



Summer 1996

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Recommended Citation

Villeneuve C. De H.V., *Western Europe's Artery: The Rhine*, 36 NAT. RES. J. 441 (1996).
Available at: <https://digitalrepository.unm.edu/nrj/vol36/iss3/1>

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ABSTRACT

This article covers the century-long attempts to come to terms with the pollution of the Rhine river by dangerous chemicals, chlorides and other adverse human impacts on its quality. It demonstrates how, little by little, the combined efforts of the adjacent countries have succeeded, even though there is still much to be done. It also addresses how the International Commission for the Pollution of the Rhine gradually extended—and is still extending—the scope of its activities from mere pollution control to an ecosystem approach of the catchment and to a more integrated management of water quality and quantity. It illustrates how, in 1986, decennia-long stagnation changed virtually overnight due to the Sandoz accident near Basel. Finally, it asserts the value of working with non-legally binding international policy agreements along with comprehensive regulatory standards.

CHARACTERIZATION OF THE RHINE

The Rhine is western Europe's largest river, measuring 1326 km in length. It originates at the glaciers of the Swiss Alps, and constitutes the border between Switzerland and Liechtenstein, Austria and, starting at Lake Boden, Germany, and between Germany and France; it continues to flow through important parts of western Germany (not surprisingly, the Länder Rheinland Pfaltz and Nordrhein-Westphalia) and, finally, crosses the Netherlands, becoming the North Sea's most important tributary by means of a common estuary with the river Meuse. Its catchment covers 224,000 km² and encompasses parts of Italy, Luxembourg and Belgium. All in all, about 60 million people live in the Rhine catchment area.¹

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1. These and the following data about the river Rhine are facts of common knowledge. I took most of these from Rhine, in *ALGEMENE WINKLER PRINS ENCYCLOPEDIE*, pt. XI, at 25-26 (1976).

The Rhine is subject to a variety of uses. It is a densely used shipping route with the world's biggest sea port, Rotterdam, at its mouth. It has important inland ports upstream like Duisburg, Strassbourg and Basel along its banks. In order to optimize the shipping function, the river's original meandering course has gradually been straightened and several locks and weirs have been constructed. Now, after centuries of planning, the Rhine-Main-Danube-canal in Bavaria is complete and the Rhine is one of Europe's main arteries for inland navigation. Many of Europe's most important industries have settled alongside its banks in Switzerland, Germany, France and the Netherlands: large petrochemical and chemical (pharmaceutical) plants, steel industries (the famous Ruhrgebiet), and potassium mines, to name a few.

The Rhine is also a source of drinking water for about twenty million of its riparian countries' citizens² and it fosters the well-reputed French and German Rhine wines. Salmon once abounded, and fisheries used to be a flourishing trade. Tourism abounds, in particular, via the beloved cruises along the German stretch of the river, recalling famous sagas and legends, like the Nibelungenlied ("das Rheingold") and the Loreley. In short, the Rhine is among Europe's most characteristic, valuable and beloved elements. Even so, all the Rhine's uses, divergent as they are, are far from constituting a harmonious entity.

After World War II, developments threatened to get out of control. Increasing quantities of urban and rural wastewater diminished the river's oxygen rate, making it uninhabitable for indigenous species. Cooling-water from power plants increased these risks during hot summers. Industrial effluents deposited huge amounts of heavy metals, chlorinated hydrocarbons and the like, affecting the fauna. Salty effluents of potassium mines threatened conduit pipes of water companies and other industries as well as horticulture in fields irrigated with Rhine water. Organic micropollutants from ship coating and other diffuse sources also contributed to the water quality's decay. In addition, the river's canalization diminished its ecological capacity, particularly concerning fish migration. Canalization also progressively increased the current's speed, thus causing higher pressure on the river dykes and thereby increasing risks of flooding. The balance between human uses and ecological requirements clearly needed to be restored. This, however, could not be realized by the riparian states individually. A concerted approach calling for close cooperation was needed.

2. LAMBERT C. GRIJNS & ERIK MOSTERT, *THE RHINE AFTER 1992: TOWARDS A METHOD FOR COMPARING AND WEIGHING TWO CONFLICTING INTERESTS* 17 (1992).

Cooperation Among Rhine States

Until the middle of this century, cooperation among riparian states was confined to specific, single-issue purposes like navigation³ and hydro-electric power. Pollution and ecology were not primary concerns though, in 1886, a Salmon Convention was concluded, creating a "Salmon Commission" charged with promoting salmon fishing. This Commission, however, ceased functioning and vanished in all but name after salmon fishing had stopped due to a gradual depletion of the stock.⁴

After World War II, priorities began to shift. In 1950, the riparian countries of the Rhine downstream of Lake Boden—France, Germany, the Netherlands, Switzerland, and Luxembourg—joined forces by creating, on an informal basis, the International Commission for the Protection of the Rhine against Pollution (ICPR), enabling a joint study of the river's qualitative condition.⁵ This Commission, while it certainly contributed to creating a better understanding among the cooperating parties, was without any legal commitment in connection with the persisting conflicts of interest. It was, therefore, not entirely an effective tool.

Consecutively, agreements were concluded for creating international commissions for protecting some of the river's tributaries, such as the Moselle⁶ and the Saar⁷ against pollution. The commissions are charged with studying the nature, volume and origins of pollution and with proposing appropriate measures to the respective governments to

3. The Treaty of Mainz of March 31, 1831, followed by the Revised Rhine Navigation Act of Mannheim of October 17, 1868, guarantees free navigation for all nations on the river from Basel to its mouth, to be supervised by the Central Commission for Navigation on the Rhine, located in Strassbourg; Germany, Belgium, France, Switzerland and the Netherlands participate in this Commission.

4. The Salmon Convention was signed at Berlin on June 7, 1886 by Germany, Switzerland and the Netherlands; see ALEXANDRE CHARLES KISS, *La pollution du Rhin et le droit international public*, in *RHINE POLLUTION - LEGAL, ECONOMIC AND TECHNICAL ASPECTS* 59-80 (1978).

5. See SCHUURMAN & JORDENS, Introductory note to the ICPR Agreement, in *NEDERLANDSE STAATSWETEN NR. 147-IB, MILIEUWETGEVING, INTERNATIONALE REGELINGEN VERONTREINIGING ZEE EN RIVIEREN, VERDRAGEN EN ANDERE INTERNATIONALE REGELGEVING MET BETREKKING TOT ZOET WATER IN EUROPA 85* (5th ed. 1994) [hereinafter *S&J*].

6. Protokoll zwischen den Regierungen der Bundesrepublik Deutschland, der Französischen Republik und des Großherzogtums Luxemburg über die Errichtung einer Internationalen Kommission zum Schutz der Mosel gegen Verunreinigung, December 20, 1961, published in *BUNDESGESETZBLATT, JAHRGANG 1962, TEIL II, 1102-05* [hereinafter *Moselle Agreement*].

7. Protokoll zwischen den Regierungen der Bundesrepublik Deutschland und der Französischen Republik über die Errichtung einer Internationalen Kommission zum Schutz der Saar gegen Verunreinigung, December 20, 1961, published in *BUNDESGESETZBLATT, JAHRGANG 1962, TEIL II, 1106-08* [hereinafter *Saar Agreement*].

control pollution, and undertaking any other tasks jointly entrusted to them by the governments of their contracting parties.⁸ Both the Moselle and the Saar Commissions convene at least once a year,⁹ consist of delegations of all contracting parties,¹⁰ decide on the basis of unanimity of votes,¹¹ and rotate their presidency among the parties for two year periods.¹² The Commissions may establish working parties, to be presided by one of its members.¹³ The costs are divided according to a mutually agreed formula,¹⁴ and both Commissions share a common secretariat.¹⁵

The ICPR

In 1963, the ICPR Parties concluded that the existing tools for cooperation among governments should be strengthened, formalized the Commission's existence by agreement at Berne,¹⁶ and endowed it with a permanent joint secretariat at Coblenz.¹⁷ The following tasks were entrusted to the ICPR:

- * studying the nature, volume and origins of Rhine pollution;
- * proposing to the governments of the Parties appropriate measures to control pollution;
- * preparing further agreements between the governments of contracting parties;
- * undertaking any other tasks jointly entrusted to it by the governments of contracting parties;¹⁸
- * drawing up a yearly report on its activities.¹⁹

It was agreed that the Commission, which convenes at least once a year,²⁰ consist of delegations of all contracting parties,²¹ that it decide

8. Moselle Agreement, *supra* note 6, at art. 2; Saar Agreement, *supra* note 7, at art. 2.

9. Moselle Agreement, *supra* note 6, at art. 5; Saar Agreement, *supra* note 7, at art. 5.

10. Moselle Agreement, *supra* note 6, at art. 3; Saar Agreement, *supra* note 7, at art. 3.

11. Moselle Agreement, *supra* note 6, at art. 7; Saar Agreement, *supra* note 7, at art. 7.

12. Moselle Agreement, *supra* note 6, at art. 4; Saar Agreement, *supra* note 7, at art. 4.

13. Moselle Agreement, *supra* note 6, at art. 8; Saar Agreement, *supra* note 7, at art. 8.

14. Moselle Agreement, *supra* note 6, at art. 10; Saar Agreement, *supra* note 7, at art. 10.

15. This secretariat is situated at Trier, in Germany.

16. Overeenkomst nopens de Internationale Commissie ter bescherming van de Rijn tegen verontreiniging. Apr. 29, 1963, art. 1, 1963 Tractatenblad van het Koninkrijk der Nederlanden No. 104 (Neth.), published in S&J, *supra* note 5, at 89-94 [hereinafter ICPR Agreement].

17. S & J, *supra* note 5, at 86.

18. ICPR Agreement, *supra* note 16, at art. 2.

19. *Id.* at art. 11.

20. *Id.* at art. 5, para. 1.

21. *Id.* at art. 3, para. 1.

on the basis of unanimity of votes (all parties being present, each of the delegations disposing of one vote, and one abstention not precluding unanimity),²² and that its presidency rotate among the Parties. As a rule, the president is presumed not to speak for his own delegation.²³ The Commission may establish working parties²⁴ and, in fact, has done so. The costs of the Commission are shared by the Parties with France, Germany and the Netherlands paid equal parts and Switzerland paid half of the same share, leaving a small amount to be financed by Luxembourg. These costs neither include the costs of research or other measures taken by parties on the basis of the Commission's recommendations nor those of the parties' representation in the Commission or its working groups.²⁵

It took some time, though, before the impact of water pollution on the river convinced the Parties that joint measures should be taken. In October 1972, the Ministers of the ICPR Agreement convened, for the first time, in The Hague.²⁶ As will be shown, the impetus of this meeting provided a trigger for more intense cooperation in combating pollution by chlorides as well as by dangerous chemicals.

In 1976, the ICPR Agreement was amended to enable the European Economic Community (EC) to join.²⁷ The EC's accession became inevitable in view of its newly developing environmental legislation, particularly in the field of water pollution. As a consequence, EC member states can no longer conclude agreements with non-EC States (like Switzerland) on matters falling within EC competence. The EC Commission, therefore, now fully participates in the ICPR and shares in its costs. In matters falling under EC competence, it exerts its voting rights instead of those of its participating member states. In all other cases, the EC Commission does not exert these rights.

Chloride pollution

From the beginning, the ICPR deliberated on the problem of pollution by sodium and potassium chlorides. These salts were discharged not only through urban waste water, but also by large industrial plants at a much higher rate, in particular in Germany and France. The

22. *Id.* at art. 6.

23. *Id.* at art. 4.

24. *Id.* at art. 7.

25. *Id.* at art. 12.

26. See Introduction to the Agreement on the Protection of the Rhine Against Chemical Pollution (the Chemical Agreement) in S&J, *supra* note 5, at 96.

27. The agreement was signed in Bonn, December 3, 1976 and published in 1977 *Tractatenblad van het Koninkrijk der Nederlanden* No. 31 (Neth.).

French "Mines de Potasse d'Alsace" (MDPA) near Mulhouse contributed fifty-four percent of the total chloride charge of the Rhine. The increasing impact of chloride pollution on water works, industry, and horticulture made radical remedial measures evitable.²⁸ To this end, several alternatives were studied including using ships or piping the pollution to sea and storage on land or underground. Discussions on this subject took several decennia. An approach at an agreement had to wait for the First Ministerial Conference in 1972. This agreement would have obliged France to store 60 kg/sec. of chloride ions, imposed a "stand-still" to prevent further pollution, established a water quality objective of 200 mg/l and included a cost sharing formula.²⁹

The attempted agreement of the First Ministerial Conference did not materialize, however. In particular, the storage requirement was met with difficulties. Four years later, a new solution was found, which was formally agreed upon by means of the Agreement on the Protection of the Rhine against Pollution by Chlorides, concluded by the ICPR Parties at Bonn on December 3, 1976.³⁰ It foresaw a progressive reduction of the Rhine's chloride load with 60 kg/sec. on French territory by 1980, and provided that the parties agree on the technical and financial means to achieve such a reduction.³¹ A reduction of 20 kg/sec. was to occur by means of injection of the wastes underground. The infrastructure needed for this to occur was to be put into place within eighteen months after the Agreement's entry into force.³² The costs of the measures taken were to be shared among the Parties according to the 1972 formula.³³ In the case of serious threats to the environment, groundwater in particular, France is allowed to temporarily halt injection activities.³⁴ Within four years, the ICPR was asked to propose further measures for reducing chloride pollution.³⁵ In cases of sudden and appreciable increase of chloride-ions in the Rhine, a warning procedure is to be followed.³⁶ Finally, the

28. See Introduction to the Agreement on the Protection of the Rhine Against Pollution by Chlorides (the Chloride Agreement) in S&J, *supra* note 5, at 104-05.

29. France and Germany pay 30% each, Switzerland pays 6% and the Netherlands, as the most interested party, pays 34%. See Introduction to the Chloride Agreement in S&J, *supra* note 5, at 106.

30. 1977 Tractatenblad van het Koninkrijk der Nederlanden No. 33 (Neth.). Also published in S&J, *supra* note 5, at 193-209.

31. *Id.* at art. 2, para. 1.

32. *Id.* at art. 2, para. 2.

33. *Id.* at art. 7.

34. *Id.* at art. 4.

35. *Id.* at art. 6.

36. *Id.* at art. 11.

Agreement contains an arbitration procedure for resolving disputes among the Parties.³⁷

In spite of this Agreement, this solution did not work either. In Alsace, an important popular movement arose, protesting the injection of wastes because it might pollute groundwater that is locally used as a source of drinking water. Members of the French Parliament succeeded in getting even wider support by not ratifying the Agreement.³⁸

Meanwhile, in the Netherlands, damage caused to three farmers by the chloride discharges prompted them to sue MDPa before a Dutch court for compensation. The farmers were supported by the Reinwater (which literally means "clean water", but sounds like "Rhine water") Foundation, an organization set up especially for this reason. The Dutch court's competence was settled in 1976 by the EC Court of Justice, which declared that a plaintiff was free to decide which court to choose according to the place where the damaging act took place (France), or where damage occurred (the Netherlands).³⁹ Interestingly, penal and administrative law procedures were started before the French courts, because the MDPa (a state company) did not satisfy the conditions of the French discharging permit. Popular feeling in the Netherlands was strongly in favour of the plaintiffs; environmentalists, water companies and representatives frequently requested their government take a strong stand against the French with respect to its refusal to ratify and enforce the Agreement. The Netherlands reply to the French refusal to ratify the Agreement was forceful indeed. It immediately recalled its ambassador from France, which is a unique act among EC member states.⁴⁰ Despite the heavy internal pressure, however, it did not go as far as starting procedures according to international law.

It took some time for the dispute between the two countries and their differing environmental points of view to work themselves out. Eventually, new studies were undertaken and, in 1983, after the Netherlands and France had agreed to modify the Agreement after a team of scientific experts had come to a common conclusion, it was finally submitted to and ratified by the French Parliament.⁴¹ In July 1985, the Agreement finally entered into force.

The legal procedures meanwhile proved successful to a large extent, although they took a long time. In France, MDPa lost several

37. *Id.* at art. 13, Annex B.

38. See Introduction to the Chloride Agreement in S&J, *supra* note 5, at 107-08, n.1.

39. CJEC judgment of Nov. 30, 1976 in 21-76 AFFAIR 1735.

40. See H.U. Jessurun d'Oliveira, De Rijnsanering in het slop, in NEDERLANDS JURISTENBLAD 85-86 (1980).

41. See Introduction to the Chloride Agreement in S&J, *supra* note 5, at 107-08, n.1.

cases⁴² and the lawsuit requesting damage compensation culminated in 1988 in a Netherlands' Supreme Court judgment proclaiming that MDPA was liable for compensation for a share proportionate to its contribution to the Rhine's total chloride pollution.⁴³ The exact amount of compensation was eventually settled upon by the parties.

In December 1986, the heads of delegation of the ICPR agreed that, subject to certain conditions, the Agreement's objectives might be attained by means other than injection. Finally, in September 1991, the Parties signed an additional protocol by which they formally dropped injection as an option and, instead, agreed that France shall limit its chloride discharges once the chloride concentration gets above 200 mg/l and temporarily store the remainder on land. However, in case of high river flows, it may increase its chloride discharges with chlorides from the storage. The costs of this intermediate storage are shared among the Parties, always according to the 1972 formula.

This new solution, however, did not entirely solve the problems of the Netherlands, where one of the main drinking water basins, Lake IJssel, is primarily fed by one of the Rhine's branches. A concentration of 200 mg/l was not considered acceptable for the drinking water potential of this Lake, because it also received brackish seepage water from the nearby polder Wieringermeer. The Parties, therefore, agreed that the Netherlands may, on the same cost sharing basis as the French measures, construct devices to divert the brackish polder water to the sea.⁴⁴ The additional protocol has entered into force and it appears that the odyssey of the Rhine chlorides may finally come to an end.

Chemical Pollution

The Ministerial Conference of October 1972 made another important decision by charging the ICPR with compiling lists of substances which constitute chemical pollution. In addition, it charged the ICPR with developing a program of action for supervising, reducing and possibly prohibiting discharges of the listed substances.⁴⁵ The Second Ministerial Conference, which convened in Bonn in December 1973, added to this directive by elaborating an international Agreement.⁴⁶ The

42. The Dutch plaintiffs were represented at the time by the actual French Environment Minister, Corinne Lepage.

43. Judgment of Sept. 23, 1988, HR [highest court], 13,303 RECHTSPRAAK VAN DE WEEK 1988 150 (Neth.).

44. Chloride Agreement, Sept. 25, 1991, Additional Protocol, 1992 Tractatenblad van het Koninkrijk der Nederlanden No. 3 (Neth.).

45. See Introduction to the Chemical Agreement in S&J, *supra* note 5, at 96.

46. *Id.*

Agreement on the Protection of the Rhine against Chemical Pollution was concluded in 1976,⁴⁷ together with the Chloride Agreement. The Chemical Agreement entails the following main elements:

- * Two lists of substances were developed and the discharge of these substances into the Rhine's catchment is to be progressively terminated (list I) or reduced (list II);⁴⁸
- * The Parties must inventory potential discharges of list I substances subject to emission limit values, and notify the ICPR of such inventories;⁴⁹
- * Discharges of list I substances into surface waters or into sewer systems are subject to a permit which includes emission limit values for the substances being discharged. If the permittee does not comply, the discharge may be prohibited. The permits are limited in time, but they are renewable. After a transition period, the same rules apply to existing discharges;⁵⁰
- * Emission standards are fixed by the ICPR on basis of their toxicity, persistency and bio-accumulative capacity, taking into account the best technical means available, and time frames that are well suited to the relevant industrial sectors. The ICPR may propose other measures for reducing Rhine water pollution by the substances concerned if necessary;⁵¹
- * National measures are to be taken for reducing discharges of list II substances. To this end, the Parties shall draw up national programs, taking into account the latest technical developments economically feasible. Discharges are subject to a permit including emission standards, based upon water quality objectives established for the Rhine water. Further, the programs must contain time-frames and specific provisions for the composition and use of substances or products. The ICPR is kept informed about the programs and their results;⁵²
- * The Agreement's application shall not lead to any Rhine water pollution increase.⁵³

47. The Chemical Agreement, Dec. 3, 1976, 1977 Tractatenblad van het Koninkrijk der Nederlanden No. 32 (Neth.), published in S&J, *supra* note 5, at 111ff.

48. *Id.* at art. 1, para. 1.

49. *Id.* at art. 3.

50. *Id.* at arts. 3, 4.

51. *Id.* at art. 5.

52. *Id.* at art. 6.

53. *Id.* at art. 9.

The Chemical Agreement also includes provisions about storage of substances, supervision of discharges,⁵⁴ monitoring of the river quality,⁵⁵ and warning and alarm procedures to be established by the ICPR for dealing with sudden and appreciable pollution incidents.⁵⁶ Moreover, the Agreement, much like the Chloride Agreement, provides for an arbitration procedure for resolving disputes.⁵⁷

The Chemical Agreement was negotiated alongside with the EC Dangerous Substances Directive (Directive),⁵⁸ which was adopted in 1976 and the text of which is similar to the Chemical Agreement. Essentially, this means that by means of the Chemical Agreement, Switzerland adheres to this piece of EC legislation. Germany and the EC Commission, especially, favoured this parallelism, as they requested that equal competition conditions be observed for all riparian States.

The Chemical Agreement's implementation clearly exhibited this parallelism with regard to EC developments. Thus, the ICPR consecutively agreed upon emission limit values for mercury,⁵⁹ cadmium,⁶⁰ tetrachlorocarbon,⁶¹ chloroform, aldrin, dieldrin, endrin and isodrin, hexachlorobenzene and hexachlorobutadiene,⁶² all of which correspond to EC limit values in the Directive. An exception must be made for the ICPR water quality objectives for chromium, a list II substance, fixed in 1982.⁶³ A proposal for water quality objectives had been made by the EC Commission, but was never adopted. The ICPR water quality objectives, meanwhile, have not yet entered into force because they have not been ratified by Germany.⁶⁴

All in all, during the ten years following the Chemical Agreement's adoption, cooperation within the ICPR developed into a slow, bureaucratic process of struggling over detailed figures, which did not keep up with the continuous generation of new hazardous compounds. The public started questioning the ICPR's usefulness; did it really add any value to the work of the European Community?

54. *Id.* at art. 7.

55. *Id.* at art. 10.

56. *Id.* at art. 11.

57. *Id.* at art. 15, Annex B.

58. Council Directive of May 14, 1976 (on the pollution caused by certain dangerous substances that are being discharged into the aquatic environment of the community), 1976 O.J. (L 129) 23.

59. See 1983 Tractatenblad van het Koninkrijk der Nederlanden No. 53 (Neth.); 1988 Tractatenblad van het Koninkrijk der Nederlanden No. 65 (Neth.).

60. See 1988 Tractatenblad van het Koninkrijk der Nederlanden No. 65 (Neth.).

61. *Id.*

62. See 1989 Tractatenblad van het Koninkrijk der Nederlanden No. 7 (Neth.).

63. See 1988 Tractatenblad van het Koninkrijk der Nederlanden No. 65 (Neth.).

64. All standards and objectives referred to above can also be found in S&J, *supra* note 5, at 138-92.

The Sandoz Incident and the Rhine Action Programme

On November 1, 1986, a fire broke out at a storage shed for dangerous chemicals of the Swiss pharmaceutical company, Sandoz, at Schweizerhalle near Basel.⁶⁵ The firefighters arrived in time to extinguish the fire, but as a result, the water used for fire-fighting mixed with the dangerous chemicals stored, and eventually reached the adjacent stretch of the Rhine because the Chemical Agreement's provisions on storage had not yet been fully implemented. As a consequence, a 200-km stretch of the Rhine became ecologically dead. The warning and alarm procedure which had been set up pursuant to the Chemical Agreement, had been effectuated belatedly because of a misunderstanding.

The disaster received large press coverage, and the ICPR Parties reacted swiftly. On November 12, 1986, the Ministers convened in Zurich in order to jointly assess what should be done. The Ministers were joined by Sandoz's chief executives, who explained what went wrong and promised to make amends. In particular, monitoring was to be improved, a restoration program was to be developed, harmonisation of industrial disaster prevention was to be considered, and the alarm procedure was to be assessed. The Ministers decided to discuss further measures on December 19, 1986 in Rotterdam. This Seventh Ministerial Conference profited from the sudden momentum by firmly enlarging the ICPR's field of activities. Apart from the necessary improvements regarding disaster prevention and alarm procedures, the ICPR was instructed to draw up an action program aimed at the following results:

- * The Rhine's ecosystem must be brought back into a condition such as to allow disappeared species (such as the salmon) which previously were endemic in the Rhine, this great European river, to become indigenous again;
- * Rhine water must remain fit to be used for drinking water production in the future;
- * The Rhine load of harmful substances must further be reduced, also with the common goal of a significant reduction of sediment pollution by toxic substances, such as to make sediment suitable again as material for land cover, or fit for dumping at sea.⁶⁶

At another Ministers Conference in Brussels, held in November 1989, a fourth objective was added:

65. See C.H.V. de Villeneuve, *De zalm terug in de Rijn? Enige beschouwingen over de Rijnministersconferentie van 19 december 1986*, 72 *WATERSCHAPSBELANGEN* 206-11 (1986).

66. Introduction to the Chemical Agreement in S&J, *supra* note 5, at 103.

- * North Sea water quality must be improved such as to ensure the marine ecosystem's health and to prevent this from being threatened by pollution from discharges or accidental spills.⁶⁷

On October 1, 1987, the Eighth Ministerial Conference adopted the action program submitted by the ICPR.⁶⁸ This so-called "Rhine Action Programme" encompasses measures for improving the Rhine's physical, chemical and biological condition, addressing the water column as well as suspended materials, sediment and organisms. In particular, the sum of discharges of twenty-nine priority substances, as well as the sum-parameter AOX, must be reduced by fifty percent. It contains measures aimed at improving the river's biological capabilities by bringing about a return of its pristine state. The program's first stage, lasting until 1989, mainly comprehends its further expansion and focus. During the second stage, lasting until 1995, the program was to be implemented and if the measures taken do not prove sufficient, complementary measures are to be taken before the year 2000.⁶⁹ Under the ICPR, a "Coordinating Group" was instituted for keeping track of the program's implementation.⁷⁰

None of the requirements laid down in the "Rhine Action Programme" have any legal standing. Right from the start, it met outright criticism from environmentalists, from water companies and from the Port of Rotterdam, which was confronted with huge amounts of heavily polluted harbour sediments it had to get rid of. The Port of Rotterdam set up a "Program Inquiry into the Rhine" (POM), in order to assess their chances for suing upstream polluters for damage compensation. Rotterdam even negotiated separate covenants with industry alongside the Rhine. The program proved a decisive success. Even though the fifty percent reduction was not realized in 1995 for all priority substances, the results were remarkably close: two thirds of the polluting substances no longer presented problems, and in most cases the reduction target was reached by 1992.⁷¹ The Eleventh Ministerial Conference, which took place in Berne in December 1994, decided that for the remaining substances, additional measures must be taken. As concerns copper and zinc, the Conference recognized that the objective cannot be attained. For persistent organochlor compounds, the ICPR is to make an ecological assessment and a cost-benefit analysis on sediment removal. Moreover,

67. *Id.*

68. *Id.*

69. Published in its entirety in *S&J*, *supra* note 5, at 123-40.

70. Introduction to the Chemical Agreement in *S&J*, *supra* note 5, at 104.

71. See Press Release of the Eleventh Ministerial Conference, Berne, Dec. 8, 1994.

the Ministers decided to add pesticides and biocides to the list of priority substances, and to reduce agricultural pollution by means of, *inter alia*, better agricultural practices. They also decided to publish an ICPR brochure containing recommendations on "Calamity Prevention and Industrial Security," and suggested that the equally present EC Commissioner consider harmonizing elements of waste water charging systems within the Community.⁷²

At the Berne Conference, the Ministers also adopted an "Ecological Master Plan", encompassing a program for the return of long-distance migratory fishes "Salmon 2000";⁷³ this program foresees:

- * Restoration of the main stream, including its main tributaries, as the backbone of the ecosystem, offering a habitat for long-distance migratory fish—in particular reconstructing spawning-grounds, constructing fish ladders along weirs, and restricting excessive fishing;
- * Protecting, preserving and improving ecologically important reaches of the river corridor for the sake of reinforcing the diversity of indigenous fauna and flora; this includes protection, preservation and extension of alluvial areas as natural flood plains, designation of areas under the Ramsar-Convention, and making projects for water use subject to an environmental impact statement.

Perspectives for Future Cooperation

The Eleventh Conference did not stop with the above listed directives and programs. It gave an additional thrust to the ICPR's work by entrusting it with new mandates. Pressed by the river floodings in France, Germany and the Netherlands which occurred in December 1993, the Ministers instructed the ICPR to convene a new working group for dealing with high water problems, in spite of the fact that this subject seems rather remote from the ICPR's legal tasks.⁷⁴ This working group convened for the first time in March 1995. The Ministers also decided that the ICPR shall closely follow ongoing work at the Central Commission for Navigation on the Rhine, in particular as concerns the need of creating waste reception facilities for inland navigation. One of ICPR's members is henceforth charged with ensuring the necessary cooperation.

72. Final Declaration of the Eleventh Ministerial Conference, Berne, Dec. 1994.

73. INTERNATIONAL COMMISSION FOR THE POLLUTION OF THE RHINE, *Ökologisches Gesamtkonzept für den Rhein "Lachs 2000"* (1994).

74. Their legal tasks are confined to the water pollution area.

Finally, the Ministers charged the ICPR with elaborating the text of a revised Agreement, taking into account the extension of the ICPR's mandate as well as other recent developments in international water cooperation, including a more river basin-oriented cooperation. The new agreement, which is currently being drafted, is scheduled to enter into force by the year 2000.

Conclusion

International cooperation on the Rhine river has, until recently, been confined to single-issue subjects, such as inland navigation, hydropower, and pollution prevention. Within the last decade, however, developments have led toward a more integrated view of river basin management. These developments are ongoing and it remains to be seen whether the salmon will indeed be back by the year 2000 and if the promises of the last Ministerial Conference will be fulfilled.

An important message to be learned from the case of the Rhine river is agreements based on shared policy views and on imagination have more impact than hard-fought, precise legal obligations. Clearly, the willingness to cooperate has proven more valuable than strict legal constraints.