Toxic Waste Dumping in Conflict Zones: Evidence from 1980s Lebanon

Records show that numerous countries experiencing civil wars – including Angola, Eritrea, Lebanon, and Somalia – witnessed environmental crime, such as the dumping of toxic waste. To explore the dynamics of waste crime in conflict zones I combine a historic overview of the international trade in toxic waste with a case study of the 1987 toxic waste dumping scandal in Lebanon. I show that conflict zones provide ideal conditions for waste criminals, that waste crime is an easy way for militias to profit, and that environmental crime differs sharply from other modes of predation in the political science literature.

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In September 1987 a ship arriving from Italy docked at the port of Beirut which at the time was controlled by the Lebanese Forces, a Christian militia participating in Lebanon's ongoing civil war.[1] In the dark of night militiamen rapidly unloaded 15,800 barrels and 20 containers full of toxic waste originating from across Western Europe. Over the next decade various unfortunate Lebanese citizens would discover this waste dumped in industrial storage facilities, abandoned mine shafts, and mountainous valleys. In some places toxic waste leaked into the groundwater, killing cattle and causing cancer in humans. Regrettably, Lebanon is not the only conflict zone where participants have profited from dumping toxic waste. During the Angolan civil war a Swiss arms trader contracted to build a sham waste disposal facility outside the port of Namibe where he intended to dump toxic ash and waste water in the desert.[2] During the Eritrean War of Independence the Eritrean People's Liberation Front accused the Ethiopian government of dumping toxic waste in the port city of Massawa; the government responded by blaming the rebels.[3] Shortly after Somalia collapsed into state failure a close political ally of one of its major warlords signed an agreement to import large quantities of toxic waste for "recycling" from an Italian company, allegedly controlled by the Mafia, in exchange for some combination of cash and arms.[4]

How do conflict zones become crime scenes for environmental atrocities? What is the allure of conflict zones to Western waste criminals? When will civil war combatants engage in environmental crime, and how do crimes such as waste dumping compare to other sources of

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[1] Greenpeace (1996:5-7)
[2] Greenpeace (2001:26)
[3] Greenpeace (2001:50)
[4] Greenpeace (2010:20-24)

funding such as taxes or theft?[5] And why did wartime Lebanon, Angola, Eritrea, and Somalia become dumping grounds for toxic waste?

There is some debate about whether environmental problems, particularly climate change, cause armed conflict.[6] There is also some literature on how armed conflicts indirectly cause environmental problems such as destruction of cropland, contaminated drinking water, and loss of biodiversity.[7] However, there does not at present appear to be any systematic work in either criminology or political science on environmental crime as a wartime phenomenon. This shortcoming is unfortunate for two reasons: because the consequences of crimes such as toxic waste dumping are very severe for its victims, and because there may be scope for well-designed policies to reduce its occurrence.

To further our understanding of this dismal topic I engage with the criminological literature on waste crime and the political science literature on civil war predation to make three theoretical points. First, we know that waste criminals seek out jurisdictions marked by corruption and institutional failure where they can dispose of waste in illicit manners. Conflict zones, in a way, represent the ultimate form of institutional failure with opportunities for unscrupulous actors to profit from illicit behavior. Second, we know that many armed groups raise revenue through predatory behavior such as theft, looting, or racketeering. However, we have no studies of how or when armed groups might engage in environmental crime as a form of behavior, even though from a theoretical perspective this form of crime should be particularly appealing to civil war actors looking to make an easy profit. Third, environmental crime forces

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[5] For systematic work on variation in how armed groups fund their operations see Weinstein (2007) and Staniland (2014).

[6] Burke, Miguel, Satyanath, Dykemae and Lobell (2009); Buhaug (2011)

[7] See for instance Austin et al (2000); Francis and Krishnamurthy (2014); Hendrix and Glaser (2011); and Milburn (2012).

us to re-conceptualize civilian victimization in civil war. To date, the literature focuses on forms of victimization – such as theft or murder – where there is a clear victim and where the victim immediately realizes their predicament. Environmental crime has more insidious properties: often the ultimate victims do not even realize their victimization until years after the crime has been perpetrated.

To explore the dynamics of waste crime in conflict zones I combine a historic overview of the toxic waste trade with a detailed case study of toxic waste dumping in 1987 during the Lebanese civil war. The North-to-South toxic waste trade began around 1980 as private companies sought to evade tightening regulatory environments in Western countries by exporting waste to the Global South. While Western countries tightened their regulations, most countries in the Global South did not yet have formal laws against toxic waste dumping and the practice may well technically not have been illegal – or at least existed in a legal gray zone – in many jurisdictions. However, during the mid-1980s the affected countries began to fight back using an array of political, legal, and diplomatic tools. The waste trade culminated in 1987-88, as waste criminals sought out increasingly dysfunctional polities to dump their toxic merchandise, but declined after this date.

Second, I provide a case study of a 1987 toxic waste dumping scandal that occurred during the Lebanese civil war, which illustrates how and why conflict zones make attractive sites for environmental crimes. As the Lebanese government ceased to function, armed groups reigned supreme. In close collaboration with the Italian Mafia, senior members of the largest Christian militia found creative ways to facilitate the toxic waste trade in exchange for cold hard cash. The case study draws partly on material published by Greenpeace and local news media, but also on interview evidence gathered during 16 months of fieldwork.

The article proceeds in four sections. The first section contains a theoretical discussion about waste crime, wartime predation, and civilian victimization. The following section provides a historical overview of the rise and fall of the North-to-South toxic waste trade between 1980 and 2000, and explains why this trade culminated around the years 1987-88. The third section contains a case study of the 1987 toxic waste dumping scandal during the Lebanese civil war. The final section of the paper concludes by discussing what the case study teaches us about waste crime, rebel governance, and victimization of civilians during civil war as well as relevant policy implications. One lesson from prior episodes of toxic waste dumping concerns how to regulate e-waste, such as discarded consumer electronics including laptops and mobile phones, and explains why we need international treaties to address this growing environmental problem.

THE POLITICAL ECONOMY OF ILLICIT WASTE DUMPING

This article is about toxic waste: poisonous chemicals that cause cancer, birth defects, skin lesions, respiratory illness, and other adverse health effects in humans.[8] Some examples include heavy metals like cadmium and mercury, tarry residues from oil refining, certain kinds of paint and varnish, asbestos, the pesticide dichlorodiphenyltrichloroethane (DDT), and substances contaminated by dioxins or polychlorinated biphenyls (PCB).[9] It is inherently costly to dispose of toxic waste in a safe manner such as through specially engineered landfills, impoundment, or high-temperature incineration. Elementary economics teaches us that toxic waste is a classic

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[8] Some authors prefer the term hazardous waste. See Kummer (1995) chapter 1 or Switzer (1994:104) for a discussion of terminology and definitions.
[9] Strohm (1993:131); Krueger (1999:8)

example of a negative externality, and that the free market will overproduce it whenever

producers and consumers can avoid paying the full cost of safe disposal.[10]

There is also a literature in environmental politics about the conditions under which for-

profit private companies systematically try to avoid paying the full cost of environmentally

harmful activities. When one jurisdiction tightens regulations on an environmental problem, such

as toxic waste dumping, some companies may relocate those activities to other jurisdictions; this

process can result in a "race to the bottom" where companies continuously seek out new, less-

regulated jurisdictions – and increasingly vulnerable populations – where they can impose the

social cost of their activities.[11] The profit motive drives this process because avoiding

environmental regulations increases profits by reducing costs. Of course, many activities are

costly to relocate and empirical research shows that most Western companies and industries have

historically chosen to comply with new environmental regulations in domestic markets rather

than relocate to non-Western jurisdictions.[12] One extreme example would be nuclear power

plants, which cannot easily be moved in response to new regulations. Waste disposal, however,

sits on the opposite end of this spectrum as waste can relatively easily be transported away from

the jurisdiction where it is generated.[13]

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[10] For classic contributions to environmental economics and politics see Ostrom (1990) and Hamilton (1993).
[11] Bullard (1990) shows how chemical companies in the US tended to locate polluting activities in African-American areas in the American South as they faced less political resistance in those locations. Clapp (2001) specifically considers the international trade in toxic waste as an example of the "race to the bottom".
[12] Pearson (1987); Leonard (1988)
[13] Leonard (1988) shows empirically that companies handling some particularly toxic and dangerous pollutants belong to the minority of for-profit companies that have proven willing in the past to relocate their operations to different jurisdictions in response to new regulations.

When private companies engage in a "race to the bottom" by relocating to jurisdictions with weaker regulations on health and safety they may be engaged in immoral behavior, but they are not typically breaking the law. Other actors, however, profit specifically from breaking the law by disposing of waste in ways that do not comply with – and therefore are cheaper to utilize than – legal requirements.[14] Many waste criminals operate in Western countries where they get paid to dispose of various types of waste that they then either dispose of in illegal ways, such as dumping or using unsafe storage or disposal techniques, or illegally export waste to countries with weaker environmental regulations.[15] The waste management sector is an incredibly complex industry that involves many different types of commercial actors and products, and it is simply impossible for regulators to monitor all transactions and shipments. Lax enforcement and relatively low penalties serve as further inducements for many criminals to enter this surprisingly lucrative market.

Major Western companies with well-known brand names and profitable legitimate operations carefully manage public relations and are unlikely to risk their reputation by engaging in illegal waste dumping. However, the waste management business includes many types of brokers and middlemen.[16] Businesses that generate or handle toxic waste typically pass it on to professional waste management firms at a cost, and these in turn may pay others to take certain quantities of waste off their hands. There is a long history of dubious business actors, including organized crime syndicates, entering the waste management business and operating through shell

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[14] For classic studies and reviews of the literature see Bullard (1990); Clapp (2001); Daele et al (2007); Dorn et al (2007); and Baird et al (2014)

[15] Passas (2001) refers to these incentives to shift criminal activities across borders as criminogenic asymmetries.

[16] BAN (2005); Greenpeace (2010)

companies and other seemingly legitimate facades.[17] Illicit dumping will likely attract illicit

actors, but legitimate businesses can easily feed this practice merely by not asking too many

questions. Some criminals involved in waste crime are relatively unsophisticated, such as local

gangs that profit from racketeering in waste disposal in individual cities or neighborhoods.

Others form part of organized crime syndicates, such as the Italian mafia, that leverage

professional organizations with ties across countries and continents.[18]

The literature on waste crime has not fully explored the allure of using conflict zones for

unsafe waste disposal. This omission is surprising, since we know – as detailed at the very start

of this article – that several conflict zones in the late 1980s became dumping grounds for toxic

waste. It is also surprising since conflict zones offer such seemingly ideal conditions for actors

engaged in illicit disposal. Waste criminals generally seek out locations marked by poverty,

corruption, and weak or failed institutions. Countries marked by political instability in general

tend to deliver all three variables in abundance, and civil wars represent the most spectacular

form of institutional failure. Conflict zones are particularly intense manifestations of political

instability, institutional failure, and poor governance, which is precisely the kind of factors that

attract waste criminals.

In a way, dumping in civil war zones represents the ultimate culmination of "race to the

bottom" dynamics whereby dumpers seek out increasingly vulnerable civilian communities.

During civil wars the government generally does not have full military control over all of its

territory, and even in territory where they do have control local commanders may exercise great

discretion. National institutions such as environmental agencies and law enforcement, regardless

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[17] Baird et al (2014)
[18] Greenpeace (2010)

of what their status would be in peacetime, cannot operate adequately in civil wars because organized violence disrupts normal economic and government activity. Media, activists, and civil society groups have limited ability to operate during wars, and the ones who do will likely focus on conflict and violence rather than environmental or social justice issues. It may even be unclear during the war how some actions, that normally would be deemed criminal, will be viewed once the war ends or what their formal legal status will be or become at that point in time. Wartime actors may believe that it will be difficult after the war ends to produce sufficient evidence about wartime abuse, including illegal dumping, to initiate litigation. Many civil wars are also followed by amnesties or other agreements that limit post-war liability for wartime abuse. In short, conflict zones offer almost ideal conditions for waste criminals to engage in illicit trade, storage, and disposal of toxic waste.

Toxic Waste Dumping as Wartime Predation

When will waste criminals be able to access illicit dumping sites in the Global South in general, and in countries in afflicted by civil war in particular? The answer to this question begins with the, perhaps counterintuitive, fact that it is profitable not only for Western waste criminals to dump waste overseas but also for local actors in the affected country to supply dumping sites. Assuming that the local actor can dump in a location where they do not themselves experience the negative health repercussions of toxic waste dumping, they accept to receive the waste in exchange for a hefty sum of money. They then dump the waste and pass on the true social cost to whatever third party lives in proximity to the dumping site. The local actor could be anyone looking to make a profit such as a corrupt government official, businessperson, warlord, or

militia. Dumping is profitable when the cost of dumping in another country is cheaper than safe and regulated disposal in whatever jurisdiction the waste originates from. The company that dumps waste and the local actor that supplies a dumping site both make money by sharing the profits (lower costs of disposal) generated by illicit dumping.

Local actors tempted to make a quick profit in an immoral way may face attractive opportunities to engage in toxic waste dumping in any context marked by poverty, corruption, crime, and weak institutions as these factors make it easier to avoid detection and prosecution. However, countries affected by civil wars typically provide even greater opportunities for illicit waste dumping since civil war represents a particularly spectacular example of institutional failure where the ordinary machinery of the state can no longer protect civilians from abuse and predation. Furthermore, few local actors are as well-placed to engage in toxic waste dumping as are armed groups engaged in violent sub-state conflicts. Armed groups in conflict zones typically exercise full control of at least some territory where they command de facto sovereignty. As for the temptation to engage in dumping we know that armed groups engage in a wide variety of activities both to fund their political and military operations and because commanders use wartime opportunities to enrich themselves.

Armed groups generally accumulate resources from some combination of taxes, donations, operating firms, and predation.[19] The first three modes of funding are more demanding of an armed group because they require administrative infrastructure, donor networks, and managerial talent, respectively. Predation requires less organizational capacity, although it comes at the cost of civilian victimization that could turn civilians against the armed group. There is a big literature on the conditions under which armed groups kill, maim, rape, and

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[19] Weinstein and Humphreys (2006); Weinstein (2007); Cederman, Girardin and Gleditsch (2009); Staniland (2014)

steal from civilians in areas they control. We know of several factors that influence the level of abuse against civilians in civil wars. For instance, the level of abuse varies depending on how groups recruit and incentivize their troops.[20] Variation in leader attitudes, how information flows up through the chain of command, mechanisms for discipline and the likelihood of punishment, soldier norms, and small group cohesion and socialization also affect variation in civilian abuse.[21] Armed groups that mobilize preexisting civilian networks and institutions into wartime service develop deep ties to civilians in areas they control and tend to engage in much less abuse.[22]

Toxic waste dumping clearly falls under the umbrella of predatory funding modes, but it differs from other kinds of predation in three ways. The literature studies civilian abuse with three properties: there is a clear and identifiable victim, the victim suffers from the abuse immediately when it occurs, and the victim realizes right away that they have been victimized. All three properties are true of murder, rape, bodily harm, and theft.[23] Toxic waste dumping differs in all three regards. At the moment when an armed group dumps toxic waste into the air, water, or soil it might not be readily apparent what individuals will ultimately suffer adverse health effects as a consequence: it could even ultimately be individuals who are not yet born when the waste dumping occurs. It can take years before the public health effects such as cancer or birth defects materialize. Unlike theft, rape, or murder it is also relatively easy to conceal waste dumping and it may take considerable time before nearby residents realize that they have been exposed to a major negative health risk.

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[20] Weinstein (2007); Cohen (2016)
[21] Weinstein and Humpreys (2006); Wood (2009)
[22] Staniland (2014)
[23] See for instance the conceptualization of predation and victimization in Weinstein (2007); Staniland (2014); or Cohen (2016).

In short, compared to other modes of wartime funding waste dumping is among the easiest abuse to get away with from the perspective of an armed group looking to profit at the expense of civilians. Some armed groups might still refrain from the activity if they generate sufficient economic resources from taxation, donations, and operating firms, or if the profits from waste dumping are very small or trivial compared to the former three. However, in general we might expect that there should be ample opportunities for Western waste criminals to find local actors in civil war zones to provide dumping sites, and that armed groups may be more willing to engage in environmental dumping than in many other kinds of wartime predation. The next two sections of the paper provide some evidence in support of both claims, as well as of some factors that inhibit waste crime in conflict zones.

A BRIEF HISTORY OF THE TOXIC WASTE TRADE

Environmental regulation in the United States dates back to the Progressive Era with landmark achievements such as the creation of the National Park Service.[24] However, the scale of environmental challenges grew as massive economic growth in the decades following 1945 created Western societies based on mass consumption. One rough estimate is that the generation of toxic waste increased in proportion to the global production of organic chemicals, which grew from about 7 million metric tons in 1950 to over 250 million tons in 1985 (a 36-fold increase).[25] During the early 1980s Western policy-makers implemented stricter regulations to better align the private and social cost of toxic waste disposal. As a consequence, its price tag grew exponentially. The typical cost for landfill disposal of regulated waste in the United States

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[24] Switzer (1994) is an accessible textbook introduction to environmental politics in general and US policy in particular. Chapter 5 deals specifically with the issue of waste and toxic substances.
[25] Kummer (1995:4)

increased from about $15 per ton in 1980 to about $250 by 1988, while safe high-temperature

incineration can cost as much as $2,000 per ton depending on the specifics of the product and

technique.[26] Landfill costs in less developed countries in this period, however, remained as low

as $4 per ton. The economic incentives for shipping waste from Western countries to the Global

South are obvious: the preceding figures show how in extreme cases dumping could save as

much as 99.8% of the disposal cost, excluding shipping and handling.

As a result of these regulatory changes the international trade in toxic waste commenced

around 1980.[27] As late as 1987 the OECD estimated that about 90% of toxic waste originated in

wealthy industrialized countries, and many shipments occur between wealthy countries to reach

specialized firms with the most sophisticated technology for disposal.[28] However, a sizeable

share of waste exports also left Western countries for non-Western states with less onerous

environmental regulations. Some economists defended this practice as legitimate trade, on the

logic that poor countries might prefer the revenue from importing waste over the luxury goods of

environmental protection. "I think the economic logic behind dumping a load of toxic waste in

the lowest-wage country is impeccable and we should face up to that", wrote World Bank chief

economist Lawrence Summers in a 1991 internal memo; Mr. Summers later apologized for this

statement and claimed that it was intended as sarcasm.[29]

Some North-to-South shipments of toxic waste in the 1980s, that were morally

reprehensible acts of de facto dumping, may nevertheless have been legal in a formal sense.[30]

First, it took several years for many non-Western countries to understand the nature of the

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[26] Strohm (1993:133)
[27] See Strohm (1993); Kummer (1995) chapter 1; Krueger (1999) chapter 2; and Clapp (2001).
[28] Strohm (1993:132)
[29] New York Times (1992)
[30] Clapp (2001)

international trade in toxic waste and to introduce, clarify, and strengthen laws regulating or

outlawing this practice. Second, at the time there were no widely agreed upon international

definitions, standards, measurements, and rules for what constitutes toxic waste, and

unscrupulous Western companies exploited legal loopholes by exporting toxic waste as raw

materials or recyclable goods. Third, there were also many cases of outright dumping where

toxic waste from Western countries ended up abandoned in storage facilities, landfills, or open

nature in poor countries through clandestine shipments without any pretense of legality.

Table 1 shows how the waste trade from North to South culminated in the late 1980s.

This period saw the greatest number of documented waste trade transactions and shipments, but

also marks a turning point when countries in the Global South began concerted legal and

political efforts to stop this practice.[31] Those efforts began as domestic legislative and judicial

processes typically aimed at stopping specific shipments, but the focus of the struggle against

toxic waste quickly shifted to the international and diplomatic arena. African nations

spearheaded these initiatives, which grew partly out of self-interest as Africa suffered a

disproportionate burden of illicit waste dumping. Its leaders realized that it would be very

difficult to end this practice without international agreements to develop shared definitions,

standards, and legal frameworks to regulate or ban certain types of trade without accusations of

protectionism. Finally, the issue resonated powerfully with African mass publics that saw the

issue of toxic waste dumping as the latest installment in a history of political and economic

exploitation and; popular commentary even referred to it as a form of "ecological imperialism".[32]

Senegalese pop sensation Youssou N'Dour conveyed this popular anger in his 1990 song about

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[31] Greenpeace (2001)
[32] Strohm (1993:143)

the toxic waste trade, "Toxique", which became a huge regional hit as it resonated with widely

shared sentiments.[33]

Table 1: Import Schemes for Toxic Waste to African Countries, 1980-2000
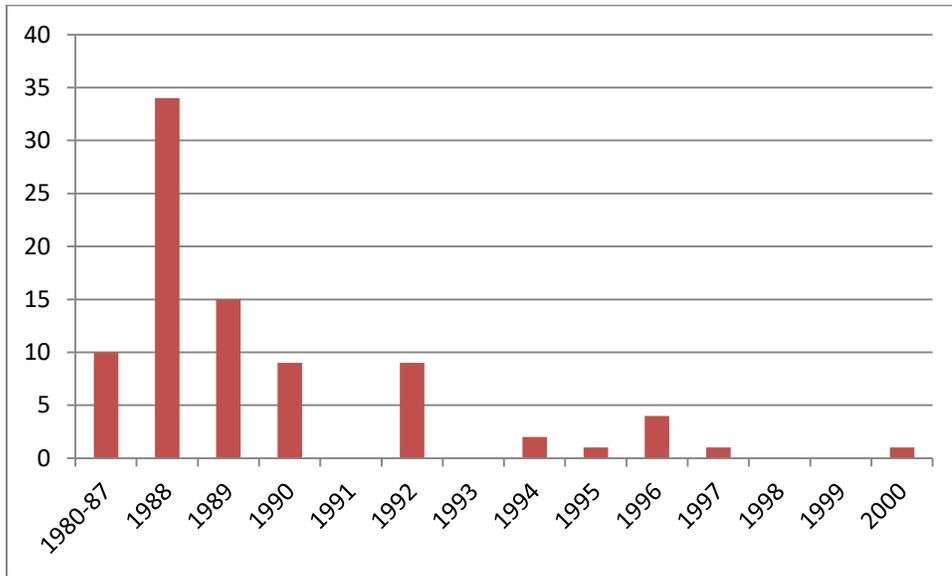
Source: Greenpeace (2001)

In 1989 a group of African diplomats working under the auspices of the United Nations

Environment Programme (UNEP) introduced a treaty, known as the Basel Convention after the

Swiss city that hosted its inception, to regulate the international waste trade.[34] A major

breakthrough came at a follow-up conference in 1994 where a majority of OECD countries

agreed to join the convention, adhere to a complete ban on toxic waste exports from OECD to

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[33] The song is available on YouTube: https://www.youtube.com/watch?v=2YxGkuvoCew
[34] On the international politics behind the Basel Convention see Kummel (1995) chapters 2-3; Krueger (1999) chapter 2; and Greenpeace (2001:4-8).

non-OECD countries, and to implement certain domestic monitoring and reporting arrangements to track generation and handling of toxic waste to prevent illicit dumping.[35] Because of these developments toxic waste exports to the Global South ground to a halt in the 1990s. While law enforcement agencies, media, and activists still expose illicit dumping schemes with some regularity, the Basel Convention provides legal and institutional frameworks for addressing the problem.

TOXIC WASTE DUMPING IN WARTIME LEBANON

To explore the operations and dynamics of waste crime in conflict zones I use a case study of toxic waste dumping in 1987 during the Lebanese civil war. To construct this case study I rely on interviews with former militia operatives, media reporting from the largest daily newspaper in Lebanon, and an extensive report on the toxic waste scandal compiled by Greenpeace in 1996 after the war had ended. The interviews were conducted in person during 16 months of fieldwork, which took place during the 2013-14 academic year and in the summer of 2017.

As part of fieldwork I interviewed a total of ten current officials and political leaders, as well as former fighters and commanders, from the Lebanese Forces. This organization originally emerged as a dominant political and military force in the Maronite Catholic community during the civil war as the result of a merger between several smaller Christian armed groups.[36] The process of merging Christian forces into one began during the late 1970s and completed in 1980. After the civil war the Lebanese Forces demobilized, surrendered its weapons, and transformed

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[35] These provisions became part of European Union law on January 1, 1998. For more information see the treaty's webpage: http://www.basel.int/
[36] Snider (1984); Harik (1994)

from an armed group into a parliamentary party. It has been represented in each parliament, and in several government cabinets, since the civil war ended in 1990. The organization has always commanded an almost exclusively Christian following, with supporters among all Christian sectarian communities – including many Greek Orthodox and Greek Catholics – but a heavily Maronite Catholic concentration of members and supporters.

To obtain interview opportunities I relied partly on snowball sampling, but I also endeavored to have multiple points of entry into the organization to ensure diversity of viewpoints. In practice I approached interviewees in three different ways. First, several interviewees had formal positions within the party, including several with office space in the party headquarters. This group is reflexively defensive of the party and its history and past activities. Second, through the group 'Fighters for Peace' I encountered more critical voices. This loose network consists of former militia fighters from different militias, which fought on opposite sides in the war, and who at one point were true believers in the cause they fought for but who at present renounce violence and encourage open discussion about the past. One leadership figure within this group is a former mid-level military commander from the Lebanese Forces. Third, since the Lebanese parliament issued a blanket amnesty law after the war ended, many former militia operatives returned to their civilian jobs. By chance I therefore encountered some interviewees previously or currently affiliated with the Lebanese Forces when I approached them in their primary professional capacity in academia, think tanks, and the private sector. Across all three groups, the interviewees ranged in seniority from relatively junior political secretaries and wartime frontline fighters to a senior aide to wartime leadership, a former member of its executive War Council during the war, and a former chairman of the party in the 1990s.

The Lebanese Civil War, 1975-1990

The Lebanese civil war of 1975-1990 began as an armed struggle between a set of Christian militias fighting a coalition of Palestinian, Lebanese Muslim, and secular left-wing political movements.[37] Syria invaded the country in late 1976 to enforce a ceasefire. In 1982 Israel invaded across the southern border and pushed as far north as Beirut.[38] Its military campaign went awry following the assassination of a key ally – Lebanese Forces leader Bashir Gemayel – and the subsequent massacres of Palestinian civilians in Sabra and Shatila refugee camps at the hands of Christian militiamen operating under Israeli protection. After Israel withdrew to a buffer zone along the southern border in 1983 the Lebanese conflict was characterized by relatively stable military frontlines coupled with episodes of armed violence, including major combat operations, between former allies within the two original coalitions. In general, the fifteen-year military conflict is therefore best understood as a series of temporally bounded combat episodes interspersed with extensive periods of relative calm.

During the civil war Lebanon thus became divided into enclaves, controlled by different militias and dominated by distinct sectarian communities, where life at times resumed a sense of fragile normality. Compared to rebel groups in many other conflicts, major Lebanese militias such as the Christian-dominated Lebanese Forces, the Druze-dominated Progressive Socialist Party, and the Shia-dominated Amal Movement provided relatively stable governance including some public goods and social assistance in the areas they controlled.[39] Militias took over management of many public services previously run the government such as garbage collection,

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[37] Salibi (1976); El-Khazen (2000)
[38] Schiff and Yaari (1984)
[39] Snider (1984); Harik (1994); Cammett (2014)

street cleaning, traffic management, water and sanitation, telephone service, public order, and education. Militias also operated radio and TV stations to create a stronger sense of communal solidarity and to disseminate news and current affairs according to party perspectives. There were several reasons why militias provided this level of governance, but one primary reason was to ensure that a relatively large civilian base would choose to reside within these enclaves. Militia operatives and their families also lived within these enclaves and had genuine self-interest in providing services for residents in the community.

Funding Militia Operations

The militias needed significant resources to sustain both their war machines and their governance initiatives. Those resources came in four major forms: volunteer efforts, donations, taxation, and predation. As for the first of those four pools of resources, all major Lebanese militias relied heavily on volunteers to man the frontlines. When the civil war first broke out, "[Lebanese] militias were little more than neighborhood groups", says a former fighter with the Lebanese Forces.[40] "We were volunteers, not employees. We were not an invading army. People fought in their own neighborhoods". A striking feature of militia warfare is the extent to which it relied on temporarily mobilizing community members who otherwise maintained normal civilian lives. "When there was a cease-fire, everyone would go home. Most weapons were individual, in the closet," according to the same fighter. "As were uniforms. [Many] people fought locally so there was no need for transportation. The militia could disappear and reappear in a day". Most frontline fighters served in or near the areas where they lived and many were high school or

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[40] Interview, Broumanna, April 2014

university students living with their parents. Many militia fighters with regular jobs would only join the fight if and when it affected their own neighborhood.

As for donations, all militias received considerable arms shipments from foreign governments. "The enemy's enemy is a friend", says a former member of the executive council of the Lebanese Forces.[41] "You'd sit down with them and they'd ask, so, what do you need? And then things started arriving. Heavy weapons came in fits and pieces, over time, from many places. Foreign security services aided us versus the PLO. Arab governments aided us. First it was Syria, when we were against the PLO, and then later on Iraq and Libya gave aid when we were against Syria. And there was Israel, of course." Israel eventually became the largest foreign donor to the Christian war effort by quite some margin.[42] However, in the early days Christian militias also received arms from the United States, Jordan, and Iran based on their status as pro-Western proxies against East Bloc-aligned groups like the PLO.[43]

Third, the militias also raised significant fiscal revenues through taxation and other means. The main sources of revenue for the Lebanese Forces came from sales taxes on items ranging from petrol to restaurant meals, from property taxes, by collecting excise duties from operating ports and from checkpoints on major highways, from smuggling operations including shipping hashish grown in the eastern Beqaa valley to European markets, and from running private casinos.[44] These revenue streams went into party coffers and funded both military operations and social service provision. Within their own enclaves, the major militias functioned

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[41] Interview, Beirut, July 2014

[42] Israeli journalists estimate that Israel spent $150 million on aiding the Christian militias during the Rabin government alone. See Schiff and Yaari (1984).

[43] El-Khazen, 2000 pp. 299-304 lists all foreign sponsors of the major armed groups of the 1970s. Note that Iran under the Shah was a major US ally in the Middle East until the revolution of 1979.

[44] Interview with former deputy head of military intelligence for the Lebanese Forces, Beirut, March 2014

as a form of state-within-the-state that raised revenue, provided governance, and upheld public order.

Fourth, in this chaotic environment many militia fighters also exploited the war – and often their position in the militia hierarchy – to enrich themselves through predation. One former mid-level commander from the Tigers militia, a smaller Christian militia that merged with the Lebanese Forces in 1980, describes how many commanders "took initiatives outside the formal hierarchy" and how this behavior was known in militia circles as how someone had "opened up his own shop."[45] Some militia commanders engaged in looting, confiscation of private property, armed robberies, and other criminal activities.[46] However, smuggling and racketeering was generally more profitable than larceny or petty crime. Militia operatives who oversaw the various modes of raising revenue often skimmed a private share from militia cash flows. Others exploited militia control over ports, highways, and territory for private smuggling ventures of drugs and luxury goods. As the war went on some commanders also engaged in outright fraud against their own militia superiors, for instance by payroll fraud in units they controlled or by selling off arms and ammunition on the side for personal gain. Many fighters joined militias attracted by opportunities for financial gain; predation was thus indirectly a tool for recruitment, and thereby kept the war machine running even in the many cases where stolen assets stayed in private hands and never entered militia balance sheets.

This behavior was evident from the very inception of the civil war in 1975 but it became more common, brazen, and sophisticated as the war went on. By the mid-1980s many militia fighters and commanders had given up hope of winning a decisive military victory. At this point

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[45] Interview, Beirut, February 2014
[46] Makdisi and Sadaka (2005:32)

the country was divided by clear frontlines into separate enclaves run by different militias that all had powerful foreign military backers and no militia had any credible path towards a decisive military victory. This defeatist mindset encouraged some to use their positions for private gain instead. "The militias became more corrupt over time," says a former mid-level commander of the Lebanese Forces.[47] Their criminal activities involved mildly spectacular ventures including operating unlicensed casinos, rebranding Israeli merchandise for export to Arab countries, international piracy – and at least one major case of toxic waste dumping.[48]

The 1987 Toxic Waste Scandal

In 1987 the Lebanese Forces received a shipment of 15,800 barrels and 20 containers full of toxic waste from an Italian company.[49] The Italians had allegedly paid militia operatives $22 million to accept the shipment and quietly dispose of it. The barrels and containers held an assortment of poisonous chemicals including industrial waste from the production of plastics, medication, and pesticides; outdated paints, varnishes, adhesives, and solvents recently banned in Europe; lubricants contaminated with PCB; acids used to remove heavy metals; and sand contaminated with dioxins from cleaning industrial waste.[50] Militia members appear to have dumped these vessels in empty factories, quarries, harbor berths, landfills, mine shafts, and remote mountainous valleys across the territory it controlled.

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[47] Interview, Beirut, March 14, 2014
[48] See Traboulsi (2007) chapter 13
[49] Greenpeace (1996:5-6)
[50] Ibid. pp. 8-13

In June 1988 details of the waste dumping leaked to local media and created a political scandal.[51] Government agencies initiated a full independent investigation, arrested key suspects, and prepared for legal proceedings. International pressure forced the Italian government to accept responsibility for the waste export and promise to return all materials to Italy for safe disposal. However, those processes quickly ground to a halt as Lebanon entered a period of renewed military hostilities in September 1988 including major combat operations between rivals in the Christian-dominated enclave hitherto controlled by the Lebanese Forces.[52] For most of this period the country even had two different entities that claimed to be its legitimate, internationally recognized sovereign government. Work at government agencies, which successfully managed many routine operations at certain points during the war, ground to a halt. Those individuals who had been arrested for waste dumping in 1987 were released on indefinite bail.[53] Furthermore, when Italian merchants sent ships supposed to retrieve all toxic waste the operation was supervised only by the Lebanese Forces: the same militia whose members had profited from waste dumping in the first place.

The civil war ended in 1990, and during the first few years after the war it became apparent that the Italians had indeed left much of their toxic waste behind. A string of incidents involved local residents discovering barrels of toxic waste hidden in various places where they posed health hazards to communities.[54] In some places toxic waste seeped into the groundwater and poisoned both humans and animals. Independent scientists took samples from several sites in 1994 and concluded that the waste most likely stemmed from the 1987 Italian shipment. In January 1995 the Lebanese Army Secret Service produced a classified report - that subsequently

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[51] Ibid. pp. 15-17
[52] Traboulsi (2007)
[53] Daily Star (2015)
[54] Greenpeace (1996:14)

leaked to media - that presented a relatively detailed picture of the toxic waste scandal.[55] Among other things, it listed 27 Lebanese nationals (mostly members of the Lebanese Forces) as primary suspects. In response to these developments the government ordered a formal inquiry in February 1995 with the intention of bringing the perpetrators to justice.

The inquiry ran into some unexpected problems: of the 27 suspects listed in the Army report it turned out that nine by then held jobs at the Ministry of Environment, including its most senior positions as special advisors to the Minister. The Army report speculates that this arrangement may have resulted from strategic action by the Lebanese Forces during negotiations over postwar power-sharing aimed at covering their tracks. Indeed, the Ministry rapidly issued a range of assertions including that all toxic waste from the 1987 shipment had been returned to Italy; that the recently discovered barrels had other origins; and that their contents, contrary to all independent experts, were not toxic or particularly dangerous to humans. These diversions were ultimately unsuccessful at halting the government inquiry. However, at that point all former members of Lebanese Forces involved in the dumping scandal successfully invoked immunity from prosecution based on a 1991 general amnesty law that prevented legal actions against perpetrators of wartime crimes.[56] In the end only two independent businessmen faced any legal consequences for the 1987 shipment. After 1994 the Lebanese government began cleaning up some of the worst dumping sites at the taxpayer's expense. According to media reports the remaining waste was supposedly shipped to France for disposal in 1998 under a secret deal brokered by Syria, although the details remain murky.[57]

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[55] Ibid. pp. 6-7
[56] Ibid. pp. 20-22
[57] Daily Star (2015)

The Lebanese case thus highlights several mechanisms that make civil war zones ideal for toxic waste dumping. Militias such as the Lebanese Forces controlled territory where they commanded de facto political sovereignty. Because of the civil war the central government and its agencies, including law enforcement, could not operate properly. Militias also controlled port facilities, which made it easy to smuggle in waste without alerting customs officials. Conflict and violence distracted news agencies, civil society, and the public from less pressing issues such as the environment. The postwar amnesty law prevented authorities from prosecuting most of the perpetrators. Militia members responsible for dumping waste even managed to infiltrate, if not take control over, the Ministry of the Environment after the war ended. The Lebanese experience thus highlights all the major reasons why political instability and civil wars create fertile ground for environmental crime in general, and waste crime in particular.

Dumping toxic waste generated relatively small gains for its perpetrators in relation to other modes of militia financing. While Greenpeace alleges that the Italian mafia paid their Lebanese interlocutors about $22 million to dump toxic waste in 1987, other scholars estimate that militias collectively amassed about $15 billion from criminal activity throughout the war.[58] Toxic waste represents less than one percent of that figure, and its profitability may thus be quite limited compared to that of other criminal activity such as drug smuggling or racketeering.

Furthermore, we do not fully know to what extent the profits from this crime ended up in militia coffers or private bank accounts. Some of the proceeds allegedly entered the 'Social Fund', the general fund used by the Lebanese Forces to pay for public goods and social relief in its enclave.[59] However, one would assume that those involved in the waste crime took out a

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[58] Makdisi and Sadaka (2005:32)
[59] Greenpeace (1996:6)

healthy personal paycheck before the money left their hands. This suspicion should be particularly strong since some of the alleged perpetrators were independent businessmen with ties to the Lebanese Forces, rather than members or operatives, and it would strain credulity to assert that they would dump toxic waste as a form of charity.

CONCLUSION

By 1980 most Western countries had addressed the issue of toxic waste dumping with stricter regulations at the national level. At this point, and as a direct consequence of national-level policy developments, unscrupulous businesspeople discovered the immense profits that accrued from shipping toxic waste for de facto dumping in the Global South. This trade accelerated throughout the mid-1980s until governments, mass publics, and NGOs in poor countries understood the full scope and moral travesty of the issue and began to fight back using all legal, political, and diplomatic tools at their disposal. By the late 1980s private Western companies were facing increasingly stiff resistance in their efforts to dump toxic waste in foreign jurisdictions. At this point, the immense profitability of this trade attracted unscrupulous actors – such as the Italian Mafia and major arms dealers – to continue their poisonous "race to the bottom" by finding ever more vulnerable populations to exploit. Political instability and civil wars offered irresistible opportunities for treating civilian communities as human landfills. It took an international treaty, negotiated over the better part of a decade and currently signed by about 200 nations, to control this lucrative mode of economic exploitation.

This process explains why Lebanon, Angola, Somalia, and Eritrea became dumping ground for toxic waste. The key issue is timing: all four countries had civil wars raging in 1987-

88, the point in time that is often viewed as an inflection point when the fight against toxic waste dumping in the Global South began to turn. All four conflicts were fought through conventional warfare, meaning that non-state actors came to control vast swathes of territory. Furthermore, they are all coastal countries with major commercial port facilities that fell under the control of armed groups. Port facilities matter: the vast quantity of toxic waste involved in most trade schemes precludes shipment by truck or airplane and necessitates maritime transportation. All four countries are relatively close (by international shipping standards) to those Italian ports, such as La Spezia, that are most frequently implicated in illegal shipments of toxic waste. Interestingly, several of these waste crimes were also connected to the international arms trade. In Angola the waste trade was initiated by a Swiss arms trader who had most likely come into contact with local militants through this profession, while Somali militias may have dumped waste in exchange for arms rather than money. It seems that one type of crime may beget another.

Future work should build on these insights. This article serves as a theory-building exercise, rather than as a definitive empirical test of any specific hypotheses. Yet the case of toxic waste dumping in wartime Lebanon teaches us a couple of important things. First, the case demonstrates the allure of using conflict zones to commit environmental crime. Second, it shows that we need to include environmental crime under the broad umbrella of predatory wartime militia activities. Finally the nature of environmental crime in general - and of waste crime in particular - challenges us to broaden our conception of civilian victimization in conflict zones beyond those crimes, such as murder or theft, which are readily apparent to its victims.

The most important challenge for future work is that the data on environmental crime in conflict zones – whether qualitative or quantitative – is incredibly sparse, precisely because those

best situated to disseminate it have every incentive to take their secrets to the grave. Yet old barrels age and rust, bend and crack: the truth, like toxic waste, has a tendency to seep out into broad daylight eventually.

The toxic waste trade also offers policy implications for how to deal with the contemporary crisis of e-waste. Since the early 2000s the world has witnessed a dramatic increase in international shipments of discarded electronic consumer products such as mobile phones, laptops, desktop computers, and TV sets and other monitors.[60] The contemporary trade in e-waste has many parallels to the trade in toxic waste during the 1980s. There are few internationally agreed upon definitions or standards for classification, and as a result it is difficult to establish whether any one particular shipment constitutes secondhand goods for resale, damaged goods intended for repair, broken equipment to be stripped for parts, or toxic waste containing hazardous materials such as mercury, lead, and brominated flame retardants.[61] Exporters exploit these legal loopholes for product classification, including by outright fraud, to avoid paying for safe and regulated disposal. The true cost of e-waste is borne by workers who disassemble it in unsafe conditions and by local communities whose air, water, and soil absorb its residues. History shows that we need international treaties that regulate the trade in e-waste. If we simply wait for developing countries to address this issue on their own we effectively invite another "race to the bottom" where waste criminals will seek out ever more vulnerable populations to exploit.

Wealthy countries have a moral obligation to take the lead in negotiating international solutions as we not only produce most of the waste, but also create the incentives for dumping

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[60] Duan et al (2013:10-12) estimates that the United States discarded over 250 million units of used electronics in 2010 alone.
[61] UNEP (2015:21-25)

elsewhere by banning the practice within our own jurisdictions. What makes the toxic waste trade so deeply troubling for observers in Western countries is precisely that as consumer we form part of the process that ultimately poisons innocent people in poor areas of the world. As citizens of wealthy countries we choose to indulge in lifestyles that generate waste and we have no moral choice but to take full responsibility for our actions.

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