

RESEARCH

Hazardous Waste: The Beginning of International Organizations Addressing a Growing Global Challenge in the 1970s

Iris Borowy

Hazardous waste began gaining public attention in industrialized countries in the 1970s, partly as a result of several scandals involving former waste sites. Early on, several international organizations (IOs), notably the EEC, NATO, OECD and WHO, addressed the issue in publications, surveys and the collection of data. Collectively, these initiatives addressed crucial questions regarding the definition, collection, transportation and disposal of hazardous waste. Above all, they provided space and subtle pressure for national authorities to gather information about a problem which, so far, had been all but ignored. These programs revealed the improvised nature of much policy-making at the time but also offered the opportunity to consider hazardous waste management within larger development pathways. The perspectives taken during discussions at IOs vacillated between pragmatic, simple collection of data and superficial searching for short-term management in terms of trying to get rid of the substances and more principled considerations of how to find long-term solutions for hazardous waste through comprehensive approaches that integrated all stages of production from produce planning to disposal. Thus, IOs did not prevent the increasing spread of toxic materials into the environment. But they may have mitigated its form and paved the way for alternative development planning in the long run.

Keywords: hazardous waste; international organizations; OECD; waste and development; NATO; WHO

Introduction

Waste management has always been a challenge to sedentary societies, threatening social norms of order as well as public health. For a long time, organic waste, both of human and animal origin, was considered a major health hazard, and addressing it through sanitation is one of the roots of public health as a discipline. By the 1980s, managing human waste was considered solvable—and largely solved—through sanitation and no longer an issue in ‘developed’ countries. The World Health Organization (WHO) named it a ‘traditional’ health risk, as opposed to ‘modern’ health risks, such as chemical pollution from industry and intensive agriculture (WHO 1997: 8). In reality, even in high-income countries the question of what to do with human waste seems far from mastered, and globally it remains a formidable health threat (Bianchini et al. 2016; Webb 2019). Nevertheless, the term ‘hazardous’ as a defining trait of a particular type of waste with the potential for causing physical harm has been reserved for waste of more recent origin, tied to rising industrial production.

Between 1890 and 1990, global population increased by a factor of 4, energy use by a factor of 13 and industrial

output by a factor of 40 (McNeill 2000: 360). This process has led to rising living standards, more material wealth, longer life expectancies and shorter working hours for many people around the world, sometimes dramatically so. It has also involved a substantial increase in the production and use of new synthetic substances and an increase in discarded products and materials (Köster 2016; Pellow 2007: 2628). How much of this growing quantity of waste is hazardous depends on definition. In addition to domestic socio-economic development within countries, differential development between countries has been a major context of waste management, provoking both legal and illegal transfers of waste. This development was especially relevant for hazardous waste, when increasing environmental regulations made comparatively less damaging disposal in industrialized countries more expensive. This practice has received a lot of attention, and resulting discussions were marked by moral arguments and outrage, as human rights activists, environmentalists and delegates from low-income countries condemned the practice as a modern form of colonialism and environmental racism or toxic terrorism (Cited in Choksi 2001: 515; cf. Park 1998; Nixon 2011).

Most research so far has focused on Western industrialized countries as major producers of toxic waste. Exact numbers are difficult to come by. A sometimes quoted

estimate of the early 1990s indicating that the USA was responsible for 85% of global hazardous waste and EU countries for another 5–7% (cited in Clapp 2001: 22, 47) is misleading given the different calculations of what constituted hazardous waste, which included diluted dishwasher in the USA but not elsewhere (Clapp 2001: 25). It is also probably wrong given the paucity of data from communist countries at that time. Hazardous waste formed a serious threat in Central and Eastern Europe (Carpenter et al. 1996), and a 1999 study by the National Intelligence Council and DCI Environmental Center estimated Russia generated approximately 200 metric tons of toxic waste annually (NIC/DCI 1999), which would place it in a range similar to or one third lower than that of the USA, where estimates for the 1980s and early 1990s ranged between 198 and 306 metric tons (Blackman 2001: 18). The communist countries played virtually no role in the discussions within the international organizations (IOs) analyzed in this paper, either because they were not members (as in NATO or the OECD) or because they did not take an active role in the investigations (as in WHO). The story of their inter- and transnational communication needs to be explored elsewhere.

Keeping this caveat in mind, several IOs have nevertheless played important roles in debates regarding hazardous waste. In overall terms, several IOs have been central agents in overriding international development efforts (Jolly et al. 2004; Unger 2018), which formed the basis for increasing hazardous waste production. More directly, IOs have been involved in the interaction of hazardous waste both with domestic and international development. In one emblematic episode, debates centered on an internal memo of the World Bank, written in 1991 by Lant Pritchett and signed by the chief economist, Larry Summers, which appeared to call for moving more dirty industries and toxic waste to ‘under-polluted’ low-income countries because 1) the economic costs would be lowest in low-wage areas, 2) the costs of pollution were lowest and 3) poor societies with high infant mortality rates had other concerns than those regarding the risks for cancer at old age (Summers 1991). This memo was leaked to the Brazilian minister for the environment and has since been the object of outrage by politicians, activists and scholars (Clapp 2001: 1–2; Enwegbara 2001). According to Pritchett, however, the memo was part of a sarcastic text commenting critically on the economics of the supposed ubiquitous benefits of free trade and was taken out of context to smear Summers and the World Bank (Rosenberg 2001). Pellow (2007: 10), in return, has argued that, whatever the intent of this particularly comment, in practice, World Bank policies have encouraged the transfer for Northern toxic garbage to low-income Southern communities. Be that as it may, international transfers are merely one component of the larger question of how to manage toxic wastes, of which an estimated 90% never leave their country of origin (Clapp 2001: 24).

While these developments have received substantial historical interest, far less is known about the earlier period in which IO activities tied mainly into the interaction of hazardous waste and domestic development, when national administrations were just waking up to

the issue. Arguably the earliest engagement of an IO took place in the 1930s, when the League of Nations Health Organisation addressed waste as part of its program on healthful housing (Borowy 2009: 417–419). Later, governments faced a limited range of options of how to dispose of waste: it could be fed to animals, dumped into water (sea, lake or river), dumped on land (as an open landfill or buried) or burnt. By the early twentieth century, all methods were practiced in industrialized countries.

Part of that waste was clearly poisonous, but for a long time, no special provision was envisaged. When Hooker Electrochemical dumped 22,000 tons of chemical sludge into an abandoned canal (named Love Canal after its creator) during the 1940s and early 1950s, it was perfectly legal (Newman 2016: 75). The situation was similar in other countries. By the 1970s, the rising volume and emerging scandals brought public attention to the issue and repeatedly forced local and national administrations to take action. In 1972, drums of cyanide waste were discovered on a site used as a children’s playground near Nuneaton in Britain, leading members of Parliament to hastily pass *The Deposit of Poisonous Waste Act* in the same year (Williams 2005: 3), probably the first piece of legislation regarding toxic waste anywhere. Increasingly, urgent complaints by residents of Love Canal, near Niagara, New York, of frequent miscarriages and cases of debilitating illnesses provoked a scandal and made President Carter declare the area a national emergency in 1978 (Newman 2016: 126). Almost identical cases came to light in Dortmund, Germany, (Köster 2016: 39) and Lekkerkerk, in the Netherlands (Blackman 2001: 30). They only represented the best known of a rapidly growing list of more or less notorious cases (Blackman 2001: 2–33).

Indeed, national governments were far from having a clear policy or, in many cases, even a solid understanding of the challenge at hand. In addition to responding to whatever scandal happened to erupt on their territories, they turned to IOs for support and guidance. By the same token, the emerging activities of IOs in this field also forced governments to pay increasing attention to the topic. This paper analyzes this underexplored dimension of the development of international hazardous waste regulations. Focusing on selected initiatives by the World Health Organization (WHO), the North Atlantic Treaty Organization (NATO), and the Organization for Economic Cooperation and Development (OECD), it discusses how they have both reflected and contributed to the international conceptualization and management of hazardous waste and argues they have been crucial for national awareness of and management policies regarding hazardous waste. Inevitably, the focus is on Northern industrialized countries, those that took the lead both in generating hazardous waste and, subsequently, in debating how to address this growing challenge.

Discussing Hazardous Waste at International Organizations

Arguably, the first consideration of hazardous waste undertaken at IOs concerned nuclear waste, resulting from the medical and military uses of radioactive substances and

above all from the growing number of nuclear power plants. Between 1967 and 1982, the European Nuclear Energy Agency of the OECD coordinated a cooperative project of dumping nuclear waste of several European countries into the Atlantic. This project served to give legitimacy to a practice already undertaken by the United Kingdom and to diffuse the responsibility for a controversial method useful above all to France as a way to dispose of rapidly growing waste material (Borowy, forthcoming).

These activities were framed as part of nuclear rather than waste policies and formed a specific story with challenges and political and ideological ramifications in many ways different from those subsequently encountered during discussions about hazardous waste, so they will not be further discussed here. This background does, however, serve to describe the climate of the postwar years in which economic growth was considered the self-evident goal of further development and waste was accepted as an inevitable side effect. The involvement of several IOs with nuclear waste also served as an initiation into the topic, paving a pathway for attitudes and strategies. Above all, it provided a first example of how IOs cooperated with national governments in facing the dilemma of how the growing production of energy and goods, a desired development, went hand in hand with the growing generation of waste material that could do damage to humans and other beings, an undesirable development.

This dimension was expressed quite clearly in 1967 by the WHO Scientific Group on the Treatment and Disposal of Wastes. Without using the term, this report was also one of the earliest documents to describe the phenomenon of what would become known as hazardous waste:

Industry has usually not considered the effect that the wastes from new products or new industrial processes may have on the water environment. Governments also rarely consider the possible long-term effect of such products and processes on the environment when industrial projects are conceived. Highly persistent detergents, pesticides, and other toxic wastes are becoming an ever-increasing problem in developed countries and in time will present a similar challenge to developing countries (WHO 1967: 10).

In subsequent years, discussions of waste formed part of subtle (or sometimes not so subtle) political struggles when the environment emerged as a topic of growing international concern. Early concern found expression in international agreements and focused on ocean pollution. The Stockholm Declaration, taken at the United Nations Conference on the Human Environment in 1972, stated that states should 'take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life' (UNEP 1972).

This conference gave rise to several partially overlapping conventions addressing various components of the disposal of hazardous wastes, including the International Convention on the Prevention of Marine Pollution by

Dumping of Wastes and other Matter (London Convention), the Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (the Oslo Convention), both finalized in 1972, and the Convention for the Prevention of Marine Pollution from Land-Based Sources (the Paris Convention) of 1974 (Selin & Selin 2006: 260). They all focused on protecting the seas rather than on waste management (i.e., on what not to do rather than what to do). The European Economic Communities went a step further. In a declaration of their council meeting in November 1973, they stated 'wastes which, because of their toxicity, their non-degradability, their bulk, or for other reasons, require a solution extending beyond the regional framework and possibly even beyond national frontiers' should be eliminated and that it would be necessary to pool existing knowledge and experience regarding possible means to achieve this goal (EEC 1973). They also set up a working group dedicated to toxic wastes designed to collect relevant information. They were not the only ones. By the early 1970s, most IOs addressed environmental issues in some way, and several had special commissions dedicated to the topic, with NATO, the UN Economic Commission for Europe (ECE) and OECD taking particularly active roles (Borowy 2019).

In 1973, the OECD Environment Committee created a temporary joint policy issues group dedicated to issues of waste disposal. A preparatory paper described the challenge: while men had always produced waste, recent developments had added more persistent and toxic material to waste being generated. Prophetically, the paper suggested the awareness of the toxicity of existing waste was likely to increase in the future: 'Much material, which is at present bulked and treated as inert, may well in the future have to be treated for extraction of metals and other undesirable components, with significantly increased costs of disposal' (OECD 1973). A year later, the OECD established a waste management policy group, inspired by the polluter pays principle and motivated by concerns that new regulations regarding waste disposal and concomitant costs might create trade distortions. Consequently, the group sought to facilitate international standards and harmonization in a comprehensive waste management policy. This task included gathering information and proposing waste strategy policies, thus taking the working group far beyond questions of trade. During the first decade of its work, it undertook studies on a series of topics, including waste disposal, packaging, recycling, product durability and a new category named hazardous waste.

Almost simultaneously, NATO approached the topics within its Commission on Challenges on Modern Society (CCMS). The CCMS went back to an initiative by US President Nixon in April 1969 (CCMS 1970). The European members had reservations about the idea NATO should address environmental issues, particularly in view of the already existing environmental activities in other IOs, but in the interest of Western unity, they acquiesced. As its main working methods, the CCMS devised pilot studies, proposed by member countries on topics of particular interest to them. If they found support as well as the pro forma acceptance of the NATO Council, they would be

responsible for the organization of the studies, including defining the research questions and organizing meetings and other events. These pilot countries would also be in charge of financing and providing the necessary personnel for the projects. Afterwards, the Council of Ministers decided whether to recommend the conclusions to all NATO members for implementation (Kyba 1974: 256–258). The expectation was that the results of these studies would find their way into national policy and legislation (Grieves 1978: 316). Such a pilot study appears to have been the first cooperative international study on hazardous wastes in Europe under the auspices of an IO.

Pilot Study at the Commission on the Challenges of Modern Society (CCMS), NATO

At the meetings in November 1972 and April 1973, the German delegation at the CCMS offered to carry out a pilot project on the disposal of hazardous substances. In September 1973, they organized a workshop on the topic, in which representatives from the United States, France, Britain, Belgium, Canada and Denmark voiced their specific interests in the topic, given the growing number of uncoordinated national and international activities in the field. In October 1973, the CCMS officially accepted the offer. The problem was framed as one of an increasing quantity of waste, including toxic material for which existing disposal methods on land and sea seemed inadequate. The absence of clear guidelines regarding technical and organizational methods created problems not only for the environment but also for 'undisturbed economic competition.' The aim of the study was to review and test appropriate technology for disposal and, if possible, recycling and, eventually, to create a list of hazardous substances and treatment methods designed to 'serve the governments as a technical orientation for the preparation of laws and regulations.' The study was to focus on a limited list of substances (residual hardening salts, acidic resins, organic solvents, arsenic residues, mercury and mercury compounds, lead and lead compounds and sludges containing nonferrous metals) and to last for three years (CCMS 1973a; CCMS 1973b).

By October 1974, the nine participating countries¹ had further specified their plans. The study should collect and distribute information on various aspects of the question, including different technologies for disposal on land, transportation, public health effects, economic and financial impacts, the methodology for laboratory analysis and the classification and definition of substances. The last point was considered key to sensible regulations. The governments of the USA and of Belgium agreed to act as co-pilot countries. Different delegates offered to contribute studies on various aspects according to their specific interests of their countries: the USA on transportation, the British representative on disposal in landfills, his Belgian colleague on underground disposal in mines and the Netherlands, Danish and French delegates on classification and regulation of wastes. In addition, the German government issued a questionnaire to all contributing countries (CCMS 1974). Between September 1974 and May 1977, the group met seven times in Germany, Canada, London and Washington D.C.

The meetings revealed the concern of the relevant administrations regarding the release of toxins into the environment, which seemed far from being controlled. At a meeting in Bonn in June 1976, delegates from various countries recounted research being done on landfill leachates. In the UK in particular, a landfill research programme addressed mercury in domestic wastes and investigated the co-disposal of cyanide, metal finishing sludge and oil with domestic refuse. The US representative, Lehmann, reported on 13 similar studies underway. The problem was not negligible, as the EPA was concerned about over 400 documented cases of leaching problems in closed landfills, sometimes decades after closure, and Lehmann hoped for helpful information from colleagues. So did his counterpart from the Netherlands, where no studies were being done and the disposal of hazardous waste on regular landfills was forbidden. In West Germany, a few initial studies had been undertaken and more were planned. The need appeared clear, given that out of 50,000 dumps in operation in 1970, approximately 45,000 had been or were about to be closed soon.

The Belgian delegate, Medaets, who chaired the session regarding underground disposal, came to sum up the central challenge of the issue:

It is recognized that industrialized society has to cope with ever growing amounts of industrial waste, which in part are toxic by their composition or cannot at the present state of technology, be disposed of by alternative methods without a considerable danger to the environment or contain valuable materials which cannot, at present be profitably (sic) reclaimed. For these categories of waste deep-mine storage and disposal appears to be an acceptable solution. In all other cases underground disposal should be avoided in order to spare available space for the above mentioned more urgent needs and not to create unnecessary problems for later generations (Wolbeck 1976).

The reference to potential problems for later generations (one of the few such references in all related documents) indicates a certain unease felt by stakeholders that this method might be less than ideal. But meeting participants could present few opportunities that appeared to promise a viable alternative. Remarkably, several governments not only did not have a solution for adequate disposal of hazardous waste, they also did not seem to feel they should. Though it was clear—and generally agreed—the material in question involved risks to environmental and human health, not all governments assumed full control. Dutch regional planning only applied to residential waste, while planning for industrial waste was considered a normal part of industrial activity and responsibility, an attitude shared in the USA, so that only general rules regarding industrial waste management could be expected to come from the USA. However, the US delegate 'admitted that in USA a shortfall of disposal capacities is anticipated in certain regions and for certain wastes, e.g. sludges, and that some kind of public reaction will be needed in a five to ten

years period of shortfall, but then on State and regional level' (Wolbeck 1976). By contrast, in England and Wales, the responsibility rested with the counties, in France with the communities and in Germany with the provinces (Länder). Other administrations, such as in Canada and Belgium, pointed to the responsibility of industry, in line with the polluter pays principle, and appeared to see the role of governments primarily as one lending financial support in case industry proved unable to cope with the challenge.

The improvised character of most—or all—the countries' policies was reflected in the fact that information about long-term care, site selection and citizen acceptance was considered so insufficient as to make it unclear whether it should even be included in the report. Besides, participants acknowledged it would not be possible to agree on any definition of exactly what constituted hazardous waste, especially because some countries, such as France, did not even have a definition. It was the Canadian delegate, Mazerolle, who introduced a more principled consideration, arguing proper disposal of hazardous materials required a comprehensive approach that considered all stages of product management, from pre-production decisions to generation, transportation, treatment and disposal. He admitted the difficulty about this approach was 'the fact that these decisions must be made considering the interdependence of economics, politics, legislation, technology, and public information, education and training' (Wolbeck 1976), a degree of complexity that was not usually achieved or even sought after in these debates.

In reality, such far-reaching considerations were rare. When the project ended in 1977, results were meagre. The organizers found geographical, climatic and organizational conditions differed so much between countries and regions that general recommendations were all but impossible. Brief reports on six sub-topics, all organized by different countries, reflected this difficulty. The study on landfills found they were a major disposal method in all participating countries and were expected to remain such. All participants were aware of the risks concerned, and there was substantial interest in further investigations regarding ways to minimize leachate, to select suitable landfill sites and to (co-)dispose of specific types of waste. The study on underground disposal endorsed the practice as a method of last resort, albeit only in inactive (parts of) mines and only if negative effects on the biosphere and subterranean water could be ruled out. The studies on transportation and organization saw private enterprise (i.e., the shipper or the waste-generating industry, respectively) as primarily responsible for operating shipments and disposals, though they did see important roles for the UN and the OECD for creating suitable classifications and for national governments to retain overall control. Planning landfills for hazardous waste should entail the cooperation of all involved under governmental auspices, while the question of financing them was considered unresolved. France carried out a study on chromium pollution, which came to the self-serving conclusion the French industry did not produce harmful wastes (CCMS 1977).

It was not the only report published on the topic in that year. Parallel to work within the CCMS, another IO prepared another study on the same issue.

World Health Organization Study

In 1977, WHO published a report on toxic and other hazardous waste, which was also designed to take stock of existing knowledge and practices in the field. Compared to the CCMS, WHO approached the topic in a far more systematic manner. The report recounted the three disposal methods in use were dumping (either as tipping on land, disposal at sea or in deep mines); incineration; or treatment through chemical, electrochemical or biological processing, supposedly mitigating its hazardous quality. All methods came with their specific risks, notably air and water pollution, and all choices of methods inevitably included economic considerations. Several issues were subject to debate. Thus, while according to the polluter pays principle the waste producer should take responsibility of the challenges, there was no consensus about what exactly those responsibilities should be: should it mean to pay for all possible and long-term damage or to dispose of waste in a prescribed manner? And what should this manner be? In many cases, it was not even clear who exactly should be counted as the producer.

There was also the difficulty of definition. The OECD adopted the definition of the US EPA, which categorized hazardous waste on the basis of harmful effects of the material on its environment, including ignitability, corrosiveness, reactivity, toxicity, radioactivity, infectiousness, phytotoxicity, teratogenicity and mutagenicity. Meanwhile, the EEC took a different approach by using a list of specific substances, defined as hazardous, including arsenic, mercury, cadmium, thallium, beryllium, chromium, lead, cyanide and respective compounds, as well as organic solvents (WHO 1977). Both approaches came with advantages and disadvantages.

Five years after its original declaration, the EEC Council released a new declaration in which it no longer called for the elimination but for the prevention of 'toxic and dangerous waste' and of any type of reuse. The declaration also insisted that, while the costs should be borne by the 'handler, previous holder or producer' according to the polluter pays principle, states should retain the overall control and decision-making power and 'designate competent authority in charge of the "planning, organization, authorization and supervision of operations for the disposal of toxic and dangerous waste"' (EEC 1978: § 4). The stated justification for such an initiative was, once more, to prevent trade distortions, making sure that all member states would face equal opportunities, which, in turn, required a harmonization of international trade and domestic waste disposal regulations. These recommendations seem both trivial and right on target when considering the average status of hazardous waste collection in the late 1970s. In the USA, communities living near hazardous waste dumps were waking up to the threats inherent in their toxic environments and were beginning to win court cases against corporations. Their underlying pattern revealed not so much a breach of regulations but their absence, coupled with an

absence of corporate and administrative responsibilities, which encouraged companies to choose places that were convenient and whose low-status inhabitants promised little effective opposition (Newman 2016: 169). An OECD initiative during the following years confirmed the degree to which the governments of its member countries were only just starting to pay attention to the topic. A perusal of the reports paints a picture of administrations trying to come to terms with a matter that threatened to grow beyond control before they had fully grasped its extent.

OECD Country Reports

Between 1978 and 1991, the OECD issued annual reports, *Recent Developments in the Field of Waste Management in Member Countries and in International Organisations*, based on information solicited from member countries. The report collected information provided by national and international authorities. The information supplied differed, depending on what the respective countries considered relevant, available or wished to share. Not surprisingly, initiatives for new legislation or other policies that painted a positive picture of governments in charge were prominently represented, but so were the results of surveys, investigations or comments that left a more mixed or downright terrifying impression. For instance, the USA contribution of 1980 referred to the Love Canal disaster only to add that '[m]ore recently, in Elizabeth, New Jersey, an abandoned waste storage area exploded sending a cloud of toxic fumes over the adjacent area' as well as to comment that such incidents had led to the passing of the Resource Conservation and Recovery Act. Because these documents were not meant to be published but merely to be distributed among governments, mainly between officials facing similar problems, there may have been more willingness than otherwise to share questions, findings and experiences, based on the hope that pooled information would be helpful for policy decisions in one's own country. The surveys were not specifically about hazardous waste, but given the emerging scandals and the growing public attention to this issue, a relatively large part of the papers focused on this topic. (OECD/countries 1978–1991).

The most frequently cited types of problematic wastes included used oil, mercury derived from batteries, and PCBs, but other materials were also mentioned. In 1979, the Australian administration provided a long list of substances, including tannery wastes, oil mixtures, acids, alkalis, sludge mixtures, paints, miscellaneous organic chemicals not containing significant quantities of halogenated hydrocarbons, insecticides, herbicides, peroxides. Canada (1981) focused on acids, alkalis, paint sludges, dioxins and hospital wastes. Austria (1981, 1984) focused on solvents, acids, varnishes, batteries, biocides, production residues and materials containing heavy metals, while France (1980) cited various metals (mercury, chrome, silver, copper) as deserving particular attention.

Available information suggested the substantial extent of the challenge. The 1979 Swedish report indicated the yearly consumption of amalgam in Sweden was in the order of 10 to 20 tons, half of which was mercury,

and roughly 4 tons were recovered for recycling. The Dutch reported an estimated 1 million tons of 'toxic and dangerous waste' per year (in 1980) and 15–29 tons of mercury per year from fungicides and batteries in the environment (in 1984). In France (1980), the estimate was that 2 million tons of 'toxic and dangerous' waste (out of 50 million tons) were ending up on 9 disposal sites, while the USA contribution estimated it harbored 37 million metric tons of 'toxic or otherwise dangerous materials' on US soil. The resulting burdens were not merely environmental—these OECD-generated papers were remarkably short on considerations regarding the ecological repercussions of these burdens—but financial. The 1982 Dutch report suggested cleaning operations already undertaken in 350 places were destined to cost billions of Dutch guilders and there were about 4,000 spots where the soil had been or as still being similarly polluted. Possibly even more disconcerting, a new chemical waste law placed a levy of 1.5 Fl. per hectoliter produced or imported lubricating oil but turned out to cost more money than it raised, so authorities faced a situation of having insufficient funds for the implementation of the new law. Two years later, the Danish contributions also estimated cleaning up efforts of old landfills would cost six to eight billion kroner. These estimates were an exception. Most contributions did not even try to come up with a financial estimate.

This absence reflected simple lack of knowledge. Expressed in brief, dry remarks, these reports collectively revealed the degree to which governments frequently had little idea of the true situation of hazardous waste in their countries and were struggling to establish strategies to become more informed. Tools varied, ranging from licensing systems to maximum contamination values. In 1979, the Swedish government planned to make it mandatory to issue declarations of hazardous wastes going into the sewers, thus making visible a whole category of previously invisible material. US authorities (1982) were planning a licensing system to judge the adequacy of landfills, incinerators and so forth and the establishment of a system of compulsory 'notification of the government of accidental releases to the environment (spills, etc.) of significant quantities of hazardous substances.' Canada (1989) went a step further, aiming at a federally funded national inventory of hazardous wastes to identify major industrial generators of hazardous wastes with types and volumes produced, while British authorities were creating a register of producers of hazardous waste (1982). But all efforts suffered from difficulties of deciding who should be principally in charge of hazardous waste, given competing and overlapping responsibilities of producers, consumers and federal and local authorities and, arguably even more limiting, of defining what should or should not count as hazardous waste. Frequently, measures appeared to show a belated post-fact approach and intentions, rather than existing policies, as countries reported policies were in preparation, underway or tentatively being implemented. Additional problems arose in countries with a tradition of decentralization, such as Canada (1984), where six provinces were developing various regulations of their own. Everywhere,

there were debates as to how to integrate industry into the process, which was, after all, the major producer of hazardous waste but also the provider of jobs and driver of economic development. Views differed on whether there should be binding rules imposed on industry or, rather, an appeal to voluntary cooperation. Small-scale generators of hazardous waste were often exempt from regulations or proved difficult to reach, allowing for important loopholes.

Finally, all countries struggled with the question of what to do with the substances. All methods, be it incineration, landfills, wet oxidation or sea dumping, came with environmental problems and faced difficulties of local acceptability. Thus, the Austrian contribution of 1984 explained the situation regarding sanitary landfills had become dramatic because few areas met the technological requirements and, even if they did, plans usually aroused the opposition of citizens' action committees and local politicians. The US contribution of 1980 commented: 'The public has been severely frightened by some of the disasters and by the news media, and they are unwilling now to accept even a well run facility. Any proposal to site a new facility becomes a major political issue.'

Public concern that authorities did not have the issue under control was not entirely far-fetched. Overall, the reports betray a remarkable degree of unpreparedness and improvisation and piecemeal approaches seeking to contain the problem, rather than solve it, by transferring the waste from one medium to another or by looking for accepted methods of long-term disposal. There was also a clear lack of coordination between countries, which acted as an invitation to waste trade. Even this very limited amount of cooperation and pooling of knowledge supposedly would not have taken place without the initiative of IOs. The simplest and most radical suggestion appeared in the Danish report of 1988: 'Industry must produce less hazardous waste.'

This statement certainly contained truth. By the mid-1980s, independent studies indicated that even in cases where the contamination was far below those that had given rise to scandals, residents near hazardous waste sites experienced an increase in a series of medical complaints, notably regarding respiratory and constitutional illnesses (Ozonoff et al. 1987). In addition, these threats were not evenly distributed. A report by the United Church of Christ's Commission for Racial Justice established the location of hazardous waste disposal sites had an important racial dimension, making black communities far more likely to be exposed to the health burdens of toxic waste. Anticipating later arguments regarding international exports of waste, this finding added the concept of environmental justice to anxieties regarding health threats (Haq & Paul 2012: 14).

However, calling for industry to produce less hazardous waste risked missing the degree to which it was deeply ingrained in the lives of people in industrialized countries. Waste generation was part and parcel of the production of manifold products, which, collectively, constituted the rising living standards of postwar societies. Reducing hazardous waste through more responsible management and more stringent regulations was possible (and urgently

needed), but its extent was also limited by a broadly accepted goal of increasing material consumption. It was, once more, a WHO report that spelled out the basic problem of the topic:

Hazardous waste is potentially damaging to the environment and must therefore be controlled. Most of it, however, comes from industries that are among the most important to the growth and maintenance of a modern industrial society, such as iron and steel, nonferrous metals, and the primary and secondary chemical industries. If, in addition to materials that are toxic, flammable or corrosive, the definition of 'hazardous' includes materials with a high water pollution potential, food and food processing waste should also be included in those requiring special control. The needs of environmental protection and economic development must therefore be finely judged if a proper balance is to be achieved (WHO 1983: 2).

This paragraph should not be construed to mean hazardous waste should be acceptable in the interest of economic gain. Prioritizing economic benefits of all, many or a few people in a given area over environmental and health protection can have the effect of victimizing other, potentially large, parts of populations (human and otherwise) in other areas. But this should not distract from the fact hazardous waste was and is the result of economic activities, and changing its generation, management and disposal necessarily involves changing a larger context of economic activities. In a world of international economic interactions, this has required international negotiations and exchanges of knowledge and ideas. Irrespective of whether participants perceived them as such, these activities have constituted one crucial strand of international negotiations on ongoing and future development.

The examples addressed in this paper constituted the beginning of such exchanges. Today, such pooling of knowledge and standards includes, for instance, an EU classification of hazardous waste (EU 2015), a list of national restrictions of hazardous substances (OECD undated A) and a control system for waste recovery (OECD undated B). These websites form a direct continuation of IO activities 40 years ago whose major component was the generation and distribution of information on which further policies built.

The effect has not been a straight line to success. As several authors have convincingly argued, increasing awareness of toxic wastes and their danger to human and environmental health in the 1980s in Europe and North America led to more stringent regulations regarding their disposal, which, in turn, contributed to an increase in legal or illegal transfer of such wastes from Northern, industrialized countries to low-income Southern countries (Pellow 2007: 11–14). While probably true, this connection merely globalizes the underlying dynamics by spreading the geographical reach of IOs.

Between 1982 and 1988, UNEP, the EC and OECD all took steps towards formulating rules that would serve as guidelines to regulate international trade in hazardous

waste. In 1985, the OECD began negotiations towards a binding treaty. Most importantly, it organized a conference on international cooperation concerning transfrontier movements of hazardous wastes in Basel designed to set in motion efforts towards a binding international agreement. Two years later, these efforts were complemented and then superseded by similar efforts at the UN. Between 1988 and 1989, five working group meetings prepared an international convention. Out of the 96 countries that participated in one or several of these meetings, 66 were low-income countries. Almost all aimed at the complete prohibition of the transportation of toxic waste to developing countries, while the smaller but influential group of industrialized countries preferred regulation to a complete ban. Unhappy with this development, and influenced by lobbying of environmental NGOs, notably Greenpeace, African countries began parallel negotiations in 1988, loosely within the framework of the Organization of African Unity. The result was two separate agreements: the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, signed in 1989, which formulated stringent regulations for international trade in waste (UNEP undated A) and the Bamako Convention, signed in 1991, which prohibited all imports of hazardous waste into Africa (UNEP undated B). Without the necessary funding to monitor the movement of toxic wastes, the latter agreement was largely symbolic, designed to hand a legal argument to NGOs, with whom low-income countries had been cooperating on this issue. Thus, rather than merely a regional agreement, the Bamako Convention represented a contribution to larger global negotiations, particularly when several African states refused to sign the Basel Convention because of the stronger results in Bamako (Clapp 2001: 38–52).

However, all agreements were merely temporary steps. Waste exporters quickly adapted by recategorizing waste shipments as meant for recycling rather than final disposal, and the split between different groups of countries with different agendas continued, as revealed by negotiations regarding the 1999 Protocol on Liability and Compensation (Choksi 2001). Clearly, dealing with the challenge of hazardous waste was going to be a long and ongoing process, both within and between countries. By the early twenty-first century, it is widely accepted that toxic waste is a matter of international negotiations. This understanding is difficult to imagine if it had not been preceded by earlier stages of international exchanges on the topic.

Conclusion

From a historical perspective, the activities of various IOs in the early 1970s provide a window into the profound, sometimes shocking lack of knowledge of national governments not only about how to deal with hazardous waste but also about the basics of how much there was or even what exactly it was. Reading the sources on the topic gives the impression of watching in real time how administrations were struggling to assess a problem which, they were beginning to understand, they had had for a while, were bound to keep for a long time into the future and which was getting more serious the more they looked into it.

The overall evaluation is ambiguous. On the positive side, IOs clearly upstaged the issue and promoted an active discussion on which materials were included, which management options existed and which lessons this provided for larger developmental decisions. Though by the early 1970s most administrations had clearly become aware of the issue and had initiated studies in the field, there is a strong feeling that often it was the activities of IOs that spurred or, in some cases, even started this process. The formats differed, but whether it was WHO publications designed for general reading, annual OECD collections of national policies in the field designed for internal use only or a NATO pilot study designed for something in between, in all cases national administrations were pushed to find out about and to prepare for a presentation of relevant data on the topic. Presumably, sheer necessity would have pushed administrations to take action eventually, but as it was, at all stages of addressing hazardous wastes, IOs acted as catalysts: problem conceptualization and assessment, data generation, problem debate, interest formulation, compromise, identifying a strategy of agreed common benefit, all evolved earlier and faster than they otherwise would have thanks to the platform for debate offered by and pressure emanating from IOs. Upcoming meetings or report deadlines forced officials to look into the matter, to write up information if it existed and to gather information if it was not yet available. This part of information sharing was explicitly welcomed by governments (and arguably a major reason for the existence of many IOs), but by juxtaposing the performance of different administrations, this process also placed psychological and political pressure on delegates as well as administrations not to embarrass themselves by either not knowing about or not acting on existing problems. Remarkably, it is not so much any individual organization that played a role but the collective activities of various organizations, which addressed similar questions and stimulated similar debates. On the other hand, none of these activities seems to have resulted in an end or even a tangible decrease of toxic waste generation. By 2016, the European Union alone generated more than 100 million tons of waste categorized as hazardous, an increase of 4.9% since 2010 (EU 2019). Similarly, international trade in hazardous waste was affected but not ended. There is, therefore, little reason to idealize the engagement of IOs. Without knowing what the alternative development would have been, it is difficult to decide to what extent possible improvements in hazardous waste policies may have been substantial or merely cosmetic.

The work undertaken at IOs vacillated between the pragmatic, simple collection of data and the superficial search for short-term management in terms of a trying to get rid of the substances and more principled considerations of how to find long-term solutions for hazardous waste through comprehensive approaches that integrated all stages of production from produce planning to disposal. Occasionally, participants offered insightful analysis that a constructive approach to the issues required taking the entire economic process of production and consumption into account, not merely the isolated component of getting rid of the leftovers at its end. Little came of these

insights in the short run, as the generation of hazardous waste continued unabated throughout the period analyzed and keeps doing so today. Thus, IOs did not prevent the increasing spread of toxic materials into the environment. But they may have mitigated its form and paved the way for alternative development planning in the long run.

Note

¹ Belgium, Canada, Denmark, France, the Netherlands, Norway, the United Kingdom, the United States and West Germany. Italy, the EEC Commission, the OECD and Japan partially took part as observers.

Competing Interests

The author has no competing interests to declare.

References

Archival Sources

- CCMS.** Disposal of Hazardous Substances, Note by the Secretary, 8 Oct 1973, AC/274-D/33 NATOA. Cited as: CCMS 1973a.
- CCMS.** Disposal of Hazardous Substances, Note by the Secretary, 11 Oct 1973, Annex to AC/274-D/33. NATOA. Cited as: CCMS 1973b.
- CCMS.** Final Report on the Pilot Study on Disposal of Hazardous Wastes, AC/274-D/73, 15 Sept 1977.
- CCMS.** Progress Report by the Chairman of the Committee on the Challenges of Modern Society, 15 May 1970, NATO archives (henceforth: NATOA), C-M(70)19(Final). Cited as: CCMS 1970.
- CCMS.** Progress Report by the Pilot Country on the CCMS Pilot Study on Disposal of Hazardous Wastes, 2 Oct 1974, Annex to AC/274-D/47. NATOA. Cited as: CCMS 1974.
- OECD.** Joint Policy Issues Group on Waste Disposal, 15 Jan 1973, ENV (73)11, 2, OECD. (OECD 1973b).
- OECD.** *Recent Developments in the Field of Waste Management in Member Countries and in International Organisations, 1978–1991.* OECD. Cited as: OECD/[country year].
- OECD.** Waste Management Policy Group, Some Basic Issues OECD, Joint Policy Issues Group on Waste Disposal, 15 Jan 1973, ENV (73)11, 2, OECD. (OECD 1973a).
- Wolbeck.** (Interior Ministry) to Ministry of Foreign Affairs, 29 June 1976, Politisches Archiv des Auswärtigen Amtes (PAAA), ZA 132.258, 7.

Published Sources

- Bianchini, A, Bonfiglioli, L, Pellegrini, M and Saccani, C.** 2016. Sewage sludge management in Europe: a critical analysis of data quality. *International Journal of Environment and Waste Management*, 18(3): 226–238. DOI: <https://doi.org/10.1504/IJEW.2016.10001645>
- Blackman, W.** Basic 3rd ed. 2001. *Hazardous Waste Management.* Boca Roca: Lewis Publishers.
- Borowy, I.** 2009. *Coming to Terms with World Health. The League of Nations Health Organisation.* Berlin: Peter Lang Verlag. DOI: <https://doi.org/10.3726/978-3-653-05143-8>
- Borowy, I.** 2019. Before UNEP: Who is in Charge of International Environment? The struggle for institutional responsibility 1968–1972? *Journal of Global History*, 14(1): 87–106. DOI: <https://doi.org/10.1017/S1740022818000360>
- Borowy, I.** Forthcoming. How Safe is Safe? ENEA cooperation in dumping radioactive waste into the Atlantic. In: Müller, S and Ohmann-Nielsen, M (eds.), *Hazardous Time-Scapes.*
- Carpenter, DO, Suk, W, Blaha, K and Cikrt, M.** 1996. Hazardous Wastes in Eastern and Central Europe. *Environmental Health Perspectives*, 104(3): 244–248. DOI: <https://doi.org/10.1289/ehp.96104244>
- Choksi, S.** 2001. The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal: 1999 Protocol on Liability and Compensation. *Ecology Law Quarterly*, 28(2): 505–539. DOI: <https://doi.org/10.15779/Z38D84V>
- Clapp, J.** 2001. *Toxic Exports. The Transfer of Hazardous Wastes from Rich to Poor Countries.* Ithaca and London: Cornell University Press.
- Enwegbara, B.** 2001. 'Toxic Colonialism'. *The Tech*, 121: 16(2001). Available at <http://tech.mit.edu/V121/N16/col16guest.16c.html> [Last accessed 27 April 2019].
- European Economic Communities (EEC).** 1973. Declaration of the Council meeting of 22 November 1973 on the Programme of Action of the European Communities on the Environment. *Official Journal C*, 112(16). Available at <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=OJ%3AC%3A1973%3A112%3ATOC> [Last accessed 25 July 2019].
- European Economic Communities (EEC).** 1978. Council Directive of 20 March 1978 on Toxic and Dangerous Waste (87/319/EEC). Available at <https://publications.europa.eu/en/publication-detail/-/publication/a2ba9c30-b8c0-4b13-ae32-f2f2e84f2f13/language-en> [Last accessed 26 July 2019].
- European Union (EU).** 2015. Guidance document on the definition and classification of hazardous waste, draft version 8 June 2015. Available at https://ec.europa.eu/environment/waste/pdf/consult/Draft%20guidance%20document_09062015.pdf [Last accessed 1 August 2019].
- European Union (EU).** 2019. Waste Statistics. Eurostat Statistics explained. Available at https://ec.europa.eu/eurostat/statistics-explained/index.php/Waste_statistics#Hazardous_waste_generation [Last accessed 1 August 2019].
- Grieves, F.** 1978. Regional efforts at international environmental protection. *International Lawyer*, 12(2): 309–331.
- Haq, G and Paul, A.** 2012. *Environmentalism since 1945.* London/New York: Routledge. DOI: <https://doi.org/10.4324/9780203803875>
- Jolly, R, Emmerij, L, Ghai, D and Lapeyre, F.** 2004. *UN contributions to Development Thinking and Practice.* Bloomington and Indianapolis: Indiana University Press.
- Köster, R.** 2016. Hausmüll. Industriemüll. In: Kersten, J (ed.), *Inwastement*, 29–54. Bielefeld: transcript Verlag.

- Kyba, P.** 1974. CCMS: The environmental connection. *International Journal*, 29(2): 256–267. DOI: <https://doi.org/10.1177/002070207402900206>
- McNeill, JR.** 2000. *Something New under the Sun*. New York: W.W. Norton & Company.
- National Intelligence Council and DCI Environmental Center (NIC/DCI).** 1999. The Environmental Outlook in Russia. Available at https://fas.org/irp/nic/environmental_outlook_russia.html [Last accessed 5 Sept 2019].
- Newman, R.** 2016. *Love Canal. A Toxic History from Colonial Times to the Present*. Oxford: Oxford University Press.
- Nixon, R.** 2011. *Slow Violence. Environmentalism of the Poor*. Cambridge Mass.: Harvard University Press. DOI: <https://doi.org/10.4159/harvard.9780674061194>
- Organization for Economic Co-operation and Development (OECD).** undated A. *Regulations and Restrictions*. Available at <http://www.oecdsatoolbox.org/Home/Regulations> [Last accessed 2 August 2019].
- Organization for Economic Co-operation and Development (OECD).** undated B. *Control System for waste recovery*. Available at <http://www.oecd.org/env/waste/theoecdcontrolsystemforwasterecovery.htm> [Last accessed 2 August 2019].
- Ozonoff, D,** et al. 1987. Health Problems Reported by Residents of a Neighborhood Contaminated by a Hazardous Waste Facility. *American Journal of Industrial Medicine*, 11: 581–597. DOI: <https://doi.org/10.1002/ajim.4700110510>
- Park, RS.** 1998. An Examination of International Environmental Racism Through the Lens of Transboundary Movement of Hazardous Waste. *Indiana Journal of Global Legal Studies*, 5(2): 659–709. Available at: <http://www.repository.law.indiana.edu/ijgls/vol5/iss2/14> [Last accessed 2 August 2019].
- Pellow, D.** 2007. *Resisting Global Toxics*. Cambridge, Mass.: MIT Press. DOI: <https://doi.org/10.7551/mitpress/7479.001.0001>
- Rosenberg, J.** 2001. Toxic Memo, Harvard Magazine. Available at <https://www.harvardmagazine.com/2001/05/toxic-memo.html> [Last accessed 27 April 2019].
- Selin, NE and Selin, H.** 2006. Global Politics of Mercury Pollution: The Need for Multi-Scale Governance. *RECIEL*, 15(3): 258–269. DOI: <https://doi.org/10.1111/j.1467-9388.2006.00529.x>
- Summers, L.** 1991. The Memo, 12 Dec 1991. *The Whirled Bank Group*. Available at <http://www.whirledbank.org/ourwords/summers.html> [Last accessed 24 July 2019].
- Unger, C.** 2018. *International Development. A postwar history*. London: Bloomsbury Academic.
- United Nations (UN).** 1972. *Declaration of the United Nations Conference on the Human Environment*. Available at <http://web.archive.loc.gov/all/20150314024203/http%3A//www.unep.org/Documents.Multilingual/Default.asp?documentid%3D97%26articleid%3D1503> [Last accessed 11 April 2019].
- United Nations Environment Programme (UNEP).** undated A. *The Basel Convention. Text and Background*. Available at <http://www.basel.int/TheConvention/Overview/tabid/1271/Default.aspx> [Last accessed 27 April 2019].
- United Nations Environment Programme (UNEP).** undated B. *The Bamako Convention. Text and Background*. Available at <https://www.unenvironment.org/explore-topics/environmental-rights-and-governance/what-we-do/meeting-international-environmental> [Last accessed 24 July 2019].
- Webb, J.** 2019. *The Guts of the Matter. A Global History of Human Waste and Infectious Intestinal Diseases*. Cambridge: Cambridge University Press.
- Williams, P.** 2005. *Waste Treatment and Disposal*. Chichester: Wiley & Sons. DOI: <https://doi.org/10.1002/0470012668>
- World Health Organization (WHO).** 1967. *Report of the Scientific Group on the Treatment and Disposal of Wastes*. Geneva: WHO.
- World Health Organization (WHO).** 1977. *Toxic and other Hazardous Waste*. Geneva: WHO.
- World Health Organization (WHO).** 1983. *Management of Hazardous Waste*. Geneva: WHO.
- World Health Organization (WHO).** 1997. *Health and environment in sustainable development: Five years after the Earth Summit*. Geneva: WHO.

How to cite this article: Borowy, I. 2019. Hazardous Waste: The Beginning of International Organizations Addressing a Growing Global Challenge in the 1970s. *Worldwide Waste: Journal of Interdisciplinary Studies*, 2(1): 11, 1–10. DOI: <https://doi.org/10.5334/wwwj.39>

Submitted: 03 August 2019

Accepted: 11 September 2019

Published: 12 December 2019

Copyright: © 2019 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See <http://creativecommons.org/licenses/by/4.0/>.

]u[

Worldwide Waste: Journal of Interdisciplinary Studies is a peer-reviewed open access journal published by Ubiquity Press.

OPEN ACCESS 