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Present status of SEA in The Netherlands

Background paper for the 1998 Japan International Workshop on SEA

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Abstract

The article provides an overview of the two current SEA processes in the Netherlands: the 'E-test' (Environmental test) for draft legislation and 'Strategic EIA' for plans and programmes, including some brief case studies). These processes differ considerably in their approach regarding, for example, openness (e.g. with or without public participation), scope (e.g. with or without mandatory description of alternatives) or intensity and duration. Differences stem from the specific contexts in which the SEA processes are meant to be used, i.e. respectively drafting legislation or the preparation of policy plans and programmes.

1. Introduction

Under Dutch legislation there has been an obligation since 1987 to carry out an EIA for a number of spatial and sectoral plans and programmes. These include national plans on waste management, electricity production, land development and drinking water supply, and regional plans on waste management and the location of new housing and industrial areas.

For the development of draft legislation no effective assessment process existed until 1994. In that year the government decided to adopt the Environmental Test, or 'E-test'. This test is mandatory for all draft legislation that could have significant (positive or negative) environmental consequences.

This paper provides an overview of the main features of these two SEA processes, including some case studies of their application and results in practice.

2. The Dutch 'Strategic EIA' process (SEIA)

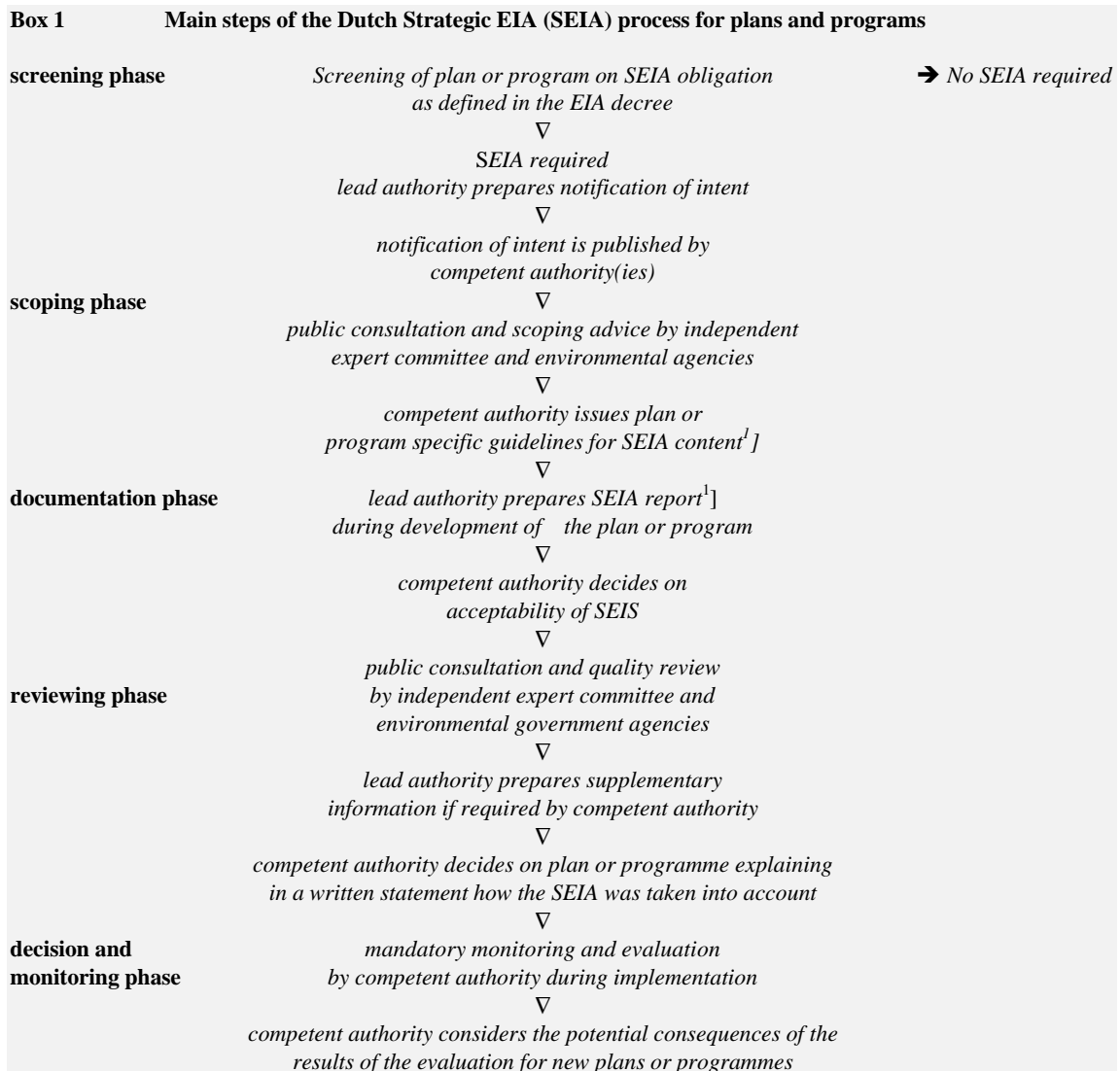
Traditionally, in The Netherlands the plans and programmes for which an SEIA is mandatory are developed in open, structured processes, including public participation and consultations with (environmental) agencies. For example, many national plans follow the 'National Spatial Planning Key Decision' procedure in which the final plan or programme is developed in four steps. At the end of each step a new draft of the plan or a review of comments received is made public.^{1]}

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2 This procedure starts with the publication of the policy proposal (Part 1), followed by a 5-7 month period in which the public, other government authorities and (environmental) agencies are consulted. The results of consultation are published in Part 2, which is used by the Cabinet when coming to its own decision (Part 3). After approval by Parliament, the policy becomes legally valid and is published as Part 4.

It is for this reason that in the late seventies and early eighties it was decided that the SEIA process should match the open nature and step-by-step structure of the procedures in which it should be integrated. The process developed has these same characteristics¹]:

- detailed procedure
- integration of information in multiple steps of plan/programme development
- full public involvement in scoping and reviewing
- mandatory advice from an independent group of experts
- mandatory examination of alternatives
- mandatory evaluation and monitoring.



3 See Box 1 for an overview of the main steps of the process.

4 Legal requirements include the description of alternatives, including the alternative most favourable to the environment. Social impacts directly stemming from environmental effects are typically included; other social impacts and economic impacts are not legally required as part of an EIA.

5 Also called: Strategic Environmental Impact Statement or SEIS

Since 1987 more than 40 SEIAs have been carried out and some of these have been described in the literature.^{1]} In the Annex to this paper four of these case studies are described briefly. From the experience so far it may be concluded that SEIA works well in the context for which it was intended. However, the process will probably not work very effectively in other contexts, for example in decision making processes that are not open (e.g. because of confidentiality reasons) or where little time is available (e.g. in annual budget allocations). Another process needs to be developed for these types of decisions. An example is the Dutch ‘E-test’ that was developed to assist the design of new legislation.

3. The Dutch ‘E-test’

Legislation is intended to have beneficial effects, but there are often unintended (side) effects. Consequently, legislation can unintentionally undermine other main objectives of government policy. In the eighties the Dutch government became aware of this problem and started to review its legislative processes. Initially, this consisted mainly of a fixed entry on a form for the Council of Ministers, stating that the effects of the legislation in question had been investigated. This, however, did not include environmental effects. Furthermore, questions were formulated in a highly abstract manner. This quickly became an automatic procedure with no real content or influence on planning. Ministries often dismissed questions with stock replies such as ‘the probable effects of this legislation are acceptable and, in view of its importance, the costs involved are justified’. It was clear that this was not the proper way to improve the quality of legislation.

Therefore, in 1994 the Dutch government set a new course for the assessment of legislation. In that year the ‘Market Operation, Deregulation and Legislative Quality’ Project (in Dutch: MDW Project) was presented. This plan includes a new approach to the environmental assessment of new legislation (the ‘E-test’) and linked to an assessment of its enforceability and feasibility and its effects on business.

Elements of the new approach

The main challenge for the government was to develop a system that stimulates rather than forces departments to make good assessments of their legislation. Key objectives of the system, therefore, were threefold: it should be client-orientated, selective and it should be easy to integrate in the existing process for developing new legislation.

The first objective was achieved by creating a helpdesk (the ‘Joint Support Centre for Draft Legislation’) and by coordinating the environmental assessment with other required assessments. The second objective was achieved by keeping the number of questions to be addressed in the assessment as small as possible and by being selective in the legislation for which an assessment is needed. The third objective was achieved by making sure that the characteristics of the E-test procedure matched the characteristics of the process by which legislation is drafted in the Netherlands: an informal, internal process, with no mandatory direct public participation and based on trust and cooperation between civil servants. The E-test has these same features: a simple, flexible procedure, with no public participation or independent external review and in which representatives of several departments work together (see Box 2). Below the elements of the new approach are described in more detail.

6 See, for example, Verheem (1992); Ten Holder & Verheem (1996); Sadler & Verheem (1996)

Box 2	E-test procedure
screening/ scoping phase	<p>an interdepartmental working group selects and lists proposals for which an E-test should be carried out and the environmental questions to be answered.</p> <p>∇</p> <p>Council of Ministers adopts the list of selected legislation</p> <p>∇</p>
documentation phase	<p>selected questions are addressed by the responsible ministry, supported by the helpdesk; results of the E-test are documented in the Explanatory Note^{1]} to the draft legislation</p> <p>∇</p>
reviewing phase	<p>Joint Support Centre, in cooperation with the Ministry of Justice, reviews the quality of the information in the Explanatory Note and decides whether the draft can be sent to the Council of Ministers^{1]}</p>

Client orientated

- Helpdesk: set up by the environmental and economic ministries, the Joint Support Centre supplies information and offers assistance in the collection of environmental data. It was also able to cofinance necessary research. In order to be accepted as a 'neutral' body, the Joint Support Centre does not interfere with the contents of draft legislation, but concentrates on the quality of environmental information only. This makes it easier for ministries to ask the Joint Support Centre for assistance.
- Coordination: various ministries no longer separately ask for an overview of the consequences of a piece of legislation, but have now created a single contact point. By coordinating the three tests required^{1]}, confusion and unnecessary double work by the proponent of draft legislation is avoided.

Selective

- The questions to be answered in the E-test are limited to the essential ones only (see Box 3). These questions are formulated in such a way that ministries with only limited expertise on environmental matters should be able to determine whether the draft legislation would make things better or worse for the environment.
- Only legislation with substantial (side) effects should be assessed on its environmental impacts (screening) and only the relevant questions should be answered (scoping). Screening and scoping are performed by an interdepartmental working group representing all ministries. Practice so far shows that only 5% of all draft legislation requires an E-test.

Box 3	E-test questions
	<p>What are the consequences of the draft legislation:</p> <ol style="list-style-type: none"> 1) for energy consumption and mobility? 2) for the consumption and stocks of raw materials? 3) for waste streams and atmospheric, soil and surface water emissions? 4) for use of available physical space?

Quality safeguard

An important stage in the procedure is the quality review by the Ministry of Justice and the Joint Support Centre. The E-test introduces a new element in this review: the Joint Support Centre, in cooperation with the Ministry of Justice, judges whether the Explanatory Note contains sufficient environmental information to enable the Council of Ministers to take a well-considered decision. If a proponent does not adequately answer the E-test questions, then further handling of the proposal by the Council of Ministers can be opposed. This would create a highly undesirable delay at a critical stage of the decision making process. Because of this, the quality review

7 In case of an Act called the 'Memorandum'.

8 Following this last step of the E-test, the Council of Ministers finalises the draft legislation, taking into account the results of the E-test, and sends the draft to Parliament. The final decision on the proposed legislation is taken after discussion in Parliament.

9 The environmental, the business and the enforceability/feasibility test.

serves as an important safeguard for the quality of environmental information. Box 4 gives a short example on the role the E-test has played in practice.

Box 4

A practical example of the E-test

The Ministry of Housing, Spatial Planning and the Environment aims at a further reduction of NO_x emissions of (new) small industrial heaters. For this purpose an Administrative Order on Combustion Plants is to be drawn up. The E-test should provide information on the effects on the use of raw materials and the emissions to the air. The assessment was carried out in close cooperation with the Joint Support Centre.

During the development of the Administrative Order a discussion developed between the environment and economic affairs ministries on whether industry would be able to cope with the proposed maximum NO_x emission levels and what the effects of NO_x reduction measures on CO₂ emissions would be. The Support Centre played an intermediating role in this discussion. It also financed research on the matter by an independent institute. This research pointed out that in certain situations the intended measures might cause an increase in CO₂ emissions. The Explanatory Note to the draft Administrative Order contained the results of the E-test (quantitative information on the expected effect on NO_x emissions and qualitative information on resulting CO₂ emissions) as an input for further discussion in Cabinet.

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Background paper for the 1998 Japan Workshop on SEA
Annex: SEIA Case Studies

Case 1 The National Structure Plan on Electricity Supply

The National Structure Plan on Electricity Supply is drawn up by the Government. It contains decisions on the fuels to be used for the coming 20 years and the selection of sites for power stations, wind farms and transportation facilities. The plan is revised every five to ten years.

For fuel use the alternatives '50% natural gas, 50% coal' and '33% natural gas, 33% coal, 33% oil-gasification' were taken into account, and the impacts of these alternatives were described. The emissions were calculated as the sum of all individual plants for which data was available.

The following criteria were used to assess the environmental impact of alternatives:

- emissions: SO₂, NO_x and CO₂, chloride, fluoride, barium, selenium, mercury and dust
- waste and residues
- radiation (in waste and emissions)

As a result of the EIS (Environmental Impact Statement), it was suggested that the amount of coal burnt had to be reduced and restricted to the use of modern technology for coal gasification.

In the EIS, the proposed sites and transportation facilities in the draft Structure Plan were checked against the objectives of the Nature Policy Plan, and the expected impacts on cooling-water capacity, water quality, noise disturbance and safety. The potential 24 power station sites were assessed for sustainability on the basis of the following environmental criteria:

- thermal effects (because of the use of cooling water)
- other effects on surface water quality (e.g. toxic substances in the waste water)
- effects of fuel transport to and from the location
- spatial impacts, e.g. landscape and habitat impacts
- noise-safety-radiation

Assessments were made on the basis of existing data in the literature. The SEA was judged to be useful by the lead authority and had a major impact on the structure plan finally adopted.

Case 2 The National Plan on Drinking and Industrial Water

The main issues of this SEA were to determine effects of alternative national water production policies, and to compare alternative method for water production on environmental and other aspects.

Effects on Nature of Alternative Water Production Policies

As a first step, several options for future national water production policy were developed: increasing versus decreasing total drinking water production or industrial use of water; increasing versus decreasing the use of groundwater.

In a second step, appropriate GIS and national hydrological models (both for groundwater and surface water) were developed. With the help of these models, and prognoses of the future water production capacities needed in each of the alternative policy options, the effect of the alternatives on surface and groundwater in the Netherlands was determined.

A third step consisted of the development of a method to determine existing natural values of moist and wet ecosystems in the Netherlands (the DEMNAT model). Main features of this method are the identification of homogenous ecosystems (so called 'ecotope groups') and the estimation of existing natural value of these ecosystems per km² on the basis of presence of ecotope groups and national and international rarity of these groups.

Step four consisted of the determination of changes in existing natural values, to be expected because of the effect of policy alternatives on surface and groundwater.

The above described method showed that ending all drinking water production would lead to a 10% increase in natural value, while ending all industrial use of water leads to a 2% increase. Furthermore, it showed that ending the use of shallow groundwater is most effective to increase natural value, followed by deep groundwater, infiltrated river water and industrial use.

Comparison of Production Methods

In addition to alternative policies, the SEA compared several methods to produce drinking water. Comparison took place on various aspects, including effects on the abiotic environment (use of resources, waste production, energy), nature, landscape, public health and use of space.

To do this, the following assessment method was used:

- for each aspect several *subcriteric* were defined
- a *mix* of quantitative and qualitative information was used, on the basis of which each of the subcriteria was scored
- scores on subcriteria were translated into one score, using a mix of methods (normalisation)
- sensitivity analyses were carried out
- per aspect methods were ranked from 'best' to 'worst'.

On the basis of the ranking, final conclusions were drawn using a multi-criteria analysis, weighing from different perspectives. The perspectives chosen were: health, abiotic environment, nature, landscape and economy. It showed that from all perspectives the use of deep groundwater, infiltrated river water and deep infiltration scored best from an environmental viewpoint.

The Dutch EIA Commission reviewed the SEA as of good quality, in particular the development of the DEMNAT model. However, the lead authority was advised to be careful in applying the results of the assessment at the regional level. The production techniques that score best in the SEA could score different in specific regions, in particular because of the specific hydrological situation (water production does not affect nature in all regions) and/or developments in related sectors in a region, such as agriculture.

The competent authority concluded that the SEA influenced the decision-making process and that the methods developed as part of the SEA both stimulated and structured project-EIA's in the water sector.

Case 3 The First National Ten Year Programme on Waste Management

Every three years the Waste Management Council (WMC) draws up a Ten Year Programme on Waste Management (TYP) to plan the technology and capacity needed for the final treatment of a number of non-toxic waste flows. The prevention and re-use of waste is outside the scope of the TYP. The WMC is a joint agency of the Environment Ministry, the Association of Provincial Authorities, and the Association of Dutch Municipalities. During the preparation of its first programme for the period 1993-2003, the WMC decided to carry out a strategic EIA on a voluntary basis (since this is not required under the Dutch EIA regulations).

Three alternatives for the current policy were studied for final consideration:

- 1 the existing situation remains more or less unchanged
- 2 the main objective is to pre-separate as much as possible, after which each type of remaining waste is processed according to its type
- 3 also based on maximum pre-separation, but there will be no expansion of incineration capacity; the residual fractions will be landfilled.

The environmental impacts of the alternatives were described using a number of indicators representing certain environmental issues, based on those discussed in the Dutch National Environmental Policy Plan (NEPP). The EIA discusses how each policy alternative affects the chosen indicators.

It proved to be possible to compare the different alternatives by comparing indicators. The EIA pointed out what were the most favourable ways of processing waste from an environmental point of view. The EIA suggested that pre-separation and digestion was the best long-term approach. However, difficulties exist in the short-term as there is insufficient processing capacity and technical experience with large-scale digestion plants.

Regarding the quality of the EIA, the Dutch Commission for EIA concluded that, in general, the EIA gives a comprehensive, though rough, view of the potential environmental impacts of the alternatives described. The method chosen (the use of indicators for a number of environmental issues) was judged to be both clear and 'refreshing'. The EIA was also criticised as no weighting was made to reflect the relative importance of impacts in the light of general environmental problems in the Netherlands. This may lead to misguided conclusions. For example, the different scores allotted to alternatives for the 'climatic change' indicator are totally irrelevant in the light of total CO₂ and CH₄ production in the Netherlands. On the other hand, the differences in dioxin production are very relevant, since waste incineration is one of the main contributors to this form of pollution.

Case 4 The Second National Ten Year Programme on Waste Management

To answer some of the criticisms of the impact prediction methodology used in the SEA for the first TYP the WMC decided to use a newly-developed method for impact prediction in the SEA for the second TYP covering the period 1995-2005: life cycle analysis (LCA).

The EIS and draft TYP 95 were published in June 1995. Scenarios for the final quantities of waste to be processed were brought up to date, alternative techniques for final processing were compared, as were policy alternatives for planning the final processing. The environmental impacts of four policy alternatives were compared. These were:

- 1 continuing the policy of the first TYP
- 2 using new integrated techniques
- 3 more emphasis on the use of biological techniques
- 4 more emphasis on selective separation techniques

The lead authority concluded that the results of the LCA had significantly contributed to the development of the Ten Year Programme. In particular, it had become very clear that in deciding among alternative waste policy options the 'indirect' effects of options, i.e. the avoided emissions in primary production of iron, aluminium and electricity because of re-use of waste and production of electricity by waste incineration, are more important (often decisive) than the direct emissions (e.g. of waste treatment processes). The policy alternative with emphasis on selective separation techniques, leading to a maximum of reuse, was therefore concluded to be preferable.

The Dutch Commission for EIA underlined the value of the assessment as it gave a first, broad insight into the environmental impacts of final waste processing at the national level. However, it was also concluded that the uncertainties in the final results (partly due to using LCA, which is an instrument still under development) had not been adequately identified and discussed in the TYP. On the basis of this advice, the lead authority decided that uncertainties should be dealt with at later stages of the planning process (at the regional level), as well as in the SEA for the next TYP.