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Transparency and Toxic Waste: State Decisions to Report and Import Toxic Waste

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Transparency and Toxic Waste: State Decisions to Report and Import Toxic Waste

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Submitted in Partial Fulfillment
of the
Prerequisite for Honors
in Environmental Studies
under the advisement of Beth DeSombre

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Executive Summary

This thesis provides an overall analysis of the global toxic waste trade within the framework of an international environmental agreement called the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal, signed in 1989. Up until this treaty, there was no information based trade system for toxic waste. A series of highly publicized cases of toxic waste dumping from industrialized countries to developing countries in the 1970s and 1980s prompted the need for an organized trade system. Toxic waste is a harmful and sometimes lethal substance, and exposure is an especially high risk within developing countries who have less resources to establish the safest possible infrastructure to process waste.

Within this thesis, I primarily focus on developing countries because these countries generally do not produce toxic wastes and do not possess the infrastructure to safely process it. The Basel Convention is largely the result of developing countries lobbying the UNEP to establish an international environmental agreement to regulate the toxic waste trade. With developing countries as the focus, this thesis follows two general frameworks. Firstly, this thesis analyzes the toxic waste trade as an international environmental agreement, which seeks to improve state behavior by establishing a transparent system in which states must report where they are sending waste, with the consent of countries that import this waste. This framework ultimately aims to understand why states fulfill obligations to the agreement by reporting. The second framework focuses on which states are importing toxic waste. This thesis theoretically and empirically considers how wealth, inequality, democracy, and corruption may help explain how both frameworks are operating.

For my methodology, I draw upon a variety of primary and secondary sources. I analyze scholarly literature regarding both conditions that lead to compliance with international environmental law and general background information on the Basel Convention, in order to understand how effective international environmental agreements are in changing behavior, especially in agreements that establish reporting systems. Then I analyze environmental literature that explains conditions that lead to environmental degradation to hypothesize which states might import toxic waste. Secondly, I analyze empirical information at the state level from both the Basel Convention and from a variety of state-level indices that measure wealth, inequality, democracy, and corruption. The Basel Convention publishes reports that show how much toxic waste a country imports, exports, and details on the type of waste and the destination of the waste.

I find that reports sent to the Basel Convention are inconsistent and inaccurate, especially among developing countries. Many countries submit reports to the Basel Convention that are missing import information. Some countries write memos that explain their toxic waste imports

rather than submitting numbers. Accuracy of reporting is questionable because the information that countries provide in their import reports does not align with the reports submitted by countries that export to them. For example, in a memo China wrote that it forbids imports of toxic waste, but other countries report exporting toxic waste to them, which indicates that they may be submitting false information.

In an effort to understand reporting behavior, I consider different characteristics of these countries. Some international environmental scholars believe that states intentionally violate international environmental agreements in order to promote their own best interests, and other scholars suggest that states may not comply with obligations due to a lack of capacity to implement new systems. With these considerations in mind, I seek to understand why countries either never report or report false information to the Basel Convention.

My empirical and theoretical analysis of state-level wealth, inequality, democracy and corruption suggests that many developing countries are not reporting due to a lack of capacity. I find that the poorest and most unequal on average members of the Basel Convention are the least likely to report, suggesting that reporting is costly and requires resources that are unavailable to developing countries. Countries that are less democratic and more corrupt on average are also less likely to report, which may indicate that these countries are not willing to commit resources towards establishing a reporting system. Overall, reporting accuracy appears to be more of a capacity issue than states intentionally violating the rules.

In addition to looking at reporting behavior within developing countries, I also consider toxic waste imports. Some environmental scholars suggest that developing countries may import toxic waste out of economic desperation. Empirical evidence from the Basel Convention refutes this suggestion. I find that industrialized countries import the most toxic waste, indicating that states that have the capacity to safely process toxic waste are importing the most of it. There is no clear relationship between a developing country's level of wealth and the amount of toxic waste that it imports, which suggests that the poorest developing countries are not importing toxic waste out of desperation. My findings regarding toxic waste imports are generally reassuring, with one exception. The developing countries that do import toxic waste tend to be the most corrupt on average, which suggests that corrupt countries may import toxic waste for economic gain, while developing countries generally do not.

My empirical and theoretical findings on the current state of the global toxic waste trade hold a few implications for environmental justice and international environmental law. While the Basel Convention has improved conditions of the global toxic waste trade overall, issues remain within developing countries. I find that many countries are not reporting or reporting accurately, and the most corrupt developing countries are importing toxic waste. The Basel Convention must provide assistance to implement reporting systems in developing countries to facilitate better

overall transparency in the global toxic waste trade. Successful and transparent reporting systems promote accountability for actions within the toxic waste trade, which then results in safer conditions of trade.

The difficulties that developing countries face in meeting requirements of the Basel Convention holds implications more broadly for international environmental law. International environmental agreements must be designed with financial limitations and capacity in mind. Focusing on the importance of transparency in international environmental law agreements and establishing reporting systems that regulate behavior, such as the Basel Convention, feedback systems must be in place to assess whether states are upholding obligations, otherwise, states may not change their behavior.

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Chapter 1

Introduction

Each year states globally transport roughly 8 to 10 million metric tons of hazardous waste to other countries.¹ These harmful compounds reach a final destination, where they often linger in the environment and make people sick. Two decades ago, countries around the world gathered to ensure that toxic waste would be managed safely, especially within developing nations. The agreement they created was the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. States around the world needed an international system to keep countries accountable for the waste either leaving or entering their borders. How well is this regulatory system facilitating transparency and effective regulation in the global toxic waste trade? What influences the ability or willingness of states to live up to the treaty's provisions? Under what conditions do states decide to accept imports of hazardous waste?

Background information on Basel Convention

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was prompted by highly publicized cases of unsafe and nonconsensual waste dumps in developing countries in the 1970s and 1980s.² These instances demonstrated the need to tighten control among countries exporting and importing toxic waste. In one of these cases, nine hundred tons of highly toxic chemical waste from Italy was dumped in Nigeria without Nigeria's consent or knowledge.³ The Nigerian government's lack of awareness of the

¹ Invernizzi, M., Mauri, M., Baggi, G., & McKay, Z. (2016) "Toxic waste routes." *Density Design*. Web.

² Chasek, P. (2001). "Eleven cases of multilateral environmental negotiation." *Earth Negotiations: Analyzing thirty years of environmental Diplomacy*. New York:United Nations University Press. 111.

³ Gbadegesin, S. (2001). "Multinational Corporations, Developed Nations, and Environmental Racism: Toxic Waste, Exploration, and Eco-Catastrophe." In *Faces of Environmental Racism: Confronting Issues of Global Injustice*. Lanham: Rowman & Littlefield Publishers, Inc.

entry of a toxic substance across its borders exemplifies the lack of transparency in the international toxic waste trade at the time. The Basel Convention sought to establish transparency within the international toxic waste trade by establishing a monitoring system that would prevent unsafe societal and environmental conditions that stemmed from a lack of accountability among countries.⁴

In 1981, the legal department of the United Nations Environment Program (UNEP) agreed to address disparities within the hazardous waste trade, as well as a lack of control over trade.⁵ UNEP formed a working group to set guidelines on the environmentally sound management of hazardous wastes. This working group developed the Cairo Guidelines, two main principles agreed upon to set standards for the toxic waste trade. The first principle focused on transparency of the trade through prior informed consent of the state receiving toxic waste, and the second principle focused on ensuring that states do not send toxic waste to states that cannot process toxic waste as well as the exporting state.⁶ Both of these principles aimed to reduce unwanted transport of waste from industrialized countries to developing countries.

After the working group developed these guidelines, environmental NGOs teamed up with developing countries, working especially with African states, to lobby UNEP to negotiate an international agreement.⁷ In 1987 UNEP was authorized to form a Working Group of Legal and Technical Experts, whose purpose was to form a global convention on the international toxic waste trade, particularly focusing on transparency within the transboundary movement of hazardous wastes.⁸ UNEP drafted an agreement, encompassing principles developed by the

⁴ Chasek, 116.

⁵ Chasek, 110.

⁶ Chasek, 111.

⁷ Chasek, 111.

⁸ Gbadegesin, 187.

Cairo guidelines.⁹ In Geneva in 1988, experts from thirty-three countries gathered to discuss the principle of prior informed consent. Developing countries strongly advocated for the importance of this principle to be included in the text of the convention.¹⁰ Part of establishing transparency in the toxic waste trade was agreeing on technicalities, such as establishing the safest methods to manage toxic waste and determining what characteristics qualify a substance as a toxic waste. Later that year, forty government representatives met in Caracas and agreed to define hazardous waste on a list of categories and characteristics, which the OECD had formerly developed. Delegates agreed to include the principle of prior informed consent in the convention and to form a process to facilitate the implementation of the convention.¹¹

In March of 1989, delegates from 116 countries convened for a final session of negotiations in Basel, Switzerland.¹² The decisions resulting from these negotiations were all formally implemented as part of The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, more commonly known as the Basel Convention. The convention primarily aimed to avoid the transfer of improperly identified or inappropriate hazardous wastes to developing countries by pinpointing sources and destinations of toxic waste.¹³ States exporting toxic waste must provide information to the convention's secretariat on the effects of the movement of wastes on human health and the environment.¹⁴ They must ensure that authorized personnel manage any waste transported or disposed of within its national jurisdiction. Any waste must be packaged and labeled along with a movement

⁹ Chasek, 112.

¹⁰ Chasek, 113.

¹¹ Chasek, 113.

¹² Chasek, 114.

¹³ Chasek, 110.

¹⁴ The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989. Article IV, 2f-h.

document.¹⁵ Before exporting toxic waste, states must notify states destined for disposal or transport with detailed information of the waste and receive written consent before shipping toxic waste.¹⁶ In order to establish a more transparent international waste trade, The Basel Convention established a reporting system that requires parties to record imports and exports of toxic wastes.¹⁷ They submit reports to the secretariat, which compiles the information. The ultimate goal is to limit traffic harmful or inappropriate transfers of waste from industrialized countries to developing countries.¹⁸

In order to address disparities within the toxic waste trade, the Convention promotes transferring environmentally sound technology for the safe management of toxic waste to those in need of “technical assistance,”¹⁹ understanding that developing countries have less resources and infrastructure to safely manage hazardous waste.²⁰ It specifically aims to protect developing countries from unwanted toxic waste imports by requiring exporting parties to inform the state of import and wait to receive written consent before exporting toxic waste.²¹ Delegates of developing countries persistently promoted this aspect of the Convention throughout negotiations, threatening to block any convention that did not “give them the right to disapprove the import or transshipment of wastes through their territory.”²² The secretariat also provides assistance to parties for environmentally sound management of toxic wastes.²³

Despite the strong role of African states in the negotiations leading to the amendments of the Basel Convention, not all African states were confident that the final draft of the Basel

¹⁵ The Basel Convention, Article IV, 7a-c.

¹⁶ The Basel Convention, Article V, 1-2.

¹⁷ Chasek, 116.

¹⁸ The Basel Convention, Article XVI 1b-c.

¹⁹ The Basel Convention, Article X 2d.

²⁰ The Basel Convention, Preamble.

²¹ The Basel Convention, Article IV 1a-c.

²² Chasek, 113.

²³ The Basel Convention, Article XVI 1-3. Chasek, 116.

Convention would protect them from unwanted toxic waste.²⁴ These states felt that the Basel Convention did not go far enough to prevent industrialized countries from dumping toxic waste within their borders.²⁵ These states therefore negotiated the Bamako Convention on the ban on the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa in 1991. The Bamako Convention bans the import of any hazardous wastes in African countries. Therefore, I expect that Bamako Convention parties should not import toxic waste. In Chapter 2, evidence suggests that this is generally the case.

Unlike the Bamako Convention, the Basel Convention lacks a formal system in which states may ban imports, even though efforts have been made to include it. In 1994 representatives gathered at the second meeting of the Conference of the Parties to the Basel Convention and agreed to ban the export of toxic waste destined for final disposal from OECD (industrialized) to non-OECD (developing) states. This decision was not in the text of the Convention, so parties proposed to make this decision an amendment in 1995 for it to be legally binding.²⁶ For an amendment to enter into force, three-fourths of the parties present at the time of the adoption of the amendment must ratify it.²⁷ Following this rule, 62 ratifications are needed for the ban amendment to enter into force because that is three quarters of the number of parties present in 1995.²⁸

Despite receiving more than 62 ratifications, the Basel ban amendment has not entered into force. Differences in interpretation of Article 17 have delayed the implementation of the ban amendment. The United States, Australia, and Canada have been at the forefront of lobbying

²⁴ Chasek, 115.

²⁵ Chasek, 114.

²⁶ Chasek, 115.

²⁷ The Basel Convention, Article XVII 3.

²⁸ “The Basel Ban Amendment: Entry Into Force Now!” (2006). *BAN: Basel Action Network*. Briefing Paper 4. Web.

against the ban amendment.²⁹ Although 62 ratifications meet the three quarters requirement at the time of the adoption of the amendment, these industrialized states have argued that the number of ratifications should depend on the current list of 168 parties.³⁰ This interpretation requires more ratifications and has already delayed implementation of the Basel ban amendment to up to twenty years.³¹ Many states refuse to ratify the ban amendment, reflecting their desire to export economic externalities of industrial production to poorer countries.³²

While some states have refused to ratify the ban amendment, the United States has failed to implement the Basel Convention altogether. The United States was one of the first signatories of the Basel Convention, but it has not ratified the convention and is therefore not a member.³³ As one of the leading toxic waste producers in the world, the United States' membership in the Convention would make a substantial impact on the global toxic waste trade.³⁴ The success of the Basel Convention depends on the participation of industrialized states that produce the most toxic waste. The United States has the most financial resources to contribute to technical assistance and technology exchange with developing countries. The Basel Convention influences trade between the United States and members of the Basel Convention; waste can only be traded between these two groups with pre-determined agreements.³⁵ The Convention is thus influential, but because the United States is not a member it is not bound by the rules of The Basel Convention.

²⁹ *BAN*. (2006).

³⁰ *BAN*. 2006.

³¹ *BAN*. 2006.

³² *BAN*. 2006.

³³ "Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal." (N.d.) Basel Secretariat Website. Web.

³⁴ Kirby, R. (1994). "The Basel Convention and the Need for United States Implementation." *The Georgia Journal of International and Comparative Law, Inc*, 24.

³⁵ "International Agreements on Transboundary Shipments of Waste." (N.d.) Environmental Protection Agency. Web.

While the Basel Convention has “been central to eliminating some of the worst forms of ‘toxic dumping’ by industrialized countries on developing countries,”³⁶ several issues remain for developing countries in the context of the Basel Convention. Developing countries lack infrastructural capacity to manage waste in an environmentally sound manner and advocated for technical assistance during negotiations of the Convention. While Articles 10, 13, and 16 promote technical assistance to developing countries, resources within the secretariat are limited to follow up with these provisions, especially amid widespread need from developing countries.³⁷ Developing countries also lack the technical capacity to monitor illegal traffic of toxic wastes, which leaves them particularly vulnerable to illegal toxic waste dumping. While illegal trafficking of toxic waste is impossible to monitor, a known concern for developing countries is a lack of resources to properly deal with the discovery of illegal toxic waste.³⁸ The Convention does not state any form of compensation or reparation in the occurrence of illegal dumping.³⁹

Within the framework of understanding the Basel Convention as a system of establishing transparency in the international toxic waste trade and the known shortcomings in protecting developing countries, I investigate the current state of reporting behavior within the Basel Convention to assess its success at establishing transparency to prevent harmful trade of toxic waste and to examine the conditions that allow for, or prevent its successes. I will examine the conditions under which states comply with the reporting requirements of the Basel Convention. In addition, because I am already examining reports of imports, I have the opportunity to also examine the amounts of wastes that are traded. This too will allow me to understand under what

³⁶ Krueger, J. (1999). *International Trade and the Basel Convention*. University of California: Earthscan. 117.

³⁷ Krueger, 87.

³⁸ Krueger, 89.

³⁹ Krueger, 89.

contexts states import toxic waste, and whether these conditions promote or hinder the safest possible toxic waste disposal.

Transparency and Compliance in International Environmental Agreements

Environmental degradation often crosses international boundaries, thus international cooperation is essential to address global environmental issues.⁴⁰ This global coordination often takes the form of international environmental agreements, such as the Basel Convention. International environmental agreements often establish and facilitate systems that promote transparency, defined as “fostering the acquisition, analysis, and dissemination of regular, prompt, and accurate regime-relevant information.”⁴¹ Transparency can create an incentive for states to change their behavior by publishing information on the activities that the agreement seeks to regulate, which is called “compliance-oriented transparency.”⁴² Analysts may also use this information to assess whether the international convention is achieving its goals, which is “effectiveness-oriented transparency.”⁴³ Politically, it is easier to collect information that assesses how well the convention is doing as a whole rather than to collect information that will identify actors that are failing to meet convention requirements.⁴⁴

Self-reporting, in which states provide information on their own behavior, is the most common form that information is supplied in regimes because it is the most “politically palatable” and is the most economic form of information gathering.⁴⁵ Ronald Mitchell proposed four types of self-reporting actors in international environmental conventions. First, there are

⁴⁰ DeSombre, E. (2014). “Global Environmental Governance.” In *International Organization and Global Governance*. Thomas G. Weiss and Rorden Wilkinson, eds. London: Routledge.

⁴¹ Mitchell, R. (1998). “Sources of Transparency: Information Systems in International Regimes.” *International Studies Quarterly*, 42.109.

⁴² Mitchell. 113.

⁴³ Mitchell, 113. Sands, P. “Enforcing Environmental Security: The Challenges of Compliance with International Obligations.” *Journal of International Affairs*. (1993). Vol. 46.

⁴⁴ Mitchell. 113.

⁴⁵ Mitchell. 116.

“committed conformers” who both support regime norms and their behavior conforms to the regime norms. Secondly, there can be “good faith non-conformers” whose behavior fails to conform to regime norms despite being supportive of regime norms. This type of regime supporter often falls short of regime norms because they are either unable to fulfill the change in behavior or because they accidentally fall short of the expectations. Third, “coincidental conformers” are states that are indifferent or opposed to the international convention, yet their behavior falls in line with the regime norms for reasons outside of the international convention. These states may choose to “selectively self-report” to the international convention if there are possible benefits. Finally, “intentional violators” are states that are opposed to regime norms and their behavior fails to conform to regime norms. These states are the least likely to self-report honestly or not report at all.

Intentional violators are difficult to identify. When states are vehemently against a regime, they may not report at all, in order to undermine the effectiveness of the regime.⁴⁶ Although those against regime norms are unlikely to report, not all states that fail to submit reports are against regime norms. In fact, international agreements as a whole have low reporting rates. In these cases, intentional non-reporters can more easily deviate undetected. For regimes with high reporting rates, intentional violators can also be difficult to identify because they are more likely to submit false reports, such as Russia’s false catch statistics in the International Whaling Commission.⁴⁷ High levels of transparency in an international agreement rely on widespread and strong support of regime members because this transparency relies on the incentives and willingness of states to self-report their behavior.⁴⁸

⁴⁶ Mitchell. 118.

⁴⁷ Mitchell. 118.

⁴⁸ Mitchell. 118.

Even high profile international environmental regimes such as the Montreal Protocol, the London Dumping Convention, the International Convention for the Protection of the Sea from Ships (MARPOL), and the Convention on International Trade in Endangered Species (CITES) all lack compliance with reporting requirements from member states.⁴⁹ International environmental law scholars suggest different strategies to improve compliance in international agreements. “Rationalist” scholars believe that states will only comply with international treaty regimes if it serves in their best interest.⁵⁰ These scholars propose an “enforcement model” treaty to help improve compliance, which imposes sanctions for members that do not comply.⁵¹ On the other hand, some scholars argue that a state’s compliance depends on the design of the treaty and the capacity of parties to comply with the rules. These scholars suggest the “managerial model” of compliance, which focuses on successful domestic implementation of the treaty.⁵² These two models are important to distinguish because one of them may be more successful in determining what international agreement models will result in the highest levels of compliance.

A study on the reporting behavior of the Basel Convention member states may provide insight generally on the context in which international environmental conventions may successfully promote transparency and thus effectively change state behavior. In this study, I examine the Basel Convention’s effectiveness by analyzing the reporting behavior of various countries. This information will help explain under which conditions Basel Convention members comply with the rules. This insight will allow me to identify what stands in the way of a successful international toxic waste trade system, and it will have broader implications on how to improve compliance in international environmental agreements.

⁴⁹ Mitchell. 112.

⁵⁰ Koh, H. H. (1997). “Why Do Nations Obey International Law?” *The Yale Law Journal*, 106, 8. 2632.

⁵¹ Chayes, A. & Chayes, A. (1998). *The New Sovereignty: Compliance with International Regulatory Agreements*. Cambridge: Harvard University Press.

⁵² Koh, 2641.

Chapter 2: Assessing Reports and Imports in the Global Toxic Waste Trade

Hazardous Waste Trade Reporting

Before the Basel Convention established a system of reporting, toxic waste crossed state borders without rules that required the waste to have a label that identified its origin. Without this knowledge and transparency, primarily developing countries dealt with harmful waste disposal. In order to facilitate a transparent system of transferring hazardous waste, the Basel Convention established a secretariat responsible for collecting annual reports from countries with information on the toxic waste both imported and exported by member countries. The import and export reports provide information on the type of waste disposed, where the waste was generated, where the waste will be sent, and finally whether the waste will be disposed or recycled and stripped for valuable materials.

These reports are detailed and are the best source of information on the international toxic waste trade. I analyze import reports submitted to the Basel Convention between 2010 and 2014, which the Basel Secretariat compiled into large excel files. During this analysis, I draw out information on the amount in metric tons or tonnes of toxic waste imported by countries, which are listed by country code. In the following sections, I refer to metric tons as “tonnes.” For each country, I average the amount of toxic waste reported as imported during 2010 to 2014. Year to year, individual countries do not drastically change the amount of toxic waste that they import, thus an average of reported amounts of waste is the best representation of their imports during this time frame. Some states do not submit reports for one or two years during the time frame. I take an average of the imports in years that these states do report to estimate on average what these states are taking in.

Although reports sent to the Basel Convention are the best source of toxic waste import information, over half of the 180 parties with commitments under the Basel Convention are missing from the import report spreadsheets from the secretariat. In order to understand why these countries were excluded from the import excel sheets from the secretariat, I examine country reports that are available on an individual basis between 2001 and 2015.

Missing Countries

Table 1: Summary of reasons why countries are missing from the Basel Secretariat spreadsheets, and the number of countries included in each category.			
Submitted in Excel Format (6)	Provided Memo (37)	Missing Import Info (62)	Never Reported (21)

There are four reasons why these countries are not listed in the spreadsheets, and these reasons are summarized in **Table 1**. These reasons must be distinguished because they reflect varying levels of adherence to the reporting requirements of the Basel Convention. These reasons are explained in the following sections.

Table 1a: Submitted in Excel Format (6)	
Andorra	Moldova
Armenia	Peru
Madagascar	Russian Federation

First, the six countries listed in **Table 1a** submitted reports but are not included in the spreadsheets from the Basel Secretariat because they submitted reports as excel documents rather than adhering to the format of the secretariat reporting system. Whoever compiled the spreadsheets at the Basel secretariat overlooked these states because these states' import information was attached to their reports in a separate file.

Table 1b: Provided Memo (36)			
<i>“Prohibits Import”</i>	<i>“Zero Imports”</i>	<i>“Process of establishing infrastructure”</i>	<i>“No Hazardous Waste Facility”</i>
China	Barbados		
Columbia	Bolivia	Mozambique	Swaziland
Egypt	Bosnia		
Georgia	Cabo Verde		
Honduras	Central African Republic		
Morocco	Dominican Republic		
Nicaragua	El Salvador		
Republic of Congo	Etria		
Saint Lucia	Ginea-Bissau		
Turkey	Guyana		
United Arab Emirates	Indonesia		
	Iraq		
	Jamaica		
	Libya		
	Malta		
	Montenegro		
	Pakistan		
	Paraguay		
	Qatar		
	Rwanda		
	Togo		
	Tunisia		
	Uruguay		
	Yemen		

Secondly, the thirty-six countries listed in **Table 1b** are missing from the spreadsheets because they did not submit any numbers to the report, but instead wrote in the memo section of the import report. Ten of these countries wrote in the memo line that importing toxic waste is prohibited. Twenty-four countries wrote that they did not accept any toxic waste imports, rather than writing zero on the import report. The final two countries that submitted reports and wrote in the memo line provided differing reasons. Mozambique wrote that it was in the process of

establishing infrastructure to safely process hazardous waste, and Swaziland wrote that it does not have a hazardous waste disposal facility; therefore, it cannot import toxic waste.

Table 1c: Missing Import Info (62)			
Algeria	Chile	Kuwait	Panama
Antigua and Barbuda	Comoros	Lebanon	Papua New Guinea
Argentina	Cook Islands	Lesotho	Republic of Korea
Bahamas	Cuba	Liechtenstein	Saint Kitts and Nevis
Bangladesh	Djibouti	Macedonia	Nevis
Belize	Dominica	Maldives	Saint Vincent and the Grenadines
Benin	Ecuador	Mali	Samoa
Bhutan	Equatorial Guinea	Marshall Islands	Senegal
Botswana	Ethiopia	Mauritius	Seychelles
Brunei Darussalam	Gambia	Micronesia	Sri Lanka
Burkina Faso	Ghana	Monaco	Trinidad and Tobago
Burundi	Jordan	Mongolia	Turkmenistan
Cambodia	Kazakhstan	Nauru	Uganda
Cameroon	Kenya	Nepal	United Republic of Tanzania
Chad	Kiribati	Niger	Venezuela
		Oman	Viet Nam
			Zambia

Third, the sixty-two countries listed above in **Table 1c** submitted reports to the secretariat without providing import information. These countries put in the effort to submit reports, but did not provide information on their toxic waste imports. This reporting behavior could mean that these countries did not import any toxic waste and did not find it necessary to provide any import information, or it could indicate that these states are either purposefully or accidentally omitting import information. This category is of concern because these countries demonstrate some level of compliance with the requirements of Basel but are not providing all of the details in their reports.

Table 1d: Never Reported (21)	
Afghanistan	Mauritania
Democratic People's Republic of Korea	Namibia
Democratic Republic of the Congo	Palau
Gabon	Sao Tome and Principe
Guinea	Saudi Arabia
Iceland	Somalia
India	Sudan
Lao People's Democratic Republic	Suriname
Liberia	Syrian Arab Republic
Malawi	Tonga
	Zimbabwe

Finally, the twenty-one countries listed above in **Table 1d** never submitted reports. These countries are missing from the spreadsheet because they did not take the effort to submit reports. It could be that these countries are importing toxic waste in quantities that do not align with Basel's guidelines for sound environmental disposal, or these countries may simply not want to allocate energy to submitting reports to the convention for various reasons. This group of countries is of concern because it comprises of 36% of the Basel Convention's members and it indicates a substantial degree of non-compliance with the convention.

Quantifying Missing Countries

In many cases it may be possible to determine how much waste a country is importing, even when that information is missing. In this section, I explain how the information from the sections above can fill in the gaps of toxic waste import information. First, I assume that countries that submit import information in an excel template provide honest information but in the wrong format. Import amounts of toxic waste are available in the import section of reports sent to the secretariat but attached separately as excel documents. Second, for countries without

toxic waste import reports but with memos specifying that they do not import toxic waste, I assume that these countries do not import any toxic waste.

The biggest group of countries missing from the spreadsheet is countries that submit reports but exclude import information in these reports. Although these countries mostly adhere to the reporting requirements of the Basel convention, they exclude important information from the reports. Thus, in order to estimate the import amounts for these countries, additional information is needed.

The final group of countries missing from the spreadsheets never submits reports to the Basel Convention. Countries that do not submit reports to an international agreement may be intentional violators who have outwardly opposed the norms of the agreement,⁵³ or some states may simply lack the capacity to comply. Additional information is needed to estimate the toxic waste import amounts for these countries.

Using Export Reports for Comparison

Additional information about Basel Convention member toxic waste import is available in the export reports submitted to the secretariat. Countries that export toxic waste must report which state they will send waste to. With this information I can determine how much a country imports in a year even if it does not submit an import report. Additionally, this information provides a basis of comparison between self-reports and information provided by countries exporting toxic waste. Many Basel Convention members do not adhere to the reporting requirements of the convention, which indicates that this agreement has not been fully successful in establishing transparency in the international toxic waste trade.

I analyze export reports submitted to the Basel Convention between 2010 and 2014, which the Basel Secretariat compiled into large excel files. I draw out information on the amount

⁵³ Mitchell. 118.

in tonnes of toxic waste exported to the country of destination, which are listed by country code. For each country, I sum the amount of toxic waste exported to a destination country within each year. At the end, I average the totals for each country during the time frame 2010-2014. Following this process, I am finally able to compare information provided by self-reports to information provided in export reports. This comparison is helpful to understand reporting behavior among all Basel Convention signatories, within both industrialized countries and developing countries.

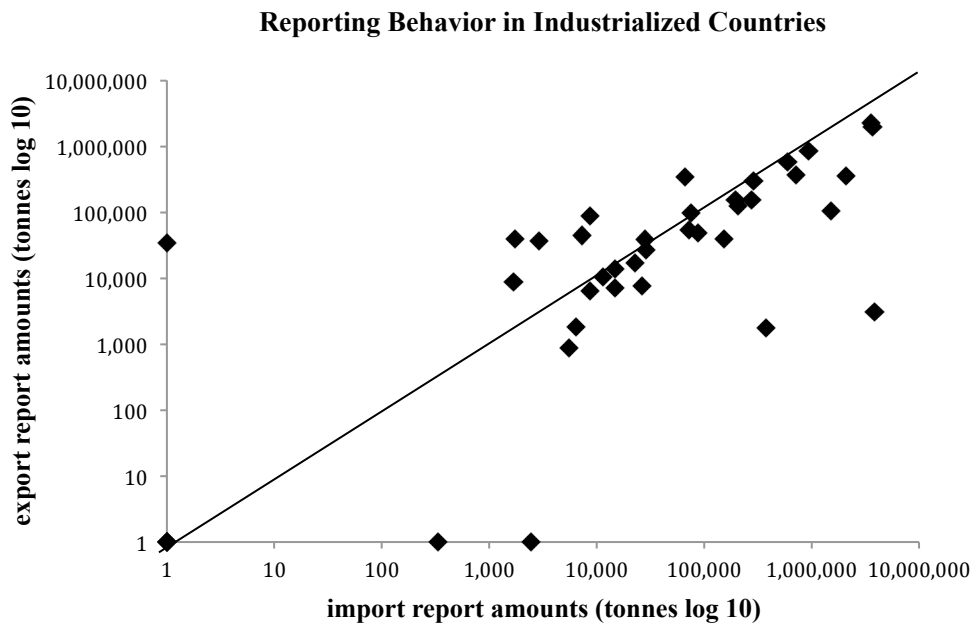


Figure 1a: The y-axis represents the amount of waste that exporting countries report that other countries are importing. The x-axis is what states self-report. The 1:1 line shows the reporting behavior ideal, in which the amount that countries self-report perfectly lines up with the amount that others report sending to them.

The figure above visualizes the comparison between toxic waste imports that are self-reported and toxic waste imports that exporting countries report in industrialized countries. Although there are some countries that do not fit on the one to one line, most industrialized countries are self-reporting roughly the same amount of toxic waste that exporting countries

report sending to them. This reporting behavior is not entirely surprising, as industrialized countries likely have the best infrastructure to monitor exports and imports.

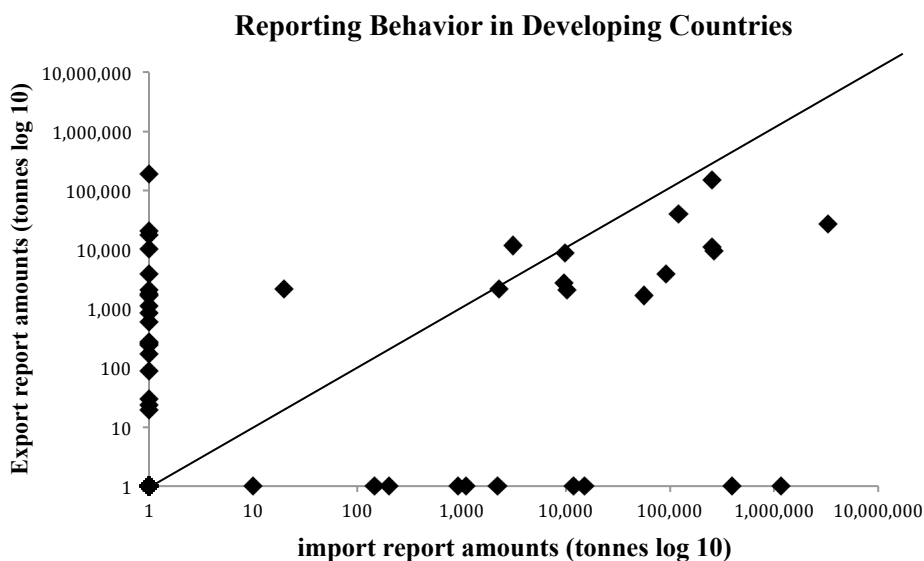


Figure 1b: The y-axis represents the amount of waste that exporting countries report that other countries are importing. The x-axis is what states self-report. The 1:1 line shows the reporting behavior ideal, in which the amount that countries self-report perfectly lines up with the amount that others report sending to them.

Unlike industrialized countries, both self-reports and export reports sent to developing countries are not very accurate. Points above the line indicate cases of under-reporting, in which countries self-report less than other countries report sending to them. Points below the line indicate are “over-reporting” countries, which means that importing states report an amount of toxic waste that is higher than others report exporting to them. Cases of underreporting are much more prevalent in developing countries than industrialized countries. This difference in reporting accuracy indicates that there is less transparency in the toxic waste trade among developing countries. Industrialized countries are generally reporting what they are doing, whereas developing countries have much more cases of over-reporting and under-reporting. In cases of over-reporting, exporting states presumably do not report everything that they export. If developing countries are over-reporting, the missing information is likely from other developing

countries who under-report much more often than industrialized countries. If this is the case, then the Basel Convention has been successful in establishing the norm that industrialized countries should not export toxic waste to developing countries.

I can use the information from self-reports and from exporting countries to further understand why developing countries and industrialized countries have different reporting behaviors. I can quantify the extent of under-reporting and identify states that under-report the most. In following sections, I use the quantified amount of underreporting to identify trends and characteristics of countries that submit false information in an effort to understand how this happens.

Table 2: Ranking of Under-reporting states, from worst to least underreporting			
	Toxic Waste self-reported	Toxic Waste reported by exporting countries	Percent difference
Republic of Korea	1	190,837	-100.0%
Turkey	1	34,044	-100.0%
China	1	21,119	-100.0%
Morocco	1	18,111	-100.0%
Democratic People's Republic of Korea	1	10,405	-100.0%
Georgia	1	3,954	-100.0%
India	1	2,069	-100.0%
Kazakhstan	1	1,784	-99.9%
Ghana	1	1,674	-99.9%
Macedonia	1	1,105	-99.9%
Afghanistan	1	834	-99.9%
United Arab Emirates	1	600	-99.8%
Gambia	1	270	-99.6%
Pakistan	1	261	-99.6%
Argentina	1	242	-99.6%
Senegal	1	169	-99.4%
Brazil	20	2,171	-99.1%
Suriname	1	88	-98.9%
Saudi Arabia	1	30	-96.7%
Bosnia and Herzegovina	1	24	-95.8%
Romania	1,736	39,302	-95.6%

Swaziland	1	19	-94.8%
Hungary	2,901	37,473	-92.3%
Slovakia	8,558	88,173	-90.3%
Luxembourg	7,311	44,673	-83.6%
Israel	1,672	8,729	-80.8%
Switzerland	65,990	341,976	-80.7%
Ukraine	3,094	11,789	-73.8%
Czech Republic	28,364	38,747	-26.8%
Poland	75,009	97,123	-22.8%
Denmark	289,322	297,081	-2.6%
Albania	1	1	0.0%
Algeria	1	1	0.0%
Antigua and Barbuda	1	1	0.0%
Bahamas	1	1	0.0%
Bangladesh	1	1	0.0%
Barbados	1	1	0.0%
Belize	1	1	0.0%
Benin	1	1	0.0%
Bhutan	1	1	0.0%
Bolivia (Plurinational State of)	1	1	0.0%
Botswana	1	1	0.0%
Brunei Darussalam	1	1	0.0%
Burkina Faso	1	1	0.0%
Burundi	1	1	0.0%
Cabo Verde	1	1	0.0%
Cambodia	1	1	0.0%
Cameroon	1	1	0.0%
Central African Republic	1	1	0.0%
Chad	1	1	0.0%
Chile	1	1	0.0%
Colombia	1	1	0.0%
Comoros	1	1	0.0%
Congo	1	1	0.0%
Cook Islands	1	1	0.0%
Côte d'Ivoire	1	1	0.0%
Cuba	1	1	0.0%
Democratic Republic of the Congo	1	1	0.0%
Djibouti	1	1	0.0%
Dominica	1	1	0.0%
Dominican Republic	1	1	0.0%
Ecuador	1	1	0.0%
Egypt	1	1	0.0%
El Salvador	1	1	0.0%

Equatorial Guinea	1	1	0.0%
Eritrea	1	1	0.0%
Ethiopia	1	1	0.0%
Gabon	1	1	0.0%
Guinea-Bissau	1	1	0.0%
Guinea	1	1	0.0%
Guyana	1	1	0.0%
Honduras	1	1	0.0%
Iceland	1	1	0.0%
Indonesia	1	1	0.0%
Iraq	1	1	0.0%
Jamaica	1	1	0.0%
Jordan	1	1	0.0%
Kenya	1	1	0.0%
Kiribati	1	1	0.0%
Kuwait	1	1	0.0%
Lao People's Democratic Republic	1	1	0.0%
Lebanon	1	1	0.0%
Lesotho	1	1	0.0%
Liberia	1	1	0.0%
Libya	1	1	0.0%
Liechtenstein	1	1	0.0%
Malawi	1	1	0.0%
Maldives	1	1	0.0%
Mali	1	1	0.0%
Malta	1	1	0.0%
Marshall Islands	1	1	0.0%
Mauritania	1	1	0.0%
Mauritius	1	1	0.0%
Micronesia (Federated States of)	1	1	0.0%
Monaco	1	1	0.0%
Mongolia	1	1	0.0%
Montenegro	1	1	0.0%
Mozambique	1	1	0.0%
Namibia	1	1	0.0%
Nauru	1	1	0.0%
Nepal	1	1	0.0%
Nicaragua	1	1	0.0%
Niger	1	1	0.0%
Oman	1	1	0.0%
Palau	1	1	0.0%
Panama	1	1	0.0%
Papua New Guinea	1	1	0.0%

Paraguay	1	1	0.0%
Qatar	1	1	0.0%
Rwanda	1	1	0.0%
Saint Kitts and Nevis	1	1	0.0%
Saint Lucia	1	1	0.0%
Saint Vincent and the Grenadines	1	1	0.0%
Samoa	1	1	0.0%
Sao Tome and Principe	1	1	0.0%
Seychelles	1	1	0.0%
Somalia	1	1	0.0%
Sri Lanka	1	1	0.0%
Sudan	1	1	0.0%
Syrian Arab Republic	1	1	0.0%
Togo	1	1	0.0%
Tonga	1	1	0.0%
Trinidad and Tobago	1	1	0.0%
Tunisia	1	1	0.0%
Turkmenistan	1	1	0.0%
Uganda	1	1	0.0%
United Republic of Tanzania	1	1	0.0%
Uruguay	1	1	0.0%
Venezuela (Bolivarian Republic of)	1	1	0.0%
Viet Nam	1	1	0.0%
Yemen	1	1	0.0%
Zambia	1	1	0.0%
Zimbabwe	1	1	0.0%
France	592,860	579,306	2.3%
Serbia	2,281	2,180	4.6%
Japan	14,652	13,973	4.9%
Slovenia	28,950	26,944	7.4%
Sweden	935,478	843,010	11.0%
Portugal	11,538	10,271	12.3%
Singapore	9,746	8,649	12.7%
Spain	197,072	151,671	29.9%
Lithuania	8,672	6,537	32.7%
Latvia	71,897	53,976	33.2%
Bulgaria	22,856	16,997	34.5%
Germany	3,547,001	2,286,619	55.1%
United Kingdom of Great Britain	205,921	123,684	66.5%
South Africa	253,885	150,201	69.0%
Finland	87,456	49,034	78.4%
Austria	278,306	155,894	78.5%
Netherlands	3,707,586	1,990,195	86.3%

Norway	714,936	367,615	94.5%
Ireland	14,643	7,113	105.9%
Malaysia	120,784	39,768	203.7%
Thailand	9,557	2,768	245.2%
Cyprus	26,607	7,651	247.8%
Greece	6,476	1,829	254.1%
Estonia	154,222	39,868	286.8%
Costa Rica	10,380	2,088	397.1%
Belgium	2,092,872	351,519	495.4%
Australia	5,570	870	540.5%
Nigeria	10	1	900.0%
Italy	1,509,049	105,137	1335.3%
Peru	252,590	11,205	2154.2%
Guatemala	91,834	3,971	2212.8%
Philippines	267,887	9,325	2772.7%
Iran (Islamic Republic of)	56,651	1,686	3261.1%
Russian Federation	3,312,511	27,499	11945.8%
Republic of Moldova	145	1	14422.0%
Kyrgyzstan	202	1	20094.0%
Canada	378,722	1,786	21107.5%
Croatia	334	1	33297.0%
Armenia	930	1	92877.5%
Andorra	1,108	1	110675.0%
Mexico	3,861,864	3,093	124738.3%
Madagascar	2,205	1	220400.0%
New Zealand	2,426	1	242514.8%
Bahrain	11,877	1	1187637.4%
Azerbaijan	15,044	1	1504340.0%
Belarus	396,568	1	39656695.0%
Uzbekistan	1,162,915	1	116291410.0%

The information listed in **Table 2** is essential to identifying states that participate in deviant reporting behaviors, such as submitting false information or failing to report at all, even if a state is importing toxic waste. This comparative analysis should provide insight into the motives of convention members, and the degree to which these countries are adhering to the reporting requirements of the agreement. Overall, this analysis allows us to judge whether or not the Basel Convention is succeeding at its goal of promoting transparency in the global toxic

waste trade, and therefore its success in establishing the accountability necessary to make the global toxic waste trade as safe as possible, especially for developing countries.

Quantifying Comparison of Export Reports

This section explains specifically how I quantify the reporting relationships between self-reported imports and import information from export reports. The quantified comparison uses a percent difference formula between the amount of self-reported imports and the amount of waste from export reports. This formula requires using ratios to compare the two sets of data in order to account for the scale of difference. Due to the mathematical error of dividing by zero, I replaced any number reported as a zero as a one, in order to avoid this mathematical limitation.

Categories of Reporting Behavior

Table 3: Summary of import and export comparison reporting behaviors, listed with number of countries in each category.

<p>Countries that report zero, but others report export to these countries (15)</p>	<p>Under-reporting Countries (11)</p>	<p>Non-reporting countries that imported waste (5)</p>	<p>“Over-reporting” (47)</p>
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After calculating these percent differences, I organized the countries into different categories of reporting behavior, summarized above in **Table 3**. It is important to distinguish these categories of behavior because they vary in degree of compliance to the reporting requirements of the Basel Convention. Countries that fall into these categories are listed in tables in the sections that follow. These tables display the amount of imported toxic waste that the country self-reports, in the column listed as “amount in import report.” In the column listed as “amount in export report,” the table displays the amount of toxic waste that exporting countries

report sending to that country. The final column displays the percent difference between the two. When reading the following sections, note that amounts written as 1 are actually 0.

Table 3a: Countries that report or imply to import zero, but others report export to these countries (15)

<i>Country</i>	<i>Amount in Import report</i>	<i>Amount in Export Report</i>	<i>Percent Difference</i>
Argentina	1	242	-24100%
Bosnia and Herzegovina*	1	24	-2265%
China*	1	21,119	-2111768%
Gambia	1	270	-26900%
Georgia*	1	3,954	-395301%
Ghana	1	1,674	-167280%
Kazakhstan	1	1,784	-178317%
Morocco*	1	18,111	-1810974%
Pakistan*	1	261	-25963%
Republic of Korea	1	190,837	-19083614%
Senegal	1	169	-16800%
Swaziland*	1	19	-1832%
The former Yugoslav Rep. of Macedonia	1	1,105	-110385%
Turkey*	1	34,044	-3404299%
United Arab Emirates	1	600	-59900%

*These countries said that they imported zero toxic waste or prohibit toxic waste imports, yet evidence from export reports indicates that they do import.

The countries listed above in **Table 3a** are countries that either implied importing zero by listing a memo, reporting zero imports of toxic waste, or by submitting a report without import information, yet other countries report sending toxic waste to these countries. The countries that list memos are not complying in a different way than those who do not report. They submit false information rather than implying that they do not import toxic waste. When scanning the table, note the relative amounts of toxic waste imported to the other countries. Swaziland took in only 19 tonnes of toxic waste when claiming zero toxic waste in its import reports, whereas Turkey took in 34,000 tonnes of toxic waste when reporting zero imports.

Table 3b: Under-reporting Countries (11)			
<i>Country</i>	<i>Amount Import Report</i>	<i>Amount in Export Report</i>	<i>Percent Difference</i>
Brazil	20	2,171	-99%
Czech Republic	28,364	38,747	-27%
Denmark	289,322	297,081	-3%
Hungary	2,901	37,473	-92%
Israel	1,672	8,729	-81%
Luxembourg	7,311	44,673	-84%
Poland	75,009	97,123	-23%
Romania	1,736	39,302	-96%
Slovakia	8,558	88,173	-90%
Switzerland	65,990	341,976	-81%
Ukraine	3,094	11,789	-74%

The countries listed above in **Table 3b** reported less toxic waste in their import reports than other countries exported to them. These countries cooperate with the Basel Convention in the sense that they submit reports, but these reports appear to contain faulty information.

Table 3c: Non-reporting countries that imported waste				
<i>Country</i>	<i>Amount Import Report</i>	<i>Amount in Export Report</i>	<i>Percent Difference</i>	
Afghanistan	1	834	-99.9%	
Democratic People's Republic of Korea	1	10,405	-100.0%	
India	1	2,069	-100.0%	
Saudi Arabia	1	30	-63.3%	
Suriname	1	88	-98.9%	

The countries listed above in **Table 3c** never submitted reports to the Basel convention, and imported toxic waste.

Table 3d: Over-reporting countries			
<i>Country</i>	<i>Amount Import</i>	<i>Amount Export</i>	<i>Percent Difference</i>
Andorra	1,108	1	100%
Armenia	930	1	100%
Australia	5,570	870	84%
Austria	278,306	155,894	44%
Azerbaijan	15,044	1	100%
Bahrain	11,877	1	100%
Belarus	396,568	1	100%
Belgium	2,092,872	351,519	83%
Bulgaria	22,856	16,997	26%
Canada	378,722	1,786	100%
Costa Rica	10,380	2,088	80%
Croatia	334	1	100%
Cyprus	26,607	7,651	71%
Estonia	154,222	39,868	74%
Finland	87,456	49,034	44%
France	592,860	579,306	2%
Germany	3,547,001	2,286,619	36%
Greece	6,476	1,829	72%
Guatemala	91,834	3,971	96%
Iran	56,651	1,686	97%
Ireland	14,643	7,113	51%
Italy	1,509,049	105,137	93%
Japan	14,652	13,973	5%
Kyrgyzstan	202	1	100%
Latvia	71,897	53,976	25%
Lithuania	8,672	6,537	25%
Madagascar	2,205	1	100%
Malaysia	120,784	39,768	67%
Mexico	3,861,864	3,093	100%
Netherlands	3,707,586	1,990,195	46%
New Zealand	2,426	1	100%
Nigeria	10	1	90%
Norway	714,936	367,615	49%
Peru	252,590	11,205	96%
Philippines	267,887	9,325	97%
Portugal	11,538	10,271	11%
Republic of Moldova	145	1	99%
Russian Federation	3,312,511	27,499	99%
Serbia	2,281	2,180	4%
Singapore	9,746	8,649	11%
Slovenia	28,950	26,944	7%
South Africa	253,885	150,201	41%
Spain	197,072	151,671	23%
Sweden	935,478	843,010	10%
Thailand	9,557	2,768	71%
U.K. Great Britain	205,921	123,684	40%
Uzbekistan	1,162,915	1	100%

The countries listed above in **Table 3d** are countries that report more imported toxic waste than other countries report sending to them. I assume that states would not intentionally

inflate the amount of toxic waste they receive. I therefore assume that their self-reports are accurate. Presumably, some exporting countries under-report the waste sent to these countries. However, this category of reporting does not provide insight to the reporting behavior of the country itself because the error or omission most likely occurs in other countries' export reports.

Table 3e: Countries that neither report imports nor are reported (91)		
Albania	Ecuador	Montenegro
Algeria	Egypt	Mozambique
Antigua and Barbuda	El Salvador	Nauru
Bahamas	Equatorial Guinea	Nepal
Bangladesh	Eritrea	Nicaragua
Barbados	Ethiopia	Niger
Belize	Guinea	Oman
Benin	Guinea-Bissau	Panama
Bhutan	Guyana	Papua New Guinea
Bolivia	Honduras	Paraguay
Botswana	Indonesia	Qatar
Brunei Darussalam	Iraq	Rwanda
Burkina Faso	Jamaica	Saint Kitts and Nevis
Burundi	Jordan	Saint Lucia
Cabo Verde	Kenya	Saint Vincent and the Grenadines
Cambodia	Kiribati	Samoa
Cameroon	Kuwait	Seychelles
Central African Republic	Lebanon	Somalia
Chad	Lesotho	Sri Lanka
Chile	Liberia	Togo
Colombia	Libya	Trinidad and Tobago
Comoros	Liechtenstein	Tunisia
Congo	Maldives	Turkmenistan
Cook Islands	Mali	Uganda
Côte d'Ivoire	Malta	United Republic of Tanzania
Cuba	Marshall Islands	Uruguay
Democratic Republic of the Congo	Mauritania	Venezuela
Djibouti	Mauritius	Viet Nam
Dominica	Micronesia (Federated States of)	Yemen
Dominican Republic	Monaco	Zambia
	Mongolia	

Finally, some countries do not appear to take in any waste. In these cases, countries do not submit import reports, and exporting countries do not report sending waste to these countries.

These countries are listed above in **Table 3e**. It is reasonable to assume that these countries therefore really do not get any toxic waste imports.

Bamako Convention Signatories

Table 4: Bamako Convention Signatories (35)		
Angola	Ghana	Rwanda
Benin	Guinea	Sao Tome and Principe
Burkina Faso	Guinea Bissau	Senegal
Burundi	Kenya	Sierra Leone
Cameroon	Lesotho	Somalia
Central African Republic	Liberia	South Sudan
Chad	Libya	Swaziland
Comoros	Madagascar	Tanzania
Cote d'Ivoire	Mali	Togo
Democratic Republic of	Mauritania	Tunisia
Congo	Niger	Zambia
Djibouti	Nigeria	
Egypt		

Members of the Bamako Convention, which are listed above in **Table 4**, were disappointed by the shortcomings of the Basel Convention to protect their countries from toxic waste disposal from wealth countries. These countries sought an alternative solution from the Basel Convention to protect their countries by signing onto the Bamako Convention. Reporting behavior and import amounts of Bamako Convention members provides some insight into the effectiveness of an additional environmental treaty that sought to improve the international toxic waste trade system. The Bamako convention is an additional commitment for a country to refuse waste, thus these countries are likely not taking in toxic waste. The reporting behavior to the Basel Convention described in the following sections may provide insight in the Bamako Convention's success in influencing the toxic waste trade.

Table 4a Bamako Convention members that did not submit reports to the Basel secretariat
Democratic People's Republic of the Congo
Guinea
Liberia
Mauritania
Somalia

Bamako Convention members that did not submit reports to the secretariat, which are listed above in **Table 4a**, likely did so out of discontentment with the shortcomings of the Basel Convention. Additionally, these Bamako Convention members have never been reported as destinations of exposal in export reports. Thus, these Bamako members are likely not taking in any waste.

Table 4b: Bamako Convention Members that reported zero, but actually imported waste (3)	
<i>Country</i>	<i>Amount of waste imported (tonnes)</i>
Ghana	1,674
Senegal	169
Swaziland	19

The Bamako Convention members listed above in **Table 4b** have signed on to an additional commitment to refuse toxic waste imports and have legally declared no imports of toxic waste, yet other countries have listed these countries as the destination for toxic waste export disposal. However, these states imported very small amounts of toxic waste, especially Senegal and Swaziland.

Table 4c: Bamako Convention Members that Imported Toxic and Reported It (2)	
<i>Country</i>	<i>Amount of waste imported (tonnes)</i>
Madagascar	2,205
Nigeria	10

Two Bamako Convention members listed above in **Table 4c** self-reported to import toxic waste. Madagascar imported substantially more toxic waste than Nigeria, but 2,200 tonnes of toxic waste is not very much waste.

Table 4d: Countries that neither report imports nor are reported (25)		
Benin	Democratic Republic of	Mali
Burkina Faso	Congo	Mauritania
Burundi	Djibouti	Niger
Cameroon	Egypt	Rwanda
Central African Republic	Guinea	Somalia
Chad	Guinea Bissau	Togo
Comoros	Kenya	Tunisia
Cote d'Ivoire	Lesotho	Zambia
	Liberia	
	Libya	

The Bamako Convention members listed above in **Table 4d** neither reported import information, nor were reported as a destination of disposal in export reports. With no information from either source, I estimate that these 25 countries, accounting for the majority of Bamako Convention signatories, are not importing toxic waste.

Overall, the information in this section suggests that the Bamako Convention has been effective in its goal to eliminate toxic waste imports to member countries. Although some Bamako Convention members import waste, they make up a very small portion of the treaty members and import very little toxic waste.

Toxic Waste Import Information

By comparing both import and export reports, I am able to predict the amount of toxic waste that states are most likely importing. I expect that exporting states have little to no incentive to report more toxic waste than they are sending to importing countries, and importing countries have no incentive to report that they are importing more waste than they are. Thus, when comparing the amounts of toxic waste listed in both self-reported import reports and in export reports, I estimate that the larger amount of toxic waste listed is the most likely import amount. Additionally, this comparison allows me to estimate the toxic waste import amounts for countries that do not submit self-reports of import amounts.

Table 5: How much waste states are actually receiving	
<i>country</i>	<i>amount actually receiving (tonnes)</i>
Albania	0
Algeria	0
Antigua and Barbuda	0
Bahamas	0
Bangladesh	0
Barbados	0
Belize	0
Benin	0
Bhutan	0
Bolivia (Plurinational State of)	0
Botswana	0
Brunei Darussalam	0
Burkina Faso	0
Burundi	0
Cabo Verde	0
Cambodia	0
Cameroon	0
Central African Republic	0
Chad	0
Chile	0
Colombia	0
Comoros	0
Congo	0
Cook Islands	0
Côte d'Ivoire	0

Cuba	0
Democratic Republic of the Congo	0
Djibouti	0
Dominica	0
Dominican Republic	0
Ecuador	0
Egypt	0
El Salvador	0
Equatorial Guinea	0
Eritrea	0
Ethiopia	0
Gabon	0
Guinea	0
Guinea-Bissau	0
Guyana	0
Honduras	0
Iceland	0
Indonesia	0
Iraq	0
Jamaica	0
Jordan	0
Kenya	0
Kiribati	0
Kuwait	0
Lao People's Democratic Republic	0
Lebanon	0
Lesotho	0
Liberia	0
Libya	0
Liechtenstein	0
Malawi	0
Maldives	0
Mali	0
Malta	0
Marshall Islands	0
Mauritania	0
Mauritius	0
Micronesia (Federated States of)	0
Monaco	0
Mongolia	0
Montenegro	0
Mozambique	0
Namibia	0

Nauru	0
Nepal	0
Nicaragua	0
Niger	0
Oman	0
Palau	0
Panama	0
Papua New Guinea	0
Paraguay	0
Qatar	0
Rwanda	0
Saint Kitts and Nevis	0
Saint Lucia	0
Saint Vincent and the Grenadines	0
Samoa	0
Sao Tome and Principe	0
Seychelles	0
Somalia	0
Sri Lanka	0
Sudan	0
Syrian Arab Republic	0
Togo	0
Tonga	0
Trinidad and Tobago	0
Tunisia	0
Turkmenistan	0
Uganda	0
United Republic of Tanzania	0
Uruguay	0
Venezuela (Bolivarian Republic of)	0
Viet Nam	0
Yemen	0
Zambia	0
Zimbabwe	0
Nigeria	10
Swaziland	19
Bosnia and Herzegovina	24
Saudi Arabia	30
Suriname	88
Republic of Moldova	145
Senegal	169
Kyrgyzstan	202
Argentina	242

Pakistan	261
Gambia	270
Croatia	334
United Arab Emirates	600
Afghanistan	834
Armenia	930
The former Yugoslav Republic of Macedonia	1,105
Andorra	1,108
Ghana	1,674
Kazakhstan	1,784
India	2,069
Brazil	2,171
Madagascar	2,205
Serbia	2,281
New Zealand	2,426
Georgia	3,954
Australia	5,570
Greece	6,476
Lithuania	8,672
Israel	8,729
Thailand	9,557
Singapore	9,746
Costa Rica	10,380
Democratic People's Republic of Korea	10,405
Portugal	11,538
Ukraine	11,789
Bahrain	11,877
Ireland	14,643
Japan	14,652
Azerbaijan	15,044
Morocco	18,111
China	21,119
Bulgaria	22,856
Cyprus	26,607
Slovenia	28,950
Turkey	34,044
Hungary	37,473
Czech Republic	38,747
Romania	39,302
Luxembourg	44,673
Iran (Islamic Republic of)	56,651
Latvia	71,897

Finland	87,456
Slovakia	88,173
Guatemala	91,834
Poland	97,123
Malaysia	120,784
Estonia	154,222
Republic of Korea	190,837
Spain	197,072
United Kingdom of Great Britain	205,921
Peru	252,590
South Africa	253,885
Philippines	267,887
Austria	278,306
Denmark	297,081
Switzerland	341,976
Canada	378,722
Belarus	396,568
France	592,860
Norway	714,936
Sweden	935,478
Uzbekistan	1,162,915
Italy	1,509,049
Belgium	2,092,872
Russian Federation	3,312,511
Germany	3,547,001
Netherlands	3,707,586
Mexico	3,861,864

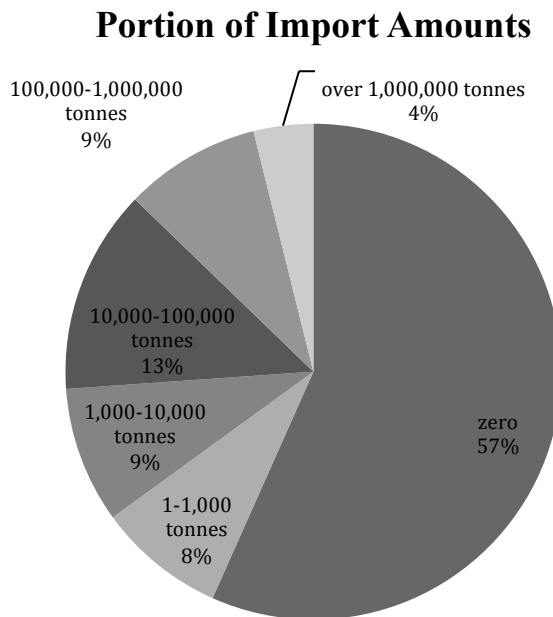


Figure 5: This graph shows the portion of countries in the Basel Convention that import certain ranges of toxic waste amounts.

The groups of toxic waste amounts provide an overall idea of how much toxic waste members are importing. The majority of Basel Convention members do not import toxic waste. In the following section, I use these toxic waste import estimates to learn more about Basel Convention member reporting behavior. The information in **Figure 5** helps contextualize what amount of toxic waste imports is large and what is small for the following section.

Comparing Reporting Behavior and Import Amounts

In this section, I review the relationship between non-reporters and the amount of toxic waste that they receive in order to answer the question: how important is non-reporting? Members of the Basel Convention may not uphold their reporting requirements in three different ways. First, some countries never submit any reports to the Basel Convention. This is the most extreme version of non-reporting. Other countries submit reports, but they do not include import information in the reports. Although submitting a report indicates some level of compliance with

the Basel Convention, a report submitted with missing information does not help facilitate transparency in the Basel Convention. Thus, it is important to understand how important missing information from reports is. The remaining countries without toxic waste import information provide memos instead of submitting import reports. Although the memo provides more details than the countries with missing information, these countries are still not providing import information.

Non-Reporting Countries and Import Amounts

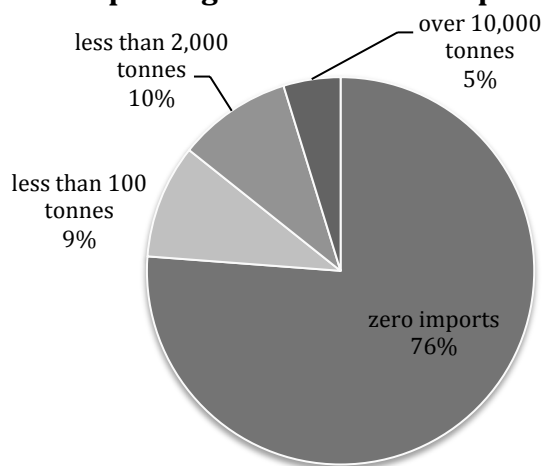


Figure 5a displays the portion of non-reporting countries that import certain amounts of toxic waste.

The majority of countries that did not submit reports to the secretariat were not importing toxic waste. Of the 24% of countries that imported toxic waste without submitting reports, Saudi Arabia and Suriname imported very little toxic waste (under 100 tonnes). India and Afghanistan never submitted reports to the Basel convention but imported relatively small amounts of toxic waste (under 2,000 tonnes). However, the Democratic People’s Republic of Korea imported a large portion of toxic waste without reporting it (10,405 tonnes). Overall, non-reporting does not substantially alter the transparency of the Basel Convention, since most non-reporters did not import waste.

Countries that Submit Reports with Missing Import Information

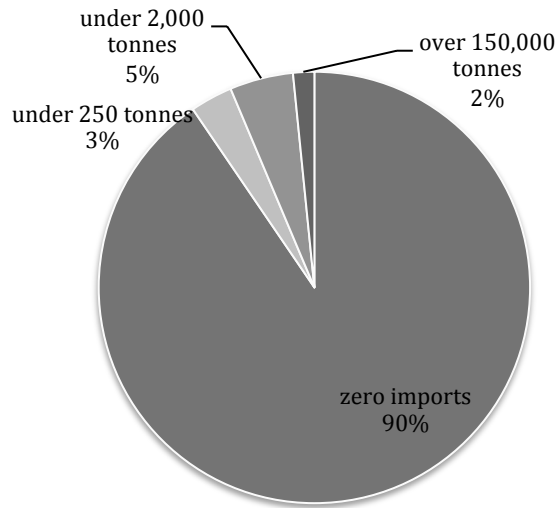


Figure 5b The figure above displays the portion of countries that submitted reports with missing import information that imports certain ranges of toxic waste amounts.

About one-third of countries with obligations to Basel submitted reports to the convention with missing import information. Of these 62 countries, only 10% imported toxic waste. The majority of states that imported toxic waste imported relatively low amounts of toxic waste (between 200 to 2,000 tonnes). These countries are Argentina, Ghana, Kazakhstan, Senegal and the Former Yugoslav Republic of Macedonia. Overall, countries that submit reports to the Basel Convention with missing import information do not considerably reduce the transparency of the global toxic waste trade. However, the Republic of Korea is a major exception to this trend, having imported 190,800 tonnes of toxic waste.

Countries Missing Import Information that Write Memos

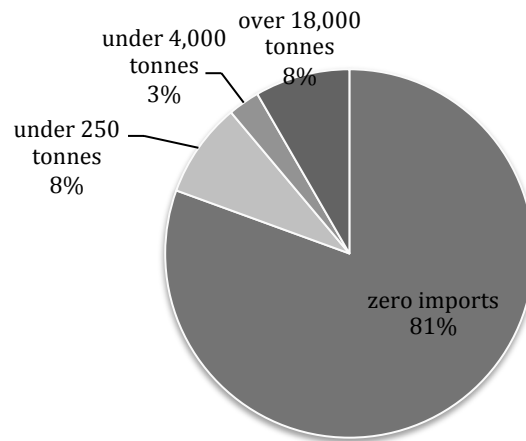


Figure 5c The figure above displays the portion of countries missing import information but who provide memos that import certain amounts of toxic waste.

Thirty-three countries submitted memos rather than import reports with numbers of toxic waste. Of this group, 19% imported toxic waste. Unlike the former categories of non-reporting, countries that submit memos rather than import amounts are importing relatively larger amounts of toxic waste. China, Morocco, and Turkey, import over 18,000 tonnes of toxic waste. Georgia imports a moderate to low amount of toxic waste, about 4,000 tonnes. Meanwhile, Bosnia and Herzegovina, Pakistan, and Swaziland import under 300 tonnes of toxic waste. Overall, countries that submit memos hinder transparency in the global toxic waste trade more than non-reporting countries or countries that report with missing information because more of these countries imported larger amounts of toxic waste. Furthermore, these countries actively submitted false information to the secretariat.

Conclusion

There is a great deal of non-reporting and non-accurate or incomplete reporting in the Basel Convention, which limits the effectiveness of the treaty. The Basel Convention aims to

improve the international toxic waste trade by establishing a reporting system to facilitate transparency. Without widespread compliance to reporting requirements, there is a decreased chance of improving the conditions under which waste is both traded and disposed of. A reporting system that facilitates honest and full participation will establish the transparency needed to ensure that toxic waste is discarded in an environmentally sound and equitable manner.

Thus far, the data suggests two conclusions about developing countries in the Basel Convention. First, the analysis above provides some insight to the success of the Bamako Convention. If the Basel Convention does not go far enough to protect developing countries, does the Bamako Convention provide an additional layer of policy to prevent inequitable disposal of toxic waste in developing nations? Overall, Bamako convention members do not import toxic waste, and if they do, they import very little. Thus, the Bamako Convention appears to serve as an additional protection to developing countries against importing unwanted toxic waste. Second, toxic waste trading among developing countries is less transparent. There are higher instances of non-reporting and inaccurate reporting among developing countries, which suggests that the Basel Convention must go further in providing support to developing nations to establish better reporting systems.

Moving Forward

Identifying country characteristics that maximize transparency in self-reporting may provide better insight to assess the success of the Basel convention. Member states of international conventions have differing capacities to provide accurate and quality information to increase regime transparency. Member states self-report information to the Basel secretariat, and the accuracy and quality of self-reporting may change depending on the characteristics of the

actor providing the information.⁵⁴ In order to understand why states report in the manner that they report, we must carefully evaluate characteristics of the states that are reporting. If certain characteristics are associated with compliance, I will gain insight to the conditions under which the Basel Convention can effectively promote a transparent and safe global toxic waste trade.

The following chapters are broken into two sections. In the first section of each chapter, I first examine whether a country's reporting behavior changes within a certain context. In order to comply with Basel Convention reporting requirements, members must submit accurate toxic waste import information to the Basel Convention secretariat. In the second half of each chapter, I examine whether a country's decision to accept toxic is associated with a particular country characteristic. I measure a country's decision to import toxic waste using information from the section above, which lists the propositions that guide my estimate of the amount of toxic waste that each state actually imports. A country's decision to accept toxic waste imports may indicate its commitment to the environmentally sound disposal of toxic waste depending on the context that it imports the toxic waste.

⁵⁴ Mitchell. 116.

Chapter 3: Wealth

In order to understand the conditions needed for Basel Convention members to comply with the rules, it is useful to first understand what conditions generally allow for better compliance in international agreements. As mentioned in Chapter 1, some scholars believe that member states' compliance with an international environmental agreement depends on the capacity of parties to comply with the rules.⁵⁵ Without successful domestic implementation of treaty requirements, there is little chance that countries will comply. Although most countries want better environmental conditions, wealthier countries are often more inclined to participate in international environmental agreements.⁵⁶ This is likely a consequence of capacity.

With respect to the Basel Convention, members must establish a reporting system within their own countries to comply with the reporting requirements of the agreement. Poor countries face an additional hurdle to domestically implement the Basel Convention than industrialized member countries. The reporting system of Basel requires strong border protection and the bureaucracy to staff them. Many industrialized countries already have border infrastructure and have more money to implement a new reporting system. Thus, developing countries are left with more work to domestically implement the agreement and have less money to create a new system. A country's wealth in this sense may hinder its capacity to comply with the Basel Convention.

If wealth influences a state's reporting behavior, the Basel Convention would fit the managerial model of compliance, suggesting that reporting is an issue of capacity, rather than intention, that explains a state's behavior. If this is the case, then the convention should provide more resources to assist countries with domestic implementation. If wealth does not influence a

⁵⁵ Koh, 2641. Chayes, A. & Chayes, A.

⁵⁶ Drumbl, M. (2002) "Poverty, Wealth, and Obligation in International Environmental Law." *Tulane Law Review*, 76, 843. 847.

state's reporting behavior, then we have reason to believe that capacity is not a limiting factor of compliance. This finding would suggest that the Basel Convention should follow the "enforcement model," to establish sanctions to punish states that do not comply with convention rules.

In order to answer the question of why developing countries import toxic waste, we must consider the priorities of these countries. While developing countries likely want sustainable environmental conditions, they must first address basic needs like access to safe drinking water and malnutrition. Impoverished countries are more likely to experience economic desperation, and may sacrifice sustainable or safe environmental conditions in order to survive. Thus, wealth may influence how much toxic waste a country imports.

Operationalization

I measure wealth with gross domestic product (GDP) per capita, which measures the total economic output of a country divided by the number of individuals living in the country. This measurement accounts for a country's population size and provides a better societal representation of the country than an alternative that looks only at aggregate wealth. There are a few limitations to using GDP per capita as a measure of wealth. First, it does not factor in the costs of living specific to the country, which helps contextualize wealth and economic need. Second, GDP per capita does not account for the wealth distribution within a country, which may prevent representation of the majority of the population. Despite these limitations, GDP per capita is the universal measurement of development or national wealth in policy and international development literature.⁵⁷ In this study I use GDP per capita estimates from 2015, which is the most recent year with information available for almost all countries. Some countries

⁵⁷ Bonini, A. (2008). "Cross-National Variation in Individual Life Satisfaction: Effects of National Wealth, Human Development, and Environmental Conditions." *Social Indicators Research*.

are missing estimates of GDP per capita in 2015, so I used estimates from as far back as 2010 to ensure that all the countries in this study would have a wealth measurement.

Reporting

A state with limited wealth likely has inadequate capacity to implement a quality reporting system. Poor countries have less infrastructure and resources to enforce the domestic laws of an environmental agreement.⁵⁸ In order to uphold reporting requirements of the Basel Convention, states must establish a reporting system, including potentially costly infrastructure. One aspect of reporting to the Basel Convention secretariat involves establishing one or more competent authorities to monitor and report to the secretariat toxic waste that enters and exits state borders.⁵⁹

Toxic waste can enter or exit the state without notifying the competent authority if there are no customs services in place to strictly regulate the movement of traded goods across borders. Developing countries often lack efficient customs services, thus poor countries are less able to staff and patrol border crossings with a tightly regulated customs service.⁶⁰ Without the wealth to establish this infrastructure, poorer states may not have access to accurate information on the imports of toxic waste into their country.

In addition to limiting reporting accuracy, a lack of wealth may also cause countries to neglect reporting requirements altogether. Some poor countries may find the cost of establishing a domestic reporting system to be too great, especially if a country does not intend to import toxic waste. The poorest countries lack industrialization and urbanization⁶¹ and may not find it

⁵⁸ Drumbl. 848.

⁵⁹ The Basel Convention. Article 5 (1-3).

⁶⁰ De Wulf, L., and José B. Sokol, eds. (2005). *Customs modernization handbook*. Washington D.C.: World Bank Publications.

⁶¹ Dunlap, R. E. and Jorgenson, A. K. (2012). "Environmental Problems." *The Wiley-Blackwell Encyclopedia of Globalization*.

necessary to contribute resources to establish a reporting system if they do not produce toxic wastes and do not possess the infrastructure to process toxic waste. In these cases, less wealthy states may not accept toxic waste imports from other countries, but they also may not dedicate resources to reporting.

In the following section, I examine the average GDP per capita of countries importing toxic waste and the category of reporting to which they belong. I divided reporting behavior into four categories. First, “good reporters” are countries that submit reports in excel format, self-report either more than or within 10% percent difference of what is reported in export reports, or that submit reports with missing import information, but exporting countries do not report sending to them. I consider these countries as good reporters because they submit or imply accurate report import information. “Memo-reporters” do not submit import amounts, but instead write a memo describing imports. They are in a separate category of reporting because they submit reports in a simplified format, which may suggest some lack of capacity. “Non-reporters” never submit reports. Finally, “false reporters” either under-report their imports or do not submit import amounts and exporting countries report sending waste to them.

In the next section, I limit my focus to reporting behavior within developing countries. Industrialized countries are already wealthier on average, so wealth is not as much of a concern within these countries.

Wealth and Reporting Behavior

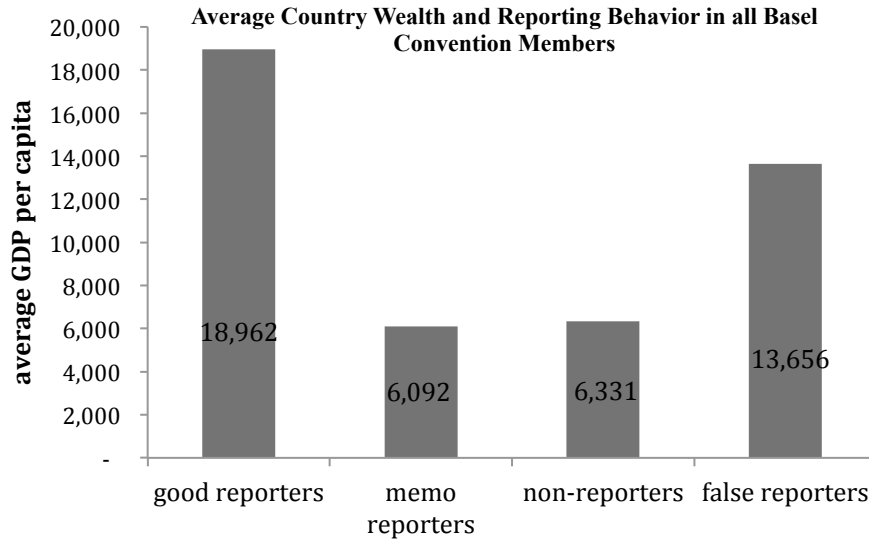


Figure 1: Wealth and reporting behavior in all Basel Countries.

As expected, the most accurate reporters are the wealthiest group of countries. These countries have the infrastructure to implement quality reporting systems within their countries and thus have access to accurate import information. Interestingly, false reporters are not that much less wealthy than the most accurate reporters. This may indicate that countries have the capacity to report accurately, but are purposefully submitting false information to the Basel Convention secretariat. Countries that never report to the Basel Convention and only submit memos are among some of the poorest, which suggests that the wealth of these countries limits their capacity to implement a proper reporting system. Instead of submitting a report with import information, poorer countries may find it easier to write a memo. Poor countries that never report likely chose not to spend money on a reporting system.

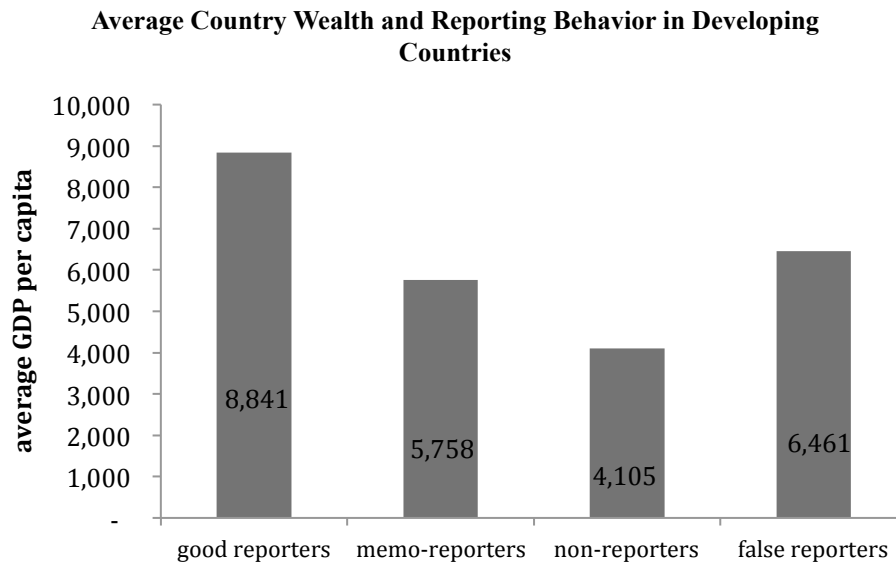


Figure 1a: Wealth and reporting behavior in developing Basel Convention countries.

Reporting behavior within developing countries (**Figure 1a**) generally follows the same trend as all Basel Convention members (**Figure 1**). In developing countries, members that submit memos are slightly wealthier on average than countries that never report to the Basel Convention. This suggests that wealth may influence a state’s capacity to uphold reporting requirements. The poorest countries do not establish reporting systems. Within developing countries, there is a slight difference in average wealth between countries that accurately report and countries that submit false information. This suggests reporting accuracy may also be limited by a state’s capacity to implement a quality reporting system.

This information suggests that most developing countries are “good faith non-conformers” in regard to reporting. They may agree with the norms of the Basel Convention but cannot uphold legal obligations of the agreement because they are unable to change in behavior. It is possible that developing countries with obligations to the Basel Convention want to implement a domestic reporting system but are financially unable to establish one. In order to improve reporting participation in developing countries, wealthier members of the Basel

Convention should provide resources to developing countries to implement domestic reporting systems.

Amount of Imported Waste

Wealth may also influence a country's decision to accept toxic waste imports. Poverty often leads to environmental degradation through short time horizons. When states make environmental decisions, leaders must make the choice between meeting current needs and prioritizing long term benefits that may be more costly in the interim. The government will prioritize current financial needs over harmful consequences in the future, which postpones action on environmental protection. In conditions of poverty this decision is understandable. If funds are limited, immediately more expensive options are not plausible even if they are better in the long term.

In an examination of multiple studies investigating the relationship between poverty and environmental degradation, people in ninety percent of cases revealed short time horizons in decision-making.⁶² For example, poor farmers harvest resources at unsustainable levels because they must make ends meet and sell what they can to have enough money to survive.⁶³ This pathway operates at both the individual and societal level. High discount rates result from pressing basic needs that make people in poor countries desperate, and their circumstances often result in environmentally degrading activities.⁶⁴ Marginal groups adopt environmentally degrading activities because they have no alternatives available to maintain subsistence.

⁶² Duraiappah, A. K. (1998). "Poverty and environmental degradation: A review and analysis of the nexus." *World Development*, 26, 12.

⁶³ Duraiappah, 2175.

⁶⁴ Clapp, J. & Dauvergne, P. (1997). "Economic Growth in a World of Wealth and Poverty." In *Paths to a Green World The Political Economy of the Global Environment*. 107.

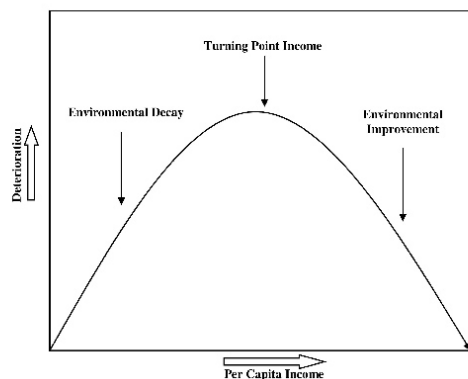


Figure 2: Environmental Kuznets Curve⁶⁵

Discounting the future can guide the Environmental Kuznets Curve (EKC) trend. The EKC reflects a relationship in which a country becomes wealthier and environmental degradation initially increases until it hits a turning point at a certain level of wealth. At this point, environmental degradation declines. As **Figure 2** demonstrates, the line representing the relationship is an inverted U-shape curve.⁶⁶ The EKC generally applies to environmental degradation in the form of pollutants, such as particulates and nitrogen and sulfur oxides.⁶⁷ It has also been found for deforestation and access to clean water and sanitation.⁶⁸

As a country becomes wealthier, it experiences longer time horizons. Once urgent and basic needs are met, actors can afford to prioritize the future. With a more future oriented society, the political structure of the state responds by setting environmental legislation and other policies set to protect the environment.⁶⁹ Similarly, as a country becomes wealthier, the state as a whole has a longer time horizon and there is less of a pressing need to accept environmental

⁶⁵ Williams, Jeremy . *Environmental Kuznets Curve*. Digital image. *Word Press*. Web.

⁶⁶Yandle et al. (2004). "Environmental Kuznets Curves." *PERC*. Research Study 02-1.

⁶⁷ Shafik, N. (1994). "Economic Development and Environmental Quality: An Econometric Analysis." *Oxford Economic Papers*, 46. Seldon, T.M., & Song, D. (1994). "Environmental Quality and Development: Is There a Kuznets Curve for Air Pollution Emissions?" *Journal of Environmental Economics and Management*, 27.

⁶⁸ Clapp, J. & Dauvergne, P. 93

⁶⁹ Lopez, R. & Mitra, S. (2000). "Corruption, Pollution, and the Kuznets Environment Curve." *Journal of Environmental Economics and Management*, 40.

harms and can afford to establish better infrastructure. An EKC can also happen for individuals, whose needs have been met and have the time and resources to pressure the government to create better environmental conditions.

The discount rates that lead to environmental degradation may also apply to toxic waste imports. Toxic waste is traded as a good, and it is a potential source of money for countries willing to import and process it. Growing levels of international debt beginning in the 1980s and 1990s have left developing countries vulnerable to the global economy.⁷⁰ Poorer countries are more likely to discount the future and may be more willing to import toxic waste for short-term financial gain despite lacking the proper infrastructure to safely process it. Jennifer Clapp has suggested this connection, arguing that developing countries are more willing to accept “rich countries’ unwanted hazards because they came with a promise of much needed foreign exchange.”⁷¹ The Basel Convention was formed due to desire in the developing world to reduce toxic waste disposal in developing countries. It is possible that poor members of this convention face such short time horizons that they have no choice but to accept more toxic waste than is safe for their citizens.

In the following section, I look at a country’s GDP per capita measured in U.S. dollars but with a log scale transformation to more easily read the graph. It is appropriate to use logs in data sets that vary by large degrees and that may be skewed in a particular direction. I compare the wealth of a country to the log transformed amount of toxic waste that we know states are actually receiving from Chapter 2.

⁷⁰ Clapp. 11.

⁷¹ Clapp. 11.

Wealth and Toxic Waste Imports

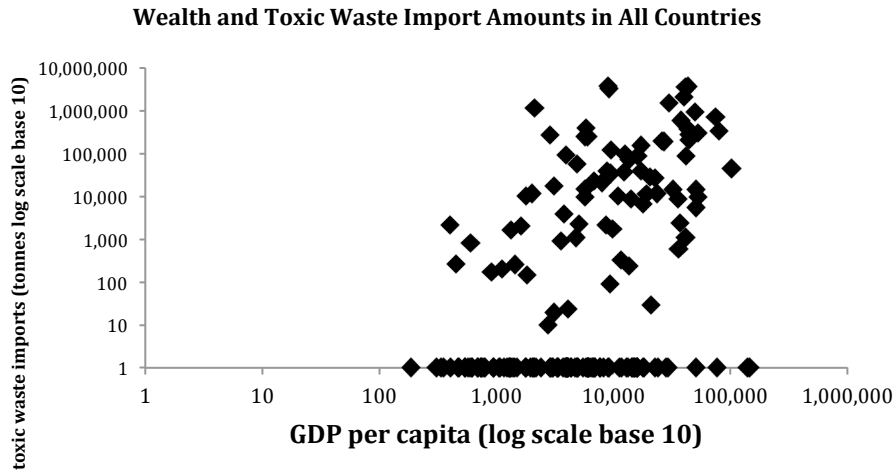


Figure 3: Wealth and Toxic Waste Import Amounts.

In general, there is a slightly positive association between wealth and toxic waste imports. Wealthier countries tend to import more toxic waste. This observation suggests that less wealthy Basel Convention members do not import toxic waste to meet financial needs created by poverty. Toxic waste imports do not seem to follow an EKC, because wealthier countries appear to import the most amounts of toxic waste. Overall, it seems that countries do not import toxic waste out of economic need. This is excellent news. One of the goals of the Basel Convention is to limit toxic waste exports such that only countries with the capacity to accept them safely do so.

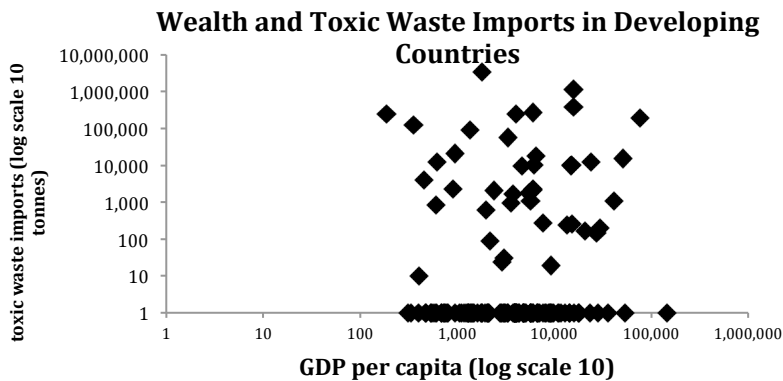


Figure 3a: Wealth and Toxic Waste Imports Developing Countries.

More importantly, looking within the group of developing countries in **Figure 3a**, those most at risk, tells us more about patterns of imports. There does not appear to be a clear pattern between wealth and toxic waste imports within developing countries. This suggests that the poorest developing countries are not importing toxic waste out of desperation but potentially for different reasons. Overall, it appears that members of the Basel Convention do not import toxic waste because of desperate economic need. This is excellent news for those concerned that the toxic waste trade may be taking place in a context of environmental injustice.

Although developing countries face many economic hardships, it is good to know that the toxic waste trade is generally not used as a source of revenue in dire economic circumstances for developing countries. Toxic waste has the potential to cause major health problems, thus it is not an ideal source of revenue, especially in countries that lack the infrastructure to safely process it.

Conclusions

In this chapter, I have found that wealth most likely influences a state's capacity to implement a reporting system. The poorest members of the Basel Convention either do not submit reports or do not provide detailed import information in their reports. Wealth may slightly explain inaccurate reports. Other characteristics may help explain under-reporting to the Basel Convention secretariat. Another finding of this chapter is that wealth does not determine toxic waste imports in developing countries. Poor countries do not import toxic waste out of economic desperation. In fact, the Basel Convention has been somewhat successful in setting the rule that industrialized countries are better equipped to import toxic waste and should import the most toxic waste.

Chapter 4: Inequality

Inequality may have implications for a country's capacity to establish a domestic reporting system. Countries with large inequalities may need to allocate resources to address more pressing needs than improved environmental conditions because more members of society are impoverished. Highly unequal countries may be less likely to establish reporting systems because they face similar capacity issues to poor countries. Inequality may also reduce a country's level of environmental concern, which could reduce its commitment to domestically implementing treaty obligations, such as a reporting system or safe management of toxic waste imports. Or inequality may influence its environmental behavior more directly, causing it to act like a poorer country than its average level of wealth may suggest.

Operationalization

The GINI index is the most widely used measurement of inequality within countries. The World Bank estimates this index through household survey data as a tool for global poverty monitoring.⁷² The GINI index is measured on a range between 0 and 1 (but is usually calculated as a percentage) and is based on residents' net income and helps define the gap between the rich and the poor. Zero represents perfect equality and 1 or 100% represents perfect inequality. In this study, I use the GINI index for whatever year is most current for that country. The most recent year with information available is 2013. The GINI index is not measured for every country in each year, so I used index measures from as far back as 1995 to find information on as many countries as possible. It is important to note that there is some limitation in the GINI index as a measurement of inequality in this study. The World Bank does not make estimates for every country because the GINI index is calculated based on household surveys, thus the governments

⁷² "GINI index." (N.d.). *The World Bank*. Web.

of these countries must allow these surveys to be taken, which creates a smaller study group of countries to analyze.⁷³ The final data set in Chapter 4 is missing 33 Basel members.

Reporting

Inequality might influence a state's commitment to establish a quality toxic waste reporting system. Some studies suggest that inequality reduces environmental concern.⁷⁴ For example, states with greater inequality failed to report to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES),⁷⁵ although that study examined only a small sample size of countries. Countries with large income inequalities may be more concerned with issues of income redistribution and economic development than environmental quality.⁷⁶ If countries are not as concerned with environmental quality, then they are less likely to devote resources toward domestic implementation of treaty rules. Inequality also helps unpack influence of wealth on a state's reporting behavior, because measurements of wealth do not account for wealth disparities within a country. If a country has a high GDP per capita but the wealthiest individuals in society hold the majority of wealth, the country would face similar problems to those of poorer countries.

In the following section, I examine the average GINI index percentage of countries importing toxic waste and the category of reporting to which they belong. I divide reporting behavior into the same four categories as Chapter 3. First, "good reporters" are countries that submit reports in excel format, self-report either more than or within 10% percent difference of

⁷³ Neumayer, E., Gates, S., & Gleditsch, N.P. (2002). "Environmental commitment, democracy and inequality: a background paper to the World Development Report 2003." World development report background papers. Washington D.C., World Bank. 36.

⁷⁴ Boyce, J. (1994). "Inequality as a cause of environmental degradation." *Ecological Economics*, 11, 169. Torras, M. & Boyce, J. (1998). "Income, inequality, and pollution: a reassessment of the environmental Kuznets Curve." *Ecological Economics*, 25, 2.

⁷⁵ Neumayer, E., Gates, S., & Gleditsch, N.P. 36.

⁷⁶ Franzen, A. & Meyer, R. (2010). "Environmental Attitudes in Cross-National Perspective: A Multilevel Analysis of the ISSP 1993 and 2000." *European Sociological Review*, 26, 2. 219-234.

what is reported in export reports, or that submit reports with missing import information, but exporting countries do not report sending to them. “Memo-reporters” do not submit import amounts, but instead write a memo describing imports. “Non-reporters” never submit reports. Finally, “false reporters” either under-report their imports or do not submit import amounts and exporting countries report sending waste to them.

In the next section, I limit my focus to reporting behavior within developing countries. Industrialized countries are better off generally than developing countries, and inequality is not as much of a concern within these countries.

Inequality and Reporting

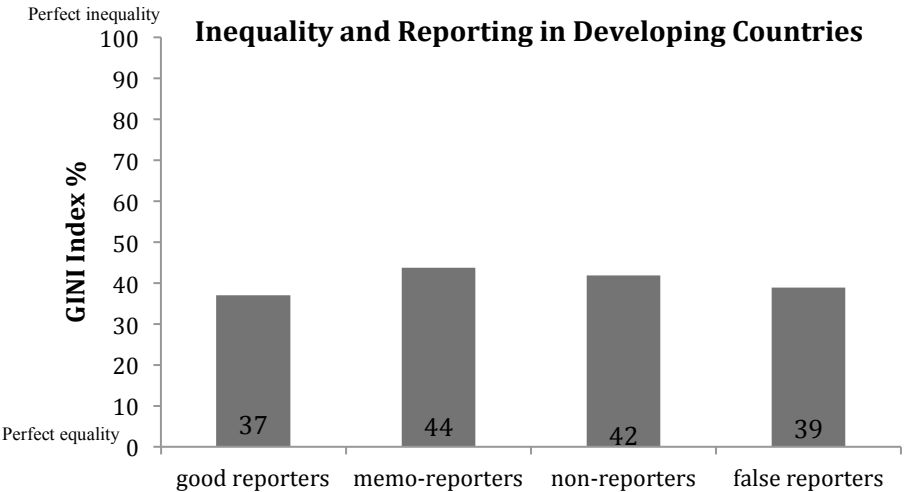


Figure 1: Inequality and reporting behavior in developing countries.

Within developing countries, average inequality varies slightly among reporting categories. The countries that submit memos instead of reports or that never submit reports are the most unequal of the categories on average by a slight margin. This trend mirrors the trend in which the poorest countries submit memos or never report, which seems to support the

suggestion that these countries do not have the capacity to implement reporting systems. Unequal countries thus seem to face similar capacity issues to poor countries.

Amount of Toxic Waste Imports

Inequality may not only influence reporting behavior of states, but it may also influence the amount of toxic waste that countries import. Countries with higher levels of inequality often have more environmental degradation generally, and there are reasons to believe that inequality plays a role.⁷⁷ A potential explanation is that the power associated with income in a highly unequal society indirectly leads to environmental degradation.⁷⁸ This theory rests on the assumption that those in power in society are also the wealthiest, and they receive the most benefits of environmentally degrading behavior.⁷⁹ If this is true, we might expect countries with higher levels of inequality to import more toxic waste.

In the following section, I look at a country's GINI index percentage and compare it to the the log transformed amount of toxic waste that we know states are actually receiving, which is calculated in Chapter 2. This graph compares the amount of toxic waste that countries receive measured in tonnes on a log scale of 10 to the GINI index estimate as a percentage of what a country receives.

⁷⁷ Boyce. 169.

⁷⁸ Torras, M. & Boyce, J.

⁷⁹ Boyce. 178.

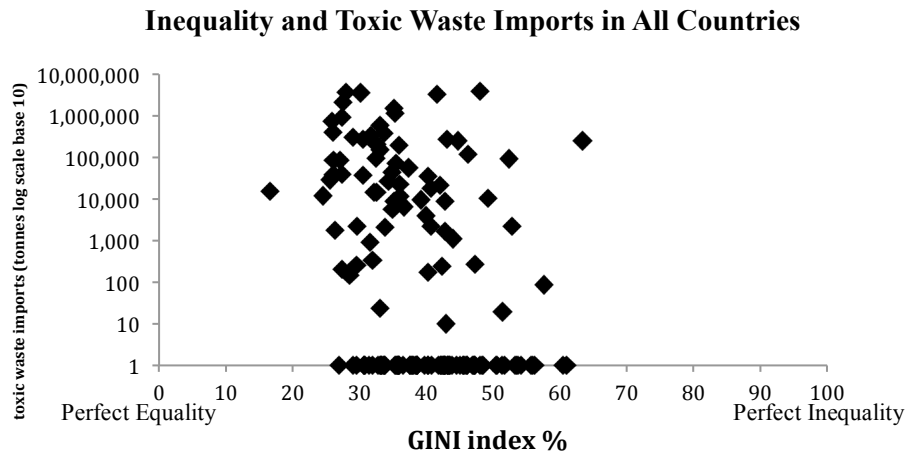


Figure 2: Inequality and Toxic Waste Imports in all countries.

The data suggests that as countries become more equal, they import more toxic waste. Looking at only developing countries, we can examine potential relationships further or determine if countries that are poorer overall show any relationships.

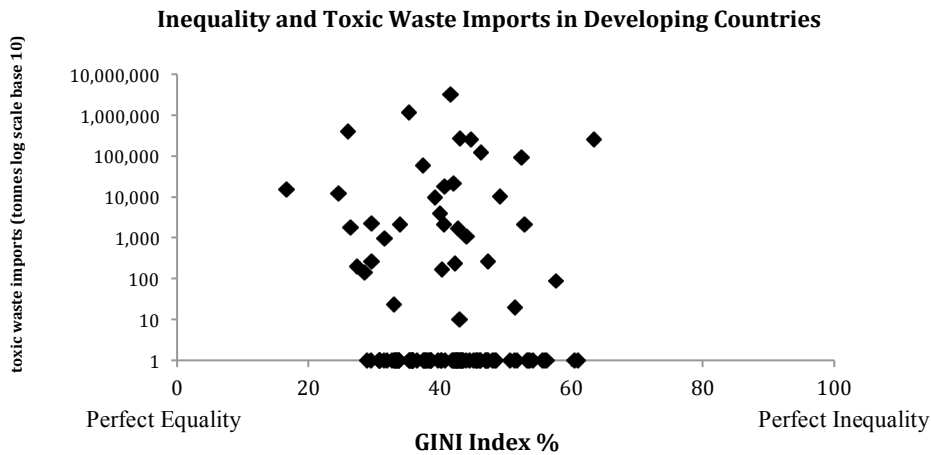


Figure 2b: Inequality and Toxic Waste Imports in Developing Countries.

There seems to be a slight trend towards increased waste imports among countries with greater income equality, suggesting that developing countries dispose of toxic waste in a manner that does not disproportionately harm the poorest members of unequal countries. This is great news within the context of social justice. Economic inequality has grown during the past three

decades.⁸⁰ Fortunately, it does not seem to unfairly burden poor individuals living in highly unequal countries by exposing them to toxic waste.

Conclusions

This chapter suggests that income inequality does not substantially influence reporting behavior to the Basel Convention. The slightly higher levels of inequality among non-reporters and memo reporters may reflect the lack of capacity of poor nations to establish reporting systems. This chapter also suggests that more equal countries are importing more toxic waste. The poorest members of unequal societies are thus unlikely to experience disproportionately harmful imports of toxic waste.

⁸⁰ Cushing, L. et al. (2015). “The Haves, the Have-Nots, and the Health of Everyone: The Relationship Between Social Inequality and Environmental Quality.” *The Annual Review of Public Health*.

Chapter 5: Democracy

The political climate of a country could play an important role in its commitment to implement the Basel Convention and adherence to the rules. By observing how democracy influences reporting behavior in the Basel Convention, we may see whether it influences willingness to report to the secretariat and report accurately. Democratic countries tend to fully engage with international agreements, so there is reason to expect that democratic members of the Basel Convention will be the best participants.

A country's level of democracy may also influence its decision to import toxic waste. Depending on the public interests of a country, democracy may either endorse or deter countries from importing toxic waste. Because democracies promote free speech and represent the interests of society, the decision to import toxic waste should reflect the interests of society. Some democracies may know the danger of toxic wastes, and thus environmental groups in these countries may organize and put pressure on the government to refuse toxic waste imports. In other democratic countries, constituencies may encourage the government to import toxic waste as a form of economic development, if that is a priority of the country. It is important to note that democracies do not exist in a vacuum. Many democracies favor free-market economies, which allow interest groups to push their political agenda.

Operationalization

I use the democracy index, developed by the Economist Intelligence Unit, as a proxy measure of democracy. The Economist Intelligence Unit's democracy index is based on five categories: electoral process and pluralism, civil liberties, the functioning of government, political participation, and political culture. These categories aim to provide an inclusive and wide measure of democracy to fully reflect how substantive a country's democracy for almost

the world's entire population.⁸¹ Expert assessments and public opinion surveys determine scores for over 60 indicators within the five categories, resulting in the final overall score. In this study, I used democracy index measurements from a 2015 report. Each country receives an overall score between 0 and 10 based on a compilation of scores for each category, with 0 being the least democratic and 10 being the most democratic. Overall, 19 Basel Convention members are missing democracy index measurements. The Economic Intelligence Unit does not measure the democracy index for microstates, the majority of Basel Convention members missing from the data sets.

Reporting

Participation in international environmental agreements is political, and the political climate of a country could influence its participation in an agreement. In a 2002 study, researchers conducted a cross-country analysis and found not only that democracies participated in more international environmental agreements, but also that they complied better with reporting requirements.⁸²

Democracy may influence a state's willingness to comply with requirements of international environmental agreements because the institutions and ideas associated with democracy are more conducive to participation in international conventions. Democracies tend to be more transparent globally because information flows openly in these societies, so they would likely be more comfortable sharing information in reports. More authoritarian states are generally less willing to reveal internal information, which could be reflected in reporting behavior to the Basel Convention.⁸³

⁸¹ Kekic, L. (2007). "The Economist Intelligence Unit's Index of Democracy." *The World in 2007*.

⁸² Neumayer, Eric. "Do Democracies Exhibit Stronger International Environmental Commitment? A Cross-Country Analysis." *Journal of Peace Research*, Vol. 39, No. 2. (2002). 139.

⁸³ Mitchell. 113.

Democracies are also more transparent domestically, which allows domestic actors such as environmental groups to put pressure on the government to fulfill obligations to international environmental treaties. If a democratic country was slacking on reporting, then environmental groups within that country could follow up. This type of process is highly unlikely in authoritarian countries. Democracies also tend to respect the rule of law,⁸⁴ which would likely translate to a respect for the legal obligations established by the Basel Convention. Democratic countries thus should be expected to report consistently and honestly.

In the following section, I look at the average democracy index of countries that fall within three reporting categories. These categories resemble the categories from Chapter 3 and 4, but memo reporters have been added to the “good reporting” group. In the earlier chapters, the memo group was a distinct category to consider the capacity of states in reporting behavior, but this category of reporting is not relevant for democracy.

Democracy and Reporting Behavior

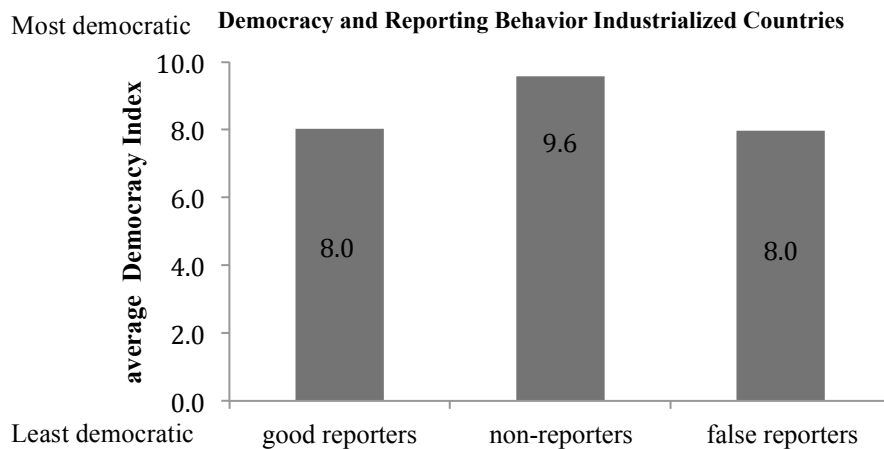


Figure 1a: Democracy and reporting behavior in industrialized countries.

Within industrialized countries there is no clear pattern between level of democracy and reporting behavior. The only industrialized country that never reported to the Basel Convention

⁸⁴ Weiss and Jacobson (1999).

Secretariat is Iceland, which has a staggeringly high score of democracy. Because Iceland is the only case of non-reporting, there cannot be much interpretation for this behavior. Interestingly, good reporters and false reporters have the same democracy index on average. This suggests that democracy may not play an important role in reporting accuracy.

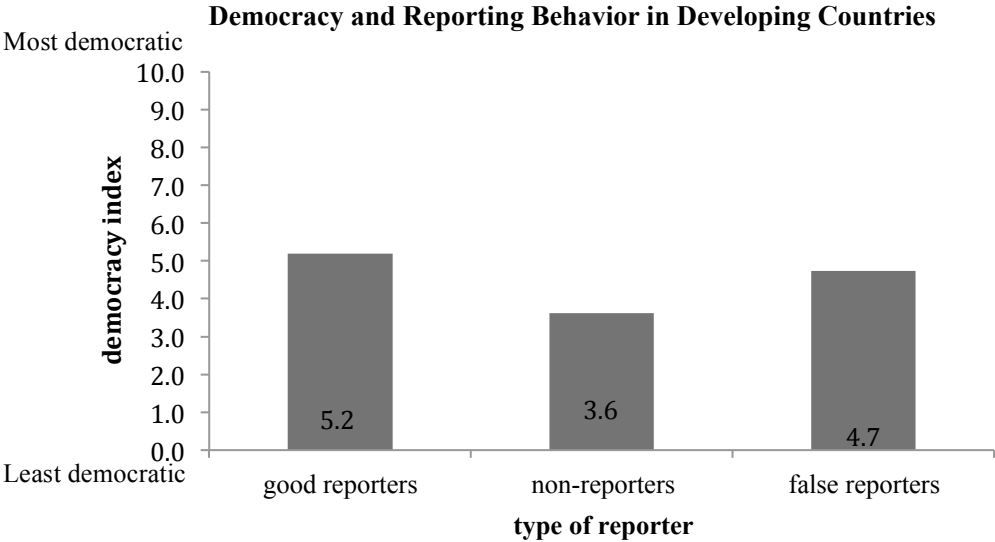


Figure 1b: Democracy and reporting behavior in developing countries.

Within developing countries, the countries that report accurately to the Basel Convention have the highest average democracy index. Non-reporters are the least democratic on average than other reporting groups, which is not surprising. The average democracy of accurate reporters is slightly higher than false reporters, but the good reporters on average are over a 5 on the democracy index scale, which surpasses the mid-way point on the democracy index. False reporters and non-reporters on the other hand, score below five.

Amount of Toxic Waste Imported

Democracy may influence the amount of toxic waste that a state imports. Scholars have disagreed on democracy's influence on environmental quality for over forty years, and two opposing viewpoints remain contested in environmental literature.⁸⁵ The first wave of literature emerged in the late 1960s, and focused on the relationship between democracy, free markets, and the environmental degradation inherent in free markets.⁸⁶ Later, scholars began to promote democracy's role in improving environmental conditions after observing the prevalence of environmental degradation in the Soviet Union and countries ruled by dictators in Latin America, Asia, and Africa.⁸⁷ A recent empirical study provided evidence supporting this relationship. In a sample of 143 countries, democracy reduced environmentally degrading human activities, such as carbon dioxide emissions, nitrogen oxide, organic pollution in water, deforestation, and land degradation.⁸⁸

Conflicting views of democracy's relationship with environmental quality rely on different potential pathways. The first pathway is that democracies provide optimal conditions for environmental groups, who work to improve environmental conditions.⁸⁹ Democracies promote political rights, which allow environmental groups to organize and raise public awareness and action to address environmental problems.⁹⁰ The second pathway is that

⁸⁵ Li, Q. & Reuveny, R. (2006). "Democracy and Environmental Degradation."

⁸⁶ Ehrlich, P. R. (1968). *The Population Bomb*. New York: Ballantine. Hardin, G. (1968). "Tragedy of commons." *Science*, 162.

⁸⁷ Pellegrini, L. & Gerlagh, R. (2006). *Corruption, Democracy, and Environmental Policy: An Empirical Contribution to the Debate*. McCloskey, H. J. (1983). *Ecological Ethics and Politics*. Totowa, NJ: Rowman and Littlefield. Payne, R. A. (1995). "Freedom and the environment." *Journal of Democracy*, 6, 3.

⁸⁸ Li & Reuveny. 953.

⁸⁹ Schultz, C. & Crockett, T. (1990). "Economic Development, Democratization, and Environmental Protection in Eastern Europe." *Boston College Environmental Affairs Law Review*, 18, 1. Payne.

⁹⁰ Li & Reuveny.

democracies tend to respond to public environmental needs because politicians are elected, so power is more evenly distributed throughout society.⁹¹

Despite the alignment in democratic attitudes and international environmental conventions, some scholars suggest that democracy may reduce a state's willingness to address environmental issues. Democracies tend to be market economies,⁹² in which business interest groups influence political decision-making and help set norms on which issues the government should address.⁹³ Democratic leaders often rely on corporate interests to finance their campaigns. Interest groups prioritize maximizing profit, which often neglects environmental quality and the larger interests of society.⁹⁴ Literature suggesting the connection between democracy and corporate interests first emerged in 1987⁹⁵ and continues to support this connection.⁹⁶

An examination of the relationship between democracy and a member state's imports of toxic waste provides empirical evidence to the debate in this literature, which has primarily focused on democracy's influence on environmental degradation in the form of greenhouse gas emissions, water and air pollution, deforestation, and land degradation.⁹⁷ Additionally, this analysis may also provide additional insight to how democracy may function differently in developing countries. In democratic developing countries, politicians must appeal to agrarian constituencies that may have reduced discount rates and who do not prioritize environmental

⁹¹ Kotov, V. & Nikitina, E. (1995). "Russia and international environmental cooperation." Green globe yearbook of international cooperation on environment and development.

⁹² Sato, S. (2000). "Democracy and Market Economy." *Asia Pacific Review*, 7, 1.

⁹³ Li & Reuveny. 938.

⁹⁴ Dryzek, J. (1987) *Rational Ecology: Environment and Political Economy*. Oxford: Blackwell

⁹⁵ Dryzek.

⁹⁶ Dinan, W. and Miller, D. (2007) *Thinker, Faker, Spinner, Spy: Corporate PR and the Assault on Democracy*. Pluto Press. Deetz, S. (1992). *Democracy in an Age of Corporate Colonialization: Developments in Communication and the Politics of Daily Life*. State University of New York Press. Ray, D. (2005). "Corporate Boards and Corporate Democracy." *The Journal of Corporate Citizenship*. Issue 20. 93.

⁹⁷ Midlarskey, M.I. (1998). "Democracy and the Environment: An Empirical Assessment." *Journal of Peace Research*, 35, 3. Li and Reuveny.

protection, which would in turn lead to reduced environmental quality.⁹⁸ For example, Brazil is a democracy, yet deforestation rates continue to increase in Brazil.⁹⁹ Developing countries are the primary focus of this study. The role that democracy can play in supporting short-term needs of the greater society may influence a developing country’s decision to import toxic waste.

In the following section, I compare the amount of toxic waste that countries are actually importing, as calculated in Chapter 2, and the level of democracy within those countries. Each country receives an overall score between 0 and 10, with 0 being the least democratic and 10 being the most democratic.

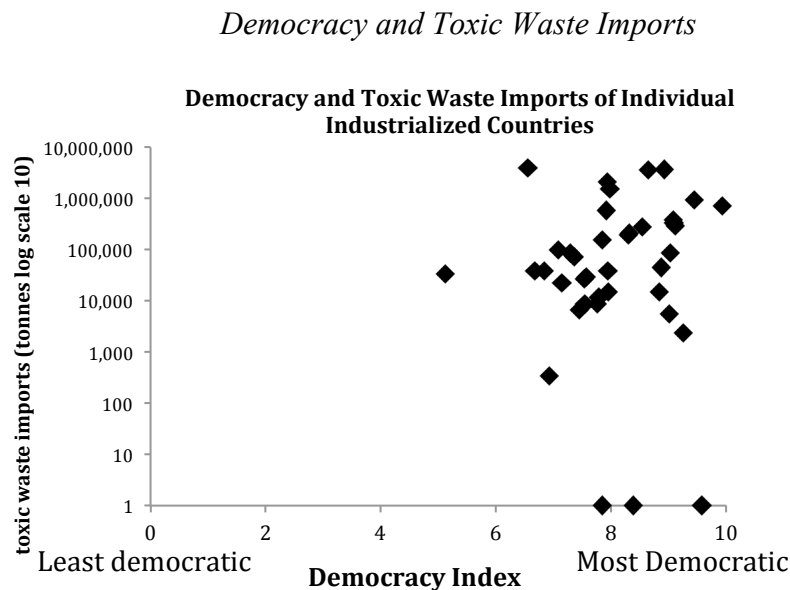


Figure 2a: Democracy and toxic waste imports in industrialized countries.

Within industrialized countries, there appears to be a slight relationship between democracy and toxic waste imports. This suggests that industrialized democratic countries import the most toxic waste, which is good news from an environmental justice perspective. The countries that should be importing toxic waste according to the Basel Convention are doing just that.

⁹⁸ Midlarskey, 358.

⁹⁹ Midlarskey, 358.

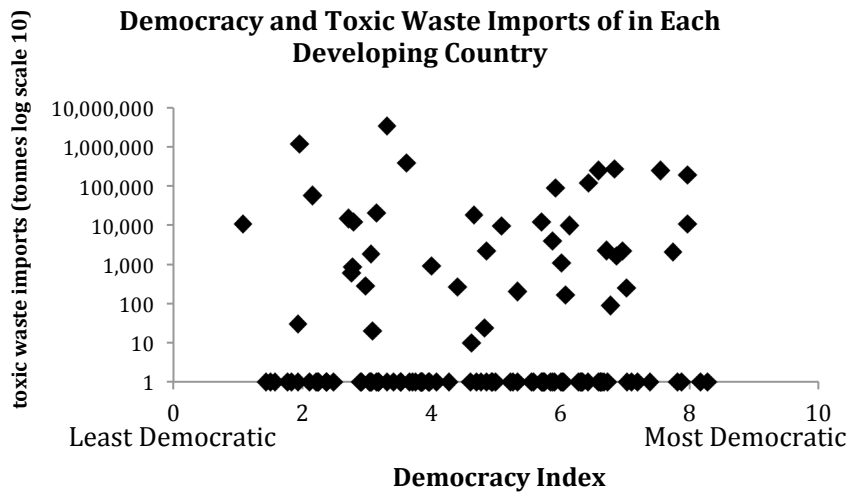


Figure 2b: Democracy and Toxic Waste Imports in Developing Countries

Within developing countries, there appears to be no relationship between democracy and amount of toxic waste imported in developing countries. However, two less democratic developing countries import the largest amounts of toxic waste. These two countries are Uzbekistan and the Russian Federation.

Conclusions

It is reassuring that for the most part, states that import the most toxic waste are not doing it for problematic reasons. Democratic industrialized nations tend to import the most toxic waste. Negotiations leading up to the Basel Convention is established the norm that industrialized countries should import the most toxic waste. Within developing countries, democracy is not associated with toxic waste imports. However, two notable outliers are worth mentioning because the least democratic developing countries import the largest amounts of toxic waste. These authoritarian governments accept the largest amounts of toxic waste. As developing countries, they likely lack the infrastructure to safely process the waste, which puts societies within these countries at risk to environmental harms without the freedom to advocate for improved environmental conditions.

Within developing countries, non-reporting countries are the least democratic on average. Authoritarian countries are less open to information sharing generally, so they may be less willing to reveal toxic waste import information.

Chapter 6: Corruption

It is possible that states might not uphold requirements of the Basel Convention because of corruption. Corruption has been defined as “an act in which the power of public office is used for personal gain in a manner that contravenes the rules.”¹⁰⁰ These countries tend to operate without regard to the rules in order to serve their best interests. Corruption may influence participation in the Basel Convention, in which states could fail to uphold reporting requirements if it is not beneficial. Corrupt countries have been cited as a destination of pollution,¹⁰¹ thus it is possible that more corrupt countries would import more polluting toxic wastes.

Operationalization

In order to measure corruption’s influence in reporting behavior, I look at a country’s corruption perception index (CPI), a measure developed by Transparency International, a non-governmental organization dedicated to addressing corruption. A number of studies examining corruption’s influence in policy have used the CPI to measure corruption.¹⁰² The corruption perception index is based on perception of the public sector’s involvement in corruption. Transparency International uses polls and data from a variety of reputable institutions and global experts within in the evaluated countries.¹⁰³ The CPI is a score between 0 and 100, with zero being highly corrupt and 100 being very clean. In this study, I look at a 2015 report listing various countries’ CPIs. Not all countries’ democracy indices were measured in 2015, so I used data as far back as 2008 to fill in the gaps of information. Eleven Basel Convention members remain missing from the available data because transparency international’s corruption perceptions index excludes some microstates.

¹⁰⁰ Aidt, T. S. (2003). “Economic Analysis of Corruption: a survey.” *Economic Journal*, 113.

¹⁰¹ Cole, Matthew. (2007). “Corruption, income and the environment.” *Ecological Economies*, 62, 3-4.

¹⁰² Pellegrini, L. & Gerlagh, R. Lambsdorff, J. G. (1999). “Corruption in Empirical Research.” Washington D.C.: World Bank.

¹⁰³ “Transparency International.” (N.d.). Web.

Reporting

More corrupt countries may report inaccurately or fail to submit reports to the Basel Convention to serve their own interests. Countries that engage in this type of reporting behavior would qualify as “intentional violators” because they may have the capacity to report or report honestly, but fail to uphold reporting obligations for other reasons that serve their self-interest. All members of the Basel Convention signed onto this commitment under the common belief that increased transparency from reporting would allow a safer international trade system of toxic waste.¹⁰⁴ While establishing this system improves global safety for all, some members may be tempted to “free ride” this agreement, meaning that they maximize their self-interest by participating in an international environmental treaty on paper while failing to uphold requirements in practice by providing false information or failing to report.¹⁰⁵

In the following section, I look at the average CPI for countries that fall within three reporting categories described in previous chapters: good reporters, non-reporters, and false reporters.

¹⁰⁴ The Basel Convention. Preamble.

¹⁰⁵ Mitchell. 118.

Corruption and Reporting Behavior

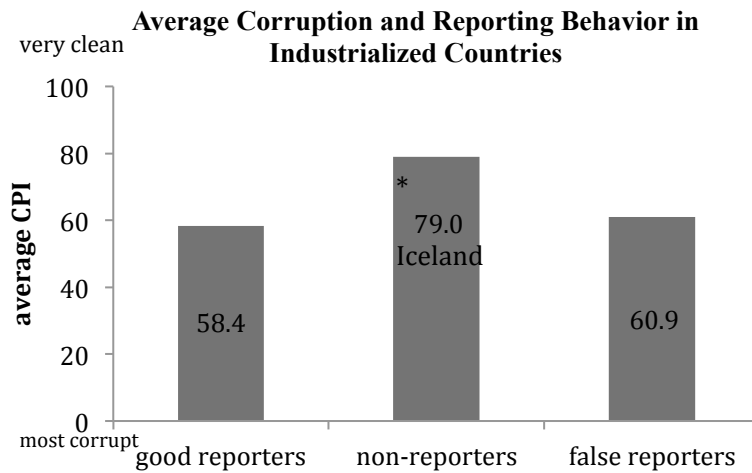


Figure 1a: Corruption and reporting behavior in industrialized countries (Iceland is the only non-reporter)

Corruption does not seem to influence reporting accuracy within industrialized countries. Interestingly, good reporters have the highest average level of corruption. The non-reporting section is marked with an asterisk because Iceland is the only industrialized country in the Basel Convention that never submitted reports and has a relatively clean CPI index. False reporters are on average less corrupt than good reporters. It is likely that industrialized countries under-report accidentally, since they are the members of Basel that are supposed to import the most toxic waste. These states may be “good faith non-conformers,” meaning that they accidentally submit inaccurate information in their reports despite agreeing with the norms of the convention.

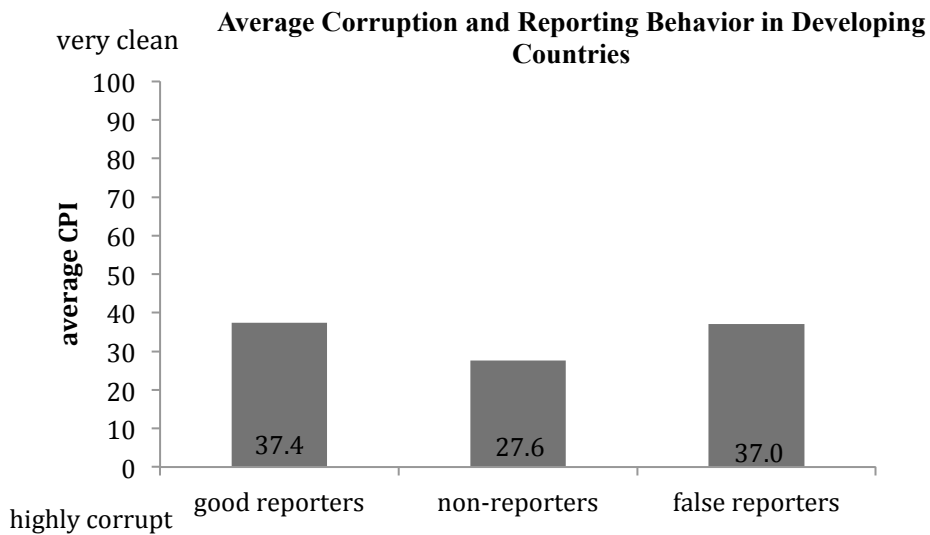


Figure 1b: Corruption and reporting behavior in developing countries.

Within developing countries, corruption seems to play a role in non-reporting. Non-reporting countries are more corrupt on average than countries that submit reports, even reports that are not accurate. Corruption does not seem to influence reporting accuracy, as accurate reporters and false reporters are at about the same level of corruption. Corrupt countries may not implement reporting systems within their governments because these systems are costly. It could be that these countries participate in the Basel Convention more symbolically, rather than with the intention to implement treaty requirements.

Amount of Toxic Waste Imported

Corruption could influence how much toxic waste a state imports, especially because more corrupt countries tend to house more pollution generally. An empirical study found that corruption positively associated with two major air pollutants: sulfur dioxide and carbon dioxide.¹⁰⁶ Other empirical studies indicate that corruption coupled with foreign direct

¹⁰⁶ Cole. (2007).

investment can create “pollution havens” or countries with high levels of pollution and few environmental regulations.¹⁰⁷

Corruption may lead to environmental degradation through two possible pathways. Corruption could cause environmental degradation through direct bribes to the government to skirt around regulatory environmental standards. Theoretical literature suggests a connection between corruption and less strict implementation of environmental regulations.¹⁰⁸ In an empirical study, a model based on data collected from ninety-four countries measured the direct impact of corruption on carbon dioxide and sulfur dioxide emissions, controlling for corruption’s impact on income.¹⁰⁹ Results from this model support the literature suggesting that corruption’s influence on the environment operates through relaxed enforcement of environmental regulations.¹¹⁰ Corruption may operate similarly in the toxic waste trade, in which corrupt governments would be less likely to implement legal obligations of the Basel Convention, such as submitting accurate reports.

Finally, corrupt governments generally do not represent the interests of their society. The turning point in environmental degradation in an EKC assumes first, that the government will take action to improve environmental conditions, and second, that government policy reflects societal preferences.¹¹¹ A corrupt government generally does not represent the interests of society, thus in corrupt countries we would expect that an EKC turnaround is less likely to occur

¹⁰⁷ Cole, M. A., Elliott, R. R. and Fredriksson, P. G. (2006), “Endogenous Pollution Havens: Does FDI Influence Environmental Regulations?” *Scandinavian Journal of Economics*, 108. 157–178.

¹⁰⁸ Fredriksson, P. G, Vollenberg, H. R. J and Dijkgraaf, E (2004). Corruption and Energy Efficiency in OECD Countries: Theory and Evidence. *Journal of Environmental Economics and Management*, 47, 2. Damania, R, Fredriksson, P. G and List, J. A (2003). Trade Liberalization, Corruption, and Environmental Policy Formation: Theory and Evidence. *Journal of Environmental Economics and Management*, 46, 3. 490–512. H. Welsch. (2004). “Corruption, growth and the environment: a cross-country analysis.” *Environment and Development Economics*, 9. Pellegrini, L. & Gerlagh, R.

¹⁰⁹ Cole. 640.

¹¹⁰ Cole. 642.

¹¹¹ Lopez, R. & Mitra, S.

when income per capita increases. Higher levels of corruption could result in reduced governmental action to represent the interests of its society by importing toxic waste, even if it is detrimental to the health of society.

In the following section, I look at the average amount of toxic waste that states actually import as calculated in Chapter 2 in relation to three different corruption ranges determined by a country’s CPI. Very corrupt states range between 0-33 CPI. Moderately corrupt states fall between 34-66 CPI, and states with low corruption range between 67-100.

Corruption and Toxic Waste Imports

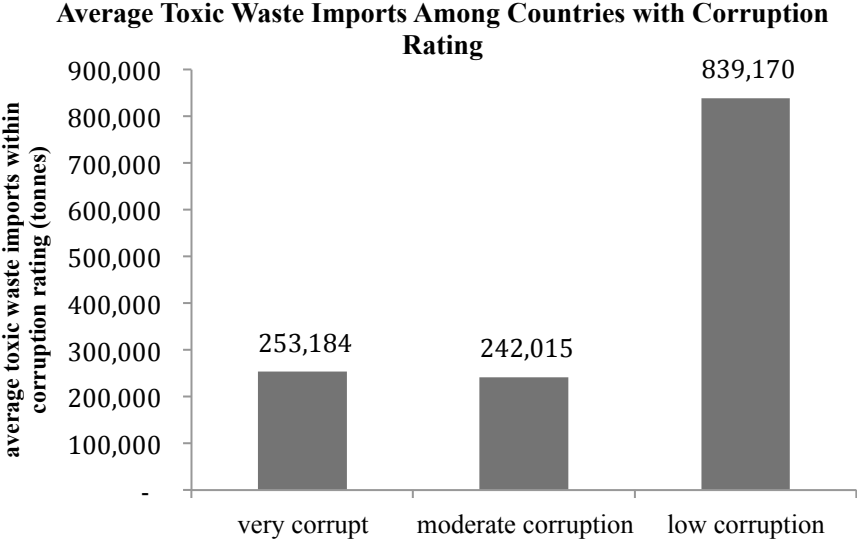


Figure 2: Corruption and Toxic Waste Imports in all Basel Convention members

Overall, it appears that the least corrupt countries import the most toxic waste of all countries in the Basel Convention. In order to get a better idea of what is going on within these countries, it is valuable to look at the trend within both industrialized countries and within developing countries.

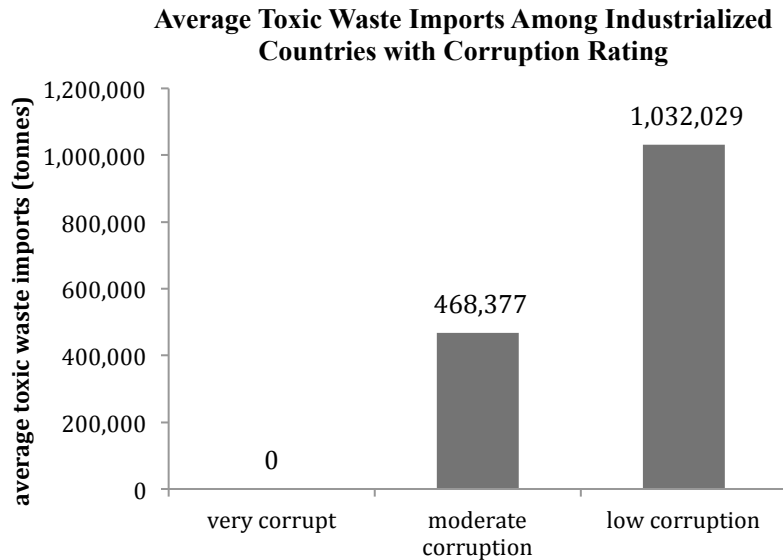


Table 2a: Corruption and Toxic Waste Imports in Industrialized Countries

In industrialized countries, countries with low corruption import the most toxic waste as a whole. Industrialized countries are the most appropriate destination for toxic waste to be disposed because they house the most advanced technology to safely process toxic waste and the level of wealth to be able to prolong safe disposal. In negotiations of Basel, states agreed that industrialized countries should be importing the most waste. Thus, it is reassuring that the least corrupt industrialized countries are importing toxic waste. These countries are the least corrupt and uphold the norm set by the Basel Convention to import toxic waste as industrialized countries.

Although the averages are helpful to look at larger trends, an exception country is lost in this form of analysis. It is important to note that Mexico does not align with the larger corruption and toxic waste import trend among industrialized countries. Mexico imports the most toxic waste of any single country in the Basel Convention and is the most corrupt industrialized country, with a score of 35. Mexico is technically a member of the OECD, but it is an emerging economy and is not as industrialized as other groups. If Mexico is importing so much toxic

waste, we want to be confident that it is safely disposing of it, and governmental corruption levels are not reassuring on that front.

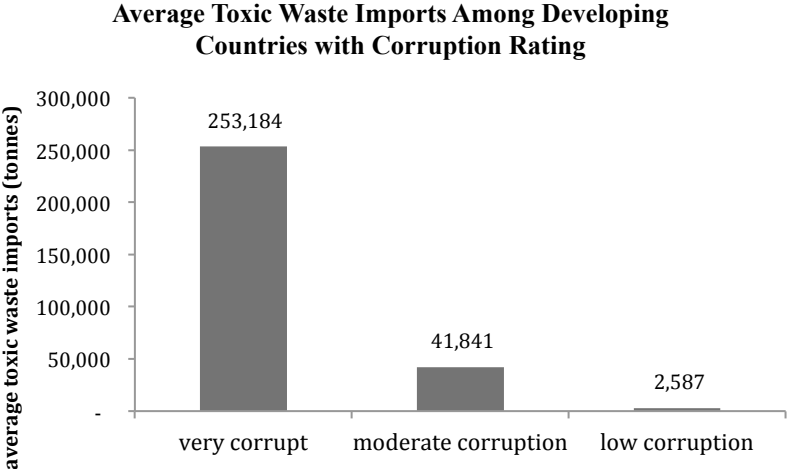


Table 2b: Corruption and Toxic Waste Imports in Developing Countries

The story in developing countries is the exact opposite. Very corrupt countries are importing the most toxic waste on average among developing countries. This suggests that corruption help explain why poorer countries import more toxic waste. Whoever has the power to make decisions about toxic waste imports in these countries likely benefits from the financial gain of toxic waste imports, even though developing countries generally are not well equipped to safely process toxic waste. When developing countries import toxic waste, they put their society at risk of exposure.

Conclusions

Corruption does not substantially influence the reporting behavior of industrialized countries. But within developing countries, corruption raises a number of concerns. Highly corrupt developing countries are the least likely to submit reports to the Basel Convention, which hinders establishing transparency within the global toxic waste trade. In order to regulate the toxic waste trade and avoid inequitable trade, we must first know where waste is going and who

is accepting it, which reporting tells us. This study suggests that corruption may influence a developing country's decision to import toxic waste. Because corrupt governments generally do not represent the needs of society, we may be concerned that the developing countries that are importing toxic waste are doing so in less safe conditions for society.

Chapter 7: Conclusion

In the past 30 years, the world has seen vast improvement in the global toxic waste trade. The Basel Convention and the Bamako Convention have both contributed to the elimination of the worst forms of toxic waste disposal in developing countries, and the majority of countries that do import toxic waste are egalitarian industrialized countries. Yet, some limitations in transparency remain, especially within developing countries. Reporting systems and reporting accuracy are much lower in developing countries, which prohibits the level of accountability necessary to promote the safest possible disposal of toxic waste. Of the developing countries that do import toxic waste, we may be especially concerned. Not only do developing countries lack the infrastructure needed to safely dispose of toxic waste, but also the governments of developing countries that do decide to import toxic waste are among the most corrupt. This leaves us with the knowledge that although conditions have improved overall, there is still much work to be done to prevent the world's most vulnerable societies from toxic waste exposure.

Reporting is an essential component of regulating the toxic waste trade and establishing transparency. An analysis of reporting within the Basel Convention provides an idea of how the Basel Convention as a whole is doing. In this study, I find that reporting to the Basel Convention is not very good, especially by developing countries. Some countries never report to the Basel Convention. Most countries that never report do not import large amounts of toxic waste, with the exception of the Democratic People's Republic of Korea, which imported over 10,000 tonnes of toxic waste. About one third of Basel Convention members submit import reports but exclude import amounts in the report. Most of these countries did not import toxic waste, but the Republic of Korea imported over 150,000 tonnes without reporting this information in its import reports. The majority of countries that submit memos to the Basel Convention secretariat rather

than specific import amounts do not import toxic waste, but three of these countries import moderate amounts of toxic waste while claiming not to import toxic waste. These countries are China, Morocco, and Turkey. Generally countries that do not report to the secretariat or that submit incomplete reports do not import toxic waste and do not substantially reduce transparency, but the exception countries import substantial amounts of toxic waste without reporting it, which hinders transparency within the global toxic waste trade.

After examining the conditions that lead to consistent and accurate reporting, I find that country level wealth, inequality, democracy, and corruption are all associated with reporting behavior in varying degrees in both industrialized and developing countries. Some of these conditions may help explain the conditions under which a state reports and reports accurately to the Basel Convention secretariat.

The wealthiest countries are the most likely to report, and report accurately, to the Basel Convention. Countries that never report to the Basel Convention are on average much poorer than other members of the Basel Convention. Similarly, the next poorest countries submit reports in a simplified format. Instead of submitting detailed import information, these countries write a memo to the secretariat. Countries that under report their imports to the Basel Convention secretariat are also less wealthy on average than the countries that submit accurate reports. These reporting behaviors suggest that wealth is an important condition for states to implement toxic waste reporting systems. Without as many resources or existing infrastructure, less wealthy countries may have limited capacity to establish high quality reporting systems that can accurately monitor toxic waste imports.

The most equal countries on average are the most likely to report to the Basel Convention. Conversely, countries that never report or submit memos are the most unequal on

average. Countries that under report are only slightly more unequal on average than countries that submit accurate reports. This pattern suggests that unequal countries face the similar capacity issues as poor countries in establishing a reporting system. Without the means to develop a quality reporting system, it is understandable that these countries are less likely to submit reports or report accurately.

Democratic states are the most likely to submit reports and report accurately to the Basel convention. States that submit reports and report accurately are on average more democratic than other developing countries. It is not surprising that democracies would report well, since democratic countries generally respect the rule of law. Countries that never report to the Basel Convention are much less democratic on average. Authoritarian governments are generally less open to sharing information, thus it would not be usual for these actors to withhold information from the secretariat.

Less democratic states are also more likely to submit inaccurate reports. On average, states that under-report are less democratic than other Basel Convention members. It would not be surprising if an authoritarian government did not adhere to legal obligations to the Basel Convention, such as reporting accurately or reporting at all, because authoritarian countries generally respect the rule of law less than democracies. The reporting behavior of poor and unequal countries has suggested that it is costly to implement a toxic waste trade reporting system. If this is the case, those less committed to upholding treaty obligations are likely less willing to allocate resources to establish a costly toxic waste reporting system.

The least corrupt countries are the most likely to submit reports of Basel Convention members, and states that never submit reports are the most corrupt on average. Corrupt countries generally skirt around laws, so it is not surprising that the most corrupt countries do not report to

the convention. Interestingly, countries that under report are not more corrupt on average than countries that submit accurate reports. It could be that members of the Basel Convention that do not comply with obligations are less willing to implement a reporting system in the first place. There are no sanctions for developing countries that import toxic wastes, likely because the developing countries that lobbied for the Basel Convention were more concerned with unwanted toxic waste from exporting countries than voluntary imports.

Reporting behavior generally changes within different domestic contexts. Financial capacity appears to be at the root of why states are not reporting. Implementing a toxic waste reporting system is costly, as it involves bureaucratic staffing of borders and staffing of a competent authority. These costs likely dissuade poorer or unequal countries that lack the resources to implement a new system. Authoritarian and corrupt governments generally do not address environmental issues, thus it would not be surprising for these countries to negate the cost of establishing a new system.

Developing countries played a pivotal role in establishing the Basel Convention after a series of highly publicized cases of toxic waste dumping in the 1970s and 1980s. The Basel Convention was mainly created so that developing countries would no longer struggle with unwanted toxic waste dumping. Member countries also established an important norm during the negotiations of the Basel Convention. Because industrialized countries possess the most advanced technology to safely dispose of toxic waste without exposing individuals within those countries to harmful pollutants, they should import the most toxic waste. Despite this norm, importing toxic waste is potentially profitable for developing countries. Some environmental justice scholars argue that developing countries face disproportionate exposure to toxic waste

and may have reduced agency in the decision to import toxic waste.¹¹² This thesis considers the question of what states take in the most toxic waste and in what context states decide to import toxic waste in an attempt to uncover whatever injustices may exist within the global toxic waste trade.

Fortunately, the most wealthy, democratic, low-corruption industrialized countries are the most likely members of the Basel Convention to import the most toxic waste. These countries are the safest sites of disposal because they possess the proper infrastructure to dispose of toxic waste and in general uphold the concerns of their own citizens and are less likely to disproportionately expose their citizens to environmental harms. Despite this general trend, some developing countries import toxic waste. Developing states are more likely to expose citizens to toxic waste even when importing small amounts compared to industrialized countries that import much more toxic waste due to differences in infrastructure. Thus, even the small amounts of toxic waste that developing countries import are important to consider. With the knowledge that some developing countries do import toxic waste, it is useful to understand the context in which these decisions are made.

There is no association between a developing country's decision to import toxic waste and its level of wealth or inequality. This suggests that the developing countries that do import toxic waste are not doing so purely out of economic desperation. Developing countries face a good deal of economic hardship, so it would not be surprising if they imported toxic waste for the financial gain. Shortened time horizons often lead to harmful environment conditions that leave the world's worse off even more vulnerable. Fortunately, developing countries seem less likely to consider importing toxic waste as a viable economic prospect. This is great news from

¹¹² Gbadegesin. 187. Clapp, J. (2001). *Toxic Exports*. Print. 11. Pellow, D. (2007). *Resisting Global Toxins: Transnational Movements for Environmental Justice*. Cambridge, MA. MIT Press.

an environmental justice perspective because it suggests that the most poor and unequal countries are not willing to import toxic waste and expose their citizens to environmental harm.

Within developing countries there is no association between democracy and amount of toxic waste imported, but the developing countries that import the most toxic waste are also among the least democratic. These countries are the Russian Federation and Uzbekistan. This is concerning because they are developing countries that likely cannot process toxic waste in an environmentally sound manner to prevent citizens from exposure. Without democracy, citizens within these countries are much less likely to have environmental groups that can advocate for improved environmental conditions or elect politicians that can promise to improve the conditions within these countries.

The most corrupt developing countries are the most likely to import toxic waste. It is not surprising that the developing countries that import the most toxic waste on average are very corrupt. Although developing countries are the least equipped to safely dispose of toxic waste, corrupt governments generally do not represent the interests of their own societies and are less likely concerned for the health of their society. Corrupt governments are likely more willing to accept the risk of toxic waste exposure for their citizens in return for the financial gain.

Although the least corrupt industrialized countries are the most likely to import toxic waste, Mexico is an exception from this trend and is worth mentioning. Mexico is a member of the OECD, but it is also an emerging country and is far less likely than any other industrialized state to possess the infrastructure needed to safely dispose of toxic waste. The majority of the world's toxic waste is sent to a relatively corrupt country with an emerging economy. Mexico is the most corrupt industrialized country and imports the most toxic waste of all Bamako Convention members, which is problematic from an environmental justice standpoint. As one of

the least wealthy OECD members, Mexico is likely the least fit to safely process toxic waste. As a more corrupt country, the government is also less likely to ensure the safest possible conditions of toxic waste disposal for its citizens.

Overall, many findings of this thesis are reassuring. The countries best fit for toxic waste disposal are the most likely to import toxic waste. Industrialized countries import the vast majority of toxic waste. The wealthiest, most equal, and most democratic industrialized countries import the most toxic waste. These characteristics set optimal conditions for safe toxic waste disposal. These countries likely have the most money to dispose of waste with the cleanest technology are the least likely to unfairly distribute environmental burdens throughout society.

Despite these reassuring findings, toxic waste imports in developing countries are concerning. When countries import toxic waste, we should be confident that they will dispose of it in a manner that reduces societal risks to exposure. The Basel Convention established that developing countries are not the best fit to import toxic waste, so the fact that developing countries are importing toxic waste at all is important. This concern coupled with fact that the developing countries that import the most toxic waste are generally not trustworthy suggests that the Basel Convention has more work to do.

Recommendations for the Basel Convention

The Basel Convention was established to promote transparency in the global toxic waste trade in order to prevent unwanted and unauthorized toxic waste transport and disposal, especially within developing countries. The Basel Convention established a reporting system to implement this transparency. In theory, a reporting system increases accountability among countries because it provides information on who sends toxic waste and who accepts it.¹¹³ This information then allows the convention to monitor whether member countries are upholding

¹¹³ Chasek. 116.

obligations of the agreement and are disposing of toxic waste in an environmentally sound manner.

The Basel Convention has failed to hold its members accountable for two reasons. The secretariat collects the information necessary to analyze the state of the toxic waste trade because it collects information from both importing and exporting countries. Yet, the Basel Convention did not design a feedback system in which this information would monitor member behavior and provide feedback to or propose sanctions on Basel Convention members. Without applying the information that it collects, the Basel Convention does a weak job at promoting environmentally sound toxic waste disposal.

Additionally, the Basel Convention process does not provide adequate support to developing countries to establish reporting systems. A lack of financial capacity to implement reporting systems is at the core of why developing countries do not submit reports to the secretariat. Without toxic waste import information on developing countries, it is difficult to do what the Basel Convention sought out to do, which is to protect developing countries from unsafe and unwanted toxic waste imports by establishing transparency. Developing countries too are more likely to lack the infrastructure to implement secure customs at borders, which leaves them more vulnerable to toxic waste trafficking.

Although the Basel Convention promotes technical assistance to developing countries, funding mechanisms are limited to follow up with these provisions, especially amid widespread need from developing countries.¹¹⁴ The Basel Convention Trust Fund to Assist Developing Countries and Other Countries in Need of Technical Assistance in the Implementation of the Basel Convention is an entirely voluntary fund,¹¹⁵ which is not an ideal situation. The

¹¹⁴ Krueger, 87.

¹¹⁵ UNEP. (2006). "Examination of Article 14 of the Basel Convention, with a view to determining the

widespread non-reporting and reports missing import information among developing countries suggest that poor members of the Basel Convention have not implemented reporting systems, even though the Basel Convention was ratified about 30 years ago. The fund established for assistance is unpredictable and many countries that do not report today lack financial support and likely cannot report due to a lack of capacity.

Recommendations for International Environmental Law

The shortcomings of the Basel Convention have broad implications for international environmental law. The Basel Convention is a high-profile international environmental agreement among many in which member countries do not uphold reporting requirements. Understanding why states comply is a major question among international environmental law scholars who want to know what leads to state compliance within international environmental agreements. This has led to two major schools of thought, which are the managerial model of compliance and the enforcement model of compliance.

The lack of capacity in developing countries supports the managerial model, which suggests that states do not comply with obligations of international environmental agreements because of a lack of capacity, not because of intentional deviance. In the case of the Basel Convention, evidence supports the conclusion that states fail to report largely because a lack of financial capacity to implement a reporting system. If that perspective is broadly representative across international environmental agreements, it suggests that international environmental agreements should account for capacity when establishing obligations and offer substantial support for domestic implementation within developing countries.

legal and institutional feasibility of appropriate and predictable financial mechanisms of the Basel Convention.” Open-ended Working Group of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. Fifth session Geneva.

To some degree, reporting accuracy within the Basel Convention may reflect both aspects of the managerial model and the enforcement model of compliance. Members of the Basel Convention that submit reports with false information are slightly less wealthy on average than states that submit accurate reports. This suggests that states may not have the capacity to report accurately, especially if customs at borders are much less organized in developing countries. There is no difference in equality of developing states that report accurately and states that submit reports with false information, which suggests that states that do report inaccurately do in fact have the capacity to report with more accurate information. The enforcement model then may also apply to reporting behavior. Some countries may have the resources to implement an accurate reporting system but chose to submit purposefully deceiving information.

The enforcement model may be more applicable to a developing country's decision to import toxic waste. The most corrupt developing countries import toxic waste despite the Basel Convention norm that developing countries should not be the final site of disposal for toxic waste. Corrupt developing countries may be behaving in a manner described by rationalist scholars, who believe that countries will only uphold international agreement obligations in order to suit their own needs. These corrupt governments import toxic waste even though their countries do not have as suitable of infrastructure to safely process it.

Within the context of the compliance question, it seems as though a blend of the managerial perspective and the enforcement perspective results in the best understanding of why states comply with international agreements. There are tradeoffs to compliance, especially when some countries lack fundamental infrastructure to domestically implement agreements.

The current state of the global toxic waste trade holds many implications for environmental justice and international environmental law. Despite the fact that industrialized

countries import the most toxic waste, the Basel Convention could vastly improve conditions for developing countries. The limited technical assistance funding of the Basel Convention and prevalence of non-reporting among poor countries demonstrates that international environmental agreements must be more accommodating to the needs of developing countries. Without established reporting systems in developing countries, including secure customs at borders, developing countries face risks of unsafe toxic waste exposure. Developing countries lobbied the Basel Convention into existence and strongly advocated during negotiations of the agreement, yet limitations remained in the final draft of the agreement to support developing countries. There is a global power imbalance, and actors that participate in international environmental agreements ought to do a better job at evening the scales.

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