

# Legal Aspects of Non-Point Source Pollution of the River Meuse

## A Comparative Analysis of Issues of Liability in Tort and Multiple Causation\*

### 1. Introduction: Presentation of Legal Issues Involved

Non-point source pollution of surface waters is a complicated matter from a technical point of view, as can be learned from Jan Dogterom's paper in these proceedings,<sup>1</sup> but is also the case from a legal point of view. The legal issues encountered in point source water pollution, such as matters of proof and liability, are only multiplied when we have to do with non-point source pollution. This is not just caused by the sheer number of possible tortfeasors in a certain watershed area, which may run into the thousands and will cause logistic problems of its own, but more particularly by the fact that each individual tortfeasor is only making a marginal contribution to the pollution as a whole and may therefore escape liability under the traditional tort rules. This is especially the case where pollution by pesticides is concerned, which is caused by numerous farmers or municipal agencies in their continuous fight against weeds and insects, for the improvement of agricultural products and municipal pavements and recreational facilities.

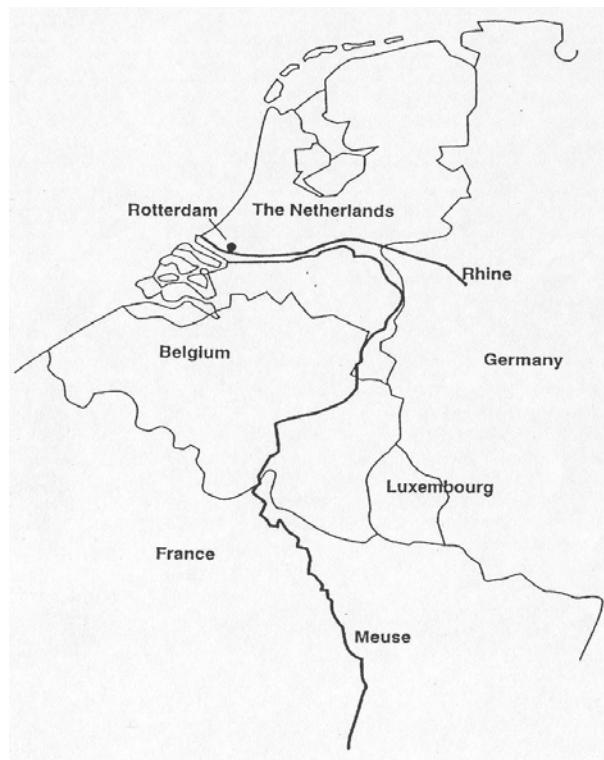
In this paper I will look into the conditions of modern tort law to hold groups of individual polluters liable for their contribution to the pollution of river water at large. Prospects are not as bleak as one might expect, due to recent case law of the Dutch Courts. At the outset I would like to stress that cooperation of polluters in programmes regarding reduction of the use of pesticides in watershed areas on a voluntary basis is definitely to be preferred.<sup>2</sup> However, when consensus cannot be [40]

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\* In: J.M. van Dunné (Ed.), *Non-Point Source River Pollution: the Case of the River Meuse. Technical, Legal, Economic and Political Aspects*, London: Kluwer Law International 1996, p. 39-61 (Proceedings Conference, Rotterdam 1995).

<sup>1</sup> See, *supra*, p. 9.

<sup>2</sup> Recent developments in this field (also Dutch Brabant) are discussed *infra*, section 3.1.



*Figure 3.1 Location of the River Meuse*

reached in that respect due to financial or political restraints, the presentation of legal obligations to prevent environmental damage to down-stream users of the river water may serve as an incentive for cooperation by polluters.

Before starting our inquiry, some preliminary remarks are made in regard to the damage incurred by the parties involved in the Meuse Research Project, and its causes.

[41] If we look at the location of the River Meuse (*Figure 3.1*), linking France, Belgium and the Netherlands, its international setting is abundantly clear. As a consequence, water pollution by definition is transboundary pollution. The River Meuse is one of the most polluted rivers of Western Europe. Of all the toxic substances causing pollution which is, regrettably, customary for a major river running through agricultural, industrial and municipal areas, the substances causing most trouble to Dutch drinking water companies in recent times are pesticides (herbicides and insecticides). Current filtering techniques in the production of drinking water are insufficient to remove pesticides, and state of the art filtering processes are extremely expensive. As Verheijden mentioned in his chapter, these costs are an estimated Dfl. 20 million per year (as regards the Water Company Europoort).<sup>3</sup> Furthermore, expenses are incurred to deal with temporary heavy pollution of river water by constructing extra storage reservoirs (Water Company Brabantse Biesbosch). In 1993 for instance, water intake was ceased for six weeks, when a

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<sup>3</sup> See *supra*, p. 6.

major diuron pollution occurred. Other damage to down-stream parties involves additional dredging costs suffered by a number of Meuse municipalities and the De Biesbosch National Park, as a result of pesticide sediments in harbours, etc. These costs amount to an estimated Dfl. 30 million. Finally, the De Biesbosch National Park is suffering ecological damage, estimated to amount to Dfl. 1.5 million annually. The latter damage is, according to recent developments in Dutch law culminating in the enactment of art. 6:175 Civil Code in February 1995, a type of damage which can be claimed in tort.

The damage is caused by the influx of pesticides into the river water. In this chapter I will deal with three pesticides which are found in considerable concentrations in the water and are highly toxic: diuron, atrazin and simazin. If one compares the contribution of these substances to Meuse water in the Dutch watershed area to that of foreign sources (mainly: Belgium) by comparing the data at the Eijsden and Keizersveer measuring points respectively, the outcome is approximately a 60-40 or 50-50 basis.

The selection of these pesticides also serves a purpose in the discussion of liability issues: diuron for instance, is almost completely emitted by municipal sources (waste water treatment plants), whereas atrazin and simazin are also contributed by agricultural sources, on an equal basis. As to the uses of the latter pesticides in agriculture, atrazin is solely used for maize crops, and simazin is applied in the growing of leek and asparagus, and furthermore in nurseries and orchards. On the municipal side, diuron is used to fight weeds on paved surfaces; atrazin and simazin are applied for the same purpose in parks and greens to treat trees, shrubs and lawns.

It should be noted that the use of diuron by municipalities presently has practically ceased, and as a consequence, the pollution caused by it on Dutch territory. This occurred at the request of VEWIN (Vereniging van Exploitanten van Waterleidingbedrijven in Nederland; a Board of Water Companies) after consultation of [42] the Dutch Meuse municipalities involved.<sup>4</sup> In the mean time, most municipalities have changed to glyphosate as pesticide, a rather unknown substance, believed to have no major detrimental environmental effects. As a matter of discussion, I have taken the diuron example. In practice, it can be substituted by a range of substances. The use of pesticides in agriculture deserves another, general remark. The Netherlands and Belgium are countries with the highest use of pesticides per hectare in the European Union. The annual sales of plant protection products per hectare of arable land and land under permanent crops are about 17 kg in the Netherlands, which is about four times higher than the average in the EEC. The economic aspects are illustrated in the output figures in crops per hectare of utilized agricultural area, which is in the Netherlands about five times higher than the EEC average.<sup>5</sup> In Belgium, coming second in Europe, the figure is 11 kg per hectare. It will be clear that a reduction in the use of pesticides will have considerable effects on crop yields, and therefore, on the farmer's income. This explains the delicate nature of our topic from a social and political

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<sup>4</sup> VEWIN's request was directed at 163 Meuse municipalities and has a high response (100 by the end of 1994).

<sup>5</sup> Figures derived from Floor Brouwer's paper, *infra* Part III. Compare also Stichting Natuur en Milieu, *Bestrijdingsmiddelenverbruik in de land- en tuinbouw*, 1 February 1994 (Logemann).

point of view. For a discussion of this theme, reference is made to other chapters in these Proceedings concerning the Laholm Bay Project in Sweden and the Halden Watercourse Project in Norway, by Katarina Eckerberg and Per Kristen Mydske respectively.<sup>6</sup>

## 2. Liability Issues: Municipal Sources

### 2.1. Pollution Caused by Waste Water Treatment Plants. The Legal Basis for Liability: Concert of Action and Alternative Causation

As indicated before, the liability issue in regard to point sources is relatively easy compared to that in the case of non-point sources which is under discussion presently. It is possible to come to terms with industrial point source dischargers of toxic substances and to conclude environmental contracts (or covenants), as is illustrated by the Rhine Research Project, which was terminated in 1994.<sup>7</sup> It is hoped the same road can be followed in the Meuse Project. In the Rhine Project, dealing with water pollution by heavy metals causing pollution of harbour sludge in Rotterdam, in the end it became clear that the river pollution to a considerable extent was caused by non-point sources, also in the case of some heavy metals like [43] copper, zinc and lead (*Table 3.1*). Water pollution by pesticides is per definition of non-point source nature.

Table 3.1 Overview of sources of non-point pollution (Rhine)

	<i>Industrial point source discharges</i>	<i>Non-point source discharges</i>	<i>Details on important non-point source discharges</i>
Zn	30%	70%	Households 30%, small enterprises 10%, deposition 25%, road traffic 3%, agriculture 2%
Cu	35%	65%	Households (Pb, especially water pipes) 60%, deposition 2%, navigation 2%, agriculture 1%
Cr	60%	40%	Small enterprises 40%
Pb	30%	70%	Households 40%, deposition (especially road traffic) 35%
Cd	75%	25%	Households 15%, deposition 10%
Ni	30%	70%	Small enterprises 35%, households 20%, deposition 10%, road traffic 3%, agriculture 2%
Hg	40%	60%	Dentistry 25%, households 5%, deposition (especially waste incineration) 30%

<sup>6</sup> Compare Part III, *infra*.

<sup>7</sup> Compare for this topic: *Environmental Contracts and Covenants: New Instruments for a Realistic Policy?*, Jan M. van Dunné (ed.), Vermande, Lelystad 1993, Proceedings of a 1992 Conference in Rotterdam. Environmental contract parties of the Municipality of Rotterdam include: Verband der Chemischen Industrie (VCI, the German Association of Chemical Industry), Duisburger Kupferhütte, Berzelius, Deutsch Giessdraht, Ara Pro Rheno, Sandoz, Rhône-Poulenc and Atochem.

As	10%	90%	Nature 80%, agriculture 5%, deposition 2%, facing 1%, decalcifiers 1%, households 1%
7 PCB	60%	40%	Deposition 35%, households 5%
HCB	95%	5%	Deposition (especially agriculture) 4%
Gamma HCH	0%	100%	Households 30%, deposition 40%, agriculture 30%
5 Drins	15%	85%	Agriculture 80%, deposition 5%
PAH (6 Borneff)	5%	95%	Deposition 50%, navigation 20%, creosoted facing 25%

Our first subject of investigation is the communal waste water treatment plants, operated by local municipal authorities or by the water authority (Waterschap) or purification authority (Zuiveringsschap); compare *Figure 3.2*, the river basin of the mythical River Drommel. The authority involved in the purification of waste water from sewage systems is not under any legal obligations in regard to pesticides, since there are no emission standards relating to the quality of surface water under the Surface Water Pollution Act (WVO).<sup>8</sup> The authority in emitting pesticides [44]

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<sup>8</sup> In the Netherlands there are over 400 communal waste water treatment plants; they are commonly seen neither as non-point sources nor as point sources. The EC Directive on pesticides and the Dutch Pesticides Act is directed at the admission of pesticides to the market only. Water quality norms such as those for drinking water production play no role whatsoever (the statutory norm for atrazin, for instance, is 0.1 µg/l).

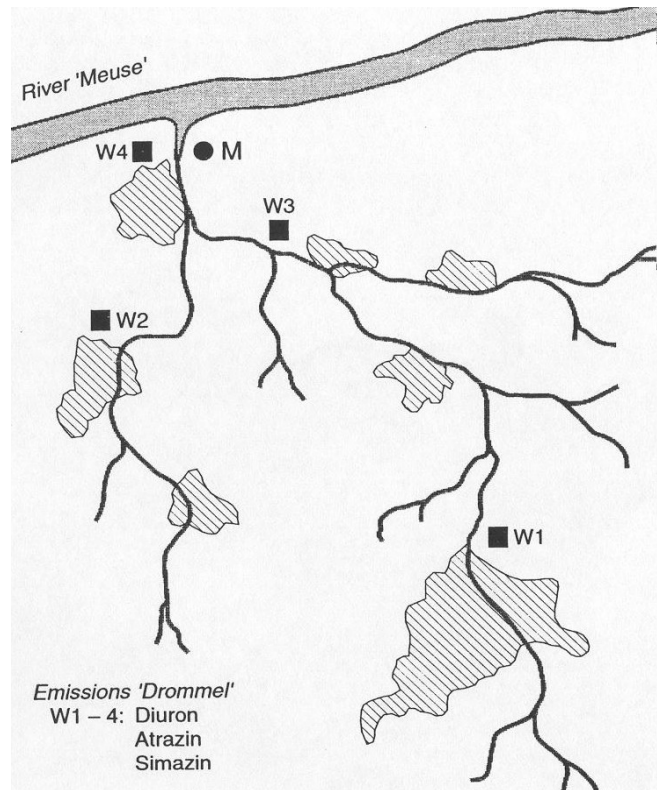


Figure 3.2 Water pollution from communal sources

containing water into a river ultimately, is not a source in itself, but is treating pesticides infected water delivered by other parties. In doing so, however, it contributes to the pollution of the surface water, and therefore, it may be submitted, it is acting jointly and severally (*in solidum*) with the original dischargers of the pesticides and is under the same liability, if any. Incidentally, the liability in tort of a waste water treatment authority was accepted by the District Court Roermond in an air pollution case in 1986.<sup>9</sup>

[45] In itself, it is arguable to conceive a water purification plant as a point source, falling under statutory requirements regarding discharge permits. This, however, for the present topic is a rather academic issue, since no permits are required for the emission of pesticides under Dutch law (and European law).<sup>10</sup> In this context, reference is made to the situation in the USA regarding construction sites and live-stock operations, where the size of the activities concerned is decisive in answering the question whether a point source is allocated, which is required to apply for and receive federal discharge permits.<sup>11</sup>

<sup>9</sup> Rb. Roermond 3 April 1986, *Huyveneers v. Waterschap Zuiveringsschap Limburg, TMA/ELLR* (*Tijdschrift voor Milieu Aansprakelijkheid/Environmental Liability Law Review*) 1987, p. 29 (Vermande, Lelystad).

<sup>10</sup> For the role of the WVO (Surface Water Pollution Act) in this context, see *infra*, section 3.1.

<sup>11</sup> Compare Steven Dressing's chapter, first paragraph. In the latter case, 1,000 animal units

The non-point source character of river pollution by waste water treatment plants as a consequence makes it necessary to look into the liability of the original users and dischargers of the pesticides, which in the case of diuron, atrazin and simazin are to be found in municipal departments in charge of the maintenance of greens and parks.

In doing so, suppose that at measuring point M in *Figure 3.2* it is found that the contribution of the waste water treatment plants W 1-4 to the total amount of pesticides in Meuse water is:

diuron: 7 per cent;  
atrazin: 6 per cent;  
simazin: 5 per cent.

When confronting individual municipal departments with these figures, and holding them liable for the pollution caused, the defence seems reasonable that here such a minor contribution to the overall pollution by an individual discharger is concerned, that there is no ground for liability of the discharger in question. However, if this is true, none of the dischargers of the pesticides can ever be held liable, which leaves a party incurring consequential damage with its loss. We are confronted here with the common situation of 'concert of action'; in the usual tort case, however, there is uncertainty in regard to the actual tortfeasor, as was the case in the archetypal case of *Summers v. Tice* (USA, 1948), where one of two hunters caused an accident, hitting a person that happened to be in the surroundings. The victim is in the awkward position of being unable to prove which of the two hunters, shooting simultaneously, was the one that actually hit him. In the current situation of multiple river pollution, discussed in this paper, we have a similar dilemma: here, too, the victim (the drinking water company) is uncertain in regard to the contribution of the individual polluter to the water pollution, and more specifically, whether he is the one causing the infringement of the pollution norm protecting his interests.

In the example given, each polluter with his individual, minor discharge stays below a certain injurious pollution norm. Together, however, the polluters with [46] the total sum of their emissions pass that norm, but it is unknown to the victim which specific discharge, by its addition to the existing pollution, is the one that constitutes the damaging amount of toxic substance in the aquatic environment indicated by the applicable pollution norm, and which by that very event establishes the tortious act of the person involved.

The doctrine involved here is that of 'alternative causation', which in Dutch tort law is laid down in art. 6:99 Civil Code, as applied by the Dutch Supreme Court in the *DES daughters* case of 1992.<sup>12</sup> In this products liability case the six plaintiffs were daughters of women who used the DES drug during pregnancy which led to serious illnesses of the daughters. Plaintiffs sued ten manufacturers of DES in tort but were unable to prove which individual manufacturer had produced the drug their mother had taken at the time. The Supreme Court construed art. 6:99 Dutch Civil Code in a liberal way, taking for its legal meaning the support for

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are the criterion for accepting the construction of a point source discharge.

<sup>12</sup> Hoge Raad 9 October 1992, *TMA/ELLR* 1993, pp. 15-27, note Van Dunné; *NJ* 1994, 535, note Brunner.

reasons of equity of a victim in distress, not being able to prove which person caused its damage. The damage is certain, the tort is certain, but uncertain is the identity of the actual tortfeasor, out of a group of potential tortfeasors. No proof of a specific tortious act is needed, according to the Court, and the article may be applied if a great number of people are involved: no 'circle of liable persons' has to be established by plaintiffs, as was held by the lower courts.<sup>13</sup> In conclusion, plaintiffs could choose any defendant DES manufacturer and hold him jointly and severably liable for the total damage they have suffered.

The decision is of great importance to questions of causation in tort law in general, and environmental torts in particular, where in practice it is often hard to prove a causal connection in the case of multiple causation. Non-point source pollution is a prime example. Therefore, the *DES* case, a landmark decision, with no equivalents in other jurisdictions, deserves further discussion.

## **2.2. The Dutch DES Case (1992): a Precedent for Alternative Causation in Environmental Cases**

The first Dutch DES case brought a surprise, compared to the American *DES* cases of the last years: it established joint and several liability in tort for the manufacturers. Market-share liability, strongly advocated by the Attorney-General Hartkamp in his 'conclusion' (a legal opinion on behalf of the public prosecutor's office in civil cases, based on the French tradition) in this case, was explicitly turned down by the Court, as being not in the interest of plaintiffs, the DES daughters. So were also arguments based on group liability and collective liability combined with a fund. The decision of the Court of Appeal Amsterdam in favour of defendants was reversed.

[47] The central theme in this litigation, the rule of the 'alternative causation' in concert of action liability cases is derived from art. 6:99 Dutch Civil Code, in force as of 1 January 1992, which establishes joint and several liability for the tortfeasors involved. The rule is regarded to be existing law in the 1960s and 1970s when the DES tablets were taken by the DES daughters' mothers. The issue here is the application, and therefore, interpretation of this statutory rule in regard to the case at hand. Art. 6:99 Dutch Civil Code was modeled after the famous American 'two hunters' case, *Summers v. Tice* (1948), as may be inferred from its parliamentary history. Therefore, it was alleged by defendants, its wording, combined with the intention of the legislator would bar its application in a situation where an unknown number of potential tortfeasors is involved. The precise number of tortfeasors should be established, in order that art. 6:99 Dutch Civil Code be applicable. The District Court and Court of Appeal Amsterdam accepted that view; the latter Court furthermore required the tort action of any defendant to be more specified, as regards the damage inflicted to plaintiffs. A general tortious act, consisting of putting a potential dangerous drug on to the Dutch market would not be sufficient in that respect.

Surprisingly, the Supreme Court takes the opposite view, although the lower Courts on this issue found support from the Attorney-General Hartkamp.

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<sup>13</sup> Compare my discussion of this subject in my note in *TMA/ELLR*, and also in *Ars Aequi* 1992, pp. 639 ff.; *Verbindenissenrecht*, 2, pp. 386 ff., with further literature and notes to comparative law.



The difficult position of the manufacturers in a law suit based on tort inspired the lower Courts in their decisions, whereas the Supreme Court is more concerned with the position of the victims, the DES daughters, and their formidable burden of proof.

The Court held that art. 6:99 Dutch Civil Code also is to be applied where a large number of victims is involved, and each manufacturer may have caused only part of the total amount of damage, a contribution which will be statistically determinable. In its decision the Court takes into consideration the wording and the legislative history of art. 6:99 Dutch Civil Code, but above all, its legal meaning, to wit, the support for reasons of equity of the victim in distress, not being able to prove which person caused its damage. The requirement of a 'specific tortious act', imposed by the Court of Appeal, therefore is rejected by the Supreme Court, as inconsistent with the rule of art. 6:99 Dutch Civil Code according to its true meaning. The result reached by the lower court is considered unreasonable by the highest court, since victims would be left with their damages if the identity of the DES manufacturer which committed the tort cannot be established by the plaintiffs. It would be unfair to restrict the application of art. 6:99 Dutch Civil Code to damage caused by a small number of persons which can be traced. Along the same line of thought, the Court rejected the lower court's view that the 'circle of liable persons' be exactly established by plaintiffs, which is considered an unreasonable requirement in the light of the virtual impossibility of tracing all DES manufacturers involved.<sup>14</sup> Liability in [48] this concert of action situation is based on the existence of a tort, committed by a member of the circle of persons involved in the act. It should be noted, that in this litigation there is a presumption of such tort by the DES manufacturers; this issue still has to be dealt with by the lower court (litigation is still pending).

This presumption, however, gave rise to an interesting defence, proposed by Mrs Dommering<sup>15</sup> in a recent thesis, and submitted to the Supreme Court by Mr Hartkamp in his conclusion. If the manufacturer sued in tort has a valid defence (e.g. state of the art), the rule of art. 6:99 Dutch Civil Code will not apply; but this will also be the case if it can be established that there is at least one member in the group of manufacturers which could make use of such a defence. The Supreme Court, however, has no difficulty in rejecting this argument too: if the DES tablets were produced and marketed by a manufacturer which was not negligent in doing so and the plaintiffs' damage may have been caused by him, the other manufacturers remain liable, with the exception that such liability would be unreasonable under the given circumstances. The example given is the situation where there is a considerable chance that the actual damage was caused by a non-labile manufacturer.<sup>16</sup>

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<sup>14</sup> The Court mentions the possibility available for the manufacturers that are liable for all the damage to have recourse against each other; as a consequence, they will only have to take a share in the compensation of the total damage.

<sup>15</sup> L. Dommering-van Rongen, *Produktaansprakelijkheid*, thesis Utrecht, 1991 (Kluwer, Deventer).

<sup>16</sup> The subsidiary argument of 'market-share liability' proposed by plaintiffs is not accepted by the Court, although advocated by Attorney-General Hartkamp in his 'conclusion' for this case. It is after all not satisfactory, the Court held, that under this system the risk of financial insolvency of one of the manufacturers, as well as the risk that the company no longer exists or can no longer be traced, is placed on the victim and not the manufacturer.

It should be noted, that the Court's view is consistent with the doctrine of causation under Dutch law, which is based on 'reasonable imputation' (the case law dates from 1970). As a consequence, alternative causation must be applied on the footing of fairness and equity.

Opponents of joint and several liability of manufacturers in concert of action have stressed the unfair results of this approach in the case where a certain manufacturer, held liable by a victim, cannot have sufficient recourse against other manufacturers. The cause may be that they cannot be traced, are out of business or in a bad financial shape. It may be submitted that it would be even more unreasonable to lay this risk on the victims, which was also the view of the Supreme Court. As mentioned before, the Court is of the opinion that the construction of market-share liability should be rejected exactly on this ground.

For several reasons, sympathy for the hardship caused to the group of DES manufacturers by this risk contribution is not well founded. The production of DES was not protected by patent, the drug was rather easy and cheap to make and distribute, trusting to safety research done by others. The doctrine of 'creation of danger' comes to mind, developed in Germany since 1876 (*Gefährdungshaftung*) and introduced to Dutch jurisprudence at the beginning of the century. Incidentally, the six DES daughters had summoned a group of ten DES manufacturers, which held [49] an approximate 90 per cent of the Dutch drugs market at the time, and an estimated share of the DES market of well over 50 per cent. Therefore, a substantial percentage of the DES manufacturers involved were held liable in the present law suit.<sup>17</sup>

Another form of liability in multiple tort cases was also tested in this case, the group liability of art. 6:166 Dutch Civil Code. Basically, this is a concept of Roman law, a tort committed by a group of people *in turba*: through crowding, jostling and disorder. Its application in the present case was rejected by the Court of Appeal, which was approved of by the Supreme Court.

It is submitted, however, that the use of the rule of art. 6:166 Dutch Civil Code would deserve support; in its application, it must be admitted, obstacles of the kind we have met in the application of art. 6:99 Dutch Civil Code are to be expected. The legislative history of the article indicates that it is directed at damage caused by reckless youths and the like, and also demonstrations. For group action some authors require a mutual influence in the group, a high degree of attuning of the behaviour of the group members (some even speak of 'psychic causation'). Comparative research may be helpful here, to get inspiration in the construction of this article, and the determination of its reasonable meaning.<sup>18</sup>

The difference between this kind of liability and the one covered by art. 6:99 Dutch Civil Code is that in the case of group liability a member of the group may be held liable for damages inflicted by the group, even if it is established that he

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<sup>17</sup> The *DES* decision's role as precedent in environmental liability cases is also advocated by Gerrit Betlem, in his thesis *Civil Liability for Transfrontier Pollution: Dutch Environmental Tort Law in International Cases in the Light of Community Law*, Ch. 9, thesis Utrecht, Graham & Trotman, London, 1993.

<sup>18</sup> For this subject, reference is made to the research report *Liability for Environmental Damage in the Case of Harbour Silt Polluted by Discharges*, 1991, by the present author, published by the Institute of Environmental Damages, Erasmus University Rotterdam.

himself did not commit the tortious act. His membership of the group is the sole basis for liability here.

A third form of liability, collective liability in combination with the obligation to establish a fund, was also rejected by the Supreme Court, but scarcely taken into consideration. It is advocated by Knottenbelt in his Rotterdam thesis of 1990, combined with joint and several liability of the multiple actors.<sup>19</sup> The Dutch DES litigation is a good illustration of the assets of a fund construction; the millions of guilders paid by defendants in the course of this lawsuit would have been well spent in such a fund for the victims. Incidentally, the defendant DES manufacturers are prepared to go all the way in the next episode of the litigation, before the Court of Appeal The Hague: the establishment of negligence of the manufacturers in producing and marketing DES. The DES daughters may still be in for a long ride. [50]

### **2.3. Dutch Case Law Regarding Multiple Causation in Asbestos Cases (Employer's Liability): Comparative Notes**

The *DES* decision may serve as a precedent in adjacent fields of tort law. It was followed by the Cantonal Court Rotterdam in 1993 in an environmental (asbestos) case, where the plaintiff worker had worked for several employers over the years and had difficulty proving under which employer he had caught the asbestos disease.<sup>20</sup> Here again, we have a victim in distress, confronted with an almost unsurmountable burden of proof, namely to establish which person out a group of potential tortfeasors is the one who actually inflicted damage to him by acting negligently.

This sector of environmental liability also for other reasons is of interest for our present topic: the character of the liability involved, which is approaching strict liability, and the way the courts are dealing with rules of evidence in regard to shifting the burden of proof. In a leading case, *Cijsouw v. De Schelde*, the Dutch Supreme Court for the first time had to deal with the lethal disease mesothelioma, caused by exposure to asbestos fibres. In the 1990 decision of *Janssen v. Nefabas* (NJ 1990, 573) another asbestos disease was involved, asbestosis. The Court considerably lightened the plaintiff's burden of proof then: the defendant was held to be under the obligation to assist the plaintiff in collecting evidence concerning safety measures taken at the time by the employer. In the *De Schelde* case, the question was what would be the Court's position in regard to mesothelioma, an asbestos disease with a much more complicated process of medical causation. In the present decision the Court took the same approach to liability of the employer as was laid down in the 1990 case.

The decision in *De Schelde* is of considerable importance for the issue of causation in the case of damage caused by hazardous substances or hazardous activities in general. Asbestosis-related diseases are characterized by long latency periods, which as a consequence puts the plaintiff in great difficulty in establishing that when he contracted the disease, his employer was negligent in taking ade-

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<sup>19</sup> J. Knottenbelt, *Hoofdstukken produktaansprakelijkheid*, Tjeenk Willink Zwolle, 1991, p. 118 ff. (originally: thesis Rotterdam, 1990, p. 88 ff.).

<sup>20</sup> Cantonal Court Rotterdam 10 June 1993, *Prg* 1993, p. 531, *De Jong v. Pols Betimmeringen*.

quate safety measures to protect his employees. In the Netherlands information on mesothelioma was available only after 1960 (approximately), it was decided by the lower court, and the employer's obligation to protect his employees against this disease therefore could only have existed after that date. Since mesothelioma can be caused by the inhalation of a single asbestos fibre, the issue really is whether the employee inhaled the lethal fibre before or after 1960, and which party has the burden of proof in that respect.

The Supreme Court is of the opinion that neglect of safety measures by the employer in regard to the known asbestos risks in the period 1949-1967 (to wit, regarding *asbestosis*) has considerably raised the chance of the penetration of an asbestos crystal (which could lead to mesothelioma). As a consequence, the employer [51] is liable under art. 1638x Dutch Civil Code, even in the case of unknown hazards. This view is in line with case law on employer's general liability for non-compliance of safety rules, which holds that the employee is not under the obligation to establish the exact circumstances of the accident, he only has to state that the accident was caused by the infringement of safety rules (compare: *Windmill* case, *NJ* 1974, 453). The Court's approach is also falling within the category of case law on exposure to danger, where the creation of a dangerous situation by the defendant is the basis for accepting liability against third parties, even for hazards unknown to him (a doctrine known in German law as *Gefährdungshaftung*).<sup>21</sup>

The causation issue leads to another far-reaching decision of the Court in *De Schelde*, as regards the burden of proof: the District Court's decision that the employee has to prove on which date the fatal asbestos crystal penetrated his lungs, before or after 1960, was quashed by the Supreme Court, as against the purpose of art. 1638x Dutch Civil Code, namely the protection of the employee. This part of the decision was criticized by some authors (Spier, Hijma), who were in favour of a *pro rata parte* approach of liability, relating the time of exposure to the existence of an employer's obligation to take safety measures. This approach is challenged by the present author, as based on a wrong view of statistics and chance, confusing *a priori* and *a posteriori* statistics.<sup>22</sup>

In this context, attention should also be given to art. 6:102 Dutch Civil Code, which deals with the general rule of joint and several liability in tort. It is standing law in the Netherlands, that a number of separate acts by different actors may ultimately cause a tort, leaving the victim the option of choosing the defendant of his liking (for instance the party which is best insured), even if this may be a tortfeasor who by his act only had a minor contribution to the total damage in the causation chain.<sup>23</sup>

Further comparative research leads to interesting results in regard to envi-

<sup>21</sup> In this context, reference can be made to the Lugano Convention of the Council of Europe, the Convention on civil liability for damage resulting from activities dangerous to the environment. In art. 10, causation in the case of dangerous activities as defined in art. 2 *para. 1 e*, states that the court 'shall take due account of the increased danger of causing such damage inherent in the dangerous activity'.

<sup>22</sup> For an elaboration of this point, and the other issues presented, see the discussion of the case by the present author in *TMA/ELLR* 1994, p. 93. See also: 'Het De Schelde-arrest en aansprakelijkheid voor asbestziekten', in *Asbest en Aansprakelijkheid*, Jan M. van Duné, Ed., Gouda Quint, Arnhem, 1994, p. 19-48.

<sup>23</sup> Compare my *Verbintenissenrecht* 2, p. 379 ff., a rule developed in traffic accident compensation cases.

ronmental liability. According to statutory law on water pollution in many European countries multiple polluters are jointly and severally liable in tort, often in combination with strict liability.<sup>24</sup> The problem facing a plaintiff that he has to prove [52] that the defendant's conduct was at least a potential source of the entire damage, as a requirement for joint and several liability was dealt with in an most interesting way by the German Supreme Court in a 1971 decision: *Hühnergülle* (chicken manure).<sup>25</sup> Here three emitters of toxic substances into surface water were held jointly and severally liable. The down-stream plaintiff, owner of a fish pond, could not establish the individual contribution of the defendants to the upstream water pollution. In its decision the Court is making use of the concept *summierte Kausalität*, causation by adding up causes. In a liberal interpretation of para. 22 *Wasserhaushaltsgesetz*, the Court accepted the rule of a 'presumption that any hazardous conduct that could have contributed to the harm has actually caused the harm'. This exception to the general rule was based on the specific properties of water pollutants to merge with other pollutants at the time of discharge, thus obscuring the extent to which each substance contributed to the overall pollution.<sup>26</sup>

Traditionally, for the acceptance of joint and several liability in tort of a group of persons, the law requires some sort of a joint and uniform action, and a conscious interaction among the persons involved in a common activity. This requirement, however, is increasingly relaxed in its application by the French, German and Swiss courts, and in some cases only paid lip service. The cases are varied, and include accidents in a social setting (shooting parties, hockey matches) and banking services that were negligent. For further details, reference is made to the sources mentioned in note 24.

#### **2.4. The Legal Position of Municipal Agencies Involved in Water Pollution. Transboundary Pollution: the French Potassium Mines Case (1988)**

A considerable number of cities are located in the River Meuse in the riparian states (see *Figure 3.3*). Waste water from municipal sources accounts for a significant contribution to the pollution of the river water by pesticides. In this paragraph liability issues are discussed.

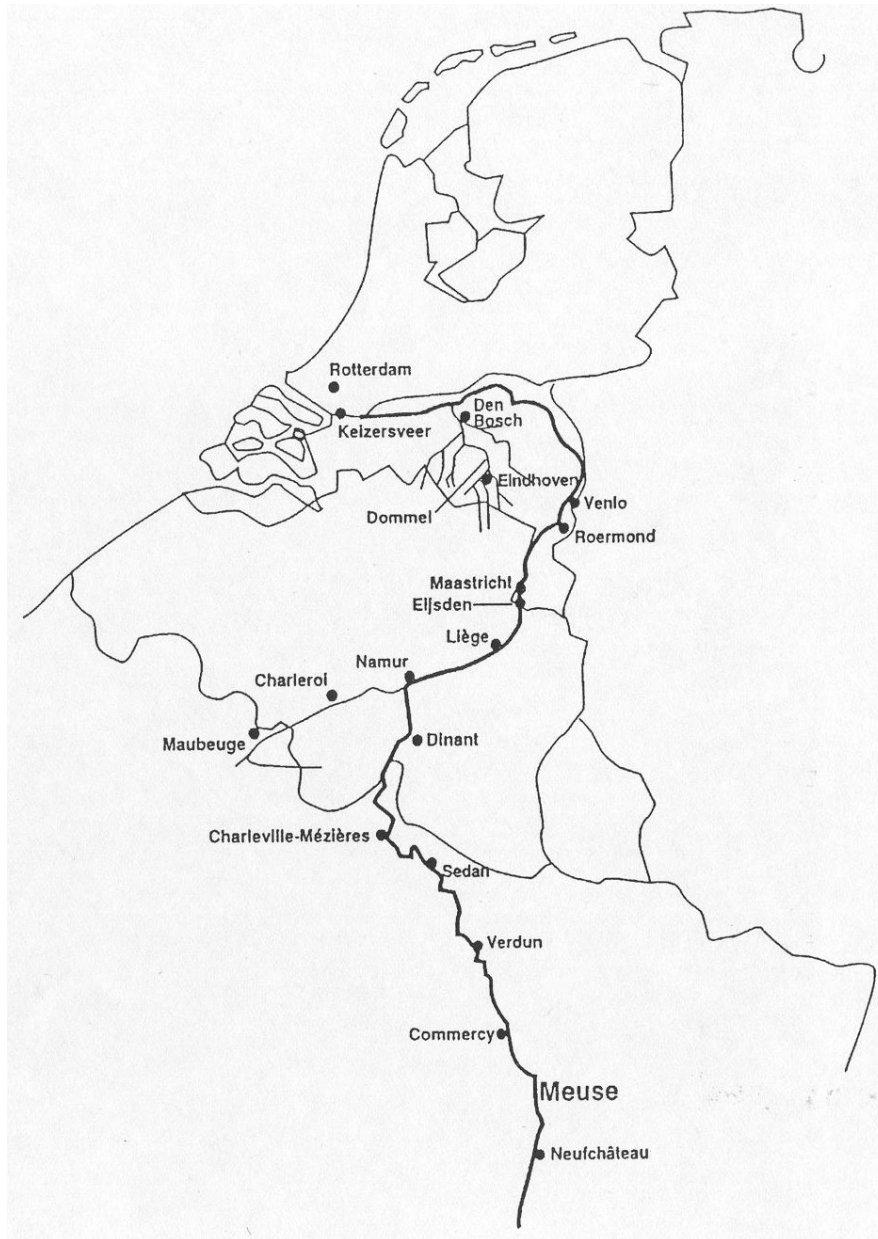
As regards the legal position of municipal agencies in dealing with waste water, and the acceptance of a duty of care in that respect, there is a range of rele-

<sup>24</sup> See for example the German *Wasserhaushaltsgesetz* of 1957, para. 22, and the Swiss *Gewässerschutzgesetz*, Article 36. For a discussion of this topic, see Jan M. van Dunné, *Liability for Environmental Damage in the Case of Harbour Silt Polluted by Discharges*, Rhine Inquiry Project, Part 2, 1988, Institute of Environmental Damages, Rotterdam, p. 53 ff., with further references. See also Gert Brüggemeier, 'Liability for water pollution under German law: fault or strict liability?', and Johannes Köndgen, 'Multiple causation and joint tortfeasors in pollution cases according to German law', both in: *Transboundary Pollution and Liability: the Case of the River Rhine*, Jan M. van Dunné (Ed.), Vermande, Lelystad, 1991, at p. 83 and p. 99, respectively.

<sup>25</sup> BGHZ 57, 257, also discussed by Brüggemeier and Köndgen, *op. cit.*, at p. 88 ff. and p. 103 ff.

<sup>26</sup> In a comparable case, also widely discussed in German literature, *Steinbruch*, BGHZ 66, 70 (1976), property damage by blasts from two nearby quarries could have been caused by either one. The Court accepted the presumption of a causal connection in regard to the defendant quarry, based on a rule of evidence. See Köndgen, at p. 102.

vant case law, starting with the series on the pollution of the Voorste Stroom, a river in the Dutch Province of North-Brabant, receiving untreated sewage water from the Municipality of Tilburg, a pollution dating from the 1870s. From 1915 until 1953 some hundred law suits have been filed before the local court, eventually leading to seven Supreme Court cases, until finally, after the last case, a 1953 decision, [53]



*Figure 3.3 Cities located on the River Meuse*

[54] Tilburg installed a waste water treatment plant. The 1943 decision is of par-

ticular interest here, *Voorste Stroom VI*.<sup>27</sup> The city's defence, an argument based on the shortage of financial means to build a purification plant and the choice for the cheaper way of disposing of the waste water into the river, was rejected by the Supreme Court. It held that such a policy may be justified from a point of view of the general interest or even be obligatory under the given circumstances, but this will not relieve the Municipality from its obligation to take the detrimental effects of its policy for third parties for its account.

The 1915 decision, *Voorste Stroom I*, establishing liability of the upstream water polluter *vis-à-vis* the down-stream user of river water under the doctrine of a property owner's right to the use of river water for agricultural purposes (resembling a 'servitude', easement; art. 676 (Old) Dutch Civil Code), found a recent follow-up in the well-known *French Potassium Mines* case of 1988.<sup>28</sup> This case, dealing with industrial pollution of the River Rhine with chlorides (salt) in Alsace, which caused damage to nursery firms dependent on river water in the western part of the Netherlands, is a landmark case on transboundary water pollution. This decision is the foundation of tort liability for pollution of water ways across the border, an area of the law which thus far was thought solely to be governed by public international law. Furthermore, the pollution involved actually was a minor contribution to the overall pollution at the site of the plaintiffs. Its relevance for crossborder river pollution from non-point sources will be clear, as is the case in the Meuse project.

In the *French Potassium Mines* the Dutch Supreme Court's approach to the matter resembles that in nuisance cases in general; the Court held that the question of negligence should be answered by taking into consideration the character, severity and the extension in time of the damage to third parties, with regard to the circumstances of the case. The dischargers of toxic substances should in their conduct be guided by a weighing of their own interests against those of the down-stream users of river water. In particular the circumstance that this use is sensitive to the substances emitted should be of importance here, the Court ruled. Furthermore, the down-stream user is justified in expecting that the river will not be polluted excessively by considerable discharges.

This latter phrase, however, should be taken with a grain of salt: the lower court had established that the Potassium Mines' contribution to the salt pollution of the Rhine water was of 'a relative minor proportion', due to the substantial contribution of sea water to the salination of the surface water in that part of the Low Countries. Although the Potassium Mines' salt discharges into the Rhine appeal to the imagination, reaching in peak years a staggering amount of 22 million tons, which accounts for a 40 per cent of the total industrial salt discharge into this river, its [55] contribution to the salination at the site of the nursery firms was only 14.5 and 8.8 per cent respectively. Under these circumstances the Mines are only minor polluters, which makes the decision of special interest for our topic. It should also be noted that the emission of chlorides did not create a health risk in the use of river water by the plaintiffs; the damage concerned is pure economic

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<sup>27</sup> HR 19 March 1943, *NJ* 1943, 312, *Gent. Tilburg v. Haas et al.* Compare my comments in *TMA/ELLR* 1988, p. 38.

<sup>28</sup> HR 23 September 1988, *NJ* 1989, 743, note Nieuwenhuis and Schultsz; *TMA/ELLR* 1989, p. 12 (with English translation), note Van Dunné (with English Summary).

damage, namely additional costs of water treatment for the nursery firms (as regards causation, the linear relation between emission and impairment was not contested).

Another point of interest here is the Potassium Mines' defence that the chloride discharges are to be dealt with in accordance with the Bonn Salt Treaty of 1976, under rules of public international law; in fact the emissions were within the standards laid down in that treaty (which came about after 25 years of negotiations, and clearly is a compromise of all interests involved). The Supreme Court, in rejecting that argument, held that the Treaty is only binding upon the concluding States, and not upon individual citizens of those States in relation to others. As a consequence, in transboundary river pollution, civil claims can be brought before the Court, on the basis of Dutch tort law.<sup>29</sup>

The competency of a Dutch Court, at the location where the damage occurred, is based on a decision of the European Court of Justice, at the request of the Dutch Court in the *French Potassium Mines* case (a prejudicial decision of the Luxembourg Court).<sup>30</sup>

In this context, reference should also be made to an adjacent area, the maintenance of waterways. The decision of the Dutch Supreme Court in the *Bargerbeek* case of 1981 comes to mind, where it was held that the water authority was under a duty of care to third parties for the proper maintenance of the local brook.<sup>31</sup> Here the plaintiff's crop was damaged by an inundation, due to deficient maintenance of the brook. The Court held that the water authority had some discretion in its operations, thereby also taking into account financial aspects. In recent case law, however, this latter aspect is assuming less weight.<sup>32</sup> In his note Brunner defends the reversal of the burden of proof of the plaintiff in cases such as the one at bar.

One may conclude from this survey of Dutch case law that a Municipality or Water authority according to Dutch tort law is under a duty of care in regard to down-stream users of river water such as drinking water companies *et al.*, not to discharge toxic substances into surface waters which will cause detriment to parties using the water in the production of drinking water, or similar purposes. [56]

## 2.5. Belgian and French Case Law on Water Pollution

In Belgian case law we find decisions comparable to the case law discussed so far, regarding the discharge of untreated waste water into the surface water by municipalities. In the case of the *Julienne*, a small river flowing into the Meuse, fish farmers sued the Municipality and the Walloon Province. The Court of Appeal Liège held both defendants liable in tort by acting negligently in disregarding the

<sup>29</sup> The Potassium Mines' appeal to the conditions of its permit was rejected by the Court of Appeal - which was confirmed by the Supreme Court - since it, according to French law, and taking into account the wording of the permit, did not relieve defendant of its liability in tort (which is also the case under Dutch law).

<sup>30</sup> For this subject, see also Betlem, *op. cit.* (thesis 1993). For the public international law aspects of transboundary water pollution reference is made to my Report (in conjunction with that of Hans Lammers) to the Netherlands Association of International Law 1991, *Aansprakelijkheid voor schade door grensoverschrijdende milieuvcontreiniging: civielrechtelijke aspecten*, Kluwer, Deventer, at p. 127.

<sup>31</sup> HR 9 October 1981, *NJ* 1982, 332, note Brunner.

<sup>32</sup> See my *Verbintenissenrecht* 2, p. 452 ff.



fish farmers' interests; furthermore, the Municipality infringed the Surface Water Act of 1971 and the Province acted negligently by refraining from building a water treatment plant.<sup>33</sup> In the *Brugelette* case a similar action was brought before the Cantonal Court by local bee-keepers against the Municipality of Brugelette, which approved of pollution of a brook by industrial discharges of waste water, causing damage to their beehives and their populations. The Judge of first instance held the Municipality liable in tort (nuisance) and imposed an obligation to take measures to bring the pollution to an end, under a recognizance.<sup>34</sup>

A typical aspect of Belgian environmental law, and of French law as well, is the use of the action in nuisance, *troubles de voisinage*, to the effect that strict liability of the person disturbing the 'balance' in the neighbourhood is assumed (art. 544 Belgian Civil Code). The nuisance caused to other persons must be abnormal; no negligence is required, however, the actor is under a general obligation to restore the equilibrium by paying a reasonable compensation.<sup>35</sup> A plaintiff confronted with difficulties of proving negligence of the defendant in a common tort action, may resort to the nuisance action as an alternative, the Belgian Supreme Court held in a 1973 decision. This action basically is an infringement of property rights of persons located in the neighbourhood.

Case law offers interesting examples of the use of this instrument in environmental disputes. A municipality had to pay compensation to the owner of a fish pond which was polluted by the discharge of untreated sewage water into a local canal; a farmer was held under the obligation to pay damages to adjacent farmers when pesticides sprayed on his land were carried along with rainwater and caused pollution of farm land in the vicinity.<sup>36</sup>

In French law we find a similar use of the action in nuisance; in a 1971 decision the Cour de cassation held that the obligation to give compensation for impairment [57] in case of *trouble de voisinage* is not based on negligence (*faute*).<sup>37</sup> At times the compensation consists of building purification works or at least an indemnification of the costs required. In a 1972 decision the defendant had to pay the costs of a river cleanup.<sup>38</sup> It should be noted, however, that the French courts

<sup>33</sup> Court of Appeal Liège 9 February 1984, *JT* 1985, 320, note Jadot.

<sup>34</sup> Cantonal Court (Justice of the Peace) Lens 27 May 1986, *RGAR* 1987, nr 11 250; confirmed by District Court Bergen 23 December 1986. Compare also Cantonal Court Lens 9 April 1990, *AR* 1990, 6661.

<sup>35</sup> Belgian Supreme Court 6 April 1960, *Arr. Verbr.* 1960, 722; in establishing this rule of law, the Court is referring to the Constitution. For this subject, compare L. Cornelis, *Beginnelen van het Belgische buitencontractuele aansprakelijkheidsrecht*, Antwerpen, 1989, p. 670 ff.; H. Bocken, *Het aansprakelijkheidsrecht als sanctie tegen de verstoring van het leefmilieu*, Brussels, 1979, p. 270 ff.

<sup>36</sup> Compare, respectively: District Court Turnhout, 3 June 1985, *Res Jura Imm.*, 1985, 181; District Court Hoei, 25 June 1986, *R.G.A.R.*, 1987, nr 11 280.

<sup>37</sup> Cour de cassation 4 February 1971, *J.C.P.* 1971, II 16781, note Lindon. The same holds for a situation where otherwise the requirements for liability for things according to Article 1384 CC would apply, the Court decided in 1984. See for this subject: Geneviève Viney, *Traité de droit civil V, Obligations*, 1988, nr 90; E.H. Hulst, *Grondslagen van milieu-aansprakelijkheid*, thesis Rotterdam 1993, Gouda Quint, Arnhem 1993, p. 337 ff.

<sup>38</sup> Cour de cassation 17 February 1972, *Bull. civ.*, II nr 50, p. 36, cited by Viney with other cases and literature, *op. cit.*

are sensitive to the amount of compensation involved, in relation to the economic position of the defendant polluting company.

Another interesting instrument of French law, also outside the realm of negligence and its intricate requirements of proof and causation, is the use of art. 644 Civil Code in water pollution cases. According to this article, the equivalent of which was used in the Dutch *Voorste Stroom I* case of 1915, discussed before, owners of riverside land have a 'servitude' to use the river water for agricultural purposes. In an old decision at the turn of the century, the Cour de cassation has held that a riparian land owner who has permission to use river water for industrial purposes is under an obligation to respect the rights of down-stream property owners, especially to prevent the water from becoming improper for normal use.<sup>39</sup> In a more recent decision, the Cour de cassation has ruled that a company under this article has the obligation to construct a purification plant, to the effect that the river water used by the company on its premises will be discharged into the river again in its natural purity.<sup>40</sup>

## **2.6. The Need for Black Letter Emission Standards in Establishing Negligence**

One aspect of tort liability law asks for closer consideration: the lack of surface water quality norms in regard to pesticides and the question whether this is of influence in establishing a duty of care against third parties. As mentioned before, this is the common situation in the Meuse riparian States, and under EC law as well. We will deal with this issue according to Dutch law, the law the author is most familiar with. A recent decision of a Dutch court, actually concerning pollution of the Meuse in Belgium, will serve as *casus* for our discussion of the matter.

In the decision of the Court of Appeal Den Bosch (Bois-le-Duc) of 31 May 1994 in *Cockerill Sambre v. Foundation Reinwater et al.*, it was held that no action in tort for water pollution would lie in the absence of a clear (written) norm regarding the emission of the particular toxic substances.<sup>41</sup>

[58] At the outset, it may be observed that despite of the large quantity of legislation resulting from a growing awareness of the need for a clean environment, an important task remains for the judiciary in the area of environmental liability: resolution of cases the circumstances of which have not yet been addressed by the legislator. One of the biggest problems encountered in attacking environmental damages is where the legislator or emission permit does not set forth any precise emission standards. In such a case the issue arises as to whether an action in tort could arise based on societal standards of care and recognized interests.

In *Cockerill*, the Court of Appeal Den Bosch decided that in such a case of water pollution there is no cause of action for negligence, considering that a negligent act requires a clear, applicable Standard, by which the Court evidently meant a quantified, written standard. The Court rejected Reinwater's (an environmental organization) claim against Cockerill because no permit conditions were exceeded

<sup>39</sup> Cour de cassation 6 July 1897, *D.P.* 1897, 1.536.

<sup>40</sup> Cour de cassation 12 February 1974, *J.C.P.* 1975, II 18106, note Despax.

<sup>41</sup> Court of Appeal Den Bosch 31 mei 1994, *TMA/ELLR* 1995, 60. Compare also the articles in the same issue regarding this decision, by Berggren and Taams, and the present author, pp. 46 ff., 41 ff., respectively, for further details and sources mentioned in the following text.

and no directly applicable legal standards concerning polycyclical aromatic hydrocarbons (PAHs) discharges had been set forth.

It may be submitted that this position is untenable, particularly since the Dutch Supreme Court in 1919 abandoned the concept that 'illegal' means 'contrary to written law'. For support of this position the author points to recent Supreme Court decisions in several nuisance actions.

First, a 1981 decision, *Van Dam v. Beukeboom* (noise nuisance action), from which it can be concluded that, despite of the existence of a written standard, a recognised interest must still be at stake. Seven years later, we see the *French Potassium Mines* case (nuisance by water pollution), in which a recognized interest plays a central role, and we also see that in the case of slight environmental pollution (and damage) the action can be a tort against third parties. The 1982 soil pollution decision, *Zegwaard v. Konijnenburg*, held that the scope of the nuisance need not be precisely established in order to make a case for negligence. Finally, in the 1986 air pollution case, *Rockwool Lapinus v. Poly Roermond*, the Court of Appeal Den Bosch held that, in principle, activities that conflict with established permit conditions are also negligent against those parties on whose behalf the conditions were made. Here the fact that in certain circumstances it is difficult to ascertain whether there is a conflict with established permit conditions at issue, is of less importance in the opinion of the Court. It is remarkable that in this case the Den Bosch Court of Appeal had no difficulty with the lack of 'objectively measurable criteria' in establishing the negligence of the actions.

There are convincing arguments to dispose of the expected objection that the criticism of the *Cockerill* case is disregarding the summary nature of the proceedings. First, reference can be made to existing practice in environmental cases where often use is made of summary proceedings (see for example *Sopar*, *Zegwaard* and *Benckiser*). Complex cases can also be determined in summary proceedings, since establishing the precise extent of environmental damage is not a precondition for addressing the negligence of the actions, especially when not so much compensation as damage limiting measures are particularly required.

[59] An argument of legal policy is that a normal Court procedure is too lengthy for the average injured party and for the environment.

The conclusion therefore is justified that the position of the Court of Appeal Den Bosch in the *Cockerill* case, i.e. that there must be a hard, black letter emission standard in order to make a negligence case for pollution, has no support in standing law, based on decisions of the Supreme Court and several Courts of Appeal (including that of Den Bosch!) in nuisance cases where actions were brought for air, water and soil pollution. The need for hard norms expressed by the Den Bosch Court in *Cockerill* is an illustration of the well-known maxim: 'Hard cases make bad law'. The decision is of a low precedent value for environmental tort in general, in my judgment.

### 3. Liability Issues: Agricultural Sources

#### 3.1. Establishing a Causal Connection in Cases of Water Pollution by Agricultural Sources

We now come to the contribution of agricultural sources to water pollution by pesticides. Basically, the issues are the same, although there is no intermediary of a waste water treatment facility here. Furthermore, the number of individual dischargers is considerably higher than in the case of municipal discharges. The conse-

quence thereof, leaving aside logistics, is that the individual contribution to water pollution is far more marginal than in the former case. However, the outcome, by adding up all small contributions, still is detrimental to third parties, and therefore tortious in nature.

The research carried out by the International Centre for Water Studies in North-Brabant gives information on the use of arable land in a certain watershed area, the crops that are grown, the emissions of pesticides washed into local brooks and streams, measured at certain measuring points. The areas chosen concerned the river-basins of the Achterste Stroom and the Bakelse Aa; reference is made here to Jan Dogterom's paper and *Figure 3.4*. To give an impression of the intricacy of the area mapping, reference is made to *Figures 3.5* and *3.6* on pages 61 and 62. If one studies the satellite pictures - one of those wonders of technology which brings the lawyer to the border of modesty - it is suggested that 'zooming in' on specific farming areas can lead to determining the crop grown at a particular surface, by an individual farmer. Since there is a relationship between specific crops and pesticides applied, in our case that between atrazin and maize, and simazin and leek and asparagus, nurseries and orchards, it is possible to establish a causal connection between farming and the pollution of surface waters. In particular, when taking the sum of the emissions in the area at a certain measuring point, assessment of the total emission of, say, atrazin by maize farmers, is feasible.

I refer to *Figure 3.7* for a, for the sake of discussion, simplified map of a particular agricultural area, the riverbasin of the *Be*, with the farming lots numbered [60]

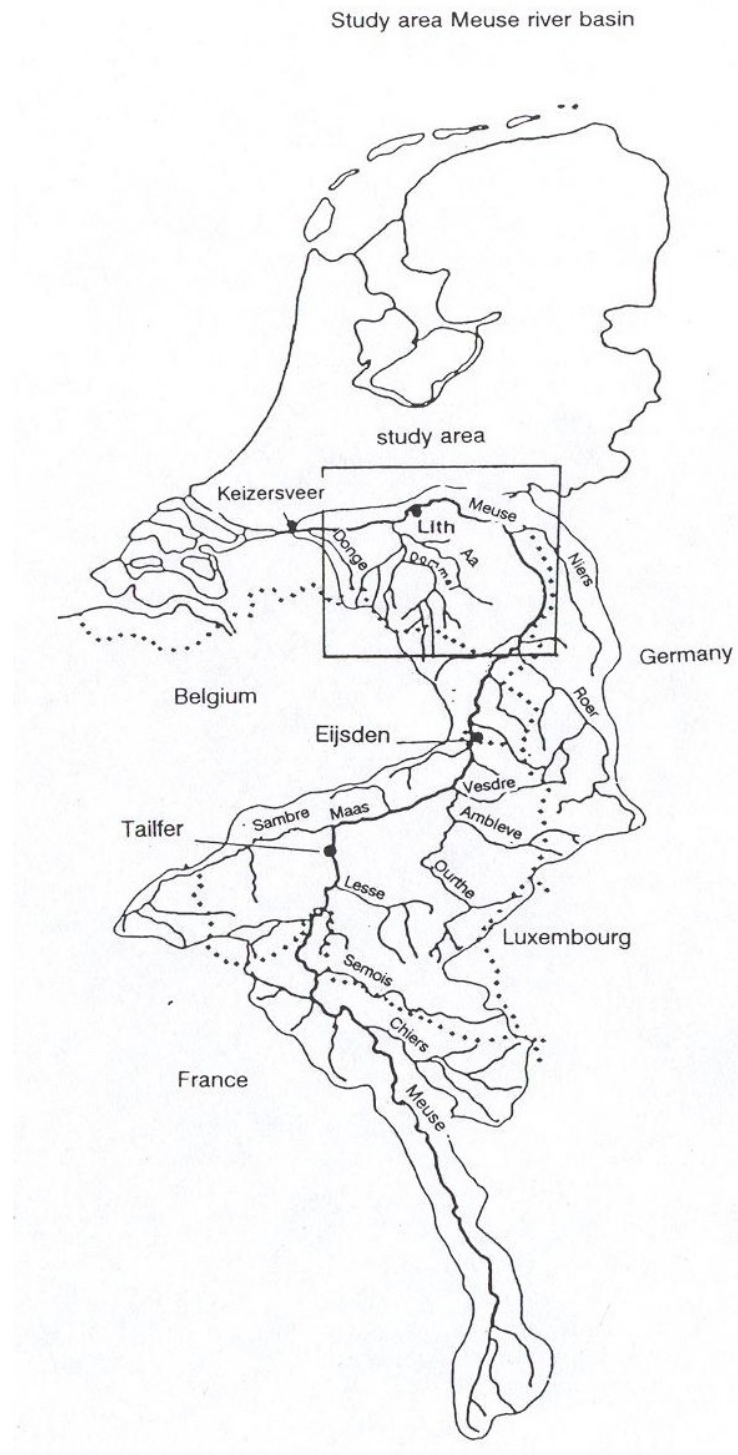


Figure 3.4 Meuse basin and location research area

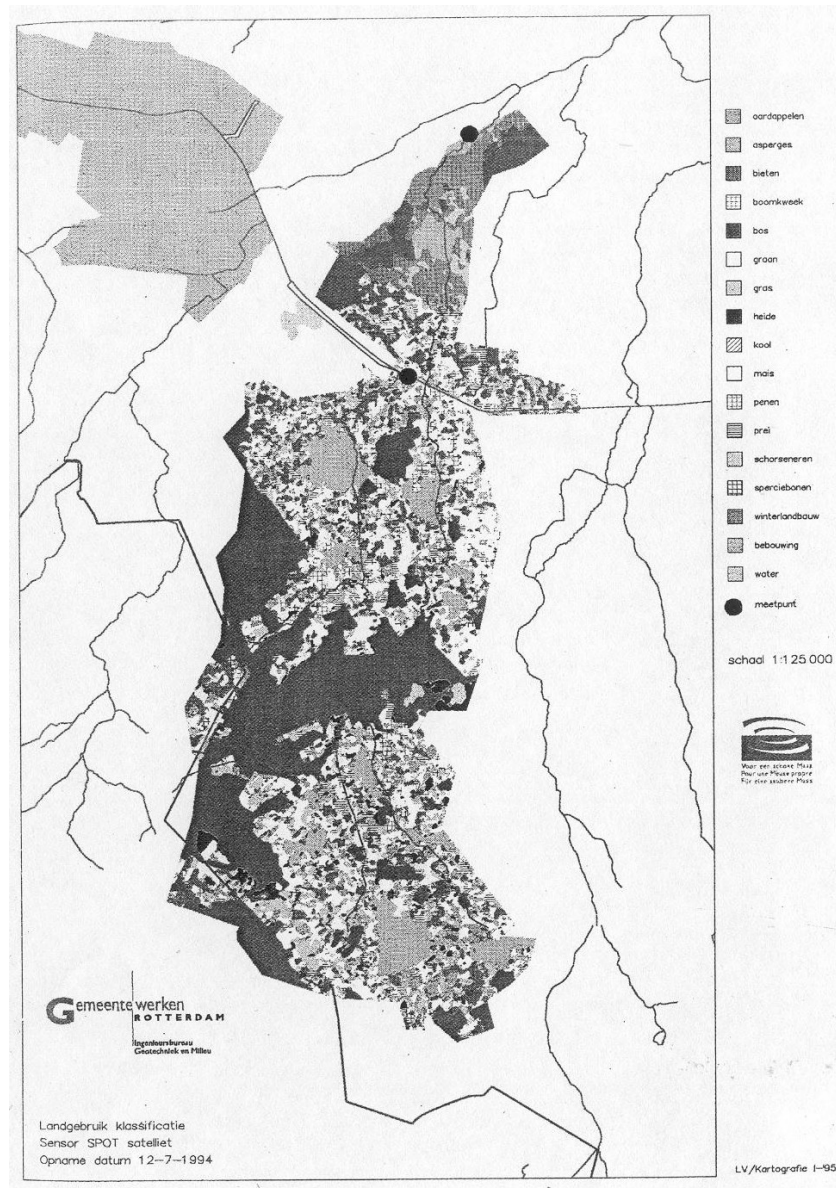


Figure 3.5 Satellite picture showing intricacy of the area mapping (1)

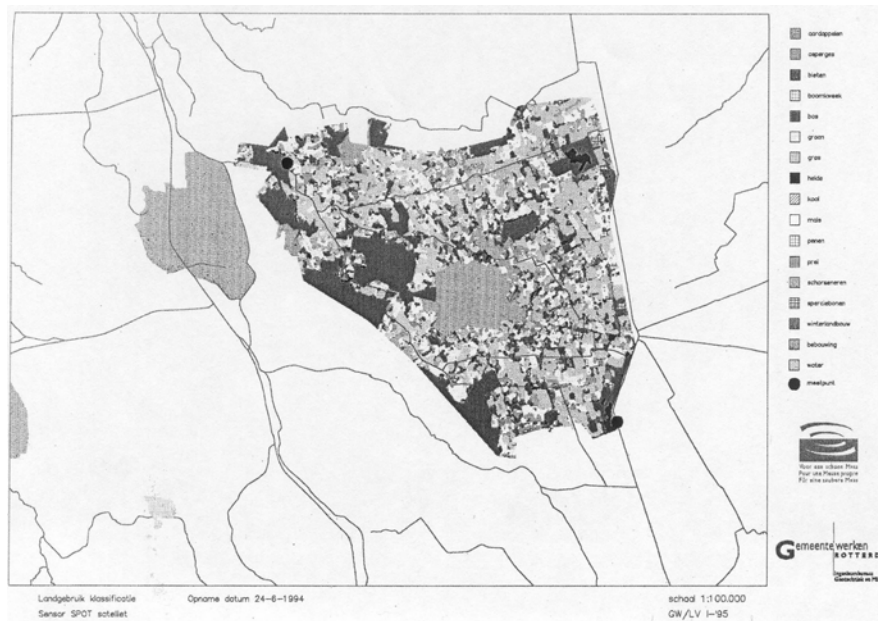


Figure 3.6 Satellite picture showing intricacy of the area mapping (II)

[63] 1-25. If maize is grown in the lots 1-10 and 17-20, the conclusion is justified that farmers involved in the exploitation of those lots in a particular season have contributed to the emission of atrazin found in a certain amount at the measuring point of the area and therefore could be held jointly and severably liable (*in solidum*) for damage caused by that emission.

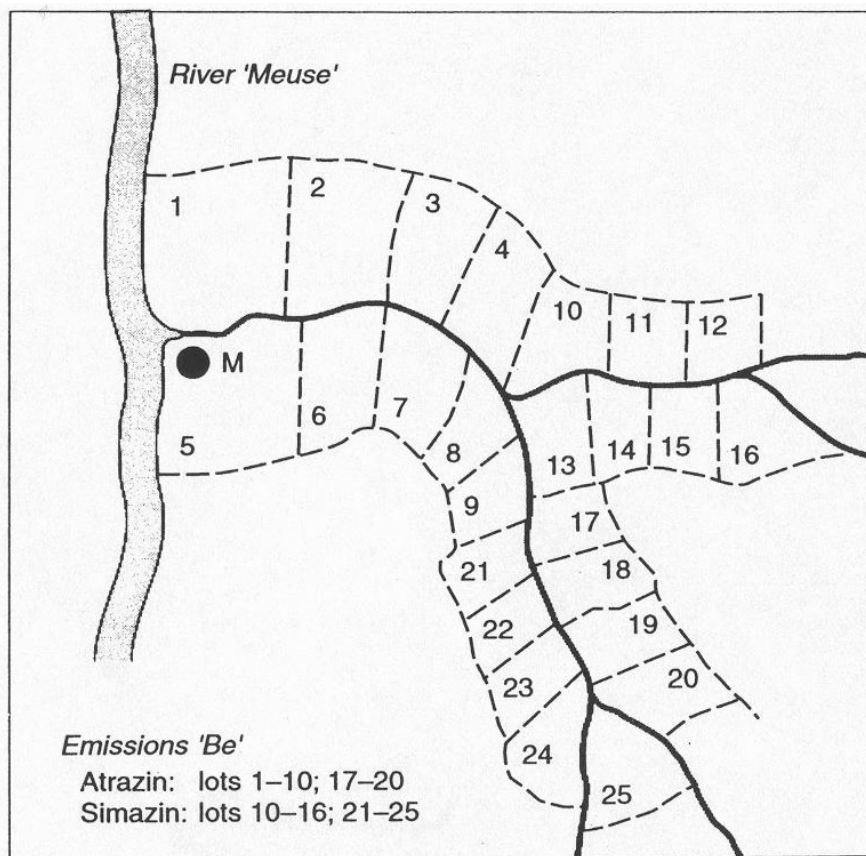


Figure 3.7 Water pollution from agrim

Similarly, the crops of leek and asparagus and the location of nurseries and orchards in the lots 10-16 and 21-25 give rise to the conclusion that the farmers in question are liable, again jointly and severally, for damage caused by the emission of the amount of simazin found at the measuring point.

In both cases the causal relation is sufficiently established according to standards accepted under current case law, discussed in the previous paragraph (compare [64] also *infra* 3.2); of course an individual farmer may have the opportunity to prove that no causal relationship exists in his specific case, which will not be an easy task, and comes close to a *probatio diabolica*, a devil of a burden of proof.

There is no room for a review of the requirements for environmental liability which were treated earlier in regard to the position of municipal sources of pollution, focusing this time on the specific characteristics of agricultural non-point source pollution. It is left to the reader to find the analogies here.

The sheer number of actors in a non-point source situation, however, makes it necessary to have another look at the causation question, to see what remedies modern tort law may have for us in coping with that complicated matter. This is a topic which in many jurisdictions increasingly is getting attention under the heading of 'mass torts'. The format of this chapter makes brevity a prerequisite of treating that subject. Which is, as the experienced reader may notice, a blessing in disguise



for an author.

Before dealing with that topic, however, some remarks are needed on the role of permits under the Surface Water Pollution Act (WVO) in the area of water pollution with pesticides. Recently, a change of thought has occurred in regard to the application of the WVO permit system to non-point source agricultural water pollution, caused by (sub-) surface run-off. The view that this kind of water pollution could not be brought under the Act was abandoned, under pressure of environmental groups, that found support in recent court decisions. First, it is now accepted that the statutory requirement that pollution should be caused by the use of 'works' (Article 1, section 1 WVO) can be construed liberally, to include discharges from drain pipes. More importantly, the phrase 'discharge other than by works', requiring permits for discharges (Article 4 Enforcement Decree WVO; Article 1, section 3 WVO), could be construed to contain application to discharges by agricultural run-off. A landmark decision here is the *Spaargaren* case of 1994, where the Administrative Chamber of the Council of State held that PAH water pollution caused by creosoted piles constituted discharges of waste into the surface water other than by works, and could therefore be subjected to surface water permits.<sup>42</sup>

In a response to reports published by environmental organizations, the Union of Water Boards has recently accepted the new interpretation of the Act and has committed itself to adapt its policy in the issuing of permits accordingly.<sup>43</sup> As a consequence, surface water permits currently are introduced in the field of market gardening, nurseries and bulb growing, in the latter area based on a covenant with the bulb growing industry.

Another initiative was taken by the Netherlands Waterworks Association (VEWIN), in which the Dutch water companies are united, to start a project of [65] good agricultural practice in cooperation with the Farmers Union of North-Brabant, to improve the quality of Meuse water.<sup>44</sup>

### 3.2. Additional Matters of Causation and Assessment of Damage

The issue of so-called 'alternative causation' (art. 6:99 Dutch Civil Code) has been discussed, but there are some additional points of interest regarding the causal connection between emission and the damage inflicted to down-stream water users. It should be borne in mind that under Dutch law causation is not considered to be solely founded on a *conditio sine qua non* basis. The leading doctrine since the 1970s is that of 'reasonable imputation', laid down in art. 6:98 Dutch Civil Code in 1992, in which the criterion of foreseeability is just one of the relevant factors in establishing the causal connection, nothing more. Therefore, it may suffice for a plaintiff to demonstrate a causal link that may serve as an adequate basis for the judge to establish with reasonable certainty the causation of damage by the defendant's act. In older cases Courts often used the phrase that there was a

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<sup>42</sup> Raad van State 20 April 1994, *ARB* 1994, 679.

<sup>43</sup> Compare the Report *Leve de sloot!*, Stichting Natuur en Milieu, 1994; Report *Mais mest water*. Stichting Reinwater 1995; Unie van Waterschappen (Union of Waterboards): letter to foundation Natuur en Milieu of 23 March 1995, letter to foundation Reinwater of 30 June 1995, and lecture by A.J.A.M. Segers, of the Union, 21 September 1995, Meuse Research Project presentation, Eindhoven.

<sup>44</sup> Reported at the Rotterdam Conference of May 1995 by Jan H.P. Baltissen.

‘considerable chance’ that damage would occur, which was foreseeable for the defendant.

In matters of proof the Courts have accepted statistical evidence; an interesting case is that of *Binderen v. Kaya*, where the plaintiff succeeded in establishing discriminating conduct of the landlord in accepting tenants through the use of statistical evidence.<sup>45</sup>

The Court may accept proof of the causal connection by reasonable imputation, but may also take plaintiff’s presentation as *prima facie* evidence, leading to a reversal of the burden of proof. Then it is to the defendant to prove the non-existence of the pretended causal relation in the case at hand.

The doctrine of reasonable imputation is also used in the assessment of damages. In our present subject of study, the contribution of non-point source polluters may pose some difficulties. How to establish the damage inflicted by a marginal polluter of river water with pesticides? In this context I will confine myself to some general remarks.

Given the fact that the estimated damage of down-stream Meuse water users is considerable, namely on a annual basis about Dfl. 21.5 million, and in addition Dfl. 30 million, even a tiny percentage of these costs will be a substantive amount of money in the eyes of a farmer or a small municipality or water authority. For the purpose of bringing parties to the negotiation table that may already suffice. Moreover, plaintiffs may also claim damages in a form of punitive damages, whereby profits made by the defendant are taken as compensation for the loss incurred by the plaintiff. Reference is made here to art. 6:104 Dutch Civil Code, a [66] doctrine which was applied in several cases, dealing with infringement of copyrights or privacy. In the environmental setting, it is submitted that for instance in case of a defendant waste water treatment authority, the profits made by not applying expensive filtering techniques to remove pesticides from the waste water could be claimed by a plaintiff as compensation for his damage.<sup>46</sup>

This instrument may be of practical importance when claiming ecological damage, which may pose the plaintiff for a difficult task in assessing that damage (e.g. in the case of damage caused to De Biesbosch National Park). It may prove quite convenient then to claim in compensation the profits of the polluter made by refraining from treating its waste water properly. In this context, it is noted that under the new art. 6:175 Dutch Civil Code on damage by hazardous substances, compensation of damage can be claimed also in the case repairment of the ecological damage sustained is not possible.<sup>47</sup> As to pesticides, these substances are covered by art.

<sup>45</sup> HR 10 December 1982, *NJ* 1983, 687. Compare also P.A. Kottenhagen-Edzes, *Onrechtmatige daad en milieu*, thesis Rotterdam; 1992, p. 265 ff. (Gouda Quint, Arnhem). In German law the courts take the same view, see Bruggemeier, *op. cit.*, p. 88. For this topic further reference is made to the recent Rotterdam thesis of August Van, *Onzekerheid over daderschap en causaliteit*, Serie Aansprakelijkheidsrecht, nr 3 (Gouda Quint, Arnhem) 1995.

<sup>46</sup> For this topic reference is made to my *Verbintenissenrecht* 2, p. 50 ff.

<sup>47</sup> Compare, *inter alia*: Bauw and Frenk, *NJB* 1991, p. 1261; Frenk, *Kollektieve akties in het Privaatrecht*, thesis Utrecht 1994 (Deventer: Kluwer). See also Van Dunné: ‘The use of tort actions in public interest cases in the Netherlands’, in: *Geïntegreerde rechtswetenschap*, R. Foqué *et al.* (Eds.), 1994, p. 479 (Arnhem: Gouda Quint). In most jurisdictions the compensation of ecological damage is still in its infancy, as is immaterial damage in general; see the last cited article for further references.

6:175 Dutch Civil Code, since the list of substances referred to in that article is not exhaustive. This topic cannot be elaborated here I hope to have demonstrated that the application of this doctrine in pollution cases is worth further study.

#### 4. Conclusions

In my chapter I have tried to give an overview of the possibilities of coming to terms with non-point source dischargers of pesticides with the use of private law instruments, notable the action in tort, with Dutch law in the role of *pièce de résistance*. It may have looked like a typical continental meal; some of the courses came from markets in neighbouring countries, with their *couleure locale*. A nuisance action or one based on property rights of the riparian owner, with strict liability as a result, may have come as a surprise to the comparative lawyer.

As ever, comparison of law gave much food for thought. It also proved that being neighbours, especially along the Meuse, does not necessarily produce *troubles de voisinage* as a result; on the contrary.

There is no need for extensive conclusions; it would, at any rate, be beyond the intended format of this chapter. Suffice it to say, therefore, that in the case of both communal and agricultural emittents of hazardous substances into the River Meuse, prospects are bright of holding those parties liable in tort before Dutch Courts, by a plaintiff suffering consequential environmental damage.

As indicated at the outset, however, it is in the interest of all parties involved to make use of legal instruments like those discussed here only if negotiations directed at a solution on a voluntary basis have definitely failed.