



SEA and EIA in airport planning and development

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The Dutch air traffic and airport network is busy and growing steadily, mainly at the country's main airport Schiphol and, to a lesser extent, the airports of Rotterdam-The Hague and Eindhoven. The growth potential of air traffic in the Netherlands depends, among other things, on the layout of the airport infrastructure and on its connectedness to economic centres. Air traffic growth may compete with targets in other economic sectors, such as housing programmes or the construction of wind farms. It may also be hampered by socio-environmental concerns, such as aircraft noise nuisance or depreciation of property. Enlarging airport capacity will depend on the management of these impacts. How do the Dutch authorities manage these impacts while at the same time managing growth, and what role does environmental assessment play in the national debate on the development of air traffic and airports? This paper argues that addressing environmental effects of airports in strategic level decision-making has advantages over addressing them on a case-by-case basis.

Management of growth: national versus regional level

In the Netherlands, the national government is responsible for assessing the country's accessibility via air traffic (national and international) and for setting limits for environmental, spatial and social impacts. It is also responsible for the zoning and licensing of military airports and large civil airports. The provinces are responsible for the heliports and small airfields for light aircraft.¹ As the environmental burdens, such as noise and air pollution, mainly affect people living in the vicinity of larger airports, this article focuses on the national government's approach and duties in general and specifically its approach concerning two of these larger airports: Eindhoven and Lelystad.

At the national level the government aims at a better separation of civil from military aviation, of Schiphol-bound traffic from traffic to other national airports, and of commercial from general aviation. The aim is to achieve safer and shorter air routes, an increased capacity and lower CO₂ emissions. Keywords in the government's outlook on airport development are optimisation of the network quality, the development of a competitive system and safe operations.²

¹ The Netherlands has 11 military and 6 large national commercial airports, 100 offshore and 70 onshore heliports, 7 small commercial airports and 75 airfields for light aircraft.

² The outlook has been presented in two policy documents, one focusing on airport development (*Luchtvaartnota: concurrerende en duurzame luchtvaart voor een sterke economie*. The Ministry of Transport, Public Works and Water Management and the Ministry of Housing, Spatial Planning and the Environment. April 2009) and one on the national and European airspace or air route structure (*National airspace vision*. The Ministry of Infrastructure and the Environment and the Ministry of Defence. December 2012).



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At the regional level the government aims to achieve a balance between the advantages and disadvantages. To do so, it uses a case-by-case approach to adjust airport and regional developments to the magnitude of environmental impacts and to develop measures to reduce these impacts.

Between 2012 and 2014 the NCEA advised on the Terms of Reference and reviews of the environmental impact assessment (EIA) reports for expansion of Eindhoven and Lelystad airports.

The case-by-case approach: Eindhoven and Lelystad

The government has decided that there should be no further increase in the number of people experiencing aircraft noise nuisance from Schiphol. This is to be achieved by redistributing take-offs and landings over runways, modifying flight procedures and accommodating part of the growth of Schiphol in the airports of Lelystad and Eindhoven. These airports are surrounded by fewer and smaller residential areas than is the case for Schiphol. The consequences of the additional flights to both airports, a total of 70,000, were studied in the EIAs .

Eindhoven airport

Eindhoven airport is a military airport which accommodates some commercial flights: in 2013 the number of civil aircraft taking off and landing was about 25,000. A major source of contention was the estimated number of people subjected to annoyance from aircraft noise, so in its advisory reports for the EIA the NCEA emphasised the need for reliable prognoses. It also recommended using the same data as a guide when deciding on new developments in the vicinity of the airport.

Lelystad airport

Lelystad airport has a runway of 1250 metres and is mainly used by light aircraft and helicopters. In 2013 there were about 90,000 take-offs and landings of light aircraft and 20,000 take-offs and landings of helicopters. Handling commercial flights would require extension of the runway and construction of a terminal and car park. The EIA for Lelystad airport identified potential conflicts with a variety of regional interests, such as housing programmes, nature conservation and sites for wind farms. In addition, it discussed potential safety problems arising from interference with flight paths of Schiphol airport. Though overall of good quality, the EIA did not fully address the concerns of the people living near the airport. In general they could agree with the description of the negative impacts (the local distribution of environmental burdens) but they seriously contested the basis for the advantages. They questioned aspects such as the estimates of growth, the commercial feasibility and the readiness of carriers to leave Schiphol for Lelystad (and thus the demand for a new commercial airport).

Similarities

Both projects had in common the fact that much preparatory work such as the above-mentioned redistribution of flights and selection of flight paths had been finished and decided upon before the formal EIA procedure started. As a result, these aspects were not publicly assessed and discussed. In both cases the public also complained about gaps in the evaluation programme and in its planning. In its advisory reports, the NCEA therefore stressed the importance of transparency in the overall process and recommended checking whether environmental impacts played a part in the prior decisions and, if so, how.

Public opposition

The prolonged opposition of the general public (see text box) to expansion of these airports and others is primarily driven by marked changes in airport use. For Lelystad, for example, the change is the introduction of commercial carriers; for Eindhoven, one of the contentious changes is the introduction of night flights. Another important driving force is distrust of government interventions, fostered by:

- the perception that when there is a conflict of interest, priority seems to be given to air traffic growth;
- the perception that only part of the decision-making procedure is open to public debate and is covered by the EIA procedure;
- the uncertainty about the characteristics and limits of growth;
- the absence of a strategic assessment at national level of the pros and cons of growth, which would lead to clear-cut preconditions for growth.

The question arising from the last bullet point is whether a strategic environmental assessment (SEA) could have made a difference. An SEA would at least have provided evidence to support the choices made earlier by the government and would have exposed them for public debate and influence.

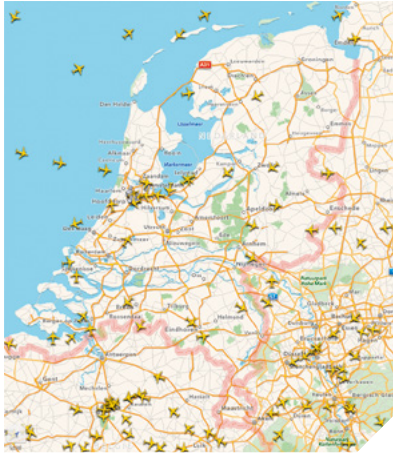
Prolonged decision-making procedures

The decision-making on airport developments entails prolonged judicial procedures whose complexity is proportionate to the airport's size and growth rate and its range of influence.

Some examples:

- In June 1987 the first EIA on the extension of the runway of Groningen-Eelde Airport was published. It took until 2013 and several new or updated EIAs before the project was completed.
- For Lelystad Airport the discussion on extension of the runway started in 2002. Currently, decision-making is in the final stage and the operator envisages the first commercial flights with large aircraft will be in 2018.
- Eindhoven Airport is used for both military and civil air traffic. In 2003 it was decided to determine separate limits to both activities in terms of use and impacts. In 2014 the decision-making process on Eindhoven Airport was completed.
- In 2003 the Ministry of Defence decided to close down Twente Airport. National and local authorities then tried to transform it into a civil airport, but in 2014 they eventually abandoned their efforts.

In all cases the skilful actions of NGOs or people living nearby put a spoke in the wheel of these projects, causing them to be delayed or abandoned. Often, the delays were related to flaws in the decision-making process.



Scheduled air traffic above the Netherlands at 4:00 PM on December 17th 2014

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SEA for air traffic growth: a lost opportunity?

What are the overall environmental consequences of various growth scenarios? Can impacts be mitigated and, if so, at what cost? Which conflicts of interest can be expected? Where and why? And how should these conflicts affect air traffic distribution and the volume of growth? Preparing an SEA for air traffic growth in the Netherlands would have provided an opportunity to methodically present the alternatives and impacts of envisaged developments, as well as possible countermeasures and their effectiveness and feasibility. Does the fact that there was no SEA mean that none of these aspects have been addressed or taken into account in the build-up to the EIAs for the individual airports? The answer is no. In its outlook on airport development the government touches upon several aspects, but there has never been either a systematic analysis or a review of these. A few examples illustrate the potential contribution of an SEA on this strategic level.

Overall picture of growth and its impacts

An important starting point for the management of the national demand for aviation is an overall picture of 1) the actual demand and impacts, 2) possible growth patterns, 3) the expansion of the environmental impacts of airports brought about by these patterns and 4) key factors and uncertainties in these estimates. Currently, this picture is flawed. Without such an overall picture it is impossible to properly balance growth and impacts or to underpin the efficacy of countermeasures.

Realistic gains resulting from innovation and technology

The government relies heavily on innovative technology (economical, clean and quiet planes) and optimisation of flight procedures (flight paths and approach procedures) to limit the environmental burdens caused by airports. Its outlook on airport development⁵ presents trends in the noise production or fuel consumption of planes as “opportunities”, but does not work out scenarios (and conditions) for their introduction. One important factor here is the rate at which airlines replace old aircraft by new. Another is the measures taken by airports to exclude noisy aircraft, such as a land tax based on noise production. An analysis of various scenarios would provide insight into the realistic and maximal gains that can be expected from new technologies. It should also reveal whether or not the progressive implementation of these developments might outstrip aviation growth.

Overall consequences of optimising flight procedures

It is known that the strict prescription of flight paths for departure and landing and instructions on the use of the engines and flaps during landing affect the spread and level of annoyance. The outlook on airport development again draws attention to these opportunities, without estimating their likely potential benefits or describing the conditions for their introduction. One such condition is the absence of possible interference between planes taking off and landing from neighbouring airports. In fact, the further growth of the airports of Schiphol, Lelystad and Rotterdam-The Hague will increase the risk of such interference. For Rotterdam-The Hague it will increase the need to deviate from prescribed flight paths and for Lelystad it will mean prescribing suboptimal flight

paths. Again, the absence of any realistic estimate of the efficacy of these measures implies that the optimism in the government's outlook should be questioned.

Environmental impacts of redistribution of flights

The environmental impacts of transferring 70,000 take-offs and landings from Schiphol to other airports were studied by Decisio.³ One of their findings was that transferring to Eindhoven and especially to Lelystad would reduce the number of people annoyed by aircraft noise. The government's outlook on airport development refers to this study, to underpin its aims for Schiphol, Lelystad and Eindhoven. Reference is made to this study when presenting the decision to transfer flights from Schiphol to Lelystad and Eindhoven. However, neither the outlook nor the study by Decisio discuss the important consequences (environmental and otherwise) of such a transfer. An example: the growth of scheduled commercial aviation at Eindhoven and Lelystad airports will replace the currently unscheduled traffic of small aircraft, the so-called "general" aviation. An important part of this traffic will disappear or move to other airports.

In conclusion

It is worth repeating that this overview does not imply that national impacts of air traffic growth have not been addressed at all. But most studies have had a limited scope, such as the characteristics of general aviation or the process of innovation. In some cases, the studies are known only to insiders. The outlook on airport development presents major choices and general conditions for the growth of air traffic. An integrated review of the impacts of all developments presented in the outlook would have made it possible to evaluate the feasibility of the government's ambition to create a lasting system, might support the justification of the government's choices and could have simplified the discussions on the relationship between individual airports and the people who are their neighbours. Finally, the outlook on airport development sets the framework for projects listed in the Annexes of Directive 92/43/EEC, as it establishes the goals and ambitions for the construction of extensions to airports or airfields. Consequently it may be considered a plan or programme as defined in SEA Directive 2001/42/EC, which implies that an SEA was actually mandatory.

“An integrated review of the impacts of all developments presented in the outlook would have made it possible to evaluate the feasibility of the government's ambition.”

³ Decisio BV. Follow up on Aldersadvies: Onderzoek naar de kosteneffectiviteit van verschillende spreidingsalternatieven. Amsterdam, January 2009.

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