

SEA Case Study: 2002 Waste Management Plan of the Netherlands

by Rob Verheem

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I would like to discuss with you an SEA case study in the Netherlands. This was the SEA we carried out in the preparation of our most recent national Waste Management Plan. This was the 2002 Waste Management Plan.

Now, the objective of this plan--and there were many objectives, but this is the one that I would like to discuss with you--was to set so-called minimum standards for waste processing in the Netherlands.

Now, what do we mean by minimum standards for waste processing? A minimum standard is the minimum environmental performance of a waste-processing technique before it becomes eligible for a license. The SEA was looking at waste streams and was looking at waste-processing techniques for these 26 waste streams.

The purpose of this SEA was to look at the environmental performance and to compare them against each other in such a way that then the decisionmakers could make up their mind and say, okay, this should be the minimum standard.

Now, clearly, this plan attracted a lot of interest from civil society. For example, the business community was very interested because waste processing in the Netherlands is highly privatized, and the choice of a minimum standard really would actually tell business what they could do and what they couldn't do. And, of course, that meant how much money they could make or couldn't make. But, also, local authorities and environmental NGOs were very interested in the results of this plan and this SEA, because everybody knows that waste-processing facilities may have a very negative impact on the people living nearby. So this was a plan and an SEA that attracted a lot of interest from society.

Now, we know the purpose, and, of course, we also know the alternatives because these were the alternative techniques for these 26 waste streams. I'm not going to mention all of them.

The methodology used to compare these alternatives was a very sophisticated methodology: life-cycle analysis. This methodology was chosen because it has many advantages. The first advantage is that this is a standardized technique, so if you use it for the plan and you use it for the new plan in the new plan, you can compare all the plans. You can also compare the life-

cycle analysis of the plan plus the life-cycle analysis if you would use that methodology for project EIAs later on down the line.

Also, this is a technique that makes use of computer models, so you put the input data in, and then you can calculate the environmental impacts of waste processing by means of computer.

I think one of the most important advantages of life-cycle analysis is that it doesn't just look at the emissions of a specific waste-processing facility, but it looks at all the impacts--emissions, use of space, use of resources--from the production of a waste right until the final disposal of final deposits. And, also--and, again, I think this is a very important advantage--it doesn't just look at negative effects of waste processing, but it also looks at the positive effects, for example, the production of electricity out of waste processing or the fact that you can re-use certain metals and waste. So it really looks at all the impacts over the entire life span of a waste stream.

But there is also a very important disadvantage that should be very clearly kept in mind when thinking about life-cycle analysis, and that is that this methodology needs a huge amount of data, so you should have these data available; otherwise, you can't use this methodology.

But in the Netherlands, we have a central waste management body, and one of its purposes is to keep track of waste processing, to keep track of all the emissions and the environmental performances of these techniques. So in the Netherlands, we have these data and, therefore, we can use this methodology.

In life-cycle analysis--as I told you, it's a standardized technique--you always look at the same set of environmental issues, basically seven of them: effect on climate change; effect on the acidification of water or land; eutrophication of water or land; toxicity for people, for ecosystems; you look at use of resources, use of space, and, finally, you look at the effect on biodiversity.

With the use of the computer model, you then have scores on each of these seven issues, or themes, I should say, and then you can compare the alternative processing techniques for a waste stream on the basis of these results. But how do you do that comparison? Well, one way of doing it is by assuming that the effect that a waste-processing technique has on each of these themes, that all scores on the themes are equally important. But, of course, at the political level, it might be quite different.

For example, at the time when this SEA was carried out, the Kyoto Protocol was just signed; and, therefore, there was a high political interest on the effect of actions in the Netherlands on climate change. So one way of comparing alternatives is assuming that the effect on climate change is the most important while the effects on the other themes are less important. So you give more weight to climate change. So weighting was a methodology used in this case to compare alternatives.

Four different weight sets were used. The first weight set was, as I told you, based on the assumption that all effects on the seven themes are equally important to decisionmakers or the public so they all have the same weight.

A second weight set was based on the assumption that politics has certain objectives. For example, politics may have an objective on climatic change. It may have an effect on toxicity for human beings.

Now, waste processing has a huge effect on toxicity for human beings, but only a very minor effect on climatic change. So if you look at the seven environmental themes, some of these themes will be highly influenced by waste processing, and some of these themes will not be influenced at all.

In this second weight set, the most weight was given to those themes that would be highly influenced by waste processing, and the other themes were given less weight.

A third weight set used in comparing alternatives was, as I said, related to the Kyoto Protocol. Most weight was given to the scores on climatic change; less weight was given on the other six themes.

And, finally, a weight set was adopted that was based on the main concern of local authorities and the public, which was toxicity of the emissions to them. So in the fourth weight set, most weight was given to the toxicity theme and less weight to the rest.

So this is a very clear example of how you can use weighting as a modern methodology to compare alternatives and to see how the end results change if you give more weight to one issue versus another issue.

In this case study, I would like to take a little bit more time to look at the methodology used for public participation because this SEA case study is a clear example of an SEA in which public participation was regarded as very, very important. Because there was so much interest from society, it was felt important to try to involve public groups, local authorities, and NGOs into this SEA as much as possible. Let's take a look at the methodology that they used.

The first group was the major national NGOs--business communities or environmental NGOs or other NGOs--and for these NGOs, roundtables were organized in several stages of the SEA, but specifically the early stage. And with these NGOs, then, it was discussed what were the alternatives that should be assessed and what were the impacts that were most important to assess.

A selection of these national NGOs and community groups then was asked to perform what you could call a continuous sounding board. They were consulted and asked for advice throughout the entire planning and SEA process.

Local NGOs and local governments were also given special treatment. They were actively invited, directly and actively invited, to send in their comments, both in the early stage of planning an SEA, the scoping stage, as well as in later stages, the review stage.

Finally, individual citizens had the right to send in comments, so this was a more passive methodology for public participation. They could send in their comments if they wished to do so to scoping and reviewing.

Now, was it effective, this methodology? First, a summary. The methodology used was discussion groups in an early stage of the SEA planning process, sounding boards throughout the process, technical expert workshops also throughout the process. There were information meetings for the general public, and there was a very active use of mass media and a specific dedicated information bulletin to inform the general public. So quite a range of different techniques and methodologies for public participation.

This, however, did have a very positive result. For example, there was a very high response throughout the planning process by the national NGOs, and most of their comments focused on the alternatives that should be examined. And this indeed led to an increased focus in the plan and the SEA on a relatively new and innovative theme in waste processing, which is pre-separation of waste. Can you actually separate a waste stream into two, three, or four substreams that you then perhaps could process a lot more effectively than you can process the integrated waste stream? And because of the participation of these NGOs, a lot more attention was given to the plan and the SEA to this issue.

There was also a very high response by local groups, the local authorities, the local NGOs. They did not so much focus on alternatives, but they really focused on local issues: toxicity, use of space, issues that were close to their heart. So this information was not so much useful for comparison of alternatives, but it was very useful in identifying the environmental themes that were important to the local people and, therefore, should be covered by the SEA and the plan.

And, finally, there was a very low response by private citizens. Clearly, this was partly due because a very passive methodology was used to involve private citizens. On the other hand, it's also a very clear sign that this kind of national, more abstract plans attract less information by individual citizens.

Now, what are the main lessons that we learned in this SEA? I would like to mention four of them.

First of all, this methodology, life-cycle analysis, can you use this in SEA? Was it useful in this case? Well, I already told you you should only use LCA if you have the data available, and you need a lot of them. But in this case, yes, it was regarded by government as a very useful methodology; however, not for all waste streams. Looking at it in hindsight, a number of waste streams, the alternative processing techniques could have been compared qualitatively because it was quite clear which one scored better than the other one. So LCA is useful, but you don't need it in all cases.

Was the very extensive public participation useful? Yes, it definitely was, and government mentions two main advantages to them. First of all, this plan was very broadly accepted, but also, because environmental and business NGOs were so heavily involved, they apply a more

holistic approach to waste processing and the environment. They didn't so much focus on their self-interest. They looked to the bigger picture, and this was definitely a big advantage.

One lesson learned was also that the public involvement in a way took place too late. The public came in at a time that alternatives were going to be discussed. However, before you even get to that stage, if you apply the sort of methodology that was applied in this SEA, a lot of assumptions are made. You assume that the waste-processing technique will have certain emissions. You assume that a waste-processing technique is feasible, yes or not. All sorts of assumptions.

The end result of an SEA will only be believed by stakeholders if they were involved in stating these assumptions. In this case, they were not involved, which created lots of discussion. They should have been involved in that. It would have made the end result of the SEA a lot more credible.

And, finally--and, again, this is a very important positive effect of an SEA--this SEA will definitely make EIAs for concrete waste-processing projects a lot easier to do--first of all because the methodology that you can use to look at environmental impacts of waste processing already has been developed, its life-cycle analysis; and secondly, because the main alternatives for processing for each of these 26 waste streams has already been done in this SEA. So the only thing you have to do in the EIA is show how your proposal compares to the alternatives comparison in the SEA.