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PAPER

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Sustainable Development and Public Policy

Dr J. van der Straaten

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Paper to be presented at the International Symposium
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Exclusive or Complementary Approaches of Sustainability?
Université Panthéon-Sorbonne, C 3 E, Paris, March 16-18, 1994.

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Sustainable Development and Public Policy

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Keywords: international cooperation, international pollution, institutions, sustainable development, public policy

1. Introduction

In many economic textbooks it is argued that environmental policy should be implemented by the introduction of economic instruments. One gets the impression from these publications that the crucial factor in environmental policy is the choice of the correct instruments. The same type of reasoning is followed in many publications dealing with the realisation of sustainable development. It is argued that many environmental problems would disappear if national and international authorities would accept the concept of sustainable development as a starting point for their environmental policies.

In my view, this overlooks the many complications connected with the implementation of environmental policies. These complications have to be analyzed before the introduction of sustainable development and the use of economic instruments can be realised. In other words: the ongoing deterioration of nature and the environment is not caused by the ignorance of the concept of sustainable development nor by the use of unsound economic instruments by national and international authorities. They accepted these issues as a starting point already long ago. The problem is that even in the cases where these concepts were accepted, they did not influence environmental policies. Other factors proved to be more significant. The aim of this paper is to investigate the main barriers to the implementation of sustainable development with the aid of adequate norms, in environmental policies of Western countries and international organisations such as the European Union.

2. The theoretical framework of environmental policies

Pigou (1920) was the first economist to deal with environmental problems and the realisation of an environmental policy. He used the concept of the external effect, introduced by Marshall, and expanded this concept into the direction of negative external effects. By doing this, he constructed a theoretical framework which could be used by national authorities to solve environmental problems.

Authorities should, in this view, investigate the damage to non-market actors caused by polluting industries. This damage has to be given a monetary value. The monetary value of the damage is seen as that segment of the production costs that is shifted away to other economic actors. In this view, there is a dislocation of costs, resulting in a low level of costs in the polluting industry. The products of the polluting industry are too cheap, as the production of these products is not confronted with all relevant costs. The dislocation can only be corrected by the government imposing a levy on the polluting industry. This levy can be seen as an attempt of authorities to bring that part of the production costs shifted away to others back to the polluting industry. By doing this, the dislocation of costs is neutralised by the environmental policy.

Some significant characteristics of this approach require further attention. Firstly, Pigou dealt with a very particular case, in which there was only one polluter and a limited number of well-known economic actors suffering from pollution. Secondly, in the Pigovian approach, the environmental damage can be given a monetary value. Thirdly, there is a clear relation between the level of pollution and the damage. In other words, there is a clear dose-effect relationship. Fourthly, the approach can focus solely on national problems. If transboundary pollution occurs, there are no adequate authorities to impose the levy.

The Pigovian approach was not given serious attention until the 1960s when environmental problems became an important issue in every-day life. Coase (1960) was of the opinion, that the Pigovian approach of a levy to be paid by the polluting industry, need not be an optimal solution. He argued that a bargaining process between the polluting industry and the victim could lead to a situation in which environmental costs could be distributed between polluter and victim in a more optimal manner.

We will not discuss here the differences between Coase and Pigou, as they are not relevant to our approach. What does require discussion is the fact that Coase used the same assumptions as Pigou. The polluter and the victim are defined and there is a clear dose-effect relationship. In addition, the victim can put specific price on the environmental damage.

Many economists are aware of the shortcomings of an approach using these types of assumptions. In many cases, it is not possible to calculate the monetary value of the environmental damage. Furthermore, there are many polluters and societies suffering from heavy pollution. This is the reason why Baumol and Oates (1988) introduced another approach. They argued that in cases when environmental costs cannot be calculated, a levy should be introduced aimed at reducing the level of pollution to a certain degree. This level of pollution had to be established outside the realm of economics. It had to be determined by politics. Later on, this approach was elaborated and given the name 'critical loads'.

3. The practices of environmental policies

The theoretical framework sketched in the previous section can hardly be recognised in current environmental policies. In most Western countries environmental awareness increased in the course of the sixties, resulting in the opinion 'that something had to be done'. Generally speaking, authorities did not pay attention to the theoretical framework of environmental policies. They tackled the problem by introducing environmental legislation in which permits and norms were the general instruments. Economic instruments were virtually non-existent in these types of environmental legislation. It was said in these laws that environmental pollution and damage should be decreased. Permits were seen as the adequate instruments for realising that. However, permits can only be effective when certain norms are introduced.

In most cases, these norms were not related to critical loads, in which is some idea of the relationship between the level of emissions and the level of deposits. In reality, these relationships are almost unknown. Environmental legislation used another departing point. The levels of the norms increasingly became the result of a bargaining process between the polluting industries and the national authorities.

This put the authorities in a difficult position. Generally speaking, the technical knowledge about pollution resulting from certain industrial processes possessed by the Ministry of the Environment is relatively low. It is the polluting industries that have the knowledge about these polluting production processes. This implies that the bargaining position of the polluting industries is considerably better than that of the government. The result is that there is a strong tendency for the norms that are implemented to be weaker than those the government originally intended.

However, it is not only a shortage of technical knowledge which puts the government into a difficult position. In the Pigovian approach, in which costs and benefits of environmental measures are known, there is a strong theoretical basis for the implementation of a levy. The government would be able to demonstrate that, in a given case, a levy would be desirable based on established economic theories. However, as was argued previously governments are hardly able to make these types of calculations. When the government has the intention of introducing strict norms, authorities are not able to 'prove' what the economic advantage is. Indeed, they are not able to bring forward the correct environmental improvements, as clear relationships between emissions, deposits and monetary values are not known.

This creates a situation in which the introduction of a strict norm could be defended by arguing that this is a good thing for the environment, as it will bring down the level of pollution. The government is not able to calculate the economic advantage of this introduction. The polluting industries, however, do know what the extra costs of production are after the introduction of the strict norms.

Polluting industries are very-well informed about the shortcomings of this approach. They focus on the heavy economic burden which will be put on their shoulders as a result of the introduction of strict norms. Generally speaking, they will not argue against a sound environmental policy as such, but they will demonstrate the costs in their industries resulting from such a policy. It is this mechanism which, in many cases, hindered the introduction of strict norms. We may conclude that the legislative framework provide sufficient possibilities for implementing a sound environmental policy. However, the Western European countries have not been able to reduce the level of pollution to an acceptable level in the last twenty years.

There are two other mechanisms which exacerbate this situation. The first one is the mechanism of economic growth. In certain cases, such as the instalment of catalysers in automobiles, countries have been able to introduce strict norms. These catalysers reduce the level of pollution by 90 per cent. The catalysers are installed in new cars. People buy a new car about once every ten years. Thus, after a period of ten years all cars will have a catalyser. At that moment the level of emissions by cars will have been reduced by 90 per cent. However, the increase in the mileage of cars and the numbers of cars is so high, that this will neutralise the effect of the catalyser. The result is that ten years after the introduction of catalysers in cars the emissions of acidifying substances will not have been reduced at all. It is the mechanism of economic growth which neutralises the beneficial effects of the introduction of strict norms.

This mechanism of economic growth often leads to a situation in which the level of pollution does not decrease in the long run. There are societal reasons why there is pressure to increase the number of cars and the mileage of the cars. When lower income groups achieve a higher level of income due to economic growth there is a strong tendency to buy a car as soon they are able to do so. Hence, the distribution of income and emancipatory tendencies increase pollution, even after the introduction of strict norms. In Section 6 this problem will be discussed in more detail.

The second mechanism is the increasing effect of international environmental problems, as in the case of transboundary pollution. Furthermore, global effects, such as the greenhouse effect and the hole in the ozone layer, cannot be neutralised by the actions of one country. Here, the introduction of strict norms, will benefit the environment of other countries as well. Hence, there is a strong need to come to international cooperation in order to reduce transboundary pollution has to be diminished. However, this problem is extremely complex as will be illustrated in the next section.

4. International complications in environmental issues

4.1 Air pollution

Sweden brought the deterioration of their lakes on the international agenda of the United Nations Stockholm Conference of 1972. They argued that transboundary air pollution was the main cause of these problems. It was the first time that the problem of transboundary air pollution was discussed on an international platform. In particular the countries which caused the pollution such as the Federal Republic of Germany, the Democratic Republic of Germany, Poland, England, and the Netherlands argued that it had not been 'proved' that they were responsible for the ecological situation of the Swedish lakes. They said that further investigation would be necessary to make clear what the real causes of the problems could be.

Of course, serious investigations of this type take a certain amount of time. So, at the end of the seventies and the beginning of the eighties the results of these studies could be published. The studies made clear that it was the emissions of the countries mentioned previously which caused the deposition of acidifying substances in Sweden. In addition, it became clear how the mechanisms of acidification worked in reality. However, the polluting countries were hardly willing to pay attention to the results of these studies. In the beginning of the eighties it became clear that the German and, later on, the Dutch forests were suffering considerably from the deposits of acid rain. Now these countries were suddenly victims of acid rain. This changed the opinion of the Dutch and German authorities completely. They became great advocates of the abatement of acid rain in Europe.

However, there were many polluting countries, all of them having their own polluting industries and their own interests. It took a long time before these countries were able to come to certain types of agreements about the reduction of the emission of acidifying substances. In this period the emissions of sulphur dioxide were seen as the main cause of acid rain. Sulphur dioxide is emitted when fuel which contains a certain percentage of sulphur is used. Oil refineries and electric power plants using oil and coal as a fuel are the main emitters.

However, in certain countries natural gas which does not contain sulphur, was used in power plants. Other countries use a high percentage of nuclear power. This implies that all countries did not have the same disadvantage when strict norms were introduced. In addition, there was the problem that certain countries had already taken many measures at an earlier stage. These countries proposed taking these measures into account. In that case these countries could introduce weak norms. These complications, due to the different position of the countries involved resulted in a long period of bargaining before an agreement could be reached. The result of these difficult negotiations was that it took until 1985 before, in Helsinki, a protocol about a 30 per cent reduction of the transboundary emissions of sulphur dioxide was signed.

A few years later a standstill protocol regarding the reduction of the emissions of nitrogen oxide which is a significant contributor to acid rain, was signed. No international agreements about the emissions of ammonia which is also responsible too for acid rain have been reached.

These reduction percentages are too low to meet the critical loads of acid rain (Downing, Hettelingh and De Smet, 1993). This brings us to the conclusion that a deposition of acidifying substances below the level of a critical load, in most European countries is far from being realised.

In the case of acid rain in particular it took many years to achieve any results. It became clear that countries suffering from air pollution needed to demonstrate with scientific research that acid rain was caused by the emissions of other countries. Subsequently a long period of bargaining was necessary to obtain certain results.

4.1 Water pollution

The pollution of many European rivers is an international problem as these rivers cross many borders. In such a situation it is not so difficult to prove that the upstream discharges cause the pollution. International negotiations are difficult, as the polluting industries will be confronted with higher costs when purification takes place. Therefore, many countries with polluting industries are not willing to introduce strict norms. A discussion of the negotiations

between the Netherlands and Belgium regarding the most polluted river in Europe, the Scheldt, will demonstrate these difficulties.

4.1.2 The Scheldt River

In this paper we take the Scheldt River 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 negotiating 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 as a 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 nature reserves. In the Netherlands the Scheldt River is of great importance as a nature reserve. The East Scheldt was dammed up in the beginning of this century, so this estuary is no longer connected with the Belgian part of the Scheldt. Only the Westerscheldt forms one streamsystem with the Belgian Scheldt.

Therefore this part of the streamsystem is taken into account here. The salt marshes of the West Scheldt 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 West Scheldt. For the international qualification of wetland areas the so-called Ramsarstandard is used. This Ramsarstandard is given to an area if 1 per cent 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 outstandingly beautiful (Kramer, 1989). In the Netherlands the water is used also for discharging polluting substances, but the level of discharge is

much lower than in Belgium.

4.1.3 Environmental legislation

4.1.3.1 Environmental legislation in Belgium

In Belgium there is a so-called basic law born 1983 regarding the quality of water (Koninklijk Besluit van 4 november 1987). This basic law 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, swimming, fishing and water for shellfish. These rules apply to certain parts of the surface water. Deviation of these norms is allowed, 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 qualified to issue individual discharge licenses. These licenses should be in accordance with the quality rules 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 qualifications are 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 qualifications should be more restrictive than the general qualification standard. The licenses to the dischargers are given by the regional water treatment companies. These companies must 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 can be set sidestepped. 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.

The problem is worsened 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 only a minimal 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 \$8,000. The average fine, however, is \$150 (Wulfraat, 1989).

4.1.3.2 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. This makes it possible for the government 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. Sectorial 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 fines are imposed upon discharges of organic material. In recent years this practice has been

introduced in Belgium too. But the level of the fines 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 West Scheldt 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 West Scheldt. It is impossible to mention all these publications here. The most important is the Policy Plan for the West Scheldt, 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 West Scheldt. 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 from 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 others.

4.1.4 Degradation of nature and environment in the Scheldt basin

4.1.4.1 The situation 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. Metallurgical industries in particular are potential dischargers of heavy materials. As 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. In addition, 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 the 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 van 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 Scheldt River. 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.

Just how bad the quality of the surface water is, can be demonstrated in Table 1. The water was compared with official Belgian and Dutch quality criteria. From Table 1 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. The oxygen content of the water in particular is often very low. In many rivers fishes no longer live. 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).

River	Location Base	Base Quality
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 1. The quality of surface water in the drainage system of the Scheldt.

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 navigating

the rivers without difficulty. 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 in 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. In twelve locations the quality of the mud was so bad, that dispersion of the mud can be regarded as dangerous. In seven locations an investigation to clean the area - based on official standards - was necessary (Wulfraat, 1989).

This situation leads to a degradation of the ecological quality of the nature areas in the Dutch West Scheldt. The poison is present everywhere in the food chain of the estuary. 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 West Scheldt is the entrance to the Antwerp harbour. This waterway should be kept in good condition. Due to the fact that the size of ships has been increased considerably over many years, there is an increased necessity for dredging in the West Scheldt. This activity has an important influence upon the salt marshes alongside the Dutch West Scheldt. More and more it is assuming the character of a canal rather than 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 West Scheldt is decreasing.

5. The common good and the conflicting interests

From the description of the ecological quality of the West Scheldt 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 a reasonable legislation against water pollution exists. But in Belgium the effect of this legislation is minor. The impression is that it is not important to maintain the law. It is important to have

a law, because then it is possible to qualify for membership in 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 Antwerp harbour has been an object of potential troubles between the two countries. There is a treaty which should guarantee free entrance to the harbour. Thus the Netherlands are obliged to dredge the polluted mud in the Dutch part of the West Scheldt. In many cases the Dutch government tried to enforce the Belgians to purify the water. The Belgian government always agrees to this, but in practice the results are always unsatisfactory.

There are more difficulties for the Netherlands. The treaty about the free entrance to the Antwerp harbour made it impossible for the Netherlands to put pressure on Belgium. There is no practical way to impede ships going to Antwerp. A second problem is the regionalization of Belgium. This implies that Antwerp, in the eyes of Belgium, is first and utmost a Flemish interest. Therefore it is very difficult to deal with Belgian authorities. Measures against pollution in the Belgian part of the Wester Scheldt are seen in Belgium as attempts to attack the competitive position of the harbour and to benefit the position of the Rotterdam harbour. So, there is little effort in Belgium to purify the drainage water.

In addition, the position of the Netherlands is not as ecologically favourable as many Dutchmen believe. In the Dutch part of the Wester Scheldt 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 Wester Scheldt. But at a symposium, held in 1989 about the future of the Wester Scheldt basin, in which Dutch and Flemish authorities were keynote speakers, the industrial development of the basin was still the main topic (Maatschappij voor Nijverheid en Handel, Acquisitiegroep Zeeland, 1989).

6. The principle of sustainable development and the role of the state

From the description given in the previous sections, it becomes clear that in the case of water pollution and acid rain negotiations have been very difficult. The traditional neoclassical theories were not relevant during this bargaining process. This is caused by the absence of the assumptions used in these theories. In the case studies about water pollution and acid rain it was not possible to make any calculations about the costs involved in these types of pollution. Nevertheless, it may be concluded that economic losses are considerably. Dose-effect relationships are not clear, and there are a great number of polluters which makes their identification difficult. The Coasian approach in which there are negotiations between polluters and victims is in these cases completely impossible. It is the national authorities bargaining with each other about the level of pollution.

The implementation of economic instruments did not play any role in the bargaining process. Legislation and treaties were the instruments which were used when transboundary pollution came up for discussion. During the eighties the results of these negotiations were not impressive. The World Commission on Environment and Development was formed in the eighties in order to find a better starting point for the implementation of environmental policies. In their report *Our Common Future* (1987) they formulated the concept of Sustainable Development. This concept has been accepted by most Western countries as a starting point for their environmental policies. In many publications this is seen as a great step forward in the direction of a sound environmental policy.

However, this principle does not neutralise the problems discussed in the previous sections. The different countries in Europe have different polluting industries and this implies, as we have seen in the previous sections, the frustration of the reduction of pollution. The role of the modern states plays a significant role in this problem. The interests of labour and capital have been able to solve a great part of their controversies by economic growth which made it possible to increase the income of labourers without reducing the interests of capital. In this process the interests of labour and capital have been able to penetrate in the state machinery to consolidate their positions. The process of modern industrialisation has secured income and employment situations for the interests of labour as well as of capital. This implies that these two production factors are strongly interested in the mechanisms which

made it possible to solve their problems.

Labour and capital are used in the production process and they have a price on the market. Many natural resources do not have a price, however. This has resulted in a situation in which nature and the environment have been used free of charge or at a very low price. In the political process the modern state is held responsible for the level of income and employment. These factors are seen as the main factors of economic development. This puts the state in a very difficult position as soon as environmental policies should be implemented by strict norms. Strict norms will always have an effect on the level of the production costs: it increases. The vested interests of labour and capital in the polluting industries are able to put pressure on the national states not to implement strict norms. As we have seen, these actions have been rather successful.

The principle of sustainable development does not change this situation. On the contrary, all polluting industries accept the principle of sustainable development as a starting point for the national economy. However, as soon as there is discussion about the pollution in their sector, they use strong arguments based on traditional economic theories. The government is then always in the difficult position of demonstrating that the implementation of strict environmental standards will benefit the economy. In many cases they are not able to do that.

In the case of transboundary pollution the situation is complicated too. On the one hand, there are the traditional interests of the polluting industries in some countries, and on the other hand, there are the interests of countries suffering from pollution. In that case the controversy is between the traditional economic interests of the polluting industries against the general interests of the environment in other countries.

7. Conclusions

From the previous discussion the following conclusions can be drawn:

- * The concept of sustainable development can be used as a principle to be used in the policies of industrialised countries. However, the concept has been developed due to the difficulties and shortcomings of traditional policies.
- * The concept of sustainable development cannot neutralise the controversy between polluting industries and other interests in society. Transboundary pollution often puts national authorities in a difficult position. Polluting industries argue that the implementation of strict norms will only benefit the environment in other countries, while the national polluting industries are confronted with higher costs which will decrease their international competitive position. National authorities are held responsible for the level of income and employment.
- * The interests of labour and capital often use traditional mainstream theoretical arguments to neutralise environmental policies. Unpriced natural resources do not have the same position in mainstream theories as the priced production factors labour and capital. The result of this point is that it is easy to stress the economic importance of labour and capital, while the economic importance of unpriced natural resources cannot be demonstrated in the same way.
- * Public policy is the only way out when dealing with environmental problems. However, the problems mentioned previously, cannot be overcome by using the concept of sustainable development. The interests of labour and capital have to be convinced that a sound environment is, in the long run, in their interests too. Political pressure and the behaviour of consumers are the most significant factors which can affect this situation.

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