decision-making on routing can be identified for the BTC pipeline:

A. Deciding which countries the pipeline would run through. As described above, Azerbaijan in close collaboration with the USA selected the approximate route deemed acceptable to safely convey oil to a Western ally. This route – across Georgia - was selected largely for geo-political and safety reasons and without the benefit of an EIA.
B. Deciding on the 10 km wide corridor through Georgia. It is common practice to identify a 10 km wide corridor within which the pipeline will run. In Georgia, three 10 km wide corridors were identified: northern, central and southern. The selection of the southern corridor was not based on EIA. However, in the EIA report its selection was justified by reference to environmental, technical and safety criteria. The northern corridor to the Black Sea coast of Georgia was unacceptable to Turkey because of the potentially major impact of oil pollution in the Bosphorus near Istanbul. The central corridor was not acceptable because it had to cross the highly valued Borjomi - Kharagauli national park. So, the southern corridor was selected.
C. Deciding on the actual route within the southern 10 km wide corridor. It is common practice to use technical, safety, environmental, social and economic criteria to locate the most suitable route within the boundaries of the 10 km wide corridor. Typically, EIA is used to identify one or more routes in this corridor by a comparative assessment of these criteria. The procedure followed for the BTC-pipeline is decribed below.

The EIA procedure for the BTC project

In Georgia, the Minister of the Environment decides on the environmental permit for the construction and operation of a pipeline. There is a statutory obligation to carry out an EIA. In this case, the IFC made the preparation of a social impact assessment a condition for providing a loan, so BP decided to combine this into an environmental and social impact assessment study (ESIA). The IFC has the obligation to follow its own ESIA procedure as a condition for providing a loan; this gave the Georgian government a good reason to follow the same procedure. Furthermore, IFC's procedure is more advanced than the statutory Georgian procedure.

As the Georgian ESIA legislation allows for international experts to be asked to review the ESIA, the Georgian Minister of the Environment invited the Netherlands Ministry of Housing, Spatial planning and the Environment to advise her on ESIA for the BTC project. The NCEA was asked to provide advice on scoping, reviewing and monitoring. Over time this resulted in five reports that were all made publicly available. On top of this, the NCEA advised on procedure. All the advice was issued by an expert group consisting of a chairman, a secretary and seven experts on pipeline engineering, geohydrology, ecology and sociology. In parallel, use was made of a reference group consisting of Georgian experts. The cost of the entire ESIA for the three countries was about US $ 12 million. The cost of the NCEA involvement was US $ 250,000.

Phase 1: Tersm of Reference (ToR) for ESIA (submitted June 2001, approved May 2002)

The main issues to be studied in the ESIA were identified during the scoping phase. The 10 km wide southern corridor crossed the sensitive and highly valued Borjomi-Bakuriani area in the Southern Caucasus mountain range. This area became the focus of study and public debate in subsequent years, mainly for the following three reasons. Firstly, the area lies in the buffer zone of the Borjomi - Kharagauli national park, the first national park in Georgia. Secondly, it is said to be the source area of Borjomi mineral water, a mineral water that is not only iconic in Georgia and part of Georgian identity, but is also a valuable source of income when exported. Thirdly, the area is a recreation area renowned for its natural beauty in summer and skiing in winter. The question asked by many Georgians was 'why put an oil pipeline through our national jewel?' In its advisory report on the ToR for the ESIA, the NCEA recommended justifying the selection of the southern corridor and emphasised the importance of mentioning social aspects, including compensation. The Minister adopted the advisory report and in May 2002 formally approved the ToR becoming a framework for review.

Phase 2: Draft ESIA report (submitted April 2002, review July 2002)

After the draft ESIA report was presented in April 2002, there was public debate about the route of the pipeline through the Borjomi-Bakuriani area that lies wholly within the boundaries of the 10 km wide southern corridor. In its advisory

review the NCEA noted that not all the alternative routes in the southern corridor had been described and recommended that this should be done. BP argued that the earlier agreements made with the government were of a sensitive nature and could not be made public. Later it emerged that a route to the south of the area in question had been rejected for strategic and safety reasons. A Russian military base was sited in the area and, moreover, many of the local residents were Armenians who would oppose a pipeline conveying 'Turkish' oil; there was a higher probability of sabotage. The Minister adopted the NCEA's recommendations, stipulating in addition that supplementary mitigating measures should be worked out for the route through the Borjomi-Bakuriani area in order to reduce the risk of oil leaks to 'as close to zero as possible'.

The discussion that arose in this phase of the project between BP, the Ministry of Environment, NGOs and international funding agencies was based on a mixture of facts and preconceptions. The NCEA played a role in separating the facts from the preconceptions. One preconception was that the number of temporary jobs created by the project would be 40,000: a more accurate estimate would be 2,500. The NCEA also dismissed the preconception that oil might contaminate Borjomi's mineral water. The NCEA's geohydrologists were able to demonstrate to all the parties that there was no risk of contamination of the Borjomi mineral water abstracted from deep aquifers. Borjomi drinking water abstracted from shallower reserves (the so-called Borjomi spring) was at risk, however: here, contamination from a leak could not be excluded. Supplementary measures were proposed in order to reduce this risk; they are being implemented.

The NCEA's advice also had an 'institutional' effect. BP reported that the advisory reports strengthened the position of its environmental and social departments relative to the technical department that was leading the project.

Phase 3: Final ESIA report and decision-making (submitted October 2002, 1st review November 2002, 2nd review October 2003.
The Minister of Environment signed the environmental permit on December 2nd, 2002 and approved the BP-preferred route across the Borjomi-Bakuriani area. There was public debate on whether the Minister had been pressurised to approve the permit, but the Minister always denied that she was subjected to pressure. The permit included a number of stipulations that BP provide additional information, e.g. to justify why one of the routes the NCEA recommended studying was still not addressed sufficiently in the final ESIA. The NCEA was asked to review the quality of the information requested in the permit. In its advisory review submitted October 15th, 2003 the NCEA stated that the information was complete and correct.

Phase 4: Monitoring (NCEA review December, 2004)
During the two-year construction of the pipeline the Ministry of the Environment was formally responsible for monitoring the project and checking whether the environmental permit conditions had been met. However, the ministry was barely able to provide the necessary high-level expertise required for this assessment. Environmental NGOs continued to exert pressure on BP and International Finance Institutes (IFIs) as well as on the Ministry of the Environment regarding certain specific issues composition programme for affected people, risks of oils spills and compensation of biodiversity loss.
BP set up an international independent advisory group, but some NGOs objected that it was biased, having been set up and funded by BP. The NCEA was therefore asked to review the quality of the monitoring programme and of the implementation of the measures agreed in the permit. In its final report submitted in December 2004 the NCEA was asked to assess the risk of geohazards in the Borjomi-Bakuriani area, especially risks of landslides that could break the pipeline. Recommendations have been provided to achieve a risk 'as close as possible to zero'. This means the application of best available techniques in which costs should not play any role. The proposed measures have been applied.

Results of the ESIA process, study and report

- BP was convinced by the Minister of Environment and IFC to study alternative routes outside the agreed 10 km wide corridor, to avoid the sensitive Borjomi-Bakuriani area. However, this did not result in major changes to the route proposed by BP at the start of the process. The pipeline was constructed within the 10 km wide corridor that had been defined at the start of the ESIA process and therefore it traverses the Borjomi-Bakuriani area.
- The ESIA was intended to determine the exact route within the 10 km corridor. At the start of the ESIA, the indicated route originally ran down the exact centre of the 10 km corridor. The ESIA resulted in many deviations from the indicative route, for the following reasons:
  - to avoid geologically unstable areas;
  - to meet villagers' requests;
  - to reduce the impacts on areas of valuable biodiversity.
- Mitigation measures to minimise potential negative environmental impacts were identified in the ESIA report, and then approved and implemented. For the Borjomi-Bakuriani area, for example, best international practice was applied. The right of way was reduced to an absolute minimum of 14 metres. To avert antagonism between workers and villagers during the construction period, a number of measures and programmes were elaborated in the ESIA report and villagers' concerns were allayed during public meetings held as part of the ESIA process.
- Compensation: The ESIA study identified the families and villages that would be affected. Individual families were approached and in most cases agreement was reached on financial compensation. A special programme was set up

to compensate the affected villages in cash or kind, e.g. by constructing a bridge, upgrading feeder roads, repairing a school. The ESIA study indicated the impacts on biodiversity and this resulted in prolonged discussion between BP and the MoE on the compensation ratio. Finally it was agreed that compensation would be paid for 105 hectares of forest lost as a direct result of the pipeline construction. In addition, BP, IFC and EBRD jointly launched a regional compensation programme of US $100 million for Georgia.

Results of the NCEA advisory reports

- The NCEA advisory reports increased the legitimacy of the ESIA decision-making process and ensured that international good practice was applied concerning environmental mitigation measures.
- The NCEA advisory reports played a role in separating the facts from the preconceptions. One preconception was that the number of temporary jobs created by the project would be 40,000: a more accurate estimate would be 2,500. The NCEA also dismissed the preconception that oil might contaminate Borjomi's mineral water.
- The Georgian Minister of the Environment noted that the NCEA advisory reports strengthened the Ministries position in the dialogue and negotiation with BP and within the cabinet on, for example, compensation rates for biodiversity loss.
- NGOs stated that the reports strengthened their position when lobbying for changes in the project design with the IFIs.
- The staff from BP's environmental and social department in Georgia stated that the NCEA advisory reports strengthened their position within the company.
- At two points of time in the ESIA process, relations between BP and the Ministry of Environment became so deadlocked that the NCEA was called in to mediate, with the result that communications subsequently improved and the project development resumed.

Lessons learned

1. In the HGA signed by the president and agreed by the Parliament, many decisions had already been made and standards had been set. Besides, the proponents of the scheme had already made numerous decisions in the preparatory phase of the technical design studies. This limited the opportunities of the ESIA to study the full range of alternatives. The lesson learned is that it is important to start the ESIA at an earlier stage. Also, at the start of an ESIA, the decisions already taken – which in this case appeared to have not been very well known to the Minister of the Environment – should be properly analysed.
2. An extensive visit to the site of the proposed corridors by the organisation and/or experts tasked with preparing the ToR for the ESIA proved to be very valuable, as so little site-specific information was otherwise available. Such visits should be made as early as possible in the ESIA process.
3. At the time, there was a huge difference in experience in the oil and gas sector and environmental impacts between BP on the one hand and the Georgian government on the other. hand. The lesson learned is that in developing countries, capacity development within government (including Ministry of Environment) is a prerequisite for the execution of an adequate ESIA, decision-making and monitoring.
4. An independent advisory body that is accepted as such by all stakeholders can play a crucial role in strengthening both the quality and the legitimacy of the decisions made. To ensure its credibility for all stakeholders, such a body should have no stake in the final outcome of the process and its findings should be based on expert knowledge and be made publicly available.

NCEA's role – advising the Minister of Environment on the ESIA process (scoping, reviewing and monitoring) in the period 2001-2004:

- **The NCEA issued an advisory report on the Terms of Reference of the ESIA in June 2001.**
- **The NCEA reviewed the quality of the ESIA report and made recommendations, first advisory review in July 2002, second advisory review in November 2002.**
- **The information provided by BP for the permit (to start the construction of the pipeline) was reviewed by the NCEA in October 2003.**
- **In December 2004 the NCEA reviewed the quality of the monitoring programme and implementation process and published its final report.**

Above mentioned the NCEA advisory reports are available on our website www.eia.nl

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Environmental Assessment in the Netherlands

At present, two types of environmental assessment (EA) exist in the Netherlands:

- Environmental Impact Assessment (EIA) provides the information needed to allow full consideration of environmental interests in decisions on projects likely to have significant environmental impacts. The EIA report shows how proposals will affect the environment and whether there are alternatives that would achieve the goals in a more sustainable way.
- Strategic Environmental Assessment (SEA) has a similar objective to EIA, but focuses on consideration of environmental consequences in strategic decision-making, for example in the design of plans and programmes.

Advisory Services in the Netherlands

At strategic and project level, the NCEA usually gives advice to competent authorities at two different stages:

- At the start of an environmental assessment: which topics should the Environmental Impact Assessment report (EIA report) cover? The NCEA advises on Terms of Reference; in EIA this advice is mandatory, in SEA it is voluntary and at the explicit request of government authorities only.
- After finalising the EIA report: is the quality of the report sufficient to allow decision makers to fully incorporate the environment in the decision-making process? This advice is mandatory in EIA; in SEA it is mandatory in cases where an assessment is required under the Nature Conservation Act and an area in the National Ecological Network is affected. In other cases the NCEA can advise on a voluntary basis at the request of the competent authority.

The NCEA's independent experts assess whether the quality of the environmental information is sufficient for decision taking. To ensure the NCEA's decisions are unaffected by any administrative responsibilities or political considerations, the NCEA acts totally independent of government. On the NCEA's website, all advisory reports (in Dutch) are made public and accessible to everyone.

Advisory Services Internationally

In addition to its services in the Netherlands, the NCEA also advises on environmental assessment abroad. Most –but not all- of this work is carried out under the agreement with the Department for International Cooperation of the Netherlands Ministry of Foreign Affairs. In line with this ministry's programme, both environmental effects, social effects and poverty reduction are addressed.
The main services NCEA provides abroad are:

- advice on strengthening of impact assessment systems for both SEA and EIA and advice on institutional setting and improvement of legislation in partner countries. In Southern and Eastern Europe the focus is mainly on conformity with European Directives for Environmental Assessment;
- capacity development on both EIA and SEA;
- advice on Terms of Reference for, and quality assessments of environmental assessments of plans, programmes and projects.

The NCEA's services are requested primarily by environment ministries in partner countries, by Dutch embassies, donor countries and development banks.

Netherlands Commission for Environmental Assessment (NCEA) online

NCEA in the Netherlands

www.commissiemer.nl (website in Dutch)

- **News:** current developments in the field of environmental assessment and press releases;
- **NCEA:** the NCEA's role in and view on environmental assessment and information about the NCEA as an organisation;
- **EIA and SEA:** the environmental assessment procedures in the Netherlands;
- **Projects and advisory reports:** a comprehensive search facility provides quick access to project information, complete texts of advisory reports, digital Notifications of Intent and Environmental Impact Statements;
- **Jurisprudence:** links to all important court cases concerning EIA and SEA, where relevant, accompanied by a manual for implementation;
- **Library:** online catalogue of reports and literature: a large number are digitally available;
- **EA legislation;**
- **Subjects A-Z:**
  - news and updates;
  - current procedures and published advisory reports;
  - policy and legislation;
  - jurisprudence;
  - practical examples and publications;
  - frequently asked questions and interesting links.

NCEA - Internationally

www.eia.nl

- **News:** activities of international staff in the Netherlands or abroad and the latest publications (in four languages);
- **Library and SEA database:** SEA/EIA related literature and legislation in developing countries (if available, full text obtainable);
- **NCEA:** the organisation and scope of the work;
- **Services:** the services the NCEA provides internationally and who could benefit;
- **Products:**
  - advisory reports on environmental assessment for complex projects and plans;
  - programmes on environmental assessment for capacity development and institutional strengthening;
  - key sheets and case studies.
- **Helpdesk@eia.nl:** for questions and suggestions.