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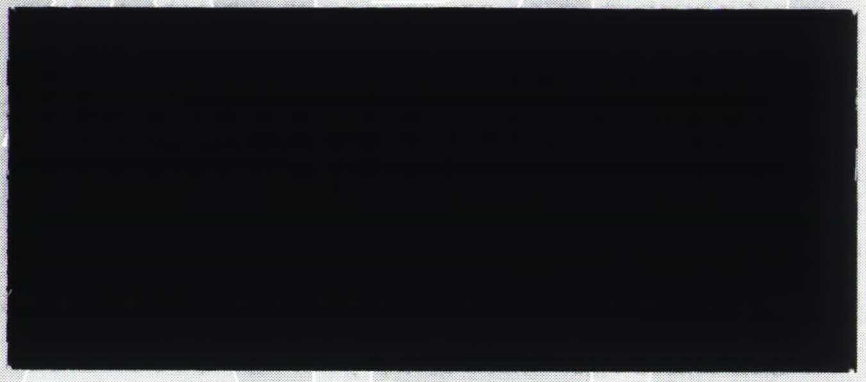

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PAPER

Harmonization of environmental rules in the Single Market: The case of the Scheldt

Dr. Jan van der Straaten

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Dr. Jan van der straaten
WORC, Tilburg University

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1. Introduction

With the help of economic theory it can be demonstrated that an expansion of a market will cause an increase in economic welfare. In a bigger market, there are more possibilities for economies of scale, which may result in lower costs. Furthermore, in an enlarged market producers have better possibilities to specialize in certain production processes which have a comparative advantage.

With respect to the European Common Market these kinds of arguments are often used. When harmonization of the rules is at stake, the arguments of lower expenditures for national states are also often mentioned, because there is a decreased necessity of control at the boundaries of national states.

Based upon these issues, the European Commission has asked a special committee under the chairmanship of Paolo Cecchini to estimate the costs of the as yet not completed Common Market. In their report the Cecchini-group has calculated the economic advantages of the abolition of especially, the non-tariff barriers between the member states of the European Community. Table 1 contains the most important results from the Cecchini report.

Table 1. The most important economic results from the Cecchini-report (Cecchini e.a., page 151, 183, 1988)

Growth of production (in % of GNP)	4,5
Decrease of price level of consumption (in %)	6,1
Decrease of governmental deficit (in % of GNP)	2,2
Increase of employment in mln jobs	1,8
Decrease of unemployment (in % joints)	1,5

When the decrease of the government deficits (2,2% of GNP) are used for tax reductions and governmental investments, the production will increase by 7,5% in stead of 4,5 as mentioned in Table 1. These optimistic calculations of the Cecchini-committee have been criticized (Centre for Business Strategy, 1989 and Central Planning Bureau, 1989). Generally speaking, the picture that the Commission presents is considered to be too optimistic. Insufficient attention has been given to institutional and cultural barriers in Europe. Therefore, the calculations should be seen as a possibility rather than as a real growth of the European economy. This criticism, however, does not put anything in the way of the idea that competition on the European Market will give a substantial increase of production.

In the Cecchini-report no attention is given to the effect of a rise in production to environmental disruption. An increase of production will also create new scarcity if we want to incorporate the environment into economic welfare (see for instance Mishan, 1967; and Dietz and Van der Straaten, 1988). Fresh air, the availability of fossil fuels and minerals will become more scarce as a result of the increase of production. In many cases this increased scarcity is not reflected in higher market prices; so the increased scarcity of environmental goods will not be registered by traditional economic parameters. But the increase of production caused by the completion of the Common Market will lead to increasing environmental deterioration and increased scarcity of environmental goods.

On the contrary, lack of international coordination is often mentioned as an important cause of the frustration in the debate about environmental disruption. As long as countries are able to poison rivers and oceans the environmental problem is "exported" to other countries. Completion of the European Market could, theoretically, offer an opportunity to abate international environmental disruption. It is difficult, however, to imagine that this development will be realized, as in reports like the Cecchini-report, integration of environmental protection is not at stake.

Of course it is not possible to evaluate the influence of the completion of the European Market for all environmental problems. Therefore we restrict ourselves to one environmental problem, which may be seen as an example of the difficulties which arise when environmental problems are taken into account in a European context.

Two questions are important. The first one is whether the increase of the production, caused by the completion of the Common Market, will increase environmental problems. If this is the case, one may argue that the impact of an increase in production may be a decrease in economic welfare, as the increased scarcity of environmental goods will probably more than compensate

the decrease of scarcity of produced goods. In this way of thinking economic welfare is seen as influenced by the scarcity of produced goods as well as environmental goods.
The second question is where the institutional framework comes into the abatement of international environmental problems. We are of the opinion, that institutional questions are important in this field (Van der Straaten, 1990).
Hodgson (1989) argues that in neo-classical approaches insufficient attention is given to institutional problems. But in his approach the environment is excluded from the socio-economic system. In this paper we will demonstrate that this approach does not give sufficient possibilities to analyze environmental economic problems.

2. The river Scheldt

In this paper we take the river Scheldt as an example. It originates in the extreme northern part of France and after flowing through Belgium, the river enters the Netherlands north of Antwerp. In Belgium the river is heavily polluted, so the water quality is bad when it reaches the Netherlands. For a long period the Netherlands has been carrying on negotiations with Belgian authorities about improving the quality of the water. The results, however, are disappointing.
The Dutch part of the Scheldt is of great importance to Antwerp, because this is the entrance to its harbour. Upstream of Antwerp the Scheldt soon loses its function of waterway. In the Belgian basin of the Scheldt the river is used for discharging polluting substances. Purification plants are scarce in Belgium. Alongside the river, in the neighbourhood of Antwerp, are salt marshes, most of them protected as nature reserves. In the Netherlands the river Scheldt is of great importance as a nature reserve. The Easterscheldt was dammed up in the beginning of this century, so this estuary is not longer connected with the Belgian part of the Scheldt. Only the Westerscheldt forms one stream-system with the Belgian Scheldt.
So this part of the stream-system is taken into account here. The salt marshes of the Westerscheldt belong to the most important marshes of Western Europe. Eighty per cent of the salt marshes of the Dutch Delta Area are found alongside the Westerscheldt. For the international qualification of wetland areas the so-called Ramsar-standard is used. This Ramsar-standard is given to an area if 1% of the population of a certain bird species is found during migration periods. The Westerscheldt meets this standard for 20 species. So it may be concluded that the Westerscheldt area, from an international point of view, is an outstanding wetland,

which is of great importance to migrating water birds that fly from Northern Europe to their hibernating areas in the south of Europe. Furthermore, the Westerscheldt is of great importance as a breeding area for several species of terns. Finally, the whole landscape of this estuary is of an outstanding beauty (Kramer, 1989).
In the Netherlands the water is used too for discharging polluting substances, but the level of discharge is much lower than in Belgium.

3. Environmental legislation

3.1. Environmental legislation in Belgium

In Belgium there is a law regarding the quality of the water of 1983 (Koninklijk Besluit van 4 november 1987). This law is a so-called basic law. It implies that only the procedures are formulated, and that with the help of implementing orders the policy will be realized. These implementing orders lay down rules for the quality of water that is used for drinking water, swimming water, fishing water and water for shellfish. These rules apply for certain parts of the surface water. It is allowed to deviate from these norms, if information is given to the national ministry.
The regions of Belgium are responsible for the realization of the policy and for the supervision. Its officials are quantified to issue individual discharge licenses. These licenses should be in accordance with the quality rules mentioned above, when the surface water is within the zones mentioned above. Besides these special quality rules there are general qualifications which should be met by all surface waters. These general qualification is not of importance to the discharger. The qualification rule is a standard for the administration. It implies that the government has - according to this law - the duty to realize this general standard.
At last there are standards in the law about the qualification standards for certain sectors of production. These qualification should be more restrictive than the general qualification standard. The licenses to the dischargers are given by the regional water treatment companies. These companies should formulate the restrictions in a way that the general and sectorial qualifications are met. But when a special water treatment plant operating on a commercial basis is not available, the sectorial qualifications could be set aside. This means that many specialized polluting industries need not meet the sectorial qualifications.
So the realization of the Belgian environmental policy has been delegated to the regions. This

implementation of environmental policy leads to the competition of environmental standards with other regional problems such as unemployment. This is the case with the purification of water by some big industries which are important for regional employment. This situation opens the door to low qualification standards by regional authorities.

This problem is strengthened by the fact that the application for a permit by the polluting industry is not published. The same is true when the permit is given to the industry. So in this situation it is very difficult for the environmental movement to get any insight into the qualification standards which are formulated in the permit. Furthermore, it is impossible to start a procedure against the qualification in the permit, as the procedure is closed to the environmental movement from start to finish.

The watch kept on the standards is in line with these shortcomings. The civil servants of the water treatment companies keep but little check. And when they actually carry out an inspection, the routine procedure is that a message is given to the polluting industry in advance. It should not surprise us, that punishment is not a common policy in Belgium. The highest fine is $8000,-. The averaged fine, however, is $150,- (Wulfraat, Ed. 1989).

3.2. Environmental legislation in the Netherlands

In the Netherlands there is a skeleton law against water pollution of surface water, which was enacted in 1970. The provinces are responsible for the permits given to discharge pollution into surface waters. The national government formulates the qualifications of the water, which should be realized. In doing this, the government gives the possibility to check the effectiveness of the policy.

The permits to discharge polluted substances are given by the provinces, which often delegate this to water treatment companies. Qualification standards in permits should be in accordance with basic standards for the quality of surface water everywhere in the country. Sectoral standards do not exist in the Netherlands, as the quality of the surface water is the starting point and the aim of the policy.

The procedure regarding permits is different from Belgium. The application of the permit is published in the Gazette. It is possible for the environmental movement to interfere in the procedure by objecting to the qualifications in the permit.

In the Netherlands charges are imposed upon discharges of organic material. In recent years this practice has been introduced in Belgium too. But the level in the Netherlands is much higher

than in Belgium. The result is that in the Netherlands many purification plants were built by polluting industries to avoid the payment of higher charges to the provincial authorities. With the money the Dutch government receives from the charges, many local purification plants are built and subsidies are given to polluting industries which have to build expensive purification plants. The supervision is better in the Netherlands than in Belgium, although it is insufficient and high fines are a rarity.

According to the fact that alongside the Westerscheldt there are important nature areas, the law regarding town and country planning is of importance as well. In this respect there are many memoranda dealing with the situation of the Westerscheldt. It is impossible to mention all these publications here. The most important is the Policy Plan Westerscheldt, which was formulated by the national state, the province of Zeeland, the communities and the district water boards alongside the Westerscheldt.

In this plan the authorities try to formulate a coherent policy regarding the Westerscheldt. This is far from easy, as many conflicting functions are found in this area. It deals with shipping, harbour facilities, industries, nature and environment, fishing, recreation and dikes. The development of these functions should be realized by a sound policy of all authorities involved in this area. Without doubt the development of all these functions is an illusion, as some of them are in conflict with other functions.

4. Degradation of nature and environment in the Scheldt-basin

4.1. In Belgium

Many small tributaries belong to the drainage system of the Scheldt, such as the Leie, the Dender, the Zenne, the Dijle and the Nete. All these rivers stream through densely populated areas with many industrial activities. The waste water of 70 percent of the Belgian population living in the drainage system is not purified at all. The effect is a heavily polluted river with insufficient oxygen in the water for living organisms (Rekers, 1989).

It is difficult to get an idea about the pollution which is caused by industries. Especially metallurgical industries are potential dischargers of heavy materials. As we already explained, the permits given to industries are not published in Belgium. Thus it is not possible to get a reliable insight into the discharge of industries by studying official reports. Two ecology groups, one in Belgium and one in the Netherlands, therefore, investigated a number of waste pipes with

which industries discharge their waste water into the river. Besides, the general quality of the water and the deposit of silt has been investigated. This investigation took place during the autumn of 1987. The samples of the water and the silt were tested in laboratories of Dutch and Belgian universities (Wulfraat, 1989).

To get an idea to what extent the water and the silt were polluted criteria for testing were developed. The starting point was found in the Dutch basic quality and the Belgian quality objective as formulated in the Law (Minister Volkshuisvesting, Ruimtelijke Ordening and Milieubeheer 1986, Koninklijk Besluit van 4-11-1987, Koninklijk Besluit van 29-11-1976). A discharge of waste water which contains concentrations more than 25 times higher than the basic quality in the law was defined as polluted. According to this criterion it appears that 15 big industries pollute the river Scheldt. Also, the discharges of the industries were compared with the qualifications which were found in the permits given by the authorities. PCB is a very dangerous material, which is not to be discharged at all. But PCB was found in the waste water of five industries. How bad the quality of the surface water is, can be demonstrated in Table 2.

The water was compared with official Belgian and Dutch quality criteria.

From Table 2 the conclusion may be drawn that the surface water of the Scheldt-basin is of very poor quality, regarding the standards set by national authorities. In most cases these standards are not met for more than one parameter. Especially the oxygen content of the water is often very low. In many rivers fishes cannot live anymore. These difficulties are mainly caused by the low profile which is given in Belgium to the building and especially the exploitation of purification plants. In many cases plants were built a few years ago, but the installations did not work (Wulfraat, 1989).

The ecological quality of the silt is low. This is the case in Belgium as well as in the Netherlands. The quality of the silt is related to the dischargers of polluting substances by industries. Neither in the Netherlands nor in Belgium is there an official standard for the ecological quality of the silt. In many places the mud is dredged to facilitate ships to pass the rivers without troubles. In the Netherlands a standard is relevant for this mud (Ministerie van Verkeer en Waterstaat, nota 88034). This standard has been used to evaluate the quality of the mud. The mud on all locations, however, did not meet the official standard. Especially heavy metals were abundant. According to the Dutch standard the mud could be qualified as chemical waste. On twelve locations the quality of the mud was so bad, that dispersion of the mud can be regarded as dangerous. On seven locations an investigation to clean the area - based on

official standard - was necessary (Wulfraat, 1989).

River	Location	Base quality (NL)	Base quality (B)
Leie	Gent	-	-
Bovenschelde	Gent	-	-
Scheldearm	Gent		-
Dender	D.monde	-	-
	Aalst	-	-
Zenne	Vilvoorde	-	-
	Rumst	-	-
Dijle	Rumst	-	-
Nete	Rumst	-	-
Grote Nete	Lier	-	-
Kleine Nete	Herenthals	-	+
Schelde	Zandvliet	-	-
(Antwerpen)	Kallo	-	-
Kanaal	Gent	-	-
Gent-Terneuzen	Terneuzen	-	-
Westerschelde	Terneuzen	-	-

- does not meet base quality
+ meets base quality

A negative result is given when one or more parameters do not meet the norm.

Table 2. The quality of surface water in the drainage system of the Scheldt.

This situation leads to a degradation of the ecological quality of the nature areas in the Dutch Westerscheldt. Everywhere in the food chain of the estuary the poison is present. Predators such as seals and porpoises are nearly extinct in this area. Many fishes have cancerous tumours and mussels are not fit for human consumption. Breeding birds of the salt marshes, which have to get their food from the estuary, are threatened (Kramer, 1989).

The Westerscheldt is the entrance to the harbour of Antwerp. This waterway should be kept in good condition. Due to the fact that the size of ships has been increased considerably during many years, there is an increased necessity to dredge in the Westerscheldt. This activity has an important influence upon the salt marshes alongside the Dutch Westerscheldt. More and more the Westerscheldt is assuming the character of a canal instead of that of an estuary. The increased rate of flow causes an increased erosion of the salt marshes. In many places the sedimentation of the mud comes to an end, and only sand is deposited. The ecological quality of the nature areas alongside the Westerscheldt is decreasing.

5. The common goods and the conflicting interests

From the description of the ecological quality of the Westerscheldt and an increasing deterioration of it in recent years, one may conclude that uncontrolled discharges in Belgium cause many problems in the Netherlands. The difference between these two countries is not a difference in legal situation regarding the pollution of water. In both countries there exists a reasonable legislation against water pollution. But in Belgium the effect of this legislation is low. One gets the impression that it is not important to maintain the law. It is important to have a law, because then it is possible to qualify for a membership of the European Market.
It is impossible for the European Court of Justice to supervise the maintenance of the law against water pollution in Belgium. The position of the Netherlands is rather weak. For many centuries the harbour of Antwerp has been an object of potential troubles between the two countries. There is a treaty which should guarantee free entrance to the harbour of Antwerp. Thus the Netherlands are obliged to dredge the polluted mud in the Dutch part of the Westerscheldt. In many cases the Dutch government tried to enforce the Belgians to purify the water. The Belgian government always agrees with this statement, but in practice the results were always very low.
There are more difficulties for the Netherlands. The treaty about the free entrance of the harbour of Antwerp made it impossible for the Netherlands to put pressure on Belgium. There are no real possibilities to impede the ships going to Antwerp. A second problem is the regionalization of Belgium. This implies that Antwerp, in the eyes of Belgium, is in the first place a Flemish interest. So it is very difficult to deal with Belgian authorities. Measures against pollution in the Belgian part of the Westerscheldt are seen in Belgium as attempts to attack the competitive position of the harbour of Antwerp and to benefit the position of the harbour of

Rotterdam. So, there is hardly any tendency in Belgium to purify the drainage water.
Besides, the position of the Netherlands is not always so ecologically favourable as many Dutchmen believe. In the Dutch part of the Westerscheldt there has been industrial development too, for which important salt marshes were sacrificed. One does not get the impression that all industries in this area do not pollute the surface water at all. Generally speaking, one may conclude that the opinion of the Dutch authorities is that pollution should stop in the Westerscheldt. But at a symposium, held in 1989 about the future of the Westerscheldt basin, in which Dutch and Flemish authorities were key note speakers, the industrial development of the basin was still the main topic (Maatschappij voor Nijverheid en Handel, Acquisitiegroep Zeeland, 1989).

6. Growth of the GNP and ecological costs

The growth of the production is seen as an important target for Western societies. We find this opinion in the Cecchini Report, which is at the base of the harmonization of the rules in the European Market, as was demonstrated in the beginning of this article. This growth of production is seen as an increase of economic welfare in this report. In this report we almost everywhere find the term economic growth when growth of production is meant. This confusion about the real meaning of terms cannot be seen as a minor problem. On the contrary, the use of the term economic growth as a synonym for growth of production is only possible when ecological problems are not of real importance. But this is not the case at all. The quality of the surface water is below all official Dutch and Belgian standards. These standards are introduced in these countries to ensure a reasonable quality of the environment, which is used for production and consumption.
In fact, the Scheldt is the most polluted river of Europe, and even more, than the well-known river Rhine. Until now it is not clear what kind of measures are taken to ensure a basic ecological quality of the water in the Scheldt.
This situation leads to very high costs in the Netherlands. In the first place the purification of waste water in the Netherlands, especially of households, does not have a real effect. The pollution of the river with organic waste from Belgium is so high, that purification of waste water in the Netherlands has only a limited effect. So the money spent in the Netherlands, is more or less spent in vain.
The second lost in the Netherlands is the ecological value of the nature areas alongside the

Westerscheldt. The erosion of the salt marshes, caused by dredging, and the inundation of these areas with heavily polluted water, causes a rapid deterioration of the nature areas. This is a loss of international importance, as these areas fulfil the Ramsar-standard 20 times as an internationally important wetland. The repercussions of it are felt in the ecosystems of arctic Europe of which a large number of birds use these areas during migration and during hibernation.

The third difficulty arises when the mud which is dredged in the Westerscheldt should be dumped elsewhere. When this mud is dumped into the North Sea, the problem is brought to another place, as the ecological quality of the North Sea is already on a very low level. But in many cases the Dutch government dumps the polluted mud elsewhere in the Westerscheldt. In this case the costs for the government are of course lower than in the case of an ecological accepted method of dumping (Anonymus, 1989). When this method is used a lot of money is necessary. It is not possible to calculate these costs. There is hardly sufficient experience about sound technologies to clean mud. Besides, there is always a huge amount of heavily polluted mud, which should be isolated somewhere as a deposit on the land. Anyhow, these operations are extremely expensive. If the discharge of polluted drain water goes on in Belgium, the dredging in the Westerscheldt will have to be repeated again and again.

It is hardly possible to qualify the costs in money, which are the result of the industrial production in the Scheldt basin. The harmonization of the rules in the Common Market will increase production and will increase environmental problems and environmental costs. As we saw before, there are many conflicting interests in the Scheldt basin. But the ecological interests, which are the real common interests, are only defended by the ecological movement.

7. Conclusions

* The harmonization of the rules in the European Market will have a negative impact upon the water quality of the Scheldt. This is caused by the fact that many plans exist for the harmonization of rules regarding industrial production, but no real plans can be found about the harmonization of environmental rules.
* The Common Market does not have sufficient power to ensure an ecologically sound behaviour of authorities in the Scheldt basin. This is, amongst others, caused by the institutional difficulties between Belgium and the Netherlands regarding the Scheldt.
* The definition of economic welfare is very important in this respect. The deterioration

of nature and environment cannot be neglected as is often done, especially in the papers of the Common Market. But we also find this approach in a recent publication of Hodgson, dealing with economics and institutions.

* It is questionable whether the increase of production, caused by the harmonization of rules in the European Market, will increase economic welfare. This increase will be accompanied by great losses of nature and environment. A substantial part of these costs cannot be quantified and are neglected by many authorities. If these costs are taken into account, it is possible that the increase in production will cause a decrease in economic welfare.

References

Anonymus. *Dumpen vervuilde baggerspecie in Westerschelde* [Dumping of polluted mud into the Westerscheldt]. Wantij, October 1989, 16.

Cecchini, P. et al. (1988). *The European Challenge 1992; The benefits of a single market, 1988.*

Central Planning Bureau (1989). *Nederland en Europa 1992.* [The Netherlands and Europe 1992]. Working paper nr. 28. 's-Gravenhage.

Centre for Business Strategy (1992). *Myths and realities, 1989.*

Dietz, F. & Straaten J. van der (1988). *The problem of optimal exploitation of natural resources: The need for ecological limiting conditions.* International Journal of Social Economics, 1988, vol. 15, 3/4, 71-79.

Hodgson, J. (1989). *Institutions and Economics.*

Klankbordforum Westerschelde. *Beleidsplan Westerschelde* [Policy Plan Westerscheldt].

Koninklijk Besluit d.d. 3.8.1987, houdende algemeen reglement voor het lozen van afvalwater in de gewone oppervlaktewateren, in de openbare riolen en in de kunstmatige afvoerwegen voor regenwater [Royal Decree of August 3rd. 1976, containing a general regulation for the discharge of waste water into the surface water, into the public sewer and into the artificial drainage systems of rain water]. Belgian Gazette, September 29th. 1976.

Koninklijk Besluit d.d. 4.11.1987, houdende vaststelling van de basiskwaliteitsnormen voor de wateren van het openbare hydro-grafische net en tot aanpassing van het Koninklijk Besluit d.d. 3.8.1987 [Royal Decree of November 4th. 1987, containing the determination of the standards for the base quality of the waters of the public hydrographic network, and the adjustment of the Royal Decree of August 3rd, 1976]. Belgian Gazette, November 21th, 1987.

Kramer, Th. (1989). *De vergeten natuur van de Westerschelde* [The forgotten nature of the Westerscheldt]. Wantij, December 1989, 5-6.

Maatschappij voor Nijverheid en Handel, Acquisitiegroep Zeeland (1989). *De toekomst van het Westerschelde-bekken* [The future of the Westerscheldt basin].

Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer (1986). *De waterkwaliteit van Nederland, Indicatief meerjarenprogramma water 1985-1989.* Bijlage getalswaarden basiskwaliteit [The water quality of the Netherlands: Indicative long-range program water 1985-1989]. 's-Gravenhage.

Ministerie van Verkeer en Waterstaat. *Baggerspecie en waterbodemproblematiek. Stand van zaken* [Problems with silt and mud. The state of things]. DBW/RIZ nota 88.034.

Mishan, E.J. (1967). *The costs of economic growth.*

Rekels, M. (1989). *Wordt de Westerschelde schoon?* [Will there be a clean Westerscheldt?] Wantij, October 1989, 14-15.

Straaten J. van der (1990). *Zure regen, economische theorie en het Nederlandse beleid* [Acid rain, economic theory and Dutch policy].

Wulfraat, K.J. (Ed.) (1989). *De Schelde - Vlaamse delta-ekologisch rampgebied* [the Scheldt-Flemish delta-ecological disaster area]. Stichting Reinwater Amsterdam - Bond Beter Leefmilieu.

Work and Organization Research Centre
Warandelaan 2, P.O. Box 90153, 5000 LE Tilburg, The Netherlands