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The Transboundary Movement of Hazardous Wastes: a Comparison between the Basel and the Bamako Conventions

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INTRODUCTION

The trasboundary movement of wastes, especially from the so called developed or rich countries to the developing countries, represents a fascinating topic within the field international environmental law because it encompasses a number of variables. Indeed, if on one hand the shipment of wastes is allowed and it can also benefit the developing countries, on the other hand it can result in the dumping of hazardous wastes that generate detrimental effects on the environment of the countries of disposal. For these reasons, a proper legal framework is demanded in order to address this issue.

Over the years, the international community has tried to establish a suitable legal framework, and in 1989 the Basel Convention was signed within the United Nations. In the following years, other regional instruments have been signed in order to deal with the same issue. The most interesting regional instrument in this regard is the Bamako Convention, an African legal instrument signed in response to the Basel Convention, that according to the African Union was not strong enough to solve the problem of the transboundary movement of hazardous wastes.

However, a legal framework works well only when it is effective and when it is properly enforced, and the recent dumping cases would suggest that there is still a room for improvement. This is why it is interesting to analyse the effectiveness of the current legal framework.

The analysis will take into account all the legal instruments dealing with the transboundary movement of wastes, but it will concentrate mainly on the Basel and Bamako Conventions. They have been chosen because the first one is the most important legal provision in this field and the latter is the one that presents the most striking differences with it. Moreover, the Bamako Convention is the most stringent among the regional agreements in this field, and Africa is the site of most transboundary shipments of hazardous wastes. Therefore, is is worthy to analyse these two instruments.
The Bamako Convention shows a real interest of African states in putting an end to the use of developing countries as a ground of disposal of hazardous wastes by multinational enterprises located in developed nations. The Bamako convention arose from the concern of the African Union in relation to the effectiveness of the Basel Convention and was specifically designed to fill in the alleged gaps of that convention, that created great concerns among African state because of its flexibility and the margin of manoeuvre. Consequently, this research question arises:

"To what extent has the Bamako Convention been successful in alleviating the problem of the transboundary movement of hazardous and radioactive wastes by allegedly rising the standards of the Basel Convention?"

In order to answer this question, in the first chapter a narration of the problem of dumping of hazardous wastes will be provided.

In the second chapter it will be necessary to start with a desk analysis of these two Conventions, starting from the legal texts and referring to the academic articles written by scholars who analysed them.

Most importantly, it will be necessary to assess the effectiveness of the Bamako Convention and its implementation, in particular with regard to the alleged failures in achieving effectiveness of the Basel Convention. Therefore, the Basel convention will be considered as a baseline, and a comparison between the key provisions of the two instruments will be made.
At this stage, a methodological approach clarification on the evaluation of effectiveness is needed. This will be dealt with in the first section of the third chapter.

There are three meanings of effectiveness[1]: legal effectiveness (compliance), behavioural effectiveness and problem solving effectiveness. It is therefore important to distinguish effectiveness from mere compliance. Indices of compliance can be useful to evaluate effectiveness but they are not sufficient because if an international treaty simply mirrors a state behaviour, compliance is perfect but there is no effectiveness.
Indeed, compliance is the mere conformity between a behaviour and a legal rule or standard, while effectiveness is the degree to which a rule induces changes in behaviour that further the goal of the rule[2].

Effectiveness depends on three variables: type of the problem, problem-solving capacity of the system and political context. If one out of three is unfavourable, however, we can still have effectiveness.
As for the nature of the problems that had to be solved by the provision, we have to take into account that benign problems are easier to solve than malign problems. The trade in hazardous wastes can be considered as a benign problem because it is easy for states to chose which wastes can be imported. However, this can also generate difficulties because sometimes governments think more about the economic benefits rather that about the likely environmental damages.

Then, in order to achieve effectiveness, it is important that the system has a good problem solving capacity. In this regard, the existence of networks of experts can contribute to a regime effectiveness, and some efforts may be more successful because more powerful institutional tools are used.

[1] Daniel Bodansky, *The art and craft of international environmental law,* (Harvard University Press 2010) 253.
[2] Kal Raustiala, 'Compliance and effectiveness in international regulatory cooperation', (2000) 32 Case Western Reserve Journal of International Law 387, 388.

Finally, a favourable political context is an important factor that can help in achieving effectiveness. In the case of African countries, however, this is not always the case. Instability and sometimes corruption can impeach the achievement of Bamako's goals. Changes in institutional settings can therefore have a positive impact in the case at stake. It is also important to remember that the characteristics of the country can have an influence on the effectiveness. In particular, since changing behaviour is often costly, richer and more democratic countries can do it more easily.

We also have to be careful in not confusing effectiveness with efficiency[3], which occurs when a regime achieves its results at low or minimum costs or that social welfare increases. In our analysis, all we need is to see to what extent the regime contributes in alleviating the problem. Effectiveness is only one of the conditions for efficiency.

In order to evaluate effectiveness, it is necessary to evaluate the outcome (changes in human behaviour) and the impact (changes in the the state of the environment itself). The ultimate test in evaluating effectiveness would be to what extent an international environmental instrument has improved/improves the state of the environment itself. But environmental objectives are to be proved through changes in the human behaviour that is the cause of the environmental damage.

Moving to the techniques used to measure the effectiveness of international environmental regimes, we can mention the quantitative way and the qualitative way. The quantitative method requires a study of statistics and of expert assessments and it is quite complicated because it is difficult to find complete and reliable numeric data and it takes long time to analyse them. This is the reason why most of the studies on effectiveness make use of the qualitative technique, which involves the study of a limited number of case studies[4]. This is also the technique that I have chosen for this thesis and to this aim, the second part of the third chapter will present a limited number of cases of dumping of hazardous wastes in the African continent, which have been chosen because of their visibility and because they have taken place after the adoption of both the Basel and the Bamako Convention.

For this purpose, a counterfactual analysis can be used. It is a comparison between the outcome and a guess about the likely course of events if the convention had not existed. This however causes a problem since we are evaluating the effectiveness of the Bamako Convention in relation to the Basel Convention, but the Bamako entered into force only six years after that, and therefore there is not a sufficiently large amount of time that could have made the difference.

[3] Edward Miles et al., *Environmental Regime Effectiveness,* (Massachussets Institute of Technology Press 2002) 468.
[4] Bodansky (n 1) 259.

Then, this could be done in the case of the Bamako Convention comparing the situation in African countries that have ratified the Convention and countries that are not parties, or compare the situation that existed immediately before the entry into force of the Convention with the current one.
As an example, Ivory Coast is a party to the Bamako and still, very recently, it has been protagonist of one of the major incidents followed to an illegal dumping of hazardous wastes from outside Africa.

However, keeping in mind the fact that in order to evaluate effectiveness it is necessary to see if the goals of the provision have been fulfilled, this thesis will analyse the effectiveness only with regard to one of the purposes of the Bamako Convention. This purpose is to my mind the most important for the aim of this thesis because it represents the most striking difference with the Basel Convention: the prohibition of the import of all hazardous and radioactive wastes into the African continent for any reason.

Given the breadth and the complexity of the issue and the limited amount of time in finding qualitative data, it will not be possible to find a definitive answer to the research question of this thesis. Nonetheless, hopefully, it will be possible to move towards that direction and to come up with some thoughts relating to the achievements of the Bamako Convention in relation to the achievements that the Basel Convention would have obtained if it had not been "supplemented" by the African instrument.

I CHAPTER

GENERAL OVERVIEW OF THE TRANSBOUNDARY MOVEMENT OF WASTES

1.1. Introduction

The production of wastes, especially hazardous, has experienced an increasing growth since the industrial revolution until today[5]. This is due to development in the field of science and technology, that of course has improved our standards of living.

However, if on one hand this can be considered as a consequence of economic development, on the other hand, if these wastes are not handled properly, this could lead to detrimental effects to human health and the environment, in particular when it comes to hazardous and toxic wastes, like e-wastes.

Moreover, the rapid globalisation in economy has allowed the increase of economic growth. This, again, has brought positive, as well as negative effects[6]. Indeed, economic growth often results also in a higher amount of the production of wastes, especially of toxic ones. The number of e-wastes that are generated every year is very impressive: according to a UN report, this number is between 20 and 50 million tons[7].

Since the economic growth has been experienced mostly in developed countries, there is no need to say that these countries are the countries where the production of hazardous waste is higher. This leads us to turn our attention to the negative aspects of the issue. In effect, developed countries cannot deal with all the wastes that they produce, and therefore they need to dispose them in some way. The transboundary shipment of wastes, especially from industrialized nations to less developed ones, has then started to augment more and more, due to a number of interconnected reasons.

As a consequence, some problems have arisen, mostly due to the fact that the shipment of these wastes is not always legal. In particular, an important distinction has to be made between non-hazardous wastes and hazardous wastes. The latter category is the one that if is not managed in a proper way

[5] Wordsworth Filo Jones, 'The Evolution of the Bamako Convention: An African Perspective' (1993) 4 Colorado Journal of International Environmental Law and Policy 324.
[6] Edna Eguh, 'The Bamako Convention and the First Meeting of the Parties: A Glance at Implementation Strategies'(1998) 7 Review of European Community & International Environmental Law 256.
[7] Chukwuka Eze, 'The Bamako Convention on the ban of the import into Africa and the control of the transboundary movement and management of hazardous wastes within Africa: a milestone in environmental protection?' (2007) 15 African Journal of International and Comparative Law 208.

can cause detrimental effects to the environment and to human health. Unfortunately, it is not always easy to distinguish between hazardous and non-hazardous wastes.

In this chapter, the global phenomenon of the transboundary movement of waste (especially hazardous) will be analysed, starting from a definition of wastes, and focusing then on the so-called "toxic colonialism" and its consequences. "Toxic colonialism" is the name that has been given by some environmental activists to the phenomenon of illegal shipment of hazardous wastes from rich to poor countries. Finally, a brief overview of some cases of dumping of hazardous wastes will be provided. It is important to recall that these incidents happened before the adoption of the most important international instruments that regulate the transboundary movements of wastes, and therefore might have contributed to raise the awareness of the necessity of these international provisions.

1.2. Definitions of Waste

It is very difficult to find a unique and clear definition of wastes. This is one of the first problems that countries encounter while dealing with its management.

However, we can take as an illustrative example the definition given by the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal[8], one of the most important conventions which regulate the management of waste. According to art. 2(1) of this convention, wastes are: 'substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law'[9].

The waste that is generated takes usually the form of solid, liquid or gaseous. These wastes can be defined according to two characteristics: their source and their hazardous characteristics[10].

As for the first categorization, there are several sources of production of wastes. First of all, we can find municipal waste[11], that represents about 10% of the total waste[12]. Usually is derives from households or from commercial activities like shops. It takes the form of paper, glass, metal, plastic and organic material. Its generation is directly proportional to the level of industrialization of a

[8] The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (adopted 22 March 1989, entered into force 5 May 1992) 1673 UNTS 126; 28 ILM 657.
[9] Basel Convention, art. 2(1).
[10] Philippe Sands and Jacqueline Peel, *Principles of international Environmental Law* (3rd edn, Cambridge University Press 2015) 557.
[11] Ibid.
[12] Eurostat 'Municipal waste statistics' (March 2016) <http://ec.europa.eu/eurostat/statistics-explained/index.php/Municipal_waste_statistics#Municipal_waste_generated_by_country> last accessed May 2016.

country. The second type of wastes are the so called non-municipal wastes[13]. They usually derive from industry, mining, agriculture or they are sewage sludge.

As for the second categorization, municipal waste is generally considered as non-hazardous, while non-municipal waste, especially generated by industry or mining, can often have hazardous characteristics[14].

1.2.1 Hazardous waste

Hazardous wastes are the most dangerous ones and they are likely to harm the environment and human health. Therefore, they have to be managed in a careful way in order to prevent their possible negative effects[15]. The problem is that it is very difficult to find a clear and uniform definition of hazardous waste, because several international instruments use different definitions.

The California Department of Toxic Substances Control of the State of California defines hazardous waste as follows: 'Hazardous waste is a waste with properties that make it potentially dangerous or harmful to human health or the environment'[16]. This definition recalls the one given by the U.S. Environmental Protection Agency. The Resource Conservation and Recovery Act Laws and Regulations consider a waste as hazardous if it poses threats to the environment and human health when it is mismanaged[17]. But then, they go on providing lists, as every other legal instruments regulating the topic do.

Therefore, we can again use as illustration the definition given by the Basel Convention, which has been shaped following the Cairo Guidelines. The definition states that hazardous wastes are: 'a) wastes that belong to any category contained in Annex I, unless they do no possess any of the characteristics contained in Annex III; and b) wastes that are not covered under paragraph (a) but are defined as, or are considered to be, hazardous wastes by the domestic legislation of the Party of export, import or transit"[18]. In Annex I there is a list of categories that go from waste deriving from the production of pharmaceutical products and industrial disposal operations' waste, to tempering operations' waste containing cyanides. Then, Annex III provides a list of hazardous characteristics like explosive, flammable liquids etc.

[13] Sands Peel (n 10) 558.
[14] Ibid.
[15] Directive 2008/98/EC of the European Parliament and of the Council (19 November 2008) L 312/3.
[16] The California Department of Toxic Substances Control of the State of California 'Defining Hazardous Waste' <http://www.dtsc.ca.gov/hazardouswaste/upload/hwmp_defininghw111.pdf> last accessed June 2016.
[17] Linda Greer, 'Definition of Hazardous Waste' (1984) 1 Hazardous Waste 309, 310.
[18] Basel Convention, art. 1(1).

The definition of hazardous wastes given by the Basel Convention gives room for flexibility, because art. 1(1)(b) considers also national legislations. However, there is a lack harmonization in this regard when it comes to domestic legal frameworks.

Also the Waste Framework Directive 2008/98/EC of the European Union defines hazardous wastes not through a functional definition but providing a list. Article 1(4) of the Directive refers to a list drawn up in accordance with Annex I and II of the Directive and to some properties listed in Annex III.

The problem of not having clear definitions generates some consequences like intentional and unintentional breaches of the legal framework that regulates waste management and its transboundary movement[19]. In particular, these list-based definitions should be updated after certain intervals of time, because it is possible that new substances that didn't exist before start to be considered as hazardous. This is why, as it will be seen in the second chapter, some regional instruments regulating the same phenomenon have tried to broaden this definition by including also other types of wastes within the categorization of hazardous substances.

A specific type of waste, is the e-waste. It consists in all types of electronic and electric equipment that is then discarded, like computers, mobile phones, refrigerators, air conditioners, washing machines and television sets when they are reaching the end of their useful cycle of life[20]. This type of waste is often considered as dangerous[21] because of its potentially hazardous and toxic components. For example, a personal computer can contain highly toxic components like chlorinated and brominated substances, toxic gases, toxic metals, acids and plastic additives[22].

Since the consumption of these products is very high, especially in developed countries, the number of generated electronic waste has reached an alarming rate[23]. Indeed, about 50 million tonnes of e-waste are produced every year, and only ten percent of them are recycled[24].

[19] UNEP, *Waste crime - Waste risks. Gaps in meeting the global waste challenge* (United Nations Environment Programme and GRID-Arendal, 2015) 14.
[20] Dejo Olowu, 'Menace of e-wastes in developing countries: an agenda for legal and policy responses' (2012) 8/1 Law Environment and Development Journal 57, 62.
[21] T. V. Ramachandra and K. Saira-Varghese, 'Environmentally sound options for e-wastes management' [2004] Envies Journal of Human Settlements 1.
[22] Ibid.
[23] Patricia Nemeth, 'The Basel Convention and the transboundary movements of hazardous waste to the developing world: a study of regulatory violations and the problem of legal compliance' (DPhil thesis, The State University of New Jersey 2015) 11.
[24] Olowu (n 20) 63.

To conclude with electronic waste, it is a source of great concern, because the dangerous nature of its components brings about problems in the way to discard them, and thus, a proper management of this waste is needed in order to avoid risks[25].

Another typology of hazardous wastes that are considered as hazardous[26] are lead-acid batteries which come from cars and trucks, and are among the products with the highest rate of recycling[27]. Also pesticides represent a problem due to their hazardous characteristics, and it has been estimated that in some European countries 25 per cent of them 'are illicit or counterfeit'[28].

The above mentioned are only some examples of hazardous wastes, but there can be found many more. Indeed, since the 1970s the production of hazardous waste has continued to increase[29], even though it is quite difficult to estimate it precisely, because of the non-uniformity of the definition and because in some countries certain materials are not considered as hazardous wastes but rather as precious resources, as it will be seen in the following sections.

When it comes to the major producers of hazardous wastes, a UNEP study[30] showed that in 2012 these countries were Russia, Kazakhstan, Ukraine, Indonesia, Uzbekistan, Germany and the United States. Given the difficulties concerning the definition mentioned above, however, UNEP itself warns to be careful with these data.

There is one last category of waste that deserves some explanation: the radioactive wastes. These wastes are generated by nuclear power, military sources or medical and industrial establishments[31], and contain contaminated laboratory debris, biological materials and fuel, among other things. These wastes need special attention and therefore their treatment requires special rules[32].

1.3. Treatment of waste

There are several ways to deal with wastes, and various international and domestic instruments provide a legal framework for this purpose.

However, before considering the treatment of the wastes that have already been generated, countries should take into consideration the prevention of their production. Some international obligations, like the Basel Convention, set some limits to it. In effect, fewer atmospheric emission of certain gases

[25] Ramachandra (n21) 1.
[26] Under the Basel Convention.
[27] UNEP (n 19) 25.
[28] UNEP (n 19) 26.
[29] Nemeth (n 23) 16.
[30] UNEP (n19).
[31] Sands Peel (n 10) 560.
[32] Ibid.

can lead to a decrease in the generation of some wastes[33] whose minimized production can lead to positive results. . It is important to mention that over the years there have been political efforts aiming at encouraging practices of recycling, recovery and reuse of wastes[34].

1.3.1. Disposal

When it is not possible to reduce the production of wastes, it is necessary to dispose them. There are several international instruments dealing with this, but most of them just focus on the prohibition of the disposal in certain places, rather than regulate it in more general terms[35].

There are different places where wastes can be disposed. The first one is the disposal at sea. This has often been discouraged and it is prohibited by a number of treaties like the Bamako Convention. The second one is the disposal into rivers and lakes, which is also prohibited by a number of instruments in order to protect the environment[36]. Incineration is another way to get rid of wastes, and as the previous methods, it is regulated and limited by several treaties. Finally, there is the possibility to dispose wastes in landfills. Landfill disposal is regulated by some instruments, in particular when it comes to the disposal of toxic wastes. In such a case, there has to be an environmental impact assessment prior to the disposal.

1.4. Transboundary movement of wastes

Wastes are very often sent in countries others that the ones of generation. The transboundary movement of wastes, in particular hazardous waste, is a phenomenon that started to increase in the 1970s, and it has never stopped, becoming "an increasingly globalized business"[37]. Among the parties to the Basel Convention, the evolution of transboundary movements of wastes shows that they amounted to 4 mln tonnes in 1993, reached a peak in 1999 with about 16 mln tonnes and then decreased again[38].

There are three typologies of transboundary shipment of wastes: a legal transboundary movement, an illegal transboundary movement and an actual movement of the industries that produce wastes[39]. Therefore, in principle, the transboundary movement of wastes in not forbidden, and this phenomenon takes the form of commerce. However, the illegal transboundary movement of wastes represents a

[33] Ibid.
[34] Ibid.
[35] Sands Peel (n 10) 562.
[36] Ibid 564.
[37] Andrew Webster-Main, 'Keeping Africa out of the global backyard: a comparative study of the Basel and Bamako conventions' (2002) 26 Environmental Law and Policy Journal 65, 66.
[38] Nemeth (n 23) 22.
[39] J. Wylie Donald, 'The Bamako Convention as a solution to the problem of hazardous waste exports to less developed countries' (1992) 17 Columbia Journal of Environmental Law, 419.

big problem, because it often results in hazardous and toxic wastes generated in industrialised nations and subsequently sent to countries of disposal that most of the times happen to be developing countries.

1.4.1. Cases of illegal shipment of hazardous wastes

The illegal transboundary movement of hazardous wastes has often been referred to as "toxic colonialism", in all those cases when waste is shipped from the developed country of generation to a less developed country of disposal, where it can give rise to environmental problems. Some think that this phenomenon is a direct consequence of economic globalisation[40], that has opened new connections among countries and most of all has started to build a free market. According to them, waste has become a commodity[41].

On one hand, the discard of e-wastes, and in general of hazardous wastes, entails difficulties in wealthy countries, because of high costs of recycling[42]. It is much cheaper to dispose these wastes in less developed countries. For example, in the late 1980s, when the phenomenon was very much present, the cost of disposing one tonne of hazardous waste in the OECD countries was between 100$ and 2000$, while the average cost of the same disposal in African countries was between 2.50$ and 50$[43]. Many industrialized nations have started to tighten the legal framework regarding the management of these wastes, and to build higher environmental standards. This has caused the rise in costs.

If we think about the United States, for example, 'hazardous waste landfills must have double liners, leachate collection systems, and groundwater monitoring facilities'[44]. Moreover, countries of generations faced themselves with a scarcity of disposal facilities[45], and had to find new locations.

Thus, these countries have started to ban or largely restrict the presence of some kinds of substances on their territories to protect the environment and health, but at the same time they haven't prohibited the export of the same substances[46].

On the other hand, the demand of e-waste is particularly growing in Africa, because discarded electronic goods contain some precious materials that can be extracted from them, like silver and

[40] Olowu (n 20) 66.
[41] Ibid 65.
[42] Christine Terada, 'Recycling electronic wastes in Nigeria: Putting Environmental and Human Rights at Risk' (2011) 10 Northwestern Journal of International Human Rights 154, 156.
[43] Olowu (n 20) 62.
[44] Daniel Bodansky, Jutta Brunnée and Ellen Hey (ed), *The Oxford Handbook of International Environmental Law* (Oxford University Press 2007) 415.
[45] Eze (n 7) 208.
[46] Bodansky (n 44) 412.

copper[47], nickel and rare materials like indium and palladium[48]. Therefore, the recycling of these wastes has become an attractive business[49], and as a result, a net of informal recycling yards has developed in these countries, where workers earn low wages and work in dangerous conditions because of the danger created by the materials they handle. Moreover, given the cost of these electronic goods, people who can't afford to buy them look for cheapest solutions and often buy second-hand products that come from industrialized nations[50]. This of course can benefit workers and create economic development in those countries, but it can also result in more dangerous working conditions. Hazardous wastes are also imported because these countries need raw materials to use in infrastructures and in industry[51].

It is easy to understand that one of the main reasons why less developed countries accept these wastes is the poverty factor. Furthermore, in those countries labour standards are lower and environmental standards are in most of the cases inadequate, unenforced, or in the worst cases even non-existent[52]. There is a sort of "legal laxity"[53] and a lack of control on compliance[54], that can be due to ignorance or negligence in trying to avoid dangers, but also to corruption of public officials who are more interested in the economic benefits stemming from hazardous waste trade than in the detrimental effects that it can have on the environment. It is also important to recall a problem of scarcity of information and a subsequent unawareness of the problem among the public opinion. This leads to an inexistent public opposition.

Because of the above mentioned reasons, industrialized nations started to send waste to developing countries. China and India used to be the most frequent "dumping grounds" for e-waste, but in the last decades there has been a growth in the illegal shipment of these wastes especially to African countries[55]. As it will be seen in the second chapter, this transboundary movement is not forbidden and can be dealt with as if it was a normal trade. The problems arise when the waste that is shipped is considered as hazardous, for example containing some toxic material. As it will be seen, the shipment of hazardous waste is not totally banned, but it is in any case strictly regulated and limited. As a consequence, some countries manage to find some loopholes to escape the restrictions.

[47] Olowu (n 20) 63.
[48] UNEP (n 19) 24.
[49] Nemeth (n 23) 14.
[50] Olowu (n 20) 64.
[51] Donald (n 39) 425.
[52] Olowu (n 20) 62.
[53] Manasvini Krishna and Pratiksha Kulshrestha, 'The toxic belt: perspectives on e-waste dumping in developing nations' (2008) 71 Davis Journal of International Law and Politics 71, 74.
[54] Eze (n. 7) 208.
[55] Olowu (n 20) 62.

For example, UNEP has reported that sometimes hazardous components are mixed with non hazardous waste[56] in order to hide the real nature of the product and to avoid the special rules that regulate their treatment. However, these cases are often reported as fraud rather than 'environmental crime'[57]. Even though African states have vast territories and sites where it could be possible to have, for example, a landfill, they often lack the the capability, technical expertise and technology to properly monitor these landfill sites[58].

The transboundary movements of hazardous wastes have become then illustrative of a phenomenon which has been given the name of "not in my back yard". This means that nations that benefit from development, both scientific and technologic, 'unwilling to bear the environmental burdens of their economic activities, have often sought to shift those burdens to nations that reap none of the benefits'[59]. In reality, this is only partially true, because the shipment of wastes to developing countries could also bring some benefits to them. However, positive effects can only be generated by a proper management of this waste, and often, this has not been the case.

1.4.2. Consequences

'Environmental concerns in Africa can be divided into three categories: natural disaster, modern disasters and waste trade[60]'. From this statement it is already possible to foresee the damages created by the illegal shipment of hazardous wastes.

In effect, the consequences that stem from the illegal disposal of hazardous wastes are mainly environmental and health consequences, but we must not forget the problem of the rise of criminal organizations that speculate on the illegal shipment of wastes and are developing new and improved methods of smuggling[61].

As for the first two categories of consequences, hazardous wastes are likely to release into the environment, through water and air, toxic substances. For example, sites used for dumping can get on fire and explode. Then, dumps can leak, and the solvents stemming from this leak are likely to contaminate groundwater supplies[62], and the disposal of computers in landfills can result in the

[56] UNEP (n 19) 25.
[57] Ibid.
[58] John Ovink, 'Transboundary Shipments of Toxic Waste: the Basel and Bamako Conventions: Do Third World Countries Have a Choice?' (1994) 13 Dick.J. Int'l L. 281, 284.
[59] Webster (n 37) 66.
[60] Morne Van der Linde, 'African responses to environmental protection' (2002) 35 Comparative and International Law Journal of South Africa 99.
[61] UNEP (n 19) 23.
[62] Donad (n 39) 422.

acidification of the soil[63]. These toxic substances, once into soil or into water, can hereafter enter in food chains.[64]

As far as health is concerned, Agenda 21 reported that about 5.2 million people die every year as a consequence of waste-related diseases[65]. E-wastes, for example, are composed by some toxic substances. Lead can cause damages to the circulatory system, to the kidneys, to the reproductive system, to the nervous system and it can also result in slow brain development in children[66]. Then, chromium-VI, which is another component of e-waste, is likely to cause toxic effects to the cells. Finally, beryllium can cause very dangerous diseases and even cancer[67].

No one is exempted from the harmful consequences of these substances. It is true that people living near waste dumps are affected directly, but people can also be affected indirectly through the contamination of the food chain, soil and water sources[68].

This becomes particularly dangerous when these e-wastes are dismantled in order to extract some precious material. For example, in India and in China there are hundreds of workers, and among them also children, who work everyday in dismantling electronic products, that are likely to cause them deadly diseases[69].

The environmental harm created by this issue has been also considered as linked to human rights violations. Even though the linkage between human rights and the environment is still blurred and controversial, there are some scholars who have pointed out that 'the right to life, the rights to development, and the entire gamut of economic, social and cultural rights cannot be realised in the absence of the right to a healthy environment'[70].

1.4.3. Cases

In the late 1970s, the phenomenon of the illegal transboundary shipment of hazardous waste reached the spotlight as a result of a series of international incidents linked to this matter.

The most important incident of that time is perhaps the Koko Incident. This case involved two countries: Italy and Nigeria. Basically, in 1988 eight hundred open drums were discovered in Nigeria. They contained eight million pounds of industrial and nuclear hazardous waste, and they had started

[63] Ramachandra (n 21) 2.
[64] Webster (n 37) 69.
[65] Gay Meyers and Glen McLeod, 'An international waste convention: measures for achieving sustainable development' (2006) 24.6 Waste Management and Research 505, 506.
[66] Krishna (n 53) 72.
[67] Ibid. 73.
[68] Olowu (n 20) 68.
[69] Krishna (n 53) 71.
[70] Olowu (n 20) 69.

to release their toxic substances into an adjacent river, polluting the water. Moreover, some of the empty barrels have been taken by local residents and reused to store drinking water[71]. This resulted in the spread of serious diseases like chemical burns, premature births, paralysis and even deaths. The problem originated from an Italian businessman that paid around 100$ per month a local farmer (who was not aware of the content of the barrels) in exchange of the dumping of hazardous wastes, for nine months, in his backyard[72]. When this was discovered, Italy defended its citizen arguing that the agreement was nothing more than a normal agreement between two private companies. On the contrary, Nigerian government stated that the shipment had to be considered as a crime against Nigerian population.

Other African countries have been affected by the same type of situation. In 1986, the United States transported to Zimbabwe 275 drums of wastes, disguising them as cleaning fluids. In 1987 the United Kingdom sent 625 bags filled with hazardous wastes to Sierra Leone, that were subsequently dumped in a garbage dump. People living nearby this site started to suffer from various diseases because of the vapours that contained ammonia, formaldehyde and carbon monoxide[73].

The case of the Khian Sea then again shows the seriousness of the problem in that period. This case concerns the illegal duping of 14000 tons of toxic incinerator ash coming from garbage burners in Philadelphia spilled in the area of the Suez Canal and Singapore by a vessel in 1988.

Another Italian company, Jelly Wax, was involved in a similar incident in 1987, when it attempted to dispose 12000 drums of chemical waste without anyway succeeding.[74]

All the above mentioned incidents created a big scandal and international concern began to arise with regard to this illegal shipment of waste. In particular, as shown by the Koko Case, the different positions hold by developed and developing countries started to be clear.

[71] Webster (n 37) 65.
[72] Dire Tladi, 'The quest to ban hazardous waste import into Africa: first Bamako and now Basel' (2000) 33 Comparative and International Law Journal South Africa 210, 212.
[73] Filo Jones (n 5) 327.
[74] Ibid. 329.

II CHAPTER

CURRENT LEGAL FRAMEWORK: THE BASEL AND THE BAMAKO CONVENTIONS

2.1. Introduction

As mentioned in the previous chapter of this thesis, it was in the 1970s and in the 1980s that the global concerns about the transboundary shipment of hazardous wastes arose. In particular, states were worried that these hazardous wastes were disposed in underdeveloped countries without adequately prepared sites of disposal.

For this reason, the world community started to realise that there was 'a new urgency to develop and implement international controls'[75]. These efforts culminated in the adoption of the two Conventions whose study is at the core of this thesis: the Basel and the Bamako Conventions.

However, we must not forget that besides them, also other international and regional instruments regulating the management and the transboundary shipment of wastes were adopted.

Therefore, this chapter will start with an analysis of the Basel and Bamako Conventions, from their backgrounds and the reasons why they have been adopted to the key provisions that they contain, ending with a comparison between the two. The alleged limitations of the Basel Convention will also be taken into account. Then, a brief overview of the other international instruments dealing with waste management will be provided. Some of them have been adopted before the Basel and Bamako Conventions and some others have been adopted after and therefore they have utilized these two Conventions as a model.

2.2. The Basel Convention

2.2.1. Background

The 1989 Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (the so called Basel Convention) has been considered as 'the most significant and influential international agreement regulating trade of hazardous waste'[76]. Whether we agree or not with this

[75] Eze (n 7) 210.
[76] Webster (n 37) 69.

statement, what is certain is that the coverage of this Convention is wide, because it has been ratified by 183 states[77].

Among the reasons why the Convention was adopted, there are the concerns arising in that period about the exports of hazardous waste from rich and industrial nations in the northern hemisphere to developing nations in the south, incapable of managing them in a sound manner[78]. Therefore, this instrument was adopted in order to protect the environment and the human health from the harmful effects this transboundary shipment could have[79].

The origins of the Convention have to be found in the Stockholm Declaration (the Declaration of the United Nations Conference on the Human Environment) adopted in 1972[80]. Two of its Principles are particularly important in this regard. Principle 21 stressed the need for states to develop their own national environmental policies, that must not have negative collateral effects outside the territory of the state. The importance of cooperation among states in the development of a system of liability and compensation for the victims of environmental harms was then stressed by Principle 22.

Consequently, in 1981 the UNEP organized a meeting of 'Senior Government Officials Expert in Environmental Law'[81] in order to discuss about the matter of the hazardous wastes. During the discussion, these experts agreed that toxic and hazardous wastes' management and transport represented an issue for which an increased international cooperation was needed[82]. The outcome of this meeting were the Cairo Guidelines for the Environmental Sound Management of Hazardous Wastes, that were approved in 1987 by UNEP Governing Council and called for states to take into account the protection of environment and health when dealing with these wastes[83]. The Guidelines were a voluntary non-binding legal instrument that had to guide states in the developing of their national policies[84].

Subsequently, Switzerland and Hungary asked the Executive Director of UNEP to organize the gathering of an ad hoc Working Group with the purpose of preparing a global Convention regulating

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[77] Basel Convention, 'Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal' <http://www.basel.int/Countries/StatusofRatifications/PartiesSignatories/tabid/4499/Default.aspx> last accessed June 2016.
[78] Webster (n 37) 69-70.
[79] Akiho Shibata, 'Ensuring Compliance with the Basel Convention - its Unique Features' in Ulrich Beyerlin, Peter-Tobias Stoll and Rüdiger Wolfrum (ed), *Ensuring Compliance with Multilateral Environmental Agreements. A Dialogue between Practitioners and Academia* (Martinus Nijhoff Publishers 2006) 69.
[80] Donald (n 39) 426.
[81] Ibid 427.
[82] Eze (n 7) 212.
[83] Cairo Guidelines and Principles for the Environmentally Sound Management of Hazardous Wastes (UNEP Governing Council) 14th session 17 June 1987) U.N. DOC UNEP/GC14/17.
[84] Basel Convention, 'History of the negotiations of the Basel Convention' <http://www.basel.int/TheConvention/Overview/History/Overview/tabid/3405/Default.aspx> last accessed May 2016.

the issue[85]. The debates during the meetings of this group were quite intense and therefore it was not easy to speed up the finalization of a final draft[86].

Indeed, during the negotiations some disputes emerged. On one hand, African countries considered the proposed draft as too weak. They were asking for a total ban on hazardous waste exports and for liabilities in the case of such export. On the other hand, industrialized countries (led by the United States) 'wanted a convention that would permit trade through the utilization of the informed-consent regime'[87]. They also argued that a total ban would have contravened GATT rules[88].

Not surprisingly, there were also some developing countries that actually were not in support of a ban, because they were convinced that the trade in hazardous wastes had benefited their economic development[89].

Finally, after five sessions, a final proposal for the Basel Convention was concluded during the last meeting that took place in the Swiss city of Basel in March 1989. In order to reach a consensus, a veto was given to those countries (mainly African) that wanted a ban in the trade of hazardous wastes: they had to chose whether to accept an informed-consent mechanism or to obtain nothing at all[90]. These states still tried as a last attempt to institute a ban at least to the export of hazardous wastes to those countries that lacked the technology and the capacity for a proper disposal, but many industrialized nations refused this proposition[91].

Interestingly, UNEP, in a certain way, agreed with this position. It was convinced that a total ban was not the solution because it would have prohibited also those shipments originating from a country with a lack of disposal's capacities and arriving to a country that could have managed them properly[92]. This was considered as a sort of betrayal by some developing states and NGOs.

Last-minute compromises were then necessary to adopt the Convention within the agreed time frame[93], that was also respected because of political expectations' pressure. Finally, on March 22, the

[85] Eze (n 7) 213.
[86] Nemeth (n 23) 52.
[87] Nemeth (n 23) 56.
[88] Katharina Kummer, 'The Basel Convention Ten Years On' (1998) 7 Review of European, Comparative and International Environmental Law 227.
[89] Nemeth (n 23) 58.
[90] Ibid.
[91] Ibid.
[92] Ibid 59.
[93] Kummer (n 88) 228.

Basel Convention was signed by thirty-four countries of the 116 which had participated in the negotiations[94].

The urgency of having this convention can also be seen from the fact that it needed only 20 ratifications to entry into force[95]. It took 3 years[96] to reach the number, and the Convention entered into force on May 5, 1992. Some African countries initially refused to ratify it because the ban was missing, and on the contrary, some industrialized nations didn't want to ratify it for the very opposite reason: they considered this instrument as too stringent. This shows, once more, how difficult was the process of adoption of the Basel Convention.

2.2.2. Key Provisions

As mentioned in the previous paragraph, the Convention was from the very beginning the outcome of a compromise between those nations that wanted to totally prohibit the trade in hazardous wastes and those which were not in favour of this ban[97]. The first were developing countries and EU member states, while the latter were the majority of non-European industrialized states along with a minority of developing states namely India and Pakistan, which were afraid of the bad economic consequences that a total ban could have meant for them[98].

The result of this compromise is evident in the main goal of the Convention: the regulation, rather than the ban, of the transboundary movement of hazardous wastes. The former Executive Director of UNEP recalled that the purpose of the instrument was to reduce the generation of hazardous waste and to protect countries from its uncontrolled shipments[99].

In more detail, the Convention has three principal aims:

> '(1) the reduction of hazardous waste generation and the promotion of environmentally sound management of hazardous wastes, wherever the place of disposal; (2) the restriction of transboundary movements of hazardous wastes except where it is perceived to be in

[94] The signatories of the Basel Conventions on March 22, 1989 were: Afghanistan, , Bahrain, Belgium, Bolivia, Canada, Colombia, Cyprus, Denmark, Ecuador, El Salvador, European Union, Finland, France, Greece, Guatemala, Haiti, Hungary, Israel, Italy, Jordan, Kuwait, Lebanon, Liechtenstein, Luxembourg, Mexico, Netherlands, Nigeria, Norway, Panama, Philippines, Poland, Saudi Arabia, Spain, Sweden, Switzerland, Turkey, United Arab Emirates, Uruguay and Venezuela.
[95] Basel Convention, art. 25.
[96] Webster (n 37) 70.
[97] Alan Andrews, 'Beyond the ban - can the Basel Convention adequately safeguard the interests of the world's poor in the international trade of hazardous waste?' (2009) 5/2 167, 170.
[98] Ibid.
[99] Student Comment, 'The Basel Convention on Transboundary Movements of Hazardous Wastes: An Opportunity for Industrialized Nations to Clean Up Their Acts?' (1993) 22 Denv. Journal of International Law and Policy 193 ,199.

> accordance with the principles of environmentally sound management, and (3) a regulatory system applying to cases where transboundary movements are permissible.'[100].

Article 4 is perhaps the most important provision of the Convention because it states the general obligations of the parties, with respect of the three aims mentioned above. With regard to the first aim, paragraph 2(a) obliges the parties to minimize the generation of wastes, while par. 2(b) calls them to ensure the availability of proper disposal facilities for an environmentally sound management of wastes. As for the second aim, paragraph 1(b) sets the obligation of the parties to prohibit the export of hazardous wastes and other wastes to the parties that have notified their prohibition to import them, and paragraph 2(d) the obligation to reduce to the minimum the transboundary movement of such wastes. States also have to prohibit the export in the case they have a reason to believe that the import states don't have the facilities or expertise to manage the waste in an environmentally sound manner[101].

Another important provision included in the Basel Convention is the prior and informed consent system. Under art. 6(1), the state that is exporting the wastes shall notify in writing 'to the competent authority of the States concerned of any proposed transboundary movement of hazardous wastes or other wastes'. The State of import must reply to this notification in writing[102]. It has three possibilities: consent to the shipment, deny it, or require additional information. No transboundary movement can take place prior to the approval and the specification that the waste will be treated in an environmentally sound manner[103].

Lastly, it is important to recall the duty set by article 8 that obliges the exporting state to reimport wastes whose transboundary movement cannot be completed accordingly to the contract.

All in all, the Basel Convention presents two main differences with the pre-existent instruments regulating the same issue, firstly because of the scope of the wastes covered, and secondly because of the obligations of the parties[104]. We have already seen the obligations of the parties (set mainly by art. 4). As for the scope, it is not easy to understand which are the substances that fall under the Convention's coverage, and this has generated problems because states have lamented a difficulty in distinguish hazardous from non-hazardous wastes[105]. Indeed, the Basel Convention refers to hazardous waste and gives a sort of definition in art. 1. They have to be contained in one of the

[100] Basel Convention, 'Overview' <http://www.basel.int/theconvention/overview/tabid/1271/default.aspx> last accessed May 2016.
[101] Basel Convention, art. 4(2)(e).
[102] Ibid., art. 6(2).
[103] Ibid. art. 6(3).
[104] Filo Jones (n 5) 333.
[105] This forms part of the alleged limitations of the Basel Convention, that will be treated later in this chapter.

categories listed by Annex I, 'unless they do not possess any of the characteristics contained in Annex III'[106], or they have to be considered as such by national legislations[107]. Interestingly, art. 1(1)(3) and (4) excludes from the scope of the Convention radioactive wastes and wastes that are the result of normal operations of ships.

There remain only two issues to see about the Convention: the provisions regarding the liability in case of non compliance with the terms and the compensation for the damages consequent to illegal shipments of hazardous wastes; and the total ban of the transboundary movement of hazardous wastes. These are two very sensitive matters, because none of them is currently included in the Basel Convention. In reality, these provisions have been taken into account, but they couldn't reach the required number of ratifications for them to enter into force.

2.2.2.1. The Protocol on Liability and Compensation

Kummer[108] reports that when the the Convention was adopted, the developing countries considered the matters of liability and compensation as crucial, and indeed they were very disappointed by the fact that the instrument was adopted without any substantive provision dealing with that. Some of them 'went as far as to claim that without such provisions, the Convention would be a meaningless piece of paper'[109].

The matter was never abandoned and there were six years of negotiations. After these negotiations, 115 states endorsed the adoption of the Protocol on Liability and Compensation on December 10, 1999[110].

According to the Protocol there are two types of liability: a strict one and a fault-based one[111]. The first one is the most important and it applies when the importing and the exporting states are both parties to the Convention and allocates a strict liability to the notification entity until when the disposer becomes in control of the wastes, and when only one of the states involved is party to the Convention: in this case there is strict liability for the damages that occur when such party is in control of the wastes.

Notwithstanding the fact that the 'Protocol represents a landmark international enforcement mechanism', and even UNEP has described it as the first international environmental law instrument

[106] Basel Convention, art. 1 (1)(a).
[107] Ibid. art. 1(1)(b).
[108] Kummer (n 88) 232.
[109] Ibid.
[110] Sejal Chokski, 'The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal: 1999 Protocol on Liability and Compensation' (2001) 28 Ecology LQ 509, 522.
[111] Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and Their Disposal (12 October 1999) UN Doc. UNEP/CHW. 1/WG/1/9/2. art. 4 and 5

assigning a comprehensive liability and adequate compensation, it will enter into force only when twenty states will have ratified it. As of now, only thirteen countries ratified[112].

2.2.2.2. The proposed Ban

From the above mentioned brief description of the Convention's content, it is clear that this instrument doesn't prohibit the transboundary shipment of hazardous wastes, but it only regulates it. In reality, the Convention was amended in 1994 during the second Conference of the Parties, when the parties adopted an immediate ban on the export for disposal from the OECD members to the non-OECD members[113].

This ban involves the prohibition of all of these transboundary movements. Then, there was another provision destined to be set before the end of 1997 which entailed the prohibition of all transboundary movement of hazardous wastes not only destined to disposal but also to recycling and recovery operations from OECD states to non-OECD members[114].

It was not very clear how many ratifications it needed to entry into force, and this was a matter of discussion for many years. Finally, it was decided that it needed three-quarters of the parties to the Convention[115].

Like the Protocol on Liability, the Ban amendment has not come into force yet. It has been ratified by 86 states[116] until now, and even if it can seem a considerable number, it is not sufficient to reach the threshold required for the entry into force.

2.3. The Bamako Convention

2.3.1. Background

As mentioned in the previous section, many African States were not satisfied with the provisions included in the Basel Convention: they considered them as too weak. Above all, they thought that it benefited industrialized nations to the detriment of developing countries. This opinion was shared also by some scholars like Cusack, who claimed that: 'the Basel Convention has legitimized the

[112] Basel Convention, 'Basel Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and Their Disposal - List of parties and signatories, <http://www.basel.int/Countries/StatusofRatifications/TheProtocol/tabid/1345/Default.aspx> last accessed June 2016.
[113] Sands (n 10) 571.
[114] Tladi (n 72) 222.
[115] Sands (n 10) 571.
[116] Basel Convention, 'Ban Amendment to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. (Geneva, 22 September 1995) <http://www.basel.int/Countries/StatusofRatifications/BanAmendment/tabid/1344/Default.aspx> last accessed June 2016.

international toxic waste game and proclaimed industrial nations the winners'[117]. African leaders were very concerned by the issue, and the statement that the President of Kenya gave in 1988, during the negotiations of the Basel Convention, is very illustrative because it recalled the colonization past of Africa linking it to the dumping of hazardous wastes. Basically, he considered the dumping of wastes as a new form of colonization, that he called "garbage imperialism"[118]: Africa had to control the problem within its own context. These are the reasons why the Bamako Convention was adopted only two years after the adoption of the Basel Convention.

The dissatisfaction of the Organization of African Unity (OAU) was formally recognized in February 1989, when it stated in Resolution 1199 that the Basel Convention would have not protected the African continent in a sufficient way[119].

Therefore, the Convention on the Ban of Imports into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa[120] was adopted by African governments encouraged by the OAU[121] (now African Union) in order to address the alleged failures and lacks of the international Convention adopted in 1989, in particular its failure to fully ban the transboundary movement of hazardous wastes.

Actually, the origins of the Bamako Convention can be found also in article 11 of the Basel Convention, that encourages its parties to enter into regional instrument in order to regulate the issue.

This Convention was drafted during a meeting of the OAU Pan-African Coordinating Conference in the city of Bamako, Mali, in January 1991[122]. It was signed by all the ministers of the OAU member states and it entered into force in 1998. As of today, it has 29 signatories and 25 parties[123]. Interestingly, Nigeria, that was one of the nations most hit by the dumping of wastes in those years, has not ratified the Convention.

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[117] Marguerite M. Cusack, 'International law and the transboundary shipment of hazardous waste to the third world: will the Basel Convention make a difference?' (1989) 5 Am. UJ Int'l L. & Pol'y 393, 420.
[118] Filo Jones (n 5) 329.
[119] Donald (n 39) 430.
[120] Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa (adopted 30 January 1991, entered into force 22 April 1998) < http://www.au.int/en/treaties/bamako-convention-ban-import-africa-and-control-transboundary-movement-and-management>.
[121] Sands (n 10) 572.
[122] Donald (n 39) 431.
[123] UNEP, 'First Conference of Parties to the Bamako Convention' < http://www.unep.org/delc/BamakoConvention> last accessed June 2016.

2.3.2. Key provisions Bamako

The Bamako Convention set a regional system to prohibit the trade in wastes. This is clear from the preamble, where it is stated that the parties are aware of the risks to human health and the environment caused by the transboundary movement of hazardous wastes[124] and therefore are 'determined to protect, by strict control, the human health of the African population and the environment against the adverse effects which may result from the generation of hazardous wastes'[125].

The Bamako Convention has several purposes:

> 'Prohibit the import of all hazardous and radioactive wastes into the African continent for any reason; Minimize and control transboundary movements of hazardous wastes within the African continent. Prohibit all ocean and inland water dumping or incineration of hazardous wastes. Ensure that disposal of wastes is conducted in an "environmentally sound manner". Promote cleaner production over the pursuit of a permissible emissions approach based on assimilative capacity assumptions. Establish the precautionary principle'[126].

To a certain extent, we can consider the first objective as the most important because it is the one that conveys the stringent character of the Convention. It is contained in article 4, which is one of the core articles since it states the general obligations of the parties. Indeed, according to art. 4:

> 'All parties shall take appropriate legal, administrative and other measures within the area under their jurisdiction to prohibit the import of all hazardous wastes, for any reason, into Africa from non-Contracting parties. Such import shall be deemed illegal and a criminal act'[127].

Actually, this provision is effectively strengthened also by art. 22 and 23, which make clear that only member states of the OAU can ratify the Convention.

When it comes to the issue of wastes within Africa itself, article 4, para. 3 states that each party must ensure that the production of wastes within its area of jurisdiction is reduced to a minimum and ensure the presence of proper disposal facilities, in order to provide an environmentally sound management of wastes.

[124] Bamako Convention, preamble (3).
[125] Bamako Convention, preamble (16).
[126] UNEP (n 123).
[127] Bamako Convention, art. 4(1).

Another important goal of the Convention is to establish the precautionary principle. In order to ensure this, under article 4(3)(f) the parties must prevent 'the release into the environment of substances which may cause harm to humans or the environment without waiting for scientific proof regarding such arm'[128]. A cooperation among the parties is important to this end.

The Convention provides also for a mechanism of prior and informed consent according to which the exporting state can't send the hazardous waste until the state of import has consented in writing to the shipment[129]. Kaminsky has stressed the fact that the prior and informed consent is important especially when it comes to African states, because they might lack the regulatory infrastructures and resources[130].

Lastly, article 12 called the Conference of the Parties for the set up of an ad hoc expert organ that had to prepare a draft protocol on liability and compensation. This is very important especially because due to the confusion of who was liable between the Nigerian and the Italian governments in the aftermath of the Koko incident happened in Nigeria[131], the victims could not obtain compensation[132].

As for the scope of the Convention, article 2 enumerates a list of substances that must be considered as hazardous wastes for the purpose of the Convention. These include the ones contained in the first Annex to the Convention, the ones considered as such by domestic legislations, the ones which contain some characteristics presented in Annex II, and the ones that have not been registered by the government regulatory action due to their threats to health and environment. They also include radioactive wastes, but they don't include wastes which derive from a ship's normal operation.

2.4. Comparison between the Basel and the Bamako Conventions: main similarities and differences

Considered the fact that the two Conventions were adopted about in the same historical time and that they have to a certain extent the same aspirations[133], it is not surprising that they are very similar in their key provisions, apart from the fact that with regard to the Bamako Convention they are generally more stringent.

[128] Ibid art 4(3)(f).
[129] Ibid art. 4(3)(s).
[130] Howard Kaminsky, 'Assessment of the Bamako Convention on the Ban of Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa' (1992) 5 Geo International Law Review 77, 81.
[131] See chapter 1 of this thesis.
[132] Eguh (n 6) 257.
[133] Adebola Ogunlade, 'Can the Bamako Convention adequately safeguard Africa's environment in the context of transboundary movement of hazardous wastes?' (2009/2010) 14 CAR Annual Review i, 6.

In effect, the African nations adopted the Bamako Convention with the very purpose of addressing some provisions that they felt as lacks in the Basel Convention. For this reason, the two instruments present several similarities and a few, although very striking, differences. According to Donald[134] these differences are the result of the concerns of the African Union, and Chukwuka[135] recalled that the drafters of the Bamako never meant to reproduce another Basel Convention and therefore they created more far-reaching and innovative provisions.

As for the similarities, both Conventions aim at achieving a reduction in the generation but in particular in the movements of wastes, and aim to protect the environment and human health from the detrimental consequences of the dumping of hazardous wastes.

To a certain extent, the Basel Convention anticipated the measures adopted by the Bamako Convention because in article 4 it takes into account the possibility for parties to issue import bans and prohibits export of wastes to countries that have issued such bans.

They also encourage the disposal of such wastes near the locus of generation and recognize the sovereignty of states to prohibit the import of hazardous wastes in their territories. Moreover, both Conventions don't prohibit the movement of waste within their state parties.

As for the scope of the Conventions, both exclude wastes generated by the normal operations of a ship.

Then, both the Basel and the Bamako set a duty to re-import a cargo of wastes in the case in which their disposal cannot be completed due to a breach in the contract.

When it comes to the divergences between the two Conventions, they are only minimal if we think about the real big matter that differentiates them. In the previous sections we have seen which are the purposes of the two Conventions. There is one purpose that really sets the difference: the Bamako Convention imposes a total ban on all imports of hazardous wastes into Africa from non-contracting parties and if they occur, they have to be considered as illegal. On the contrary, the Basel Convention doesn't prohibit the transboundary movement of hazardous wastes, but it only regulates them. Indeed, the Basel Convention allows these movements provided that there is a prior and informed consent, whereas the Bamako Convention adopts the prior and informed consent only within Africa.

[134] Donald (n 39) 432.
[135] Eze (n 7) 216.

The second thing that it is necessary to note is the fact that while the Basel is an international and global instrument, with many parties, the Bamako Convention is a regional instrument that has as its area of coverage only the African continent, and not even all the African nations have ratified it.

A third important difference concerns the scope of the Conventions. The Bamako Convention has a much broader scope than the Basel. In particular, art. 2 of the Bamako considers radioactive wastes under its scope, unlike the Basel Convention. Moreover, the Basel Convention excludes from its scope household wastes, which on the contrary are included in the Bamako.

A fourth difference regards the provisions on liability for the damages deriving from illegal transboundary movements of hazardous wastes. As mentioned earlier in this chapter, the Basel Convention had postponed the resolution of this problem, adopting a Protocol that then has never been ratified. On the contrary, the Bamako Convention deals with the matter in article 12 and it states that: 'strict, unlimited liability as well as joint and several liability shall be imposed on hazardous waste generators'[136].

Further, although the Basel Convention refers to preventive measures related to incidents, the Bamako Convention is the first treaty explicitly mentioning the precautionary approach 'in its operative parts'[137]. The precautionary approach is enshrined in article 4(3)(f) of this Convention, where it is stated that the parties have to strive to prevent 'the release into the environment of substances which may cause harm to humans or the environment without waiting for scientific proof regarding such harm'[138]. The article then provides for an explanation of which can be the methods of clean production for this purpose. We can say that the Bamako Convention contains more stringent provisions when it comes to the generation of waste, because it calls for the elimination of wastes before their creation, for example using new technologies that can diminish their production. On the contrary, the Basel Convention takes into account the means at disposal of the countries. This means that if some countries do not possess the economic funds to develop innovative technologies, this Convention adopts however a more sympathetic approach towards them[139].

As far as the disposal and incineration of waste in waters is concerned, the Basel Convention doesn't explicitly prohibit it, stating that this would be superfluous, given the fact that other international

[136] Bamako Convention, art. 4(3)(b).
[137] Kaminsky (n 130) 84.
[138] Bamako Convention,art. 4(3)(f).
[139] AO Akinnusi, 'The Bamako & Basel Conventions on the trnasboundary movement and disposal of hazardous waste: a comparative & critical analysis' (2001) 12 Stellenbosch Law Review 306, 312.

instruments already deal with this matter[140]. On the contrary, the Bamako Convention explicitly prohibits the dumping of waste in internal waters and at sea in article 4, paragraph 2.

Another difference between the two Conventions regards the illegal traffic of hazardous wastes, which is defined in article 9 of both the Conventions. It consists in any transboundary movement of hazardous or other wastes occurred without notification to all states concerned, without the consent of the state concerned or with a falsified consent. It can also consist in transboundary movement of waste that doesn't conform in a material way with the documents or that results in deliberate disposal[141]. Although both the instruments call for the parties to adopt national legislation preventing and punishing this traffic, only the Bamako Convention explicitly considers it as a criminal act[142].

When it comes to the dissemination of information, it has to be recalled that the Secretariat of the Basel Convention has been considered as 'passive' by some scholars like Donald[143]. On the other hand, the Secretariat of the Bamako Convention is more active because it shall conduct investigations of the breaches of the treaty and hazardous waste audits, among other things, unlike the Secretariat of the Basel[144]. The Convention requests a higher dissemination of information. For example, according to article 3, the Secretariat has to be informed about the wastes that are considered as hazardous by national legislations of the parties. Article 4 obliges parties to send to the Secretariat all the information related to an illegal hazardous waste import into Africa from non-Contracting Parties. The Secretariat shall then forward this information to all the other parties.

Furthermore, under article 4(3)(u), the Bamako Convention requires that the information related to a proposed movement of hazardous wastes clearly states the dangers that it might cause on human health and the environment. On the contrary, the Basel Convention does not address long term risks for the wastes[145].

This table will help in understanding the main features of the two Conventions.

	BASEL CONVENTION	**BAMAKO CONVENTION**
Type of instrument	International	Regional
Date of adoption	22 March 1989	30 January 1991

[140] Ibid 311.
[141] Art. 9 of Basel and Bamako Conventions.
[142] Bamako Convention, art. 4(1).
[143] Donald 432.
[144] Ibid 439.
[145] Donald (n 39) 439.

Date of entry into force	5 May 1992	22 April 1998
Number of parties	Signatories: 53 Parties: 183	Signatories: 29 Parties: 25
Reasons for adoption	- International community's concern about the exports of hazardous wastes from industrial nations to developing nations. - Protection of human health and environment from the harmful effects of this transboundary movement.	- Dissatisfaction of African states with the provisions of the Basel Convention. They were considered as too weak and benefiting only industrialized nations. - Protection of the human health and the environment of Africa against the detrimental effects of the generation and transboundary movement of hazardous wastes.
Aims	'(1) The reduction of hazardous waste generation and the promotion of environmentally sound management of hazardous wastes, wherever the place of disposal; (2) The restriction of transboundary movements of hazardous wastes except where it is perceived to be in accordance with the principles of environmentally sound management, and (3) a regulatory system applying to cases where transboundary movements are permissible.'[146]	'Prohibit the import of all hazardous and radioactive wastes into the African continent for any reason; Minimize and control transboundary movements of hazardous wastes within the African continent. Prohibit all ocean and inland water dumping or incineration of hazardous wastes. Ensure that disposal of wastes is conducted in an "environmentally sound manner". Promote cleaner production over the pursuit of a permissible emissions approach based on assimilative capacity assumptions. Establish the precautionary principle'[147].
Scope - Definition of hazardous wastes	Art. 1 of the Convention provides a list-based definition. - Hazardous wastes have to be contained in one of the categories listed in Annex I unless they don't possess any of the characteristics present in Annex III.	Article 2 of the Convention provides a list-based definition. - Hazardous wastes have to be contained in one of the categories listed in Annex I. - They have to be considered hazardous by national legislations.

[146] Basel Convention (n 100).
[147] UNEP (n 123).

	- They have to be considered hazardous by national legislations. - Radioactive wastes, household wastes and wastes result of normal operations of ships are excluded from the scope.	- Wastes that possess any of the characteristics listed in Annex II are also hazardous. - Hazardous substances banned in the country of manufacture for human health or environmental reasons. - Radioactive wastes and household wastes fall within the scope of the Bamako Convention. - Wastes deriving from the normal operations of a ship (whose discharge is covered by another international instrument) are excluded from the scope.
Main obligations of parties	Article 4 - Obligation to minimize the generation of wastes; ensure the availability of proper disposal facilities for environmentally sound management of wastes; prohibition of the export of hazardous and other wastes to the parties that have notified their prohibition to import them; obligation to reduce to a minimum the transboundary movement of hazardous wastes.	Article 4 - Obligation to take measures within the area of their jurisdiction to prohibit the import of all hazardous wastes, for any reason, into Africa from non-contracting parties. - Ensure that the production of wastes within the area of their jurisdiction is reduced to a minimum and ensure the presence of proper disposal facilities.
Prior and informed consent	Article 6(1). The state of export shall notify in writing to the states concerned any proposed transboundary movement of hazardous or other wastes. The state of import shall reply in writing stating its consent, its denial or requiring additional information. No transboundary movement shall take place without the approval and the specification that the waste will be treated in an environmentally sound manner.	Article 4(3)(f). The state of export cannot send the waste until the state of import has not consented in writing to the shipment.
Illegal traffic of hazardous waste	It is not explicitly considered as a criminal act.	It is explicitly considered as a criminal act.

Provisions on liability	Protocol on liability and compensation. Not yet into force.	Article 12 - Strict and unlimited liability must be imposed on hazardous waste generators.
Precautionary principle	The Protocol on Liability and Compensation refers explicitly to preventive measures, but this Protocol is not into force yet.	Article 4(3)(f) - The parties shall prevent the release into the environment of substances that may cause harm to human health or the environment.
Duty to re-import	Article 8. The exporting state shall re-import wastes whose transboundary movement cannot be completed accordingly to the contract. The duty to re-import applies only if it is practical to do so.	Article 8. The exporting state shall ensure that the hazardous wastes whose transboundary movement cannot be completed in accordance with the terms of the contract are re-imported into the state of export by the exporter.
Disposal and incineration of waste in waters	It is not expressly prohibited.	It is explicitly prohibited in art. 4(2).
Dissemination of information and Secretariat	It has a more passive Secretariat.	It has a more active Secretariat. The Conventions requires a higher dissemination of information.

2.5. Alleged limitations of the Basel Convention

As we have seen in this chapter, the Bamako Convention was adopted as a response to the concern of the African Union about how the Basel Convention could have tackled the issue of the illegal trade in hazardous wastes, especially in developing countries.

In this section we will briefly analyse the alleged limitations of the Basel Convention, in order to understand if these limitations are truly a problem in putting an end to these shipments or if instead they are actually an inevitable consequence of the compromise character of this legal instrument.

The factors that have been classified as limitations of the Convention concern the ambiguous character and the lack of clarity of its provisions, but most of all concern the failure in prohibiting the import of hazardous wastes.

As for the vagueness of the Convention, some scholars[148] have lamented an extreme vagueness in the definition of the term "hazardous" and a consequent difficulty for the states in differentiating the wastes. This can also be a significant challenge in the implementation. Moreover, the scope of the Convention has been considered as too narrow since radioactive wastes don't fall under its scope.

Another critic to the Basel has been 'its failure to create a fund to minimize the damage from international hazardous waste accidents under Article 14 of the Convention'[149]. In fact, if there are not such funds, developing nations may not afford the costs of clean-up in the case of environmental damages due to the dumping of hazardous wastes. Of course the fact that the Protocol on liability and compensation didn't entry into force is perceived as a major limitation, and the same thing applies to the Ban amendment.

Lastly, other two limitations have to be considered: the recycling loophole and the fact that the USA are not party to the Convention. With regard to the recycling loophole, the Basel Action Network has argued that 'most waste trade to developing countries that is claimed to be destined for reuse or recycling is either 'sham' recycling (…) or 'dirty' recycling'[150]. As for the USA, it is clear that the fact that they are not party to the Convention (they signed it but never ratified) can be a major concern, since this country is among those that export more wastes.

All in all, it is clear that the Basel Convention is characterized by many limitations, but it is still to be seen if they are true limitations or if they are only the inevitable outcome of a compromise among the parties, without which it wouldn't have been possible to adopt the Convention in the first place.

2.6. Other International and Regional Instruments regulating the Transboundary Movement of Wastes

Apart from the Basel and Bamako Conventions, several other instruments considered the issue of shipment and management of wastes and thus it is worth mentioning the most important ones.

The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, is a multilateral treaty entered into force in 1975, and therefore long time before the adoption of the Basel and Bamako Conventions. It doesn't concern directly the transboundary shipment of wastes but it concerns their disposal at sea.

[148] Nemeth (n 23) 77.
[149] Chokski (n 110) 518.
[150] Andrews (n 97) 177.

In 1990 the International Atomic Agency General Conference adopted the Code of Practice on the International Transboundary Movement of Radioactive Waste establishing a list of principles that are used as guidelines[151].

The 1997 Joint Convention on Spent Fuel and Radioactive Waste Management, which is actually modelled on the Code, contains stricter provisions. Its principal aim is to protect individuals and the environment from radioactive hazards.

Another important instrument is the Lome IV Convention, that entered into force in 1991 and states that EU members had to ban the exports of these wastes to the African, Carribean and Pacific States. However, Kummer[152] noted that this Convention was in contradiction with the Bamako Convention because it prohibited waste movements among ACP and non-ACP states, that were instead allowed under that Convention. In effect, the Lome Convention was quite strict in considering the dumping of hazardous wastes in Africa as an environmental crime, asking in addition a cleaning of areas already contaminated.

When it expired, the Convention was followed by the Cotonou[153] Agreement, that doesn't deal specifically with the transboundary movement of hazardous wastes but rather concerns the management of natural resources taking into account the issue of the management of hazardous wastes[154].

The Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region, commonly called the Waigani Convention, is an important regional instrument that entered into force in 2001. The principal aim of the Convention is the regulation of the transboundary movement of wastes between the parties. This Convention has some similarities with the Bamako Convention[155] and can be considered as a quite strong legal agreement.

Then, we can find the Protocol of the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean adopted in 1996. It forbids the import of hazardous wastes by non - European Union states as well as the export of the same type of wastes to developing countries. It has a main important similarity with the Bamako Convention where it considers the illegal traffic of hazardous wastes as a criminal offence.

[151] Sands (n 10) 574.
[152] Kummer (n 88).
[153] Nemeth (n 23) 109.
[154] Ibid.
[155] Chuwkuka (n 7) 222.

Within the context of the European Union, hazardous wastes were dealt with in Directive 91/689, but they have then been integrated within the Waste Framework Directive.

When it comes to the trans frontier shipment, the Regulation 1013/2006, also called Basel Regulation, applies.

It is then necessary to take into account the fact that the shipment of wastes is not only regulated by multilateral treaties, but also by bilateral treaties between two countries. Environmental agreements are needed because environmental damages know no borders, and this gains even more importance when it comes to bordering countries.

III CHAPTER

ACHIEVEMENTS OF THE BAMAKO CONVENTION IN RELATION TO THE BASEL CONVENTION'S EFFECTIVENESS

3.1. Implementation, Enforcement and Effectiveness in International Environmental Law

In international environmental law, as well as in international law in general, what is important is not the number of treaties ratified by states, but the degree to which they live up to their commitments and therefore the positive results that they achieve, for example in improving the quality of the environment. This involves a number of concepts, first of all the concept of effectiveness.

Before trying to evaluate the success of the Bamako Convention and see if the stricter provisions that it contains are really more positive results in term of effectiveness, it is necessary to see in the more general terms of international environmental law what is the meaning of "effectiveness" and how it is possible to measure it. For this purpose, it is also needed to make a distinction between some concepts that are very often confused among each other.

Therefore, in this section, firstly some definitions will be provided. Then, we will see which are the variables that can influence the effectiveness, and lastly, some techniques to evaluate the success of an international legal instrument will be briefly exposed.

Starting with the exposition of the definitions of compliance and effectiveness, it is always quite difficult to distinguish between them, because to a certain extent compliance is an aspect of institutional effectiveness, but it is not the only one[156]. Indeed, if the degree of compliance is low, it doesn't mean that also effectiveness is low: it can also be that low levels of compliance mean high effectiveness. Raustiala has defined compliance as follows: 'conformity between behaviour and a legal rule or standard'[157], whereas effectiveness is: 'the degree to which a legal rule or standard induces desired changes in behaviour'[158]. Therefore, an effective rule is not the one that solves an issue, but it is a simply change in behaviour, that could lead to the solution of the problem. With regard to compliance, instead, it is important to distinguish between domestic compliance and international compliance, because since in international law states have to consent to be bound, they might consent to some provisions which simply mirror a state behaviour and therefore don't require

[156] Raustiala (n 2) 388.
[157] Ibid.
[158] Ibid.

much effort from the part of states. In this case 'compliance is perfect but effectiveness is zero'[159]. In Bodansky's opinion it is not very difficult for states to comply with an international obligation. He thinks that it is not only a matter of capacities but also of willingness and thus, even poor countries could comply with many environmental standards[160] if they really want so. Accordingly, effectiveness is much more difficult to obtain than compliance.

The link between effectiveness and compliance is further explained by Bodansky when he provides some distinctions among different shades of effectiveness[161]. Firstly, he identifies a legal effectiveness: this concept is related to the issue of compliance: 'whether outcomes conform to what a legal rule requires'[162]. Secondly, he identifies a behavioural effectiveness, that implies the change in behaviour by states in order to move in the right direction. Lastly, a problem-solving effectiveness 'focuses on the degree to which a treaty achieves its objectives or, more generally, solves the environmental problem it addresses'[163]. Once more then it is evident that legal effectiveness, that corresponds to compliance, is not enough: behavioural effectiveness is needed for us to consider a regime as successful.

Miles gives an even more practical definition of effectiveness by stating that a regime can be considered effective if it solves the problems which motivated its establishment[164]. Like Raustiala, he considers perfect compliance as not always sufficient to state that an agreement or regime is effective and he makes a distinction between changes in human behaviour, that he calls *outcome,* and changes in the biophysical environment itself, that he calls *impact.* According to him, sometimes public concern can be one of the most important factors in the determination of the effectiveness of a regime.

When it comes to compliance and effectiveness in international environmental law more in general, Raustiala argues that it is not always true that binding agreements are more effective or more complied with[165]. Indeed, non-binding agreements can present some advantages and in some cases they can even be more effective. Indeed, states are less likely to ratify binding agreements if the obligations are very high demanding and stringent. On the contrary, if they know that the agreement is non-binding, they might adopt far more ambitious agreements.

[159] Ibid 397.
[160] Bodansky (n 1) 231.
[161] Ibid 253.
[162] Ibid.
[163] Ibid.
[164] Miles (n 3) 4.
[165] Raustiala (n2) 412.

Moving to implementation**,** Raustiala considers it as 'the process of putting international commitments into practice: the passage of domestic legislation, promulgation of regulations, creation of institutions (both domestic and international), and enforcement of rules'[166]. Implementation can further compliance, but there can be compliance even without implementation. This, because if there is automatic compliance implementation is useless. This is the case for example of exogenous factors like an economic crisis that leads to compliance[167].

Bodansky gives a similar definition of implementation by stating that it is 'the process by which policies get translated into action'[168]. What is interesting in Bodansky's thought is that he considers implementation as the first factor of effectiveness.

Finally, a brief explanation of enforcement is due. Sands and Peel explain[169] that international enforcement applies when a party to a treaty fails to implement an international environmental obligation, and an authority needs to enforce that obligation. Therefore, enforcement is 'the right to take measures to ensure the fulfilment of international legal obligations or to obtain a ruling by an appropriate international court, tribunal or other body, including an international organization, that obligations are not being fulfilled'[170].

From the above definitions, it becomes easier to understand that effectiveness is the term that has the broader scope and it is maybe the key to evaluate the success of an agreement, treaty or international institution and its accomplishments.

There are several variables that it is important to take into consideration when evaluating the effectiveness of a legal instrument.

The first one is the *nature of the problem*. It is important to remember that some international provisions may seem working well and may seem very effective, but this depends from a variety of aspects. One of these aspects can be the type of the problem they are addressing. Indeed, the problem structure plays a fundamental role in the analysis of institutional effectiveness[171]. A problem can be benign or malign. Using the words of Young, a benign problem is a problem that is 'easy to solve', while a malign problem is a problem that is 'hard to solve'[172]. According to Miles, a benign problem

[166] Raustiala (n 2) 392.
[167] Ibid. 393.
[168] Bodansky (n 1) 205.
[169] Sands (n 10) 144.
[170] Ibid.
[171] Ronald Mitchell, 'Problem Structure, Institutional Design, and the Relative Effectiveness of International Environmental Agreements' (2006) Global Environmental Policies 72, 73
[172] Oran Young, 'Effectiveness of international environmental regimes: Existing knowledge, cutting-edge themes, and research strategies' (2011) Proceedings of the National Academy of Sciences 19853, 19855.

is characterized by identical interests among actors, whereas a problem becomes malign when there is less harmony[173]. Thus, a problem is benign when there are coordination and symmetry, and malign when there are incongruity in a relationship of competition and asymmetry[174].

If the problem that the institution is addressing is benign, then it will be easy to think that the institution is performing well, but this can be due only to the easiness of the problem or to the design of the institution[175]. However, it is clear that the presence of a malign problem can be an obstacle to effectiveness. According to Miles, ineffective regimes can be the result of a combination of a malign problem with a system provided with low problem-solving capacity[176]. In this regard, a favourable political context can benefit to the actual effectiveness of a regime, even though this is not enough.

A second variable is the *number of actors* involved in a targeted activity[177]. For example, if there are fewer actors responsible of a violation (in our case if a limited number of countries or companies are involved in the transboundary movement of hazardous wastes) it would be easier to enforce a Convention.

A third variable concerns the *capacities* of a state. In effect, states might engage in violations of environmental rules and play a role in endangering the environment only because they lack the financial, administrative and technical capabilities[178]. Thus, they don't do that because they intend to do it, but just because of deficiencies.

The *informational environment* represents the fourth variable that influences the success of a legal provision. International problems are intensified when it is difficult to know the behaviours and the preferences of the other actors involved[179]. This happens because if there is scientific uncertainty about an environmental problem, states tend not to be very willing to change their behaviours, even when they are wrongful. On the contrary, when states know better what the other actors involved are doing, they become more willing to engage in environmentally proper behaviours and to 'carefully craft institutional monitoring provisions'[180]. Talking about the monitoring, also the countries that are involved can make the difference: for example, according to Mitchell a collaborative monitoring can

[173] Miles (n 3) 15.
[174] Ibid 21.
[175] Mitchell (n 171) 75.
[176] Miles (n 3) 309.
[177] Mitchell (n 171) 76.
[178] Ibid 80.
[179] Ibid 81.
[180] Ibid.

be useful in the case of agreements among industrialized nations, and on the contrary can be useless when it is among developing countries[181].

It is also important to look not only at the international obligations, but also to do like the political scientists who take into consideration also the international regime composed by social norms and customary norms and consequently adopt a broader perspective[182].

As far as the techniques to evaluate effectiveness are concerned, we have to recall that scholars are continuously trying to assess the effectiveness of environmental regimes and institutions, but this is not an easy target, because like Mitchell said, 'assessing the relative effectiveness of international environmental agreements accurately requires careful attention to the structures of the problems they address'[183]. The evaluation of effectiveness implies an analysis of the causes of a state's behaviour with respect to international commitments[184], something far than easy.

A first technique is the so called counterfactual analysis: 'a comparison of the observed outcome and the analyst's best guess about the likely course of events if the treaty or commitment or particular institution had not existed'[185] or a comparison of the situation that existed before the regime was established with the situation that occurs when the regime is in place. However, scholars like Miles consider this as insufficient for a good evaluation.

Then, it is important to recall the quantitative method to evaluate effectiveness. It relies on statistical techniques like the regression analysis and on statistical data, but collect these data and analyse them is an extremely difficult task according to Bodansky.

This is why the qualitative technique is the one that is used in most of the studies of effectiveness, that involve a limited number of case studies[186].

Moreover, as mentioned above, in some cases it can be good to infer, like for example when analysing the levels or the trends of an activity in the period post agreement comparing them with levels predicted in the absence of such agreement[187].

Effectiveness can be assessed by comparing agreements' effects joint to the conduct of qualitative studies[188].

[181] Mitchell (n 171) 75.
[182] Raustiala (n 2) 389.
[183] Michell (n 171) 72.
[184] Raustiala (n 2) 397.
[185] Ibid 398.
[186] Bodansky (n 1) 259.
[187] Mitchell (n 171) 85.
[188] Mitchell (n 171) 73.

Miles individuates a scheme to follow when evaluating effectiveness. As mentioned above, he considers outcomes and impacts. This scheme starts from an *output* (the regime formation) that corresponds to the state of affairs when the international agreement is signed. Then, national measures are taken in order to move towards effectiveness. This leads to the impact (the environment positive or negative response to the changes in human behaviour). The most important part are these changes in human behaviour, that correspond to the *outcome*, and more specifically to the regime implementation that could lead to effectiveness.

As far as the evaluation of compliance is concerned, this requires data about state behaviour and an analysis of the causality of compliance, joint to a counterfactual analysis[189]. Sometimes, especially in international relations, actors can "force" other actors to respect their commitments threatening a violation of those commitments themselves. However, in the case of international environmental agreements, it doesn't work this manner, because environmental damages know no borders, and therefore compliance cannot be deduced by the threats of violation. Ronald Mitchell[190] individuates instead as reasons for non compliance the correlation between costs and benefits, incapacity, scarcity of resources and normative and ideological factors.

Moreover, it is necessary to study and analyse multiple agreements and to compare them because in this way it becomes possible to understand which institutional option works better and how much it is influenced by the context.

All in all, the above overview of definitions and techniques shows that it is very difficult to have a clear and unique way to evaluate the achievements of an international agreement in terms of compliance, effectiveness and enforcement by the parties. Furthermore, as stated by Miles, instant success is a rare thing and it often takes years to see the positive or negative outcomes of a legal regime. However, a combination of these techniques can certainly help us to move towards the right direction.

3.2 Major cases of illegal dumping of hazardous waste in Africa after the adoption of the Bamako Convention

As it has been seen in the first chapter of this thesis, in the 1970s a big concern about the illegal transboundary movement of hazardous wastes began to arise. This happened because it had been experienced a rise in the cases of illegal dumping of these wastes, mainly from wealthy nations to

[189] Raustiala (n 2) 397.
[190] Bodansky (n 44) 909.

developing countries: a phenomenon that has been refereed to as toxic colonialism or "non in my backyard".

In the second chapter, then, the responses of the international community to this issue have been evaluated. Several international environmental law instruments have been created, whose most important are the Basel Convention and the Bamako Convention.

The purpose of these Conventions was, and still is, the reduction in the exports of hazardous wastes in the case of the Basel, and the total ban of import of hazardous wastes in the case of the Bamako. It is therefore interesting to see to what extent these Conventions have alleviated this problem and following the method of the qualitative analysis it can be observed if the dumping of hazardous wastes from developed countries to developing countries has still occurred in gross scale like it had occurred in the period preceding the adoption of these instruments. This will be done with regard to Africa, because the geographical area covered by the Bamako Convention is the African continent. To this aim, only the most well-known cases will be taken into account, namely the Trafigura case, which has obtained an enormous audience, and the Nigeria case.

Less known cases regard for example Somalia. It has been reported[191] that after the Tsunami of 2004 in the Indian Ocean, some containers with dumped waste (also nuclear) have been washed away to the Somali shore causing some cases of deaths, diseases and malformed babies due to the release into the environment of substances like mercury and lead.

Another case concerns England, where in 2014 a waste processor was sent to jail for 16 months by a UK Court for exporting 46 tonnes of hazardous electrical waste illegally to Africa, mainly to Nigeria and Ghana. UNEP stresses the importance of this case because it was the first time where there has been a condemn to jail for illegal transboundary movement of hazardous wastes[192].

3.2.1 The Trafigura case

The Trafigura Case, also known as Probo Koala case, is a case of dumping of toxic waste in Abidjan, Ivory Coast, occurred in 2006. This case was so well-known that it brought again international attention on the topic of the problems deriving from the transboundary movement of hazardous wastes.

[191] Institute for Security Studies, 'Stop dumping hazardous waste on African shores' (1 November 2011) <https://www.issafrica.org/iss-today/stop-dumping-hazardous-waste-on-africas-shores>.
[192] UNEP (n 19) 42.

The ship Probo Koala was chartered by the company Trafigura (a Dutch based oil and commodity shipping company) to collect a heavy residual fuel oil, the coker naphta, from Brownsville, in Texas. Then, off the the coasts of Libya or near Gibraltar, a caustic washing took place on board the ship.

Subsequently, on July the 2nd, 2006, the ship attempted to unload the toxic waste that it was carrying at Amsterdam port, since it had already obtained a consent from the Amsterdam Port Service at a certain cost[193]. However, once the ship arrived there, from the strong smell emanating from the ship the officials of Amsterdam port Service immediately understood that the cargo was not composed of what Probo Koala had claimed it was. In fact, there were wastes containing a higher presence of substances than it was permitted, like mercaptans[194]. Given the higher level of toxicity, the treatment of this waste would have been much more complex and therefore expensive. Trafigura didn't want to pay that amount of money (from the 20 USD per m3 to 900 USD per m3[195]) and asked to reload the waste. Then, the Probo Koala left Amsterdam direct to Ivory Coast, where it arrived on 19 August of the same year.

There, through Puma Energy Cote d'Ivoire, it unloaded the waste making an arrangement with a newly created company that had the name of Tommy Ltd that would have discharged the waste at a much lower price: between 30 and 35 USD per m3.

Five hundred tonnes of hazardous waste were then dumped in various sites in the area of the capital city during the night of that same day. The Ivorian Ministry of Health and Public Hygiene reported that there were about 18 dumping points in 8 sites, and none of them disposed of proper dumping facilities suitable for the dumping of chemical waste.

This caused a major environmental damage, as well as health problems for all the people who went in contact with the toxic substances[196]. Symptoms included respiratory problems, vomit (also with blood), dizziness, nausea, burns and irritation. UNEP reports that there have been around 100,000 cases of poisoning and even around 15 deaths.

Later on, this scandal was uncovered, and Trafigura agreed to pay a compensation to the Ivorian Government for the clean-up of the waste, but it agreed with this same government that Trafigura had no liability and that the Government would not submit a complaint against the company.

[193] UNEP (n 19) 29.
[194] Ibid
[195] Ibid
[196] Greenpeace, *The Toxic Ships. The Italian hub, the Mediterranean area and Africa* (Greenpeace ONLUS Roma 2010) 36.

Dutch prosecutors opened a criminal case at the Amsterdam Court against Trafigura and others in 2010 for a breach of European regulations. Trafigura has always denied any responsibility, but some evidences prove[197] that it was aware of the toxic nature of the cargo.

In 2012, Trafigura agreed to pay 300,000 euro of compensation as a result of an out-of-court agreement between the company and the Dutch Public Prosecutor's Office[198].

Then in 2015, the lawyers representing more than 100,000 Ivorian victims sent a summon to Trafigura for a new lawsuit in the Hague[199]. According to Amnesty International[200], in 2016 the victims asked again for compensation, but this claim is still unresolved.

The whole case can be considered as in breach of the provisions of the Bamako Convention, because Ivory Coast is a party to the Convention and notwithstanding the ban to import hazardous wastes, the dumping of toxic wastes occurred undisturbed.

3.2.2. The Nigeria case

Nigeria has always been affected by the problem of dumping of hazardous wastes in its territory, but the situation remains quite bad, since in 2012 it was estimated that every month 500 containers of used electronics are imported to this country from Europe[201]. Moreover, about three-quarters of them cannot be recycled and are therefore dumped in landfills. Nigeria is then a classical example of a dumping ground for developing countries'(mostly Europeans) hazardous wastes.

It is reported that from its landfill sites it is possible to see black smoke. What is worse, in these sites it is not rare to see children walking on the wastes and touching them in search for valuable materials. This of course causes them a lot of health problems in relation to the toxicity of the substances they come in contact with.

There are also environmental consequences, since researchers have found an excess in the presence of heavy metals in the soil and in plants[202]. Moreover, a contamination in vegetables, animals and drinking water has been reported.

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[197] Ibid.
[198] Business & Human Rights Resource Centre, 'Trafigura lawsuit' <https://business-humanrights.org/en/trafigura-lawsuits-re-c%C3%B4te-d%E2%80%99ivoire> last accessed June 2016.
[199] Ibid.
[200] Amnesty International, 'Trafigura: a toxic journey' (2016) <https://www.amnesty.org/en/latest/news/2016/04/trafigura-a-toxic-journey/> last accessed June 2016.
[201] Terada (n 42) 166.
[202] Ibid 167.

Some organizations like Greenpeace investigated on the problem and have found out that sometimes these illegal exports are disguised as if they were normal recycling operations.

This transboundary shipment is of course in breach with the Basel Convention's provisions, because these operations are not environmentally sound[203], and moreover, since the US are not party to the Convention, the parties cannot import wastes from them.

Nevertheless, this illegal transboundary movements of hazardous wastes continue to occur, also furthered by the fact that Nigeria doesn't have a stable political context, corruption is widespread, and there is a lack of legal enforcement against this corruption.

[203] Terada (n 42) 168.

IV CHAPTER

ACHIEVEMENTS OF THE BAMAKO CONVENTION IN RELATION TO THE BASEL CONVENTION: EVALUATION

4.1. Evaluation of Bamako Convention's achievements

In this section we will try to move towards the finding of an answer to the research question of this thesis.

It is not easy to understand if the achievements of the Bamako Convention have been more successful than the ones of the Basel Convention, but what is certain is that the drafters of the regional instrument have sought such an outcome.

Actually, the two Conventions are very similar in structure and provisions. However, it is true that they present some differences, and this is particularly true when it comes to their main purposes. The man difference in this regard is the fact that unlike the Basel Convention, the Bamako bans the import of hazardous wastes into its area of coverage.

But has this goal been achieved? In the third chapter it has been seen that it is not easy to evaluate the effectiveness of a regime. We have sought to do this with a qualitative analysis that involves the study of a limited number of cases. In the third chapter few cases of illegal transboundary movement of hazardous wastes have been described. Actually it is not very easy to find reports concerning such cases. This might imply that these cases are not frequent, or on the contrary that states hide the occurrence of them.

The analysis of only few cases cannot certainly give a clear and definitive answer to our research question, but the two cases of Trafigura and Nigeria have been chosen because they are very illustrative. First of all, they are very well-known, and second of all they can help in the attempt of providing a counterfactual analysis.

The two cases involve two countries that find themselves in different situations with respect to the Conventions here analysed. Indeed, the Trafigura case concerns an African country, Ivory Coast, that is party to the Basel Convention as well as to the Bamako Convention. On the contrary, Nigeria, the country "protagonist" of the second case, is a party to the Basel Convention, but it is not a party to the Bamako. It has signed the Convention, and this can show an interest in being bound by the instrument, but it has not yet ratified it (and since it has signed it already eight years ago, it is unlikely that it will ratify it soon).

Thus, if it could be deducted that the situation of dumping of hazardous wastes in Nigeria (that causes several environmental and health problems) is due to the fact that Nigeria is not party to the Bamako Convention, it must not be forgotten that Ivory Coast is a party to this Convention, and despite this, it has been the protagonist of one of the major environmental cases due to the illegal shipment of hazardous wastes of the last years.

Furthermore, it has been reported[204] that Nigeria was the only African nation that supported the signature or ratification of the Basel Conventions during the problematic negotiation. This shows an interest of Nigeria in dealing with the issue. The fact that the country didn't ratify the Bamako Convention thus doesn't mean that Nigeria is not acting against the transboundary movement of hazardous wastes. Maybe it considers the Basel Convention as sufficient.

Perhaps, the cases of shipment of hazardous wastes are due to a lack of implementation of the Convention. The Bamako Convention can be effective only if the monitoring system is correctly implemented. In effect, it has been noted that[205] the main challenges in the implementation of the Convention are a lack of technical capacity and expertise, a lack of resources and a lack of regulatory changes. It is therefore needed to encourage cooperation among the parties and to involve more NGOs and civil society in this process. The technical capacities of a state are also an important variable when it comes to the measurement of effectiveness.

Maybe it is easier to understand the process of implementation and the success of the two Conventions by analysing the reports of the parties to the Secretariats.

As for the Bamako Convention, it has not been possible to find its reports. In effect, the report of the First Conference of the Parties of the Bamako, held in 2013[206] shows that a Secretariat had to be established within the United Nations Environment Programme[207]. The Conference asked the African Union to transfer the Secretariat functions. This has to be done in order to ensure a better implementation of the Convention. Therefore, it can be supposed that three years ago there were still problems in the implementation. It has been difficult to find any other official document related to the matter, because there hasn't been another conference of the Parties.

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[204] Kaminsky (n 130) 88.

[205] Chemical Conventions Handbook, 'Implementing the Bamako Convention' <http://www.ntn.org.au/cchandbook/bamako/impl_sc6.html#wcbc>.

[206] Decision 1/6 - Institutional arrangements for the implementation of Convention: Establishment of a Secretariat (C1 DEC. 6 26 June 2013 Conference of the States Parties) < http://www.unep.org/delc/Portals/119/Bamako/C1DEC.6Institutional_arrangements_EstablishmentofSecretariat.pdf>.

[207] Report Of The First Session Of The Conference Of The Parties To The Bamako Convention On The Ban Of The Import Into Africa And The Control Of Transboundary Movement And Management Of Hazardous Wastes Within Africa (Bamako Convention) (C1.1. 24-26 June 2013).

When it comes to the Basel Convention, it is interesting to see the Reports of Nigeria and Ivory Coast, since we have seen that there are problems related to hazardous wastes in those countries.

The Country Sheet on Nigeria seems to show that the country is working in the good direction. Indeed, the list of domestic laws related to waste management is quite long and complete. Moreover, the country has also striven to promote and adopt national strategies for the adoption of cleaner production techniques. However, if we look at the last annual report of Nigeria (2014)[208], the country has reported no accidents deriving from the transboundary movement of hazardous wastes. This can be a good thing, of course. On the other hand, however, we saw that actually there is some evidence that such accidents happened. Therefore, the national authorities could have hidden them.

When it comes to Ivory Coast, the information provided by the competent national authority in the report[209] is quite scarce. However, the country seems to be active in trying to find a solution to the negative effects on human health and the environment. In particular, after the Probo Koala Case, some studies have been conducted, according to the report, by some scholars in 2012.

Moving back to the comparison between the achievements of the Conventions, it is not clear whether the total ban of import in hazardous wastes provided by the Bamako Convention is actually that positive. On one hand it is positive in avoiding environment damages (although we have seen that in practice in some cases it has failed to do that), but on the other hand it has some shortcomings. Firstly, there can be cases where a country actually possesses facilities for an environmentally sound management and dumping of wastes. In this case, the ban only prevents such wastes of being disposed in a better way. Secondly, the sovereignty of the states parties can be damaged, because those nations cannot choose whether they want to import waste from foreign nations. It could be that they are properly equipped in managing and dumping the cargo, but this instrument prevents them from doing so. We also must not forget that trade in wastes is a lucrative activity, and states can benefit from job incomes, business activity and also technological education associated with the transboundary movement of wastes, that if it is dealt with in a proper way is not such a negative phenomenon.

This might also explain why not so many countries have ratified this Convention. The provisions of the Bamako Convention might be a little bit too stringent. In international law, states are more willing to be bound by rules that they know they can comply with. Sometimes, compromises are necessary

[208] Basel Convention National Reports - Year 2014 - Nigeria < http://www.basel.int/Countries/NationalReporting/BaselConventionNationalReports/tabid/4250/Default.aspx>.
[209] Basel Convention National Reports - Year 2014 - Ivory Coast < http://www.basel.int/Countries/NationalReporting/BaselConventionNationalReports/tabid/4250/Default.aspx>.
[209] Olowu (n 20) 73.

in order to have more states ratifying a treaty, and consequently less stringent provisions are inserted. On the contrary, if we want more ambitious provisions, maybe a soft law instrument is more suitable. In this regard, we must not forget that the Basel Convention is the outcome of a compromise. This shows that maybe, even if it is less stringent, the Basel Convention couldn't have been adopted without such a compromise. Therefore, it is at least better than nothing. In effect, also Chukwuka has supposed that the ambitious provisions of the Bamako Convention may threaten its enforceability.

Notwithstanding its shortcomings, however, the Bamako Convention can be considered as a symbol. With this instrument African nations have raised an awareness on the issue and on the fact that they have been used - and continue to be used - as dumping grounds for hazardous wastes coming from developed countries.

Actually, there are some episodes that could let us think about an effective interest of African countries in dealing with the issue or at least an increased consciousness of it. The adoption of the Nairobi Declaration on Environmentally Sound Management of Electronic and Electrical Waste of 2006; the Durban Declaration on E-waste management in Africa of 2008 and the Bamako Declaration on the Environment for Sustainable Development of 2010 might be a proof of that. Moreover, Olowu has reported that a number of African countries are adopting policies that regulate electronic and electric equipment[210]. For example, Uganda has banned the import of second-hand electrical and electronic equipment.

Also the first meeting of the parties to the Bamako Convention held in 2013 has shown an interest of those states in this direction. In effect, during the Conference, the parties adopted the Bamako Declaration on Protection of Africa against Illegal Dumping of Hazardous Wastes[211]. In the Declaration, the parties reaffirmed their commitment to the goals of the Bamako Convention and called for African states to implement or ratify this Convention.

All in all, the two Conventions present both some shortcomings. Nevertheless, they also have strong points. The African states have adopted the Bamako Convention concerned about the limitations of the Basel Convention, but we have seen that actually the Convention has not stopped the illegal shipment of hazardous wastes into Africa.

At this stage, it is maybe better to see the two Conventions in combination with each other. According to Kaminsky[212] in effect this regional measure can coexist with - and strengthen - the Basel Convention. However, some questions arise whether the Basel Convention alone could not be

[210] Ibid.
[211] Report COP, para. 7.2
[212] Kaminsky (n 130) 88.

enough. In effect, according to article 4, states can prohibit the import of hazardous wastes in their territories if the wish.

As stated above, the capacities and the institutions of a state are fundamental. Some states have weaker institutions. This is surely a problem for a success of an international agreement. Among other things, smaller countries might be pressured by international community's opinion and in order not to be inserted in a so-called "black list" or to be protagonist of a "naming and shaming" states sometimes feel that the ratification of a certain international agreement will reduce the pressure and use it as a sort of "window dressing". In effect public concern is important in the definition of effectiveness. This could in part explain why states sometimes don't live up to their obligations. Maybe they have never truly had the intention to respect those provisions.

With regard to the Bamako Convention, in effect, the African Union has never made a mystery of the fact that African states should ratify it. Maybe some of them felt this as an inescapable obligation.

Finally, it is important to recall that environmental protection is a luxury good. This means that there are some countries, mainly the richer countries (the ones that actually are generally waste exporters) that can afford this, and countries that cannot. Therefore, the priorities of the countries are different. Even though the import of hazardous wastes can cause detrimental effects to the environment, some countries still feel it as a source of income and as an aid to economic development. For this reason, it is extremely difficult to achieve full compliance, effectiveness and enforcement in treaties like the Basel and Bamako Conventions.

CONCLUSION

This thesis has dealt with one of the most important issues of international environmental law: the transboundary movement of hazardous wastes.

The transboundary shipment of wastes can represent a lucrative activity and can benefit the state of import, but it can also cause detrimental effects both to the environment and to human health if it is not managed properly.

In the first chapter of the thesis we have seen which are the numbers of the phenomenon and we have analysed the phenomenon of the so-called “not in my backyard”. Basically, over the years, and especially since the 1970s, wealthy countries, mainly Europeans, have used developed countries, mainly African nations, as a dumping ground for the disposal of their hazardous wastes. In the chapter it has been seen that the two main reasons for this are high costs of disposal and stringent regulations, from the part of rich countries; and poverty, corruption and lack of regulations in developing countries. In the same chapter we have also provided a brief overview of the consequences on the environment and on human health that the toxic substances contained in those wastes can have. Finally, a brief overview of the most notorious cases of dumping occurred before the adoption of the Basel and Bamako Conventions has been dealt with.

These two Conventions have been the core of our analysis. They have been both adopted in order to regulate the transboundary movement of hazardous wastes, and they are very similar between each other. Indeed, the Bamako Convention has been adopted shortly after the adoption of the Basel, and its adoption derives from the concern of some African States that the Basel Convention was not stringent enough in order to address their problems. This is the reason why if we have to find a real difference between the two instruments, this is the total ban in the import of hazardous wastes of the Basel Convention compared to the fact that the Basel Convention only seeks to regulate this transboundary movement. The purpose of the thesis was indeed that of evaluate the achievements of the Bamako Convention with this respect.

However, it is far from easy to evaluate the effectiveness of an instrument. The thesis has sought to do this through a qualitative analysis and in particular through a comparison between the key provisions of the two Conventions and through the exposition of two very illustrative cases. In fact, in the third chapter it has been seen that the Trafigura case and the Nigeria case involve two African countries used as dumping grounds for hazardous wastes. One of them has not ratified the Bamako Convention, whereas the other did it.

This seems to me quite illustrative of the fact that the Bamako Convention still presents a room of improvement with regard to its effectiveness and success. Moreover, we have seen that the total ban is not always as beneficial as it is thought to be. We must also recall that States can prohibit the import of hazardous wastes through their domestic legislation. Also the Basel Convention allows states to prohibit the import of hazardous wastes. This means that the Basel doesn't ban generally the import of such wastes, but single parties are still allowed to do so, if they wish.

Therefore, maybe the Bamako Convention could be seen merely as a symbol of African Unity and this is the reason why the countries that ratified it decided to become parties. Indeed, sometimes states decide to negotiate together in order to higher the standards. Especially when it comes to poorer countries like some of African ones, they might not possess a power in negotiations or they might try to attract richer countries business or investments in their territories in order to receive some economic benefits. This might lead to bilateral negotiations between rich and poor nations that could have as outcome a lowering of the standards or a sort of "race to the bottom".

Moreover, some choices of national authorities might seem to cause costs, but maybe, they are beneficial in the long term to the state as a whole.

Therefore, it is not possible at this stage to have a clear and definitive answer to this thesis' research question, because a complete evaluation should be based on more data, also quantitative, that are very difficult to find. The evaluation of international environmental law instruments is difficult and requires a lot of resources and time.

We can nonetheless learn a lesson from this research: it is extremely difficult to curb hazardous waste trade, mainly because it is a lucrative activity. As Terada stated, without a comprehensive legislation and effective enforcement, the trade in hazardous waste will continue to flourish.

This is a major concern that governments have to take seriously, mainly because the people who are mostly affected by this issue are the poorest and the most vulnerable. Cusack reports a statement by Indira Ghandi that seems to me very appropriate at this stage: "How can we speak to those who live in the villages and in the slums about keeping the oceans, the rivers, and the air clean? Are not poverty and need the greatest polluters?"[213].

[213] Cusack, p. 423

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