Going Green to Win Over the Hearts and Minds:
Internalizing International Environmental Principles into U.S. Contingency Operations

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Disclaimer

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Abstract

Going Green to Win Over the Hearts and Minds: Internalizing International Environmental Principles into U.S. Contingency Operations

The U.S. military must internalize international environmental principles into its military operations in foreign countries in order to fully win over the hearts and minds of the local population. Two principles in particular, the obligation to prevent transboundary environmental harm and the polluter pays principle have the potential to make lasting changes in the countries where contingency operations are conducted. This paper will examine the current U.S. military guidance, directives, and regulations concerning environmental harm during contingency operations. Next, the paper will examine the origins of each of the international environmental principles. Finally, the paper will use the contingency operations of Iraq and Afghanistan as a backdrop to stress the importance of internalizing these international environmental principles in future operations.

Table of Contents

I. Introduction 1

A. Thesis Statement 8

B. Progression of Paper 9

II. U.S. Military and the Environment 11

A. Contingency Operations Defined 11

B. Early History 12

C. U.S. History and the Environment 13

1. Executive Orders and Overseas Activities 14

2. DoD Guidance 16

3. International Agreements and SOFAs 19

D. Current DoD Doctrine on the Environment and Contingency Operations 20

1. U.S. Army and U.S. Marine Corps 21

2. U.S. Air Force and U.S. Navy 22

3. Joint Operations 25

III. International Environmental Principles 27

A. Obligation to Prevent Transboundary Environmental Harm 28

1. The Trail Smelter Case 28

2. Stockholm Declaration on the Human Environment 32

3. Rio Declaration 34

4. Soft Law versus Hard Law 36

B. Polluter Pays Principle 38

1. Economic Beginnings 39

2. Different Definitions with Different Contexts 40

3. Interrelationship between Polluter Pays Principle and Transboundary Harm 42

IV. Internalizing International Environmental Principles in Operations 44

A. Current DoD guidance 45

B. The Iraq Contingency Operation 50

1. Obligation Against Causing Transboundary Harm 53

2. Polluter Pays Principle 56

C. Laws of Armed Conflict..... 59

V. Conclusion..... 61

"So we must be ready to fight…but the ultimate victory will depend upon the hearts and the minds of the people who actually live out there."

– President Lyndon B. Johnson, May 4th, 1965

"Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary."

– Principle 24, 1992 Rio Declaration on Environment and Development

I. Introduction

"You could taste the smoke all night long," Army Master Sgt. Tex C.G. Hughes recalled.[1] "This doesn't look good, smell good or taste good. I knew it couldn't be good for anybody," Air Force nurse, Lt. Col. Michelle Franco remembered.[2] "You'd cough up black stuff, and you couldn't seem to catch your breath. And your eyes were burning," said Anthony Roles, Air Force retiree.[3] Contractor Rick Lamberth testified "[t]he ash that came from the pits looked like burned notebook paper and fell like a black, sooty snowfall. Soot from the pits would cover your clothes and stick to the walls of buildings."[4] Contractor paramedic, Russell Keith, said simply, "[t]he burns pits are nasty. Try not to breathe."[5]

The burn pits that Keith was criticizing and the others were describing are the burn pits operating in Iraq and Afghanistan during contingency operations over the past several years. The burn pits were constructed to dispose of the large quantities of solid

[1] David Zucchino, *Military Facing Fire Over Burn Pits; Illnesses Including Cancer Are Blamed on the Base Disposal Sites*, L.A. TIMES, Feb. 18, 2010, at A1.
[2] *Id.*
[3] Maria Glod, *Alarms Sound Over Trash Fires in War Zones; Lawsuit Links Illnesses to Burn Pits Used in Afghanistan and Iraq*, WASH. POST, Aug. 6, 2010, at A2.
[4] Dina Fine Maron, *'There's No Such Thing as the EPA Here'*, GREENWIRE, Nov. 11, 2009, http://www.eenews.net/public/Greenwire/2009/11/11/1.
[5] *Id.*

waste generated at the installations across the deployed environment.[6] These burn pits are called "open-air burn pits" or "open burn pits" since they are a clearly defined area where the solid waste is burned in the ambient air without any apparatus or equipment to capture the smoke or fumes.[7] According to the Department of Defense (DoD), the U.S. military utilizes open-air burn pits to dispose of solid waste primarily because of their expedience, especially during the beginning stages of Operation Enduring Freedom (OEF), the Afghanistan War, and Operation Iraqi Freedom (OIF), the Iraq War.[8] These open-air burn pits were not an insignificant means of disposal when compared to other disposal options such as landfills or incineration. Oftentimes, the installations operating in Afghanistan and Iraq had more than one open-air burn pit.[9] In the early days of the contingency operations, the exact number of open-air burn pits was not calculated by U.S. Central Command (CENTCOM).[10] Then, in 2009, CENTCOM reported 50 active open-air burn pits in Afghanistan and 67 in Iraq.[11] Less than one year later, in August 2010, the total grew to 251 active open-air burn pits in Afghanistan and 22 in Iraq.[12] In comparison, the DoD installed only 20 solid waste incinerators in Afghanistan and 39 in Iraq.[13]

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[6] U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-11-63, AFGHANISTAN AND IRAQ: DOD SHOULD IMPROVE ADHERENCE TO ITS GUIDANCE ON OPEN PIT BURNING AND SOLID WASTE MANAGEMENT 8 (Oct. 2010) [hereinafter GAO-11-63].
[7] DEP'T OF DEF. INSTRUCTION 4715.19, USE OF OPEN-AIR BURN PITS IN CONTINGENCY OPERATIONS 9 (Feb. 15, 2011).
[8] GAO-11-63, *supra* note 6, at 9.
[9] *See* Maron, *supra* note 4.
[10] *Id.*
[11] GAO-11-63, *supra* note 6, at 9.
[12] *Id.*
[13] GAO-11-63, *supra* note 6, at 26.

The proper handling of solid waste is a major concern for contingency operations because of the volume of waste generated. U.S. military operations in Afghanistan and Iraq generate approximately 10 pounds of waste per servicemember each day.[14] Since the invasion of Iraq in 2003, the number of U.S. servicemembers has varied but during the 2007 personnel buildup known as the "surge," there was a peak of 157,800 American servicemembers on the ground.[15] An overall analysis of the region found that as of December 2008, there were 294,000 troops deployed to the Mideast in support of OEF and OIF.[16] Therefore, during the "surge" timeframe, these troop numbers indicate that U.S. military operations would have generated nearly 3 million pounds of solid waste on a daily basis. This solid waste consisted of, among other things, "plastic, Styrofoam, and food from dining facilities; discarded electronics; shipping materials such as wooden pallets and plastic wrap; appliances; and other items such as mattresses, clothing, tires, metal containers, and furniture."[17] To handle the proper disposal of solid waste during both military operations, at least four different military organizations developed guidance.[18] These documents detail the definition of hazardous and non-hazardous waste and further define what is allowed to be disposed via an open-air burn pit.[19] According to

[14] GAO-11-63, *supra* note 6, at 1.
[15] Amy Belasco, CONG. RESEARCH SERV., R40682, TROOP LEVELS IN THE AFGHAN AND IRAQ WARS, FY2001-FY2012: COST AND OTHER POTENTIAL 13 (July 2, 2009).
[16] *Id.* at 4.
[17] GAO-11-63, *supra* note 6, at 1.
[18] In Apr. 2009, Multi-National Corps-Iraq (MNC-I) issued *MNC-I Environmental Standard Operating Procedure 2009* for its installations in Iraq. In Sept. 2009, U.S. Forces-Afghanistan issued overarching guidance on best management practices in Afghanistan. Also in Sept. 2009, CENTCOM issued Reg. 200-2 to provide guidance for its overall area of responsibility. In Mar. 2010, DoD issued Directive-type Memorandum (DTM) 09-032. *See* GAO-11-63, *supra* note 6, at 11-14.
[19] *Id*. at Table 1.

this guidance, hazardous waste was prohibited from being disposed of in open-air burn pits but there still have been complaints of health concerns from the fumes.

The circumstances surrounding the operation of open-air burn pits highlight the environmental concerns associated with the potentially harmful emissions from burning pits. Based on the complaints and observations from servicemembers and contractors, like the ones above, who were complaining of health-related issues, Congress requested the General Accounting Office (GAO) to investigate the disposal policies of the DoD.[20] Gauging the health effects of open-air burn pits was not among the objectives of the report; nonetheless, the report found that open air burn pits "produce smoke and harmful emissions that military and other health professionals believe may result in acute and chronic health effects to those exposed" and that the "health impacts of burn pit emissions on individuals are not well understood."[21]

The GAO conducted its study against a backdrop of health and environmental concerns on U.S. servicemembers and contractors working near the open-air burn pits. Unfortunately, the report did not expand its analysis to the effect of those same open-air burn pit emissions that were swept away outside the installation walls.[22] These same chemicals and particulate matter were invariably being emitted into the air and potentially causing some of the same effects that caused complaints by servicemembers and contractors. This absence of an evaluation of the impacts of the emissions beyond the installation walls could be seen as failing to fully consider the environmental effects, in

[20] *See generally* GAO-11-63, *supra* note 6.
[21] GAO-11-63, *supra* note 6, at 31.
[22] The GAO report did reference the health effects on local nationals but the report seemed to be only concerned from the reference point of local contractor personnel who would be hired to enter the installation and sort the solid waste before disposal. GAO-11-63, *supra* note 6, at 21.

the form of air pollution, on the health and welfare of the local population of Iraq and Afghanistan.

Harmful air emissions are not the only potential environmental concern impacting those living in Iraq and Afghanistan. Environmental concerns also arise from aesthetics and infrastructure damage. In fact, some of the more outspoken charges are derived from a negative aesthetic impact to the environment. A recent statement from the Baghdad city government plainly stated that "[t]he U.S. forces changed this beautiful city to a camp in an ugly and destructive way, which reflected deliberate ignorance and carelessness about the simplest forms of public taste."[23]

The alteration of the landscape did not just occur in Baghdad; the U.S. military erected thousands of concrete walls in military installations and cities around Iraq for security purposes. Many of these concrete walls, also known as T-walls because they resemble an inverted "T," were erected to protect against bomb and sniper attacks on installations throughout the country.[24] In 2008, one noncommissioned officer in charge estimated that Camp Victory in Iraq, next to Baghdad International Airport, had nearly one million T-walls located within and around the entire 60-acre complex.[25] The U.S. military also erected these T-walls within and around the "Green Zone" which housed the

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[23] Aseel Kami, *Baghdad Wants U.S. to Pay $1 Billion for Damage to City*, REUTERS, Feb. 17, 2011, *available at* http://www.reuters.com/article/2011/02/17/us-iraq-usa-damages-idUSTRE71G2T820110217.

[24] Army Spc. Josh LeCappelain, *'Concrete Warriors' Protect Soldiers in Iraq*, AMERICAN FORCES PRESS SERVICE, Oct. 9, 2008, *available at* http://www.defense.gov/news/newsarticle.aspx?id=51449.

[25] *Id.* The news article quoted a logistics noncommissioned officer in charge, Army Staff Sgt. Mineris Figueroa-Agosto. While the quoted number of T-walls seems rather high, the U.S. military has not released any official records of T-walls construction at Camp Victory or across all of Iraq and Afghanistan. *See also* Jeremy Schwartz, *Camp Victory's Odd Allure*, AUSTIN AMERICAN-STATESMAN, Feb 24, 2011, at A1.

Iraqi Government as well as thousands of U.S. State Department, military, and Coalition personnel. The T-walls were useful in providing security checkpoints for entry and exit into these fortified secured areas. The T-walls were also used throughout the cities to prevent quick movements by insurgents, in particular suicide bombers. In April, 2007, the U.S. military built a 3-mile long wall in the center of Baghdad "along the most murderous faultline between Sunni and Shia Muslims."[26]

"Nobody knows how many of the barriers were deployed in the capital. Some residents likened them to tombstones, others to a thousand Berlin Walls"[27] Unfortunately, as one reporter quipped, "[t]he tall grey slabs of concrete have become one of the defining images" of the war in Iraq.[28] The walls were erected to absorb bomb blasts and frustrate easy movements by militias and insurgents, but at the cost of marring the "beautiful city."[29] Another reporter noted that the twelve-foot-high security walls loomed over the homes in the Dora neighborhood of Baghdad. "Dora feels more like a desolate, post-apocalyptic maze of concrete tunnels than a living, inhabited neighborhood."[30] In addition to affecting the aesthetics of the city, government officials

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[26] Ewen MacAskill, *Latest US Solution to Iraq's Civil War: A Three-mile Wall: Concrete Barrier to Encircle Sunni District: Construction Under Cover of Night*, GUARDIAN (LONDON), Apr. 21, 2007, at 1.
[27] Michael Howard, *Tearing Down of Barriers Breathes New Life Into Baghdad*, GUARDIAN (LONDON), June 11, 2009, at 22.
[28] Rebecca Santana, *Baghdad Demands $1 Billion From US in War Damages*, ASSOCIATED PRESS, Feb. 17, 2011, *available at* http://www.cbsnews.com/stories/2011/02/17/ap/middleeast/main20032772.shtml.
[29] *Id.*
[30] Steve Niva, *The New Walls of Baghdad*, FOREIGN POLICY IN FOCUS, Apr. 21, 2008, http://www.fpif.org/articles/the_new_walls_of_baghdad.

alleged that the blast walls have damaged sewer and water systems, pavement and parks.[31]

Air pollution and T-walls are two of the more prominent examples of the environmental concerns raised during OIF, but the local populations have alleged several other isolated complaints both in OIF and OEF. As was previously discussed, DoD regulations prohibit hazardous waste disposal in an open-air burn pit, instead requiring that the waste be disposed of in a proper manner. Nonetheless, one international newspaper reported that their investigation discovered hazardous material from U.S. installations being dumped locally rather than being properly managed for disposal.[32] "Iraqis who have come into contact with some of the material suffer from rashes and blistering on their hands and feet. They also complain of gagging and coughing. Rats near sites where waste was dumped have died and lie next to soiled containers."[33] The newspaper article reported that most of the dump sites are close to main roads which connect the cities of Iraq. It is not clear who disposed of the hazardous waste since the Defense Reutilization and Marketing Office (DRMO) subcontracts some of the work to local companies.[34]

Environmental harm can manifest itself in another form; damage to the livelihood of the local population. Local Afghans in the war-torn Zhari district have complained that the US military has used explosives and bulldozers to raze homes, farm houses, walls

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[31] *See* Santana, *supra* note 28.
[32] Oliver August, *America Leaves Iraq a Toxic Legacy of Dumped Hazardous Materials*, TIMES (LONDON), June 14, 2010, http://www.timesonline.co.uk/tol/news/world/iraq/article7149611.ece.
[33] *Id.*
[34] *Id.*

and trees.[35] The destruction included blocking irrigation canals that provided water to the local crops. The U.S. military explained that it took the action for security reasons and the buildings that were destroyed and the walls that were torn down were used by the enemy as hideouts and shooting positions.[36]

A. Thesis Statement

These four examples of U.S. military impact on the local environment depict the unique environmental concerns confronting the U.S. military during contingency operations. The long-term environmental effects are not always considered during planning stages and during execution of those plans. The U.S. military can learn lessons from the international environmental realm in order to address these inadequacies. Two principles in particular, the obligation to prevent transboundary environmental harm and the polluter pays principle have the potential to make lasting changes in the countries where the military conducts contingency operations. In short, the U.S. military should incorporate and internalize these environmental principles into its military planning and operations in foreign countries in order to fully win over the hearts and minds of the local population. While environmental concerns are not always going to be priority during active hostilities, it is viewpoints of the locals during the aftermath that will preserve the military gains achieved during the war. It is only when hostilities have concluded that the local population will begin to realize that freedom or liberation might have come with permanent environmental costs.

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[35] Ben Gilbert, *Afghanistan War: Bulldozing through Kandahar*, GLOBALPOST, Nov. 10, 2010, http://www.globalpost.com/dispatch/afghanistan/101109/afghanistan-war-us-bulldozes-villages-final-offensive.
[36] *Id.*

It is not the intent of this paper to suggest that the DoD has completely ignored taking environmental responsibility for its actions. In fact, the DoD and the different military services have developed procedures, standards and regulations directed at prevention of environmental damage during contingency operations. These procedures have been perfected through decades of federal agency mandates, agreements with other nations, and practical experience. That being said, incorporating the international environmental principles of prevention of transboundary environmental harm and the polluter pays principle can be guiding posts for achieving the military goals of any contingency operation going forward. It is these environmental principles that will help the U.S. military and its personnel to better internalize the environmental effects of their actions such that the local population will fully believe that the military's actions are consistent with the local population's best interests.

B. Progression of Paper

As was previously stated, the U.S. military has not ignored the effect that its operations can have on the environment. Therefore, this paper will begin with a description of the current definition of a "contingency operation" and then a brief history of how military forces have interacted with the environment throughout history. The discussion will turn to how the domestic environmental regulations prompted the DoD to begin focusing on environmental stewardship. At this point, the paper will discuss the current procedures, standards, and regulations that the DoD has implemented to prevent environmental harm both domestically and internationally at its overseas installations and during contingency operations. This section will also contain a brief discussion on how

the different services, with their differing objectives and missions, developed guidance for contingency operations.

Before one can see the potential benefits of applying international environmental principles to military operations, one must first learn the background of how those environmental principles were developed. Therefore, the next section of this paper will provide a brief history of the concepts of transboundary environmental harm and the polluter pays principle. The discussion will begin with the legal genesis of transboundary environmental harm, the *Trail Smelter* case that pitted Canada against the United States in an international court case. After discussing the opinion in this case, the paper will turn to the evolution of the principle and the international declarations of transboundary environmental harm, including the Stockholm Declaration on the Human Environment and the Rio Declaration. In reference to these declarations, this section will briefly discuss the difference between soft law and hard law in the international context. Next, this section will discuss the history of the polluter pays principle which has its roots in economic policy. The paper will discuss how this economic policy has evolved into a legal concept with several different definitions depending on the context in which the principle is being advanced.

The final section will argue that integrating the international environmental principles into current and future contingency operations will win over the hearts and minds of the local population. This section will examine how the primary focus of current DoD guidance is still domestically-centered and not from the proper perspective of the local population. The different service branches responses to the environment and contingency operations will be examined, as well as the recent research and advanced

guidance offered by the U.S. Army and the U.S. Marine Corps. A brief history of the U.S. presence in Iraq will be used as a backdrop to express the benefits of internalizing the environmental principles into future contingency operations. Finally, in order to fully integrate the concept, the environmental principles will be related to other international principles, namely the Law of War principles.

II. U.S. Military and the Environment

A. Contingency Operations Defined

The U.S. military currently operates across a wide range of military engagements that vary in size, purpose, and combat intensity.[37] The titles, descriptions or exact definitions of these battles and hostilities have invariably changed over time. Today, the U.S. military uses the term "contingency operation" as the overarching phrase which includes military actions, operations, or hostilities against an enemy of the United States or against an opposing force.[38] The term is used to describe major operations resulting from declarations of war by Congress or overseas operations such as OEF and OIF where Congress has authorized the President to use military force.[39] The phrase includes limited operations in scope and scale such as noncombatant evacuation operations, peace operations, foreign humanitarian assistance, and recovery operations.[40] Of particular note for this paper is that the DoD has expanded its limited operations to included "stability

[37] JOINT CHIEFS OF STAFF, JOINT PUBL'N 3-0: JOINT OPERATIONS I-7 (Sept. 17, 2006) (incorporating change 2, Mar. 22, 2010) [hereinafter JOINT PUBL'N 3-0].
[38] *See* 10 U.S.C. § 101(a)(13)(B) (2011).
[39] In response to the attacks on the United States on Sept. 11, 2001, Congress adopted the Authorization for Use of Military Force Resolution. Authorization for Use of Military Force, Pub. L. No. 107-40, 115 Stat. 224 (2001). Similarly, prior to the invasion in Iraq, Congress authorized the use of force. Authorization for Use of Military Force Against Iraq Resolution of 2002, Pub. L. No. 107-243, 116 Stat. 1498 (2002).
[40] *See* JOINT PUBL'N 3-0, *supra* note 37, at I-9.

operations" which is an overarching term where the military will coordinate with other instruments of national power to "maintain or reestablish a safe and secure environment…and humanitarian relief."[41] The DoD is strongly committed to this new mission and stated that "[s]tability operations are a core U.S. military mission that the [DoD] shall be prepared to conduct with proficiency equivalent to combat operations."[42]

Therefore, the term "contingency operations" is all-encompassing and is a term of art that the U.S. military has chosen to use for future engagements. From the perspective of this paper, all future contingency operations share in common the potential to negatively affect the environment and the local population. Historically, the concern about the negative aspect of the environment was not shared by the military commanders of the day. In fact, those past commanders saw the environment, the battlefield, in a somewhat different light.

B. Early History

In the early stage of military conflicts, combatants during wars were quite concerned with the environment because knowing your physical environment was important for survival. The environment was studied, normally the weather or terrain, in order to gain an advantage or overcome an obstacle.[43] A commander would schedule attacks during the foggy hours of dawn or storm the hill to ensure his troops were on higher ground. Oftentimes, the environment was seen as a potential target whereupon

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[41] DEP'T OF DEF. INSTR. 3000.05, STABILITY OPERATIONS ¶3 (Sept. 16, 2009). The instruments of national power include diplomatic, economic, informational and military. *See* JOINT PUBL'N 3-0, *supra* note 37, at p. x.
[42] *Id*. at ¶ 4(a).
[43] *See* Charles E. Closmann, *Introduction, in* WAR AND THE ENVIRONMENT: MILITARY DESTRUCTION IN THE MODERN AGE 1, 2 (Charles E. Closmann ed., 2009).

exploitation could yield victory or summon moral defeat. As early as 146 B.C., in the wake of the Third Punic War, the Roman troops would salt the surrounding soil of Carthage such that the remaining local population would be unable to regrow crops.[44] A more recent example, during the Vietnam War, the U.S. military used herbicides to defoliate areas of dense jungle to eliminate enemy infiltration and develop clear lines of fire.[45] The salting of the ground or destruction of forest are examples of deliberate environmental modification to achieve military objectives. Traditionally, the military's concept of the environment meant the physical surroundings and the environment was used to gain any advantage possible. Only recently has the focus shifted from the intentional environmental modification to examining the environmental consequences of military operations.[46]

C. U.S. History and the Environment

For the first century of the United States, the U.S. military had a rather small environmental footprint that was mostly contained within the nation's borders.[47] As the United States became more active in world politics and engaged in two world wars, that environmental footprint began to expand. Strategic military concerns flowing from the experience in the two world wars led to the United States operating military sites and

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[44] *See* Ensign Florencio J. Yuzon, *Deliberate Environmental Modification Through the Use of Chemical and Biological Weapons: "Greening" the International Laws of Armed Conflict to Establish an Environmentally Protective Regime*, 11 AM. U.J. INT'L L. & POL'Y 793, 795 (1996).
[45] *See* Col. James P. Terry, *The Vietnam War in Perspective: Lessons Learned in the Law of War as Applied in Subsequent Conflict*, 54 NAVAL L. REV. 79, 97.
[46] *See* Closmann, *supra* note 43, at 2.
[47] J. R. McNeill & David S. Painter, *The Global Environmental Footprint of the U.S. Military, 1789-2003, in* WAR AND THE ENVIRONMENT: MILITARY DESTRUCTION IN THE MODERN AGE 10, 27 (Charles E. Closmann ed., 2009).

installations around the world from Europe and Japan, to Korea, and now the Middle East.[48] The initial direct environmental impacts of those installations involved issues of chemical and nuclear wastes.[49] Local populations also criticized the United States for conducting combat readiness training on and off-base. Such maneuvers were traditionally minimally regulated by the host countries and the local populations felt this training disrupted their normal lives.[50]

As U.S. concern about the domestic environment grew in the late 1960s and in the 1970s, the U.S. military began to think of its operations and the environment differently; not in terms of achieving victory on the battlefield, but from an environmental stewardship standpoint. Therefore, before one can look at military's impact on the environmental during contingency operations, it is helpful to view how the DoD has managed environmental impacts at its hundreds of overseas installations during the last four decades.

1. Executive Orders and Overseas Activities

The DoD, just like all other federal departments and agencies, is required to comply with the multitude of domestic environmental laws and regulations. However, "[i]t is a longstanding principle of American law 'that legislation of Congress, unless a contrary intent appears, is meant to apply only within the territorial jurisdiction of

[48] The United States' footprint includes 662 sites in 38 foreign countries. The majority of the sites are located in Germany (218), Japan (115), and South Korea (86). DEP'T OF DEF., BASE STRUCTURE REPORT FISCAL YEAR 2010 BASELINE 9 (2010), *available at* http://www.acq.osd.mil/ie/download/bsr/BSR2010Baseline.pdf.
[49] *See* McNeill & Painter, *supra* note 47, at 28.
[50] *Id.*

the United States.'"[51] This principal does not preclude the President from issuing executive orders that require the DoD to comply with environmental requirements when operating abroad. In 1978, President Jimmy Carter, the commander-in-chief of the military, signed Exec. Order No. 12,088, *Federal Compliance with Pollution Control Standards*.[52] While primarily concerned with domestic environmental standards and ensuring federal compliance with federal, state, and local environmental regulators, the executive order arguably addressed military operations overseas in a single paragraph. The executive order stated: "The head of each Executive agency that is responsible for the construction or operation of Federal facilities outside the United States shall ensure that such construction or operation complies with the environmental pollution control standards of general applicability in the host country or jurisdiction."[53] Although the executive order bound the DoD to comply with the host nation pollution control standards, it has been interpreted to require compliance with only those standards generally applied to the host nation's own industry and military.[54] Despite confusion about the interpretation of "pollution control standards of general applicability," the DoD did not immediately issue any direct implementing guidance on its operations at overseas facilities.[55]

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[51] E.E.O.C. v. Arabian Am. Oil Co., 499 U.S. 244, 248 (1991) (citing Foley Bros., Inc. v. Filardo, 336 U.S. 281, 285 (1949)). Congress extended the Endangered Species Act to "the high seas." 16 U.S.C. § 1533(b)(1)(A) (2011). For a discussion of the associated litigation, see Lt. Col. Richard A. Phelps, *Environmental Law for Overseas Installations*, 40 A.F. L. REV. 49, 51-52 (1996).
[52] Exec. Order No. 12,088, 3 C.F.R. 243 (1978).
[53] *Id.* at § 1-801.
[54] Phelps, *supra* note 51, at 52.
[55] *Id.*

To address potential confusion, in 1979, President Carter further elaborated on executive agencies responsibilities overseas. He signed Exec. Order No. 12,114, *Environmental Effects Abroad of Major Federal Actions*, which furthered the purpose of the National Environmental Policy Act (NEPA) with respect the actions outside the United States, its territories, and possessions.[56] Essentially, the executive order directed federal agencies to take into consideration environmental consequences before taking major federal actions at overseas locations.[57] The executive order did not state the NEPA statute applied overseas; instead, the executive order produced NEPA-like analysis requirements for federal agencies taking major federal actions. The overarching objective of the executive order was "to further environmental objectives consistent with the foreign policy and national security policy of the United States."[58] The executive order attempted to interweave environmental stewardship goals and considerations into the DoD decisions around the world.

2. DoD Guidance

In response to this presidential mandate, the DoD issued its own guidance, entitled *Environmental Effects Abroad of Major Department of Defense Actions*.[59] The DoD declared that it was the policy of the U.S. military to act with care both in the global commons and within the jurisdiction of a foreign nation.[60] The directive detailed the DoD specific NEPA-like analysis that was required during overseas operations in foreign

[56] Exec. Order No. 12,114, 3 C.F.R. 356 (1979).
[57] *Id.* at § 1-1.
[58] *Id.* at preamble.
[59] DEP'T OF DEF. DIRECTIVE 6050.7, ENVIRONMENTAL EFFECTS ABROAD OF MAJOR DEPARTMENT OF DEFENSE ACTION (Mar. 31, 1979) (certified current Mar. 5, 2004). [hereinafter DoDD 6050.7].
[60] *Id.* at ¶ 4.2.

nations.[61] The directive listed several exemptions to the requirements of Exec. Order No. 12,114. Most notably, the general exemptions section includes actions taken when the national security or national interest is involved.[62] Furthermore, major federal actions taken in the course of armed conflict are exempted from environmental analysis as long as the armed conflict continues.[63]

Although not explicitly mentioning Exec. Order No. 12,088, the DoD began to develop guidance that effectively implemented the mandate to comply with the host country's "pollution control standards of general applicability."[64] The first step in this process, even before examining the host country's standards, required the DoD to develop a minimum level of environmental protection applicable to every DoD installation overseas.[65] Therefore, if there were no pollution control standards in a specific country, there would still be sufficient environmental protection. These minimum standard are described in an "overseas environmental baseline guidance document" (OEBGD)[66] and reflect the "generally accepted environmental standards" applicable to DoD installations within United States.[67] Therefore, the OEBGD

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[61] *See id.* at ¶ E2.
[62] *Id.* at ¶ E2.3.3.
[63] The term "armed conflict" refers to "hostilities for which the Congress has declared war or enacted a specific authorization for the use of armed forces; hostilities or situations for which a report is prescribed by section 4(a)(1) of the War Powers Resolution, 50 U.S.C.A. § 1543(a)(1) (Supp. 1978); and other actions by the Armed Forces that involve defensive use or introduction of weapons in situations where hostilities occur or are expected." DoDD 6050.7, *supra* note 59, at E2.3.3.1.3.
[64] Phelps, *supra* note 51, at 55.
[65] *Id.*
[66] The current OEBGD is located at DEP'T OF DEF. 4715.05-G, OVERSEAS ENVIRONMENTAL BASELINE GUIDANCE DOCUMENT (May 1, 2007). This document replaces previous versions designated in 1992 and 2000. *Id.*
[67] DEP'T OF DEF. INSTRUCTION 4715.5, MANAGEMENT OF ENVIRONMENTAL COMPLIANCE AT OVERSEAS INSTALLATIONS ¶ 6.2.1 (Apr. 22, 1996) [hereinafter DoDI 4715.5].

envisioned applying domestic environmental standards applicable to U.S. installations at all overseas installations.

Once the baseline had been established it was necessary to examine each host nation's environmental requirements on a case-by-case basis. Therefore, in 1996, the DoD began the process of developing more specific localized standards for environmental performance. The DoD published Dep't of Def. Instr. 4715.5, *Management of Environmental Compliance at Overseas Installations* (DoDI 4715.5), which designates DoD executive agents (EA) for nations where there is an extensive DoD presence.[68] The DoD tasked these EAs with developing "final governing standards" (FGS) by comparing the OEBGD requirements with the host nation environmental standards.[69] The EAs compiled in an FGS document the applicable standards based on a determination of whether host country or OEBGD standards were more stringent. As a result, the FGS reflects the environmental protection standards for DoD installations in each host nation.[70] It is important to note that there are exceptions outlined in DoDI 4715.5 and the standards reflected in the OEBGD and country-specific FGS do not apply to operational deployments which "include cases of hostilities, contingency operations in hazardous areas, and when U.S. Forces are operating a part of a multi-national force not under full control of the United States."[71]

[68] *Id.* at ¶ 6.1. EAs were designated for several different countries to include Germany, Japan and Korea where the U.S. military has a large presence. *Id.* at ¶ E3.
[69] *See* Phelps, *supra* note 51, at 55.
[70] *Id.*
[71] DoDI 4715.5, *supra* note 67, at ¶ 2.1.4.

3. International Agreements and SOFAs

DoD's self-imposed environmental guidance plays a large factor in dictating how the U.S. military operates in a host nation. Agreements between the United States and the host nation further defining the conduct of military actions in a foreign country. Normally these documents delineate the privileges and immunities enjoyed by the U.S. servicemembers and personnel while operating in the host nation. Most often the documents are broad in scope and are memorialized as a status of forces agreement (SOFA).[72] Not all of these SOFAs contain an environmental section but many new SOFAs contain a section that documents environmental considerations.[73]

The U.S is a party to a number of bilateral SOFAs that result from bilateral treaties, congressional action, or other form of agreement. The United States and North Atlantic Treaty Organization (NATO) countries have signed a multilateral SOFA.[74] The NATO SOFA obligates U.S. forces and civilian contractors to "respect the law of the receiving State."[75] As of June 2007, 26 countries have ratified or consented to be bound by the NATO SOFA and an additional 24 countries are subject to the NATO SOFA as a result of their participation in the NATO Partnership for Peace (PfP) program.[76] All

[72] R. Chuck Mason, CONG. RESEARCH SERV., RL34531, STATUS OF FORCES AGREEMENT (SOFA): WHAT IS IT, AND HOW HAS IT BEEN UTILIZED? 1 (Jan. 5, 2011).
[73] *See* Phillips, *supra* note 51, at 57.
[74] Agreement Between the Parties to the North Atlantic Treaty Regarding the Status of Their Forces, June 19, 1951, 4 U.S.T. 1792, 199 U.N.T.S. 6 [hereinafter NATO SOFA].
[75] *Id.* at Art. 1(e).
[76] *See* Mason, *supra* note 72, at 18. The PfP program "consists of bilateral cooperation between individual countries and NATO in order to increase stability, diminish threats to peace and build strengthened security relationships." *Id.*

together, the United States is party to more than 100 agreements that are considered SOFAs.[77]

The above discussion examined the executive orders, DoD guidance and directives, and the international agreements that dictate how the U.S. military is going to operate installations in host nation countries. However, contingency operations are excepted or and exempted from these requirements, but the requirements do provide the framework for the following discussion on the DoD doctrine and service-specific operating instructions.

D. DoD Doctrine on the Environment and Contingency Operations

The different branches of the U.S. military have different mission statements and operational capabilities. The branches can conduct contingency operations individually, jointly, or as part of a multinational force. Since each branch has an unique mission, their approach to the environment during contingency operations is going to be slightly different. Furthermore, when the branches are serving in the joint capacity, there is going to be a slightly different unified approach. The Joint Chief of Staff has issued doctrine[78] on the environmental considerations that joint forces should take into account during joint contingency operations.[79]

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[77] *Id*. at 1.
[78] Doctrine is defined as the "[f]undamental principles that guide the employment of US military forces in coordinated action toward a common objective." JOINT CHIEFS OF STAFF, JOINT PUBL'N 1-2: DEPARTMENT OF DEFENSE DICTIONARY OF MILITARY AND ASSOCIATED TERMS 114, 193 (Nov. 8, 2010) (as amended through Apr. 15, 2011).
[79] JOINT CHIEFS OF STAFF, JOINT PUBL'N 3-34: JOINT ENGINEER OPERATIONS D-1 (Feb. 12, 2007) [hereinafter JOINT PUB. 3-34].

1. U.S. Army and U.S. Marine Corps

The U.S. Army and U.S. Marine Corps traditionally have a mission that is focused on sustaining combat operations on land. These two service branches recently issued a new field manual, entitled *Environmental Considerations*, which incorporates the guidance found in the aforementioned joint publications.[80] It explains the Army and Marine Corps principles of environmental support in full spectrum operations to include contingency operations.[81] The Field Manual acknowledges the military's primary mission "is to fight and win our nation's wars" and that "[w]arfare, by its very nature, is destructive to humans and to the natural environment."[82] The manual references its environmental considerations with the following backdrop:

> Commanders must plan to implement post conflict stability measures and always keep the health and safety of their Soldiers, Marines, DA civilians, and contractors foremost in their planning. Integrating environmental considerations into the planning process helps the military to identify, prevent, and mitigate potential threats to the environment (including those affecting historical and cultural resources) and potential environmental threats to Soldiers and Marines.[83]

The field manual also defines several different environmental concepts such as stewardship, sustainability, and protection. In particular, the field manual defines environmental stewardship as:

> [T]he integration and application of environmental values into the military mission in order to sustain readiness, improve quality of life, strengthen civil relations, and preserve valuable natural resources…Environmental stewardship represents the reflection of leader and individual awareness of and commitment to protecting the environment. It is a proactive, values-based concept that helps to ensure the sustainability and conservation of resources.[84]

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[80] DEP'T OF THE ARMY, FM 3-34.5/MCRP 4-11B, ENVIRONMENTAL CONSIDERATIONS (Feb. 2010).
[81] *Id.* at p. iv.
[82] *Id.* at p. v.
[83] *Id.*
[84] *Id.* at p. 1-2.

The field manual continues on to state that integrating environmental considerations promotes foreign nation relations and supports post conflict stability efforts.[85] "Lasting victories and successful end states will be measured in part by how well the military addresses environmental considerations, to include the protection and the conservation of natural and cultural resources; the improvement of citizens' living conditions in the affected nations; and [force health protection]."[86] The field manual states that Commanders and subordinate personnel must be aware of international environmental laws to maintain the national "environmental ethic," which is defined "as taking care of the environment because it is the right thing to do; this ethic is the operating principle and value that governs individual Soldiers, units, and the Army."[87]

The field manual acknowledges that putting forth such a commitment to an environmental ethic will have negative consequences if its actions are inconsistent with its policies.[88] It specifically addresses contingency operations and finds that support for sound environmental practices "becomes even more essential." "Any violations of the environmental ethic—real or perceived—will…undermine U.S. strategic objectives."[89]

2. U.S. Air Force and U.S. Navy

The U.S. Air Force has an entirely different mission than the U.S. Army and the U.S. Marine Corps. Its mission involves air superiority and precision engagement, but an installation and corresponding airfield is oftentimes necessary in a foreign country to achieve its objectives. The Air Force has several different sources of guidance with

[85] *Id.* at p. v.
[86] *Id*. at p. 1-1.
[87] *Id*. at p. 1-5.
[88] *Id*. at p. 1-6.
[89] *Id.*

respect to environmental considerations during contingency operations. Air Force Instr. 32-7006, *Environmental Program in Foreign Countries* is primarily focused on locations where the United States already has a presence.[90] Still, Chapter 7, *Deployments*, explicitly states deployments require completion of the Environmental Impact Analysis Process (EIAP) and preparation of a specific environmental contingency plan.[91] The chapter also requires Air Force deployments to comply with the other chapters in the Air Force Instr. concerning the four pillars of the Air Force Environmental Quality Program: cleanups, compliance, conservation, pollution prevention.[92] Further guidance is published in an Air Force handbook entitled, *Environmental Guide for Contingency Operations*.[93] The handbook states that the Air Force "is committed to maintaining environmental quality to ensure long-term access to the air, land and water needed to protect U.S. interests."[94] The handbook states:

> Failure to maintain basic environmental standards could result in illnesses, diseases and even death. An unacceptable disease and non-battle injury (DNBI) rate resulting from poor environmental standards and conditions will impact the mission. Contingency operations and environmental functions are interdependent. The mission is dependent upon the environment for sustainment, and the environment is dependent upon us for preservation and maintenance. We simply cannot afford to neglect environmental concerns without understanding the risks involved.

The handbook therefore focuses on personnel health and safety and on mission objectives. Similar to the U.S. Army field manual, the Air Force base civil engineer has

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[90] DEP'T OF THE AIR FORCE, AIR FORCE INSTRUCTION 32-7006, ENVIRONMENTAL PROGRAM IN FOREIGN COUNTRIES (Apr. 29, 1994) (certified current, May 11, 2010).
[91] *See Id*. at p. 12. Deployment is defined as the "relocation of forces to desired areas of operations." *Id.* at p. 13.
[92] *See Id*. at ¶ 7.2.1.
[93] DEP'T OF THE AIR FORCE, AIR FORCE HANDBOOK 10-222, VOL. 4, ENVIRONMENTAL GUIDE FOR CONTINGENCY OPERATIONS (Aug. 1, 1997).
[94] *Id*. at p. 5.

the responsibility to ensure contingency operations comply with applicable laws and standards set forth.[95]

The U.S. Navy has an unique mission as well which is predominantly focused on equipping combat-ready Naval forces and maintaining freedom of the seas. In 2008, the Navy released its overall environmental strategy. The Navy's strategy indicates that it is "committed to preserving the environment as a necessary part of [their] mission to protect the United States."[96] The strategy discussed the overall vision of sustaining the environment and stressed that proper environmental stewardship will preserve the future mission capabilities of the naval force.

From a contingency operations standpoint, the U.S. Navy has explicitly noted that it would comply with "environmental compliance, restoration, and planning programs outside the United States, its territories, and possessions, in a manner that will preserve or enlarge access for current and future United States military activities."[97] The U.S. Navy has stressed "integrating environmental thinking into all operational planning" and divided the environmental requirements depending if the contingency operation is a limited operation or war.[98] During limited in size and scope operations, all legal

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[95] DEP'T OF THE AIR FORCE, AIR FORCE INSTRUCTION 10-211, CIVIL ENGINEER CONTINGENCY RESPONSE PLANNING 2.1.3 (Sept. 22, 2008) (incorporating change 1, Jan. 13, 2011).

[96] DEP'T OF THE NAVY, ENVIRONMENTAL STRATEGY (Apr. 11, 2008), *available at* http://secnavportal.donhq.navy.mil/portal/server.pt?open=512&objID=302&PageID=0&cached=true&mode=2.

[97] DEP'T OF THE NAVY, SEC'Y OF THE NAVY INSTRUCTION 5090.8A, POLICY FOR ENVIRONMENTAL PROTECTION, NATURAL RESOURCES, AND CULTURAL RESOURCES PROGRAMS 5(i) (Jan. 30, 2006) [hereinafter NAVY INSTR. 5090.8A].

[98] DEP'T OF THE NAVY, NAVAL WARFARE PUB. 4-11, ENVIRONMENTAL PROTECTION 5 (Mar. 1999) [hereinafter NWP 4-11]. For the purpose of this publication, the U.S. Navy, used the older DOD phrase, "military operation other than war" (MOOTW) instead of a

environmental requirements are still present.[99] During times of war, the "commander has an affirmative obligation to avoid unnecessary damage to the environment to the extent practical, consistent with mission accomplishment."[100]

3. Joint Operations

As was previously discussed, many of the current and future operations are and will be joint operations where all the branches of service will be operating. In this joint operational environment, the joint force commander (JFC) will have a joint force engineer (JFE) and corresponding staff at his service.[101] Similar to the previous discussion concerning the branch engineers being tasked with environmental decisions, the JFE is responsible for considering the environmental impacts of the JFC's actions. To ensure that environmental considerations are addressed throughout the planning process, the JFE works closely with the joint force operations officer (J-3) who is the principal staff officer for training, operations, and plans. "It is the J-3's responsibility to ensure that any significant collateral environmental damage caused by command-directed operations is understood and approved by the commander during the decision-making process."[102]

One of the primary responsibilities for the JFE is to conduct an environmental baseline survey (EBS) before a contingency operation.[103] The EBS is a multi-disciplinary site survey "conducted prior to or in the initial stage of a joint operational

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limited in size and scope contingency operation. They are effectively the same term. *Id.* at 1-5.

[99] *See Id.* at 3-1.

[100] *Id.* at 4-1.

[101] *See* JOINT PUBL'N 3-34, *supra* note 79.

[102] *Id.* at p. D-5.

[103] *Id.* at p. II-9.

deployment. The survey documents existing deployment area environmental conditions, determines the potential for present and past site contamination (e.g., hazardous substances, petroleum products, and derivatives), and identified potential vulnerabilities (to include occupational and environmental health risks)."[104] This EBS is conducted as a basis for comparison against a site closure report.[105]

The EBS is important from an environmental perspective, but the JFC is primarily concerned with the day-to-day objectives of the mission. These types of decisions are documented in operational plans (OPLANS) which detail how military operations are conducted for a specific scenario or an entire contingency operation.[106] The Joint Operation Planning and Execution System (JOPES) details the contents of the OPLANS which normally have several annexes covering broad areas of concerns like intelligence or logistics.[107] Under the JOPES system, Annex L, *Environmental Considerations*, is designated as the location for all environmental concerns. The JFE is the integrator for the writing, publishing, and updating of Annex L.[108] Adding Annex L to any operation plan ensures that the operation is conducted in accordance with all the aforementioned DoD guidance documents, OEBGD and any SOFAs that might be applicable.[109]

In summary, this section provided a historical discussion on the evolution of the U.S. military's approach to the environment. What began as strategic use of the physical environment for a particular military advantage has evolved into a concept of

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[104] *Id.* at p. GL-9.
[105] *Id.* at p. III-33.
[106] Lt. Col. Anne L. Burman & Maj. Teresa K. Hollingsworth, *JAGs Deployed: Environmental Law Issues*, 42 A.F. L. REV. 19, 25 (1997).
[107] *Id.*
[108] *See* JOINT PUB. 3-34, *supra* note 79, at p. D-4.
[109] *See* Burman and Hollingsworth, *supra* note 106, at 26.

environmental stewardship and an environmental ethic. In order to fully achieve these new goals of environmental stewardship, the U.S. military should look to the international environmental principles of the obligation to prevent transboundary environmental harm and the polluter pays principle which will be discussed in the following section.

III. International Environmental Principles

International environmental law is based on concepts and principles that have been developed over time and are documented in several different international environmental instruments.[110] These principles, or rules of conduct, function in many different capacities to include shaping global environmental and sustainable development documents, assisting in the integration of international environmental law with other fields of law, developing national environmental laws, and providing the rules for resolving transboundary environmental disputes.[111] Some of the more prominent, and well-documented principles are the precautionary principle, the principles of inter-generational and intra-generational equity, and the principle of sustainable development.[112] While all of these environmental principles might assist the U.S. military in reframing its approach to future contingency operations and thereby winning the hearts and minds of the local populations, it is the two principles of the obligation to prevent transboundary environmental harm and the polluter pays principle that will yield the best chances of achieving success. The following discussion will describe the origins

[110] DAVID HUNTER, JAMES SALZMAN, & DURWOOD ZAELKE, INTERNATIONAL ENVIRONMENTAL LAW AND POLICY 463-464 (3d ed. 2007).
[111] *Id.* at 469-471.
[112] U.N. ENV'T PROGRAMME, TRAINING MANUAL ON INTERNATIONAL ENVIRONMENTAL LAW 24 (2006), *available at* http://www.unep.org/law/PDF/law_training_Manual.pdf.

of each of these principles and where each principle stands in the international realm today.

A. Obligation to Prevent Transboundary Environmental Harm

Compared to some of the other principles of international environmental law, the obligation to prevent transboundary environmental harm has a fairly long history in the legal context. The *sic utere tuo* rule, as it is sometimes referred to, is really a derivative of the early common law of nuisance.[113] The entire maxim states *sic utere tuo ut alienum non laedus* (use your own property so as not to harm that of another) and would originally have been applicable to private parties using their property in such a manner that resulted in financial injury to an adjoining neighbor.[114]

1. The Trail Smelter Case

From its private property nuisance beginnings, the *sic utere tuo* rule developed into a principle of international environmental law. This rise in importance began with the landmark *Trail Smelter* dispute involving air pollution and transboundary harm.[115] The facts of the case have been previously discussed in several publications but a brief history is warranted for the purpose of this paper. The smelter's origins can be traced to

[113] George Norman & Joel P. Trachtman, *The Customary International Law Game*, 99 A.J.I.L. 541, 563 (July, 2005).
[114] Karen Mickelson, *Rereading Trail Smelter, in* TRANSBOUNDARY HARM IN INTERNATIONAL LAW 79, 80 (Rebecca M. Bratspies & Russell A. Miller, eds., 2006).
[115] *See* Trail Smelter (U.S. v. Can.) 3 R.I.A.A. 1938 (1941) [hereinafter Trail Smelter (1941)]. For a thorough examination into the decision, see TRANSBOUNDARY HARM IN INTERNATIONAL LAW, (Rebecca M. Bratspies & Russell A. Miller, eds., 2006).

1896 when American mining promoters built the plant in Trail, British Columbia.[116] Following mergers and World War I, the Consolidated Mining and Smelting Company perfected a metallurgical process for refining low-grade zinc ores. The smelting process was prosperous but at the same time created volumes of smelter smoke. The smoke was considered a sign of progress while at the same time being described as "an outcrop of hell."[117]

Trail, located on the shores of the Columbia River just north of the state of Washington, was an ideal location for a smelting operation. Unfortunately, Trail was also located in a narrow canyon of the river valley whose topographic conditions led to the constant presence of the smoke from the smelter.[118] The smoke contained high concentrations of sulfur dioxide and "the smoke descended on a highly sensitive complex of natural vegetation, coniferous forests, and cultivated crops, leaving a virtual moonscape in its wake."[119] The first legal battle came from local Canadian residents who complained that the sulfur dioxide was destroying their crops. While the provincial arbitration resulted in monetary awards for local farmers, no regulatory measures were enforced on Consolidated Mining.[120] The capacity of the smelting operation grew and the company constructed a 409-foot smokestack. The higher smokestack only led to the sulfur dioxide travelling further south, across the United States-Canadian border to Stevens County, Washington. Once again, farmers, now from the United States,

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[116] James R. Allum, *"An Outcrop of Hell": History, Environment, and the Politics of the Trail Smelter Dispute*, *in* TRANSBOUNDARY HARM IN INTERNATIONAL LAW 13, 13, (Rebecca M. Bratspies & Russell A. Miller, eds., 2006).
[117] *Id*.
[118] *Id*. at 14.
[119] *Id*. at 14-15.
[120] *Id*. at 15. The local provincial magistrate awarded $60,000 in damages to sixty local farmers. *Id*.

complained of the dire consequences of the sulfur dioxide on their crops, grazing land and timber lots.[121]

What began as a dispute between Washingtonian farmers and a Canadian company soon spiraled into a diplomatic discussions between United States and Canada. The first step in the discussions was sending the matter to the International Joint Commission (IJC) "which had a questionable record on pollution issues."[122] The IJC issued several nonbinding recommendations which included a recommendation that Canada pay the United States $350,000 in indemnification for damages caused by the private Consolidated Mining. Just like the provincial case earlier, there was no recommendation for regulating the smelter going forward.[123] Further diplomatic discussions ensued which led to the Convention of 1935 between United States and Canada.[124] Under the convention, Consolidated Mining agreed to pay the $350,000 in compensation before Jan. 1, 1932, but all further complaints were to be sent to an ad hoc international arbitral tribunal for mediation.[125] The Tribunal issued a preliminary decision in 1938 and a final report in October 1941.[126] The Tribunal found:

> [U]nder the principles of international law, … *no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.*[127]

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[121] *Id*.
[122] *Id*. at 15-16.
[123] Trail Smelter (U.S. v. Can.), Int'l Joint Comm'n, Trail Smelter Reference, Final Report (Ottawa, 1931).
[124] Convention on Damages Resulting From Operation of the Smelter at Trail, British Columbia, U.S.-Can., Apr. 15, 1935, 49 Stat. 245.
[125] Allum, *supra* note 116, at 16.
[126] *See* Trail Smelter (1941), *supra* note 115.
[127] *Id.* at 1965 (emphasis added).

Therefore, the tribunal expressed a new principle obligating parties to avoid transboundary harm. Several commentators have acknowledged the importance of the *Trail Smelter* arbitration since it is the only decision that directly addresses transboundary environmental damage.[128] At the same time, others have cited the case as having limited usefulness because of the unique circumstances surrounding the United States and Canada's joint decision to submit the dispute to arbitration and be binding by the decision of the Tribunal.[129]

Eight years later, the International Court of Justice (ICJ) confirmed the general obligation of one state not to cause harm to another state. The *Corfu Channel* case involved several incidents between the two countries but essentially the case involved damage to British warships caused by mines while travelling in Albanian territorial waters during World War II.[130] While not necessarily an environmental pollution case, the court in *Corfu Channel* case upheld the general obligation detailed in the *Trail Smelter* arbitration, stating:[131]

> The obligations incumbent upon Albanian authorities consisted in notifying, for the benefit of shipping in general, the existence of a minefield in Albanian territorial waters and in warning the approaching British warships of the imminent danger to which the minefield exposed them. Such obligations are based...on certain general and well recognized principles namely, even more exacting in peace than in war; the principle of freedom of maritime communication; and *every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other states*.[132]

Therefore, the obligation that started as an arbitration ruling was now approved and cited by the ICJ.

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[128] Mickelson, *supra* note 114, at 80.
[129] *Id.*
[130] Corfu Channel (U.K. v. Alb.), Merits, 1949 I.C.J.Rep 4 (1949) [hereninafter Corfu Channel].
[131] *See* HUNTER, SALZMAN, & ZAELKE, *supra* note 110 at 503.
[132] Corfu Channel, *supra* note 130, at 22 (emphasis added).

2. Stockholm Declaration on the Human Environment

It would take several years before a State's obligation with respect to transboundary environmental harm detailed in the *Trail Smelter* arbitration and the *Corfu Channel* case would became fiercely debated on the international stage during the U.N. Conference on the Human Environment held in Stockholm, Sweden. (Stockholm Conference).[133] The conference participation was broad with delegations representing 114 of the then-131 U.N. member states to include the United States.[134] The Stockholm Conference was one of the most successful U.N. conferences up to that point and it created three major products.[135] First, the United Nations Environment Program (UNEP) was created to oversee environmental issues within the U.N.[136] Second, the Stockholm Conference produced the Stockholm Action Plan to identify environmental issues requiring international action.[137] Finally, and most importantly for the purpose of this paper, the Stockholm Conference issued the *Stockholm Declaration on the Human Environment*.[138] After "[considering] the need for a common outlook and for common principles to inspire and guide the peoples of the world in the preservation and

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[133] *See generally* HUNTER, SALZMAN, & ZAELKE, *supra* note 110, at 166-173.
[134] David A. Wirth, *The Rio Declaration on Environment and Development: Two Steps Forward and One Back, or Vice Versa?*, 29 GA. L. REV. 599, 604 (1995).
[135] *See* HUNTER, SALZMAN, & ZAELKE, *supra* note 110, at 169-70.
[136] *Id.* at 170. UNEP is responsible for collecting global environmental information and distributing it to all States. *Id.*
[137] *Id.* The Stockholm Action Plan comprised of 106 different priority recommendations in five major program areas. *Id.*
[138] Declaration of the United Nations Conference on the Human Environment, adopted June 16, 1972, U.N. Doc. A/CONF.48/14/Rev. 1 (1973), reprinted in 11 I.L.M. 1416 (1972) [hereinafter Stockholm Declaration]. One of the first comprehensive reviews of the Stockholm Declaration can be found at Louis B. Sohn, *The Stockholm Declaration on the Human Environment*, 14 HARV. INT'L L.J. 423 (1973).

enhancement of the human environment," the Stockholm Declaration proclaimed 26 different principles.[139] Principle 1 states:

> Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a *solemn responsibility to protect and improve the environment for present and future generations*.[140]

With this overarching principle initially set forth, the obligation developed in *Trail Smelter* and *Corfu Channel* was reiterated in Principle 21:

> States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and *the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction*.[141]

Principle 21 balances state sovereignty with a State's responsibility to ensure the actions taken within its jurisdiction do not cause harm outside its jurisdiction.[142] Much of the debate during the conference surrounded the first part of the principle acknowledging state sovereignty. Some participating nations felt that this first clause granted nations nearly unlimited sovereignty over its natural resources and its environment without any restrictions.[143] Nonetheless, one commentator noted that "the second part of Principle 21 was considered by many so important that they were willing to pay the price of the imperfections of the first part in order to nail down a crucial rule of general importance."[144] Therefore, the general responsibility, or obligation, of the second part had the effect of curtailing the unlimited sovereign rights of the first clause. It is also

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[139] Stockholm Declaration, *supra* note 138 at the Preamble.
[140] *Id*. at Principle 1 (emphasis added).
[141] *Id*. at Principle 21 (emphasis added).
[142] *See* Sohn, *supra* note 138, at 486.
[143] *Id*. at 492. An over-broad interpretation on the sovereign rights would have been inconsistent with the overall goals of the Stockholm Declaration, therefore. *Id*.
[144] *Id*.

important to note for the purpose of this paper that Principle 21 covers damage-causing activities within a State's jurisdiction but also the acts of person's under its "control," no matter where they may act.

The representative of the United States submitted the following statement in regard to Principle 21:

> The United States of America considers it obvious that nothing contained in this principle, or elsewhere in the Declaration, diminishes in any way the obligation of States to prevent environmental damage or gives rise to any right on the part of States to take actions in derogation of the rights of other States or of the community of nations. The statement on the responsibility of States for damage caused to the environment of other States or of areas beyond the limits of national jurisdiction is not in any way a limitation on the above obligation, but an affirmation of existing rules concerning liability in the event of default on the obligation.[145]

By this statement and the signing of the Stockholm Declaration, the United States has acknowledged one state's obligations to avoid transboundary environmental damage to another state.

3. Rio Declaration

The international community addressed the issue of transboundary environmental damage again 20 years later at the U.N. Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil.[146] This conference was the largest U.N. event ever held with 178 nations represented by nearly seven thousand delegates, including 115 heads of state.[147] The Rio "Earth Summit" was a massive undertaking covering sustainable development, biodiversity and climate change. The results of the Earth

[145] Report of the United Nations Conference on the Human Environment, ch. X, ¶ 327, U.N. Doc. A/Conf.48/14/Rev.1 (June 5-16, 1972) [hereinafter Stockholm Report].
[146] Rio Declaration on Environment and Development, adopted June 14, 1992, U.N. Doc. A/CONF.151/5/Rev. 1, reprinted in 31 I.L.M. 876 (1992) [hereinafter Rio Declaration].
[147] *See* HUNTER, SALZMAN, & ZAELKE, *supra* note 110, at pp. 181, 187.

Summit included binding conventions on these areas of international law and the Rio Declaration on the Environment and Development. As with the Stockholm Declaration, the United States was a party and signatory of the Rio Declaration. The Rio Declaration began by reaffirming the Stockholm Declaration and its principles. The Rio Declaration also sought to refine and further advance Stockholm's principles by stating 27 additional principles.[148]

While the themes in UNCED and the Stockholm Conference were very similar, the primary focus of the discussion had shifted to the interrelationship between environmental protection and economic development.[149] "Sustainable development" was the concept identified at the conference to merge these two potential conflicting objectives. In fact, the concept can be seen in half of the Rio principles.[150] Without a doubt, the discussion of sustainable development was infused in the updated principle on the obligation against causing transboundary harm. The new slant on Principle 21 of the Stockholm Declaration was evident in Principle 2 of the Rio Declaration:

> States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and *the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.*[151]

Is it interesting to note that Principle 21 of Stockholm was elevated, with only one modification, to Principle 2 of 27 of the Rio Declaration. This upgrade to the beginning

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[148] Rio Declaration, *supra* note 146, at the Preamble.
[149] Marc Pallemaerts, *The Future of Environmental Regulation: International Environmental Law in the Age of Sustainable Development: A Critical Assessment of the UNCED Process*, 15 J.L. & COM. 623, 630 (1996).
[150] *Id*.
[151] Rio Declaration, *supra* note146, at Principle 2 (emphasis added).

of the Rio Declaration has been heralded as stressing the importance of the obligation against transboundary harm while others believe that the additional language of "developmental policies" weakened the first clause of the principle.[152] Either way, the additional language concerning sustainable development in the first clause did not change the requirements of the second clause, which is essentially the same as Principle 21 of the Stockholm Declaration. Also, unlike the Stockholm Declaration, the United States delegation did not offer any explicit reservations or additional clarification with respect to Principle 2.[153]

4. Soft Law versus Hard Law

The obligation to avoid transboundary environmental harm has been expressed in two different international declarations. International law includes two different types of obligations, hard law and soft law.[154] The traditional distinction between the two is the divide between binding and nonbinding obligations.[155] Hard law typically includes treaty obligations that bind the signatories of such treaty requirements.[156] Soft law has its origins in non-treaty agreements, declarations, and protocols that do not legally bind the

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[152] S*ee* Pallemaerts, *supra* note 149, at 137 (He argues that it is equally important to note the inclusion of "developmental policies" which indicates a "definite regression skillfully disguised under the appearance of an upgrading").
[153] Report of the United Nations Conference on Environment and Development, U.N. Doc. A/CONF.151/5/Rev. 1, ch. IV, ¶ 16 (June 3-14, 1992).
[154] *See generally* HUNTER, SALZMAN, & ZAELKE, *supra* note 110 at 272.
[155] Gregory C. Shaffer and Mark A. Pollack, *Hard vs. Soft Law: Alternatives, Complements, and Antagonists in International Governance*, 94 MINN. L. REV. 706, 707 (2010).
[156] Geoffrey Palmer, *New Ways to Make International Environmental Law*, 86 A.J.I.L. 259, 269 (1992). "A treaty is any instrument between two or more States that fulfills the the requirement for valid treaties set out in the Vienna Convention [on the Law of Treaties." HUNTER, SALZMAN, & ZAELKE, *supra* note 110, at 291.

parties.[157] The Stockholm Declaration and the Rio Declaration are considered sources of soft law and therefore do not bind the parties, although they do represent non-binding commitments made by the parties.

Hard law can also arise from long standing practices in international law, somewhat akin to the development of common law. [158] Customary law is created through the customary practice of nations where the actions are conducted because of the belief those actions are required by law.[159] Proving customary law is a difficult proposition and requires a court establishing a general acceptance of the rule by demonstrating that State practice is consistent with the rule and demonstrating that States act in accordance with the rule from a legal obligation to do so.[160] The former prong is sometimes satisfied by a widespread pattern of treaties used to show that a practice is so widely followed that it is generally accepted by the international community.[161] Prior decisions by international courts or international arbitrators are also used to prove the second prong.[162] If both of these prongs are proven, then a customary law is binding on all nations, whether or not they act in accordance with the customary law. The only means for a state to be exempt from the customary law is if a state is considered a persistent objector to the rule. Failure to consistently object to the application of customary law will be seen as implied consent to be bound by the customary law.[163]

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[157] *See* Palmer, *supra* note 156, at 269.
[158] HUNTER, SALZMAN, & ZAELKE, *supra* note 110 at 313.
[159] *Id*.
[160] *Id*. at 315.
[161] Joseph W. Dellapenna, *The Customary International Law of Transboundary Fresh Waters*, INT. J. GLOBAL ENVTL. ISSUES 264, 267 (2001). In rare circumstances, an unratified treaty might also be used to exhibit general acceptance of a custom. *Id*.
[162] *Id*.
[163] HUNTER, SALZMAN, & ZAELKE, *supra* note 110 at 315.

With respect to Principle 21 of the Stockholm Declaration, the United States delegation stated that the principle was a codification of existing customary international law.[164] Beyond the United States belief, it is generally accepted that Principle 21 of the Stockholm Declaration and the corresponding Principle 2 of the Rio Declaration, are consistent with long standing customary international law and therefore are binding hard law.[165] As a result, all countries, including the United States, would be bound by the principle's obligations.

B. Polluter Pays Principle

The obligation to prevent transboundary environmental harm has an extensive history and is considered to be a well-known international environmental principle, as well as presently an element of customary international law. Another international environmental principle import to contingency operations is the polluter pays principle, which has a much shorter history. The principle is actually a rather simple concept that has evolved over the last four decades. Essentially the polluter pays principle states that "whoever is responsible for damage to the environment should bear the costs associated with it."[166] As will be seen in the following discussion, the principle has evolved into different meanings.

[164] *See* Wirth, *supra* note 134, at 620.
[165] *Id*. *See also* HUNTER, SALZMAN, & ZAELKE, *supra* note 110 at 502.
[166] U.N. ENV'T PROGRAMME, TAKING ACTION: AN ENVIRONMENTAL GUIDE FOR YOU AND YOUR COMMUNITY 13 (1995).

1. Economic Beginnings

The polluter pays principle has roots in the international economic and trade arena. The principle was first described in a 1972 report by the Organisation for Economic Co-operation and Development (OECD) which is an organization that recognizes the interdependence of individual government's economies and assists its member state governments to foster prosperity and fight poverty through economic growth and financial stability.[167]

In the early 1970s, many countries began to enact strict environmental measures that were of concern to industry because of the anticipated costs involved. Industry pushed for the governments to absorb these additional costs or impose tariffs on imports from countries that were not imposing stringent environmental laws on manufacturing facilities.[168] In response to the concern over international tariffs, the OECD recommended Guiding Principles Concerning International Economic Aspects of Environmental Policies.[169] The report stated the polluter pays principle "means that the polluter should bear the expense of carrying out the [control] measures decided by public authorities to ensure that the environment is in an acceptable state."[170] The OECD stressed that the principle was not about defining an acceptable pollution level but an

[167] *See generally*, ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, http://www.oecd.org (last visited May 15, 2011).
[168] Margaret Rosso Grossman, *Agriculture and the Polluter Pays Principle: An Introduction*, 59 OKLA. L. REV. 1, 3 (2006).
[169] Recommendation of the Council on Guiding Principles Concerning International Economic Aspects of Environmental Policies, O.E.C.D. Doc. C(72)128 (May 26, 1972), reprinted in 11 I.L.M. 1172 (1972) [hereinafter OECD Guiding Principles].
[170] Id. at ¶ 4.

"acceptable state" decided by public authorities. Therefore, the OECD envisioned the polluter pays principle to be an "efficiency principle" for allocating costs.[171]

The polluter pays principle originated as an economic concept, not a legal concept.[172] After developing the polluter pays principle, OECD spent the subsequent years providing further guidance and refining the definition. It continued to focus on defining the principle in terms of scarce environmental resources and the potential negative result on international trade and investment.[173] In fact, the organization even stated that the polluter pays principle "is not a principle of compensation for damage caused by pollution," rather; the principle means the polluter should be responsible for the pollution prevention and control measures determined by the government.[174]

2. Different Definitions with Different Contexts

The OECD polluter pays concept was not immediately adopted in international environmental negotiations. The Stockholm Declaration did not contain any language similar to the OECD polluter pays concept. However, Rio Declaration did address the polluter pays principle in Principle 16:

> National authorities should endeavor to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.[175]

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[171] *See* Grossman, *supra* note 168, at 6.
[172] *Id.* at 3.
[173] *Id.*
[174] ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, THE POLLUTER PAYS PRINCIPLE: DEFINITION ANALYSIS, IMPLEMENTATION 6 (1975).
[175] Rio Declaration, *supra* note 146, at Principle 16.

Several scholars have suggested that the original OECD definition is an example of the "weak form" of the polluter pays principle since it is essentially economic in nature. All the OECD definition prohibited was the government from subsidizing the cost of the pollution control equipment to ensure the cost of the manufactured goods actually reflected the cost of the pollution borne by the manufacture.[176] In contrast, the "strong approach" reflected in Principle 16 requires polluters to internalize at least the pollution abatement costs and the government should actively pursue this internalization by utilizing economic instruments.[177] Professor Nash refers to this particular concept as "equitable internalization."[178] Requiring polluters to internalize abatement costs, the polluter pays principle provides incentives for the polluter to minimize their waste production. Furthermore, the polluter would be encouraged to develop technological methods to achieve this goal, or at least minimize the environmental effect of the pollution to avoid the costs associated with pollution.[179]

While the polluter pays principle is primarily concerned with industrial polluters, Professor Nash believes that the principle can also transform polluting behavior of individuals. He notes that the principle can lead individual actors to take responsibility for their own pollution.[180] He states that the principle has the corollary effect of creating a healthy society because "[i]f the public sees that the government acts to ensure members of society, even large corporations, bear responsibility for the costs they impose

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[176] *See* Wirth, *supra* note 134, at 643. *See also* Jonathan Remy Nash, *Too Much Market? Conflict between Tradable Pollution Allowances and the "Polluter Pays" Principle*, 24 HARV. ENVTL. L. REV. 465, 473 (2000).
[177] *See* Wirth, *supra* note 134, at 643.
[178] *See* Nash, *supra* note 176, at 477.
[179] *Id*.
[180] *See Id*. at 479.

on others, then the public will more likely trust their government."[181] He also notes that the opposite is true as well; individuals may not assume personal responsibility if they notice that government does not require corporations to incur the pollution abatement costs.[182]

3. Interplay of Polluter Pays Principle and Transboundary Harm

Because the polluter pays principle has taken on several different meanings depending on the different contexts,[183] Professor Bugge notes that the polluter pays principle has multiple meanings, depending on the context. He defines the polluter pays principle as follows:

> (1) the principle is an economic principle; a principle of efficiency;
> (2) the principle is a legal principle; a principle of "just" distribution of costs;
> (3) the principle is one of international harmonization of national environmental policy; and
> (4) the principle is a principle of allocation of costs between states.[184]

The last form of the principle focuses on the allocation of costs between states. This version of the polluter pays principal can also be seen as a form of transboundary pollution emanating from one state but damaging another. OECD did not intend the polluter pays principle to address transboundary pollution. In fact, the OECD exempted from its original discussion of the polluter pays principle the concept of "trans-frontier

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[181] *Id*.
[182] *Id*.
[183] Hans Christian Bugge, *The Principles of "Polluter-Pays" in Economics and Law, in* LAW AND ECONOMICS OF THE ENVIRONMENT 53, 74 (Erling Eide & Roger van den Bergh eds., 1996).
[184] *Id*.

pollution."[185] In the eyes of the OECD, the polluter pays principle was focused on internal cost allocation between industry and the State.

Many commentators have suggested that the proper principle to guide the cost allocation between states is the obligation to prevent transboundary environmental harm discussed in the previous section. Other commentators have noted that it makes legal sense to extend the polluter pays principle beyond the private actor envisioned by OECD since the state can either permit or prohibit the particular polluting activity and the state can also benefit from the activity through the contributions of the polluting activity to the gross national product of that state.[186] More recently, especially in the arena of climate change, advocates have cited the polluter pays principle assuming the fourth definition provided by Professor Bugge to be the proper interpretation. During the framework convention on climate change, developing countries, among others, suggested that the principle could lead to the appropriate framework to address liability and compensation for the effects of climate change.[187] The developed countries are the source of the pollution of resulting in climate change; therefore, they should be burdened with the cost of combating climate change. [188] This reasoning clearly falls within the cost allocation between states concept discussed by Professor Bugge.

While the obligation to prevent transboundary environmental harm has through long standing state practice, risen to the level of customary international law,

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[185] OECD Guiding Principles, *supra* note 169, at ¶ 1.
[186] RENÉ LEFEBER, TRANSBOUNDARY ENVIRONMENTAL INTERFERENCE AND THE ORIGIN OF STATE LIABILITY 3 (1996).
[187] Richard S.J. Tol & Roda Verheyen, *State Responsibility and Compensation for Climate Change Damages—A Legal and Economic Assessment*, 32 ENERGY POL'Y 1109, 1113 (2004).
[188] *Id*. at 1115.

commentators have expressed doubt that the polluter pays principle has reached this status.[189] The polluter pays principle is still regarded as only a "soft law" principle of international environmental law that does carry with it the same legal obligation as the obligation to prevent transboundary environmental harm.

The next section will focus on how these principles can be implemented by the U.S. military to win over the hearts and minds of local populations.

IV. Internalizing International Environmental Principles in Operations

The United States will always be conducting contingency operations somewhere around the world. The missions and objectives of these operations will vary significantly. Most of the objectives will involve gaining a military advantage of some type over the enemy. Oftentimes these operations will occur in countries where the local population may either be hostile toward the United States presence in their country or indifferent since their country is simply the battleground for the operation. In these operations winning the hearts and minds of the local population is going to be one of the mission goals. This section will discuss how internalizing the international principles previously discussed will help achieve those hearts and minds objectives.

Currently, the United States is involved in two major contingency operations in Iraq and Afghanistan, both of which have been fought over several years. In the early days of the operation, the United States defined a long-term victory in Iraq as ensuring Iraq is "peaceful, united, stable, and secure, well integrated into the international community, and a full partner in the global war on terrorism."[190] In order to accomplish

[189] *Id*.
[190] NAT'L SEC. COUNCIL, NATIONAL STRATEGY FOR VICTORY IN IRAQ 1 (Nov. 2005).

this objective, the local population must be convinced that the United States will not "abandon its friends in the face of adversity."[191] Likewise, the hearts and minds of the Afghan people are a priority for the United States. "If the people are against us, we cannot be successful. If the people view us as occupiers and the enemy, we can't be successful and our casualties will go up dramatically," said the top U.S. commander in Afghanistan, Gen. Stanley McChrystal.[192]

The goals and objectives outlined in Iraq and Afghanistan highlight the evolving role the DoD. It is being tasked with stabilizing the countries in which it engages, reconstructing the countries after the armed conflict has concluded, and helping to build successful nations. The DoD has accepted this new role within national security; in fact, the DoD has strongly stated that stability operations are a core U.S. military mission alongside combat operations. These new stability missions have led to looking at the environment in a different manner. Conflict might still lead to deliberate environmental modification to achieve a strategic goal but these new mission requirements dictate protection and preservation of the local environment for the local population whenever possible.

A. Current DoD guidance

To its credit, the DoD has developed guidance and regulations that acknowledge the importance of protecting and preserving the environment for the generations after the United States leaves a foreign country. In fact, the DoD has developed a wealth of

[191] *Id*. at 4.
[192] Kristi Keck, *U.S. Must Win Afghan Hearts and Minds, Commander Says*, CNN, Sept. 28, 2009, http://articles.cnn.com/2009-09-28/politics/afghanistan.obama_1_new-strategy-additional-forces-afghan.

guidance throughout the years, especially with respect to its long-term overseas installations. The DoD developed a NEPA-like planning directive that listed exemptions where national security or national interests are involved and armed conflict. These exemptions would seem to be very broad and almost negate the executive orders' objective of furthering national security interests while at the same time taking into consideration important environmental concerns. The DoD guidance in the OEBGD and FGS for specific countries also contain several exemptions that negate many of the operations that the DoD would be conducting in the future. It exempts operations taking place in hazardous areas and where hostilities are being undertaking. Furthermore, these minimum level requirements are not required if the U.S. is not in full control of the operation. Therefore, with all of the enumerated exemptions, these aforementioned general DoD guidance would not apply to most contingency operations.

More recently, the DoD service branches have developed specific contingency operations guidance which is somewhat different based on the differing missions of the branches and the date of the guidance. The somewhat older U.S. Air Force and U.S. Navy guidance seems to be U.S.-centric and not from the standpoint of the local population. The Joint Publications go into a little more in-depth discussion but still concerned with a baseline reference point. But, the newer U.S. Army and U.S. Marine Corps guidance is more in line with the concept of stability operations envisioned by the DoD.

The Air Force handbook on contingency operations stated the Air Force was committed to maintaining environmental quality in order to protect U.S. interests. The handbook was concerned that the lack of environmental standards would result in

illnesses and an unacceptable DNBI rate of its Airmen. Consequently, the loss of Airmen capabilities would affect the overall mission success. The U.S. Navy has a similar U.S.-centric approach. It states it is committed to preserving the environment "in a manner that will preserve or enlarge access for current and future United States military activities"[193] Both of these admittedly older guidance approaches put the U.S. interests first without taking into consideration the newer stability operations missions of the DoD. The Joint Publications do explicitly define environmental impact responsibilities and requires environmental planning to exist. An EBS must be conducted and the Annex L must be developed in the planning documentation. Still, this guidance does not look at the issue from the local population's perspective.

In contrast, the U.S. Army and the U.S. Marine Corps has recently taken a different approach. Most likely in anticipation of the expanding DoD mission requirements, the U.S. Army wanted to examine environmental effects during contingency operations, especially during post-conflict and reconstruction phases. The Army Environmental Policy Institute (AEPI) contracted with RAND Corporation's Arroyo Center to assess how successful the Army has been addressing environmental issues.[194] The goal of the assessment was to "determine whether existing policy, doctrine, and guidance adequately address environmental activities in post-conflict military operations and, increasingly, in reconstruction."[195] The report examined all of the DoD and U.S. Army guidance to date and produced seven major findings and six

[193] NAVY INSTR. 5090.8A, *supra* note 97, at 5(i).
[194] DAVID E. MOSHER ET AL., GREEN WARRIORS: ARMY ENVIRONMENTAL CONSIDERATIONS FOR CONTINGENCY OPERATIONS FROM PLANNING THROUGH POST-CONFLICT (2008).
[195] *Id*. at p. xvi.

different recommendations. The findings included "[e]nvironmental considerations can be particularly important for success in the post-conflict phase of operations" and "[t]he Army has no comprehensive approach to environmental considerations in contingencies, especially in the post-conflict phase."[196]

The recommendations included improving the policy and guidance for environmental considerations in contingency operations. The independent analysis found that the previous guidance contained no clear, comprehensive approach to post conflict environmental actions. The report also recommended that the DoD encourage an environmental ethic throughout the U.S. Army that must be extended to contingency operations. The report stressed that maintaining a proper environmental ethic at domestic installations will lead to soldiers implementing that same ethic at a deployed location. The report further recommended that environmental considerations should be better incorporated into operational planning and improve pre-deployment and field environmental training. In order to support these new recommendations, RAND suggested the Army invest more resources to ensuring environmental considerations are addressed. Finally, the report recommended a "sustainability model for contingency operations."[197]

Presumably based on these findings and recommendations, the U.S. Army and the U.S. Marine Corps issued their joint guidance on environmental considerations for operations in February 2010. The environmental protection provisions in the guidance were similar to the environmental provisions in the other service branches' guidance, but the joint guidance went further by incorporating the recommendations of the RAND

[196] *Id*. at 121-122.
[197] *Id*. at 131.

report. The guidance explicitly stated that lasting victories and successful end states will need to take into consideration improving citizen's living conditions in the local nation. Furthermore, this new guidance took RAND's second recommendation to heart and referenced a need for an environmental ethic in its future contingency operations. It is this dedication to an environmental ethic that will be crucial to whether or not the new guidance will be effective in its operations going forward. It is the international environmental principles discussed above that will help achieve this new environmental ethic.

This environmental ethic is what has been lacking in the current guidance. Even with all of the service branch, DoD, and Joint regulations and standards, the ability for the U.S. military to properly implement this guidance has been questioned on different occasions. The beginning of this article cited open-air burn pits and their effects on the health of military and contractor personnel. The GAO report was conducted to determine whether the U.S. military was actually following its own guidance. The report cited at least four different guidance documents from different levels of command that governed open-air burn pits. Still, the report first recommendation was that the DoD needed to "comprehensively implement relevant guidance related to burn pit management and operations."[198] Furthermore, the study found that the monitoring of the open-air burn pits was not being conducted properly and should be conducted in accordance with the existing guidance.[199] Finally, the GAO recommended that DoD "[a]nalyze the relative merits—including the benefits and costs—of alternatives to open pit burning, taking into account important considerations such as feasibility and the potential health effects of

[198] GAO-11-63, *supra* note 6, at 46.
[199] *See Id.*

open pit burning."[200] The fact that guidance on open-air burn pits was clearly in place but not being implemented by the military at the installations indicates that military personnel were not internalizing the guidance and seeing the importance of adhering to its prescriptions.

Although not explicitly stated, one of the benefits of an alternative to open-pit burning would be the minimization of health effects on the local population of Iraq. The study also clearly shows that having all the regulations and guidance without properly following them does not yield effective results. The four different open-pit guidance documents can be seen as analogous to the extensive documentation the DoD and the services have on environmental preservation and protection. Unless the personnel are opting to follow such guidance, the effects of the guidance and regulations are moot. The U.S. Army has done its initial part and improved its guidance but it needs to take the next step to ensure the personnel internalize the environmental reasons behind the guidance and actually act on the guidance.

B. The Iraq Contingency Operation

To assist in understanding how the U.S. military can internalize the environmental principles into its operations, the historical context of the U.S. military's presence in Iraq is important to understand. After the invasion of Iraq in March 2003, the Coalition Provisional Authority (CPA) was the UN-recognized authority responsible for the temporary governance of Iraq.[201] During this time of mutational forces occupation, the CPA was charged with overseeing the reconstruction effort in Iraq and issued several

[200] *Id*.
[201] U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-06-428T, REBUILDING IRAQ: STABILIZATION, RECONSTRUCTION, AND FINANCING CHALLENGES 2 (Feb. 8, 2006).

orders to support reconstruction including an order establishing the Ministry of Environment (MOEN). [202] The Ministry was responsible for protecting and conserving Iraq's environment, as well as protecting the residents of Iraq from "environmental risks to human health and from environmental pollutants."[203] On June 8, 2004, U.N. Security Council Resolution 1546 disbanded the CPA.[204] As a result, on June 28, 2004, the CPA transferred control to an interim sovereign Iraqi government and then, after elections in 2005, to a permanent government established in 2006.[205] The new Iraqi constitution reiterated the environmental concerns of the CPA by stating that "every individual has the right to live in safe environmental conditions" and Iraq "shall undertake the protection and preservation of the environment."[206]

The U.N. resolution also gave the continued multinational force the authority to take the necessary measures to assist the Iraqi government in security and stabilizing Iraq until the Iraqi government terminated the relationship. The U.N. resolution was continually extended before the Iraqi government requested that the security mission of the multinational force end on December 31, 2008.[207]

Since the Iraq government agreed to allow U.S. military servicemembers and contractors to continue to operate within the borders of Iraq after the security resolution ended, a SOFA was required between the Iraqi government and the United States

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[202] *Id.*
[203] COAL. PROVISIONAL AUTH. ORDER NO. 44, MINISTRY OF ENVIRONMENT § 2 (Nov. 14, 2003), *available at* http://www.iraqcoalition.org/regulations/index.html.
[204] S.C. Res 1546, ¶ 2, U.N. Doc. S/RES/1546 (June 8, 2004).
[205] PHEBE MARR, U.S. INST. OF PEACE, SPECIAL REPORT NO. 160, WHO ARE IRAQ'S LEADERS? WHAT DO THEY WANT? 5 (2006).
[206] Constitution of Iraq, art. 33, *available at* http://www.parliament.iq/manshurat/dastoreng.pdf.
[207] *See* S.C. Res 1790, ¶ 2, U.N. Doc. S/RES/1790 (Dec. 18, 2007).

between the two countries. A SOFA was finally signed between the two countries on November 17, 2008.[208] Article 8 of the Iraqi-U.S. SOFA, entitled "Protecting the Environment states:

> Both Parties shall implement this Agreement in a manner consistent with protecting the natural environment and human health and safety. The United States reaffirms its commitment to respecting applicable Iraqi environmental laws, regulations, and standards in the course of executing its policies for the purposes of implementing this Agreement.[209]

Another important aspect of the SOFA was the status of the several different installations from which the U.S. was still conducting operations. These "agreed facilities and areas" were owned by Iraq and included any structure that was "used, constructed, altered, or improved" by the U.S. forces.[210] The Iraq government stated the following with respect to the use of the agreed facilities:

> With full respect for the sovereignty of Iraq, and as part of exchanging views between the Parties pursuant to this Agreement, Iraq grants access and use of agreed facilities and areas to the United States Forces, United States contractors, United States contractor employees, and other individuals or entities as agreed upon by the Parties.[211]

Furthermore, in the situation where facilities are used exclusively by the United States, the United States shall bear all the costs associated with such facilities.[212] Therefore, Iraq owns the installation land and the real property on the installations, but the United States has the authority to grant access and use of these facilities at its own

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[208] Agreement Between the United States of America and the Republic of Iraq on the Withdrawal of United States Forces from Iraq and the Organization of Their Activities during Their Temporary Presence in Iraq, Nov. 17, 2008 [hereinafter Iraq SOFA].
[209] *Id*. at Art. 8.
[210] *Id*. at Art. 2(1).
[211] *Id*. at Art. 6(1).
[212] *Id*. at Art. 5(3).

discretion. The United States could build structures and conduct operations with minimal restrictions by the Iraq government.

1. Obligation to Prevent Transboundary Environmental Harm

The obligation to prevent transboundary environmental harm is a principle that can shape how U.S. military approaches contingency operations. This obligation will not be a difficult concept for the U.S. military to grasp and internalize. The local populations have been complaining about the U.S. military operations for decades. As previously stated, the local citizens would complain about the military maneuvers at the overseas installations. Furthermore, the individual military personnel can relate since they have lived nearby domestic military installations within the United States. These installations have the potential to cause environmental harm, whether it is noise, air, or ground pollution. The same reasons that domestic laws were passed to curb environmental harm are the reasons that the local populations would insist the United States has obligations to prevent environmental harm.

To that point, the United States has issued guidance and regulations to control pollution but they have not been effective. What is necessary is to elevate the concern to an international perspective. The United States is operating from several locations in both Iraq and Afghanistan. Each of these installations are isolated sovereign enclaves from which, under the transboundary harm principal, the United States has the obligation to prevent environmental emissions that might affect land and people not part of the enclave. This obligation is supported by the Iraq SOFA mentioned above. Iraq owns the property but the United States is allowed all access and use of the agreed facilities.

Therefore, for all intents and purposes, the U.S. military controls these installations until such time that the installations are turned back over to the Iraqi government.

Once the installations, or enclaves, are seen as being under the control of the United States and not Iraqi government, Principle 21 of the Stockholm Declaration and Principle 2 of the Rio Declaration provide clear and convincing guidance to the U.S. military and its personnel. Those principles place on the United States the "responsibility to ensure that activities within their jurisdiction *or control* do not cause damage to the environment of other States."[213] Even though the United States is operating in the sovereign nations of Iraq and Afghanistan, they are still in control of the facilities in which they operate.

The *Trail Smelter* case is directly relevant to the open-air burn pit issues seen in Iraq and Afghanistan. The border between Canada and the United States is replaced with the installation walls between Iraq and the United States. The *Trail Smelter* smoke being described as "an outcrop of hell"[214] is replaced with the comments such as "[y]ou could taste the smoke all night long."[215] The injury caused by the fumes in the state of Washington are replaced by the fumes that the GAO open-air burn pits report found may result in acute and chronic health effects to those exposed. The fumes that instigated the GAO report are the same type of fumes that are being carried over to the local populations. The lasting effects of those fumes may have the same impact on the local populations as those who were exposed from the U.S. standpoint. The only difference between the *Trail Smelter* case and the open-air burn pits in Iraq and Afghanistan is the

[213] Stockholm Declaration, *supra* note 138, at Principle 21; Rio Declaration, *supra* note 146, at Principle 2 (emphasis added).
[214] Allum, *supra* note 116, at 13.
[215] Zucchino, *supra* note 1, at A1.

international boundary in the former and not the latter. This distinction does not relieve the United States of any obligation since the subsequent Stockholm and Rio Declarations added the additional "control" modifier.

The logical connection between the open-air burn pits and the obligation to prevent transboundary harm should be evident and therefore a guiding principle going forward. The intent of this paper has been to urge that the principal be viewed as just that, a principle to guide the U.S. military's operations. For those military personnel who are not convinced that it is worthy of such consideration, then it could be argued that the obligation is not a principle but instead a statement of customary international law that the United States is bound to follow. While both the Stockholm and Rio Declarations are considered soft law, the obligation to prevent transboundary environmental harm is one of the few environmental principles that commentators believe satisfy the requirements of international customary law. The one means of avoiding compliance with customary law is to persistently object to following such a principle. This has not been the case with the United States. In fact, when Principle 21 was signed in Stockholm, the United States stated that the principle was an "affirmation of existing rules concerning liability in the event of default on the obligation."[216] Therefore, the United States would be bound to follow the obligation to prevent transboundary environmental harm not because it is a principle but because it is an international customary law. Although the contingency operations guidance include a number of specific exemptions, they can never be exempted from complying with international law. Therefore, since the principle is a statement of customary international environmental law it would have to be addressed

[216] Stockholm Report, *supra* note 145, at ch. X, ¶ 327.

when an Annex L is developed for an operation. Therefore, whether the principle is treated as a principle or customary law, the principle must be applied to minimize the U.S. military's environmental harm.

2. Polluter Pays Principle

The polluter pays principle, even with its economic policy background, should shape the military personnel's approach to contingency operations and especially to winning the hearts and minds of the local population. Professor Bugge identified one aspect of the principle as the allocation of costs between states. This conception of polluter pays, while not yet mainstream, has been gathering momentum in recent years, especially as part of the debate between developed and developing countries on combating climate change. Essentially, the interpretation would hold that since the U.S. military is the ultimate source of the pollution, it is in the best position to pay for the cost of the environmental damage. Professor Nash's "strong approach" to the polluter pays principle dictates equitable internalization. The U.S. military should be required to internalize the pollution abatement costs. Therefore, in the case of open-air burn pits, the military chain of command should be required to internalize the environmental externalities associated with this particular type of disposal. Once they are required to pay for the pollution that they are going to emit, then the choices made at these installations will be better for the environment and the local population.

Beyond the decisions of the chain of command and its operations at a macro-level, the polluter pays principle will assist in the change in culture the military has with respect to the environment. As Professor Nash points out, the polluter pays principle has the ability to transform individual's actions. In this case, individual military members,

once they realize that their organization is being held responsible for the costs of preserving the environment, will adjust their actions accordingly. Culture change from within will have an impact on the outward actions the military has on the local population.

If the U.S. military has not realized the importance of the polluter pays principle, the local Baghdad municipality government has. The T-walls that were installed in Baghdad during OIF have caused extensive damage to the Baghdad's infrastructure and the aesthetics of the city. Recently, the Iraq capital issued a statement that demanded the United States apologize for its actions and pay $1 billion for the damage done to the city. The statement read, "[d]ue to the huge damage, leading to a loss the Baghdad municipality cannot afford...we demand the American side apologize to Baghdad's people and pay back these expenses."[217]

This is a perfect example how the actions of the military can have a negative lasting effect on the hearts and minds of the local population. The construction of the walls was definitely necessary in order to protect the members of the military as well as the local population from active hostilities, roadside bomb, and suicide bombers. That being said, the lasting environmental effects are still being felt by the Iraqis. One might say that the locals are complaining about the minor issues of aesthetics and infrastructure when the major issue is that because of the U.S. military, the city of Baghdad is a safer and more secure place to live. While this argument has some weight, it does not account for the local person who remains living in Baghdad after the U.S. forces leave. This person might be safe but they still must live in an environmentally damaged city, at least

[217] Kami, *supra* note 23.

in their minds. It is not the intention of this paper to suggest that the U.S. should pay the $1 billion demanded by Baghdad, but it is the intention of this paper to suggest that the polluter pays principle would have the military internalize these environmental externalities from an equitable standpoint. If this internalization would occur, then the actions taken by the military would change and possibly lead to a positive effect on the hearts and minds of the local population as opposed to the negative reaction that the city of Baghdad has expressed by, for example, by more carefully considering the nature and placement of these barriers in the first instance or by remedying the harm once the need for the walls had passed.

Once again, the polluter pays principle will be an easy principle for the U.S. military to internalize since it can be seen as an extension of existing systems that have been established to provide assistance to local populations who are killed, injured, or suffer property damage. The DoD uses multiple types of payments to reimburse local citizens for damage to include solatia payments, condolence payments and payments pursuant to the Foreign Claims Act (FCA) of 1982.[218] The FCA[219] authorizes the Secretary of Defense to pay claims of up to $100,000 against the United States in order to "promote and to maintain friendly relations. The FCA does not explicitly state that environmental standards are potential liability. Nonetheless, claims for losses associated with environmental impacts are plausible under the FCA and the host-nation

[218] Solatia and condolence payments are expressions of sympathy or remorse based on local culture and customs and not a statement of legal liability or fault. Condolence payments are paid out of the Commander's Emergency Response Program (CERP) established by Congress and solatia payments are paid out of unit operations and maintenance funds. *See generally* U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-07-699, MILITARY OPERATIONS: THE DEPARTMENT OF DEFENSE'S USE OF SOLATIA AND CONDOLENCE PAYMENTS IN IRAQ AND AFGHANISTAN (May 2007).
[219] *See* 28 U.S.C. §§ 2734-2736 (2011).

environmental laws would apply.[220] The polluter pays principle is consistent with the compensation methods already established, the payouts would need to be tweaked to include environmental damage beyond normal property damage. The internalization of the polluter pays principle at all levels of the command would hasten this extension of the definition.

C. Laws of Armed Conflict

One final means of incorporating international environmental principles into military operations is to relate those principles with existing expertise in military law. From that standpoint, concern for protection and preservation of the environment during military operations intersects with international humanitarian law and the traditional concerns of the Law of Armed Conflict (LOAC). International humanitarian law has set limits on the ability for warriors to cause injury to people and destroy objects, including the natural environment.[221] The Hague Regulations of 1907 stated: "The right of belligerents to adopt means of injuring the enemy is not unlimited."[222] This basic principle was reaffirmed by Protocol I Additional to the Geneva Conventions.[223] The principles of military necessity and proportionality also set limits as to the extent of a servicemember's actions. These two principles state that "[o]nly those acts of war are permitted which are proportional to the lawful objective of a military operation and are

[220] *See* MOSHER ET AL., *supra* note 194, at 153.
[221] Hans-Peter Gasser, *For Better Protection of the Natural Environment in Armed Conflict: A Proposal for Action*, 89 A.J.I.L. 637, 637 (1995).
[222] Regulations Respecting the Laws and Customs of War on Land, annexed to Convention Respecting the Laws and Customs of War on Land, Oct. 18, 1907, Art. 22, 36 Stat. 2277, 1 Bevans 631.
[223] Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts, Dec. 12, 1977, Art. 35(1), 1125 U.N.T.S. 3, reprinted in 16 I.L.M. 1391 (1977) [hereinafter Protocol I].

actually necessary to achieve that objective."[224] These military principles are rules of customary international law and as previously discussed are binding on all nations. These military principles can be also relevant to the protection of the natural environment. Article 55 states:

> Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population.[225]

Many limited in scope contingency operations such as humanitarian relief noncombatant operations would not necessarily fall under the definition of international armed conflict or non-international armed conflict and LOAC would not apply.[226] Nonetheless, U.S. policy has stated that LOAC principles would apply even if the trigger of armed conflict has not been met.[227]

Every member of the U.S. military is taught the principles of LOAC from the initial stages of their training and these principles can be reinforced by the international environmental principles. The obligation to prevent transboundary environmental harm can be correlated with the principles of military necessity and proportionality. Causing harm to the environment outside one's jurisdiction is not proportional to the military objectives in a contingency operation. Neither is such destruction necessary to achieve the military objectives of a contingency operation. For example, while the use of burn pits is not traditional military acts of combat, they still have an effect on the local population. In the eyes of the local population, especially if the U.S. is seen as an

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[224] Gasser, *supra* note 221, at 637.
[225] Protocol I, *supra* note 223, at Art. 55(1).
[226] *See* Burman & Hollingsworth, *supra* note 106 at 37.
[227] *Id*.

occupying force, this military way of conducting disposal could be seen as taking actions on the local population.

These actions are potentially causing long-term effects which are not proportional with the immediate objective of defeating an enemy. In other words, the actions are creating long-term environmental effects when only short-term military objective results are needed. The actions are unnecessary as well. The disposal of solid waste is necessary when the military is conducting operations, but the means of disposal is at the discretion of the military leaders.

V. Conclusion

The military has always been, and will continue to be, an essential component to the national security of the United States. The last decade has seen extended operations in Iraq and Afghanistan and the President has stated that the United States "will continue to underwrite global security."[228] The recent headlines in the newspaper and the internet show that instability in countries such as Libya and Iran could lead to more and more opportunities for the United States to deploy its servicemembers around the world. Whether the United States is fighting another nation's military or a terrorist organization within a country, there is going to be a local population that will be affected by the U.S. military's presence within that country. While it may seem like the U.S. military will be in a location for a long time, the servicemembers will eventually pack up all the equipment and gear and leave the country. In their wake the local people will remain, as well as the local environment.

[228] THE WHITE HOUSE, NATIONAL SECURITY STRATEGY (May 27, 2010), *available at* http://www.whitehouse.gov/sites/default/files/rss_viewer/national_security_strategy.pdf.

The U.S. military has taken the local environment into consideration and passed several different guidance, directives, and regulations. It has not ignored its stewardship responsibilities. Nonetheless, the DoD is a large institution and change within such an institution of this size will take time. With the recent issuance of new environmental consideration guidance, the U.S. Army and the U.S. Marine Corps has tried to develop a new environmental ethic going forward for contingency operations. International environmental principles have the history and the logical reasoning to ensure such an ethic is truly internalized. The obligation to prevent transboundary harm and the pollution pays principle have touchstones that servicemembers at all ranks can relate to. It is important that not only the civil engineers, the joint force engineer and the joint force operations officer internalize these principles; each and every servicemember must accept the principles as necessary for successful operations. The strides made by the U.S. Army and the U.S. Marine Corps must be incorporated by the other service branches and the joint operations guidance.

There will always be opponents that say the concern for the environment should be secondary to the combative mission objectives. This reasoning ignores the expanding mission objectives of the U.S. military. The U.S. military, with its new stability operations being equated in importance to combat operations, has ventured into territories traditionally occupied by the U.S. State Department. These new missions have made winning the hearts and minds of the local populations even more important than ever before. The U.S. military is no longer conducting exclusively overpowering missions; it is now conducting stability operations which requires a different mindset. Therefore, this mission expansion dictates that the military make progress in internalizing new principles

that will serve as a guiding light to the new military objectives. The U.S. military completely understands utilizing the long-lived concepts like allowing claims to be filed against the United States or implementing the principles of military necessity and proportionality in order to win over the hearts and minds. These traditional military principles have proven invaluable but they have always left a void in winning the hearts and minds of the local population. Now, with respect to the environment, it is imperative to internalize the obligation to prevent transboundary harm and the pollution pays principle to fill that void and fully win over the hearts and minds in future contingency operations.