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From the President

Environmental Crime and Civilization: Identification; Impacts; Threats and Rapid Response – June 2018

Lynn Rhodes

The definition of “environmental crime” is not universally agreed. It is most commonly understood as a collective term to describe illegal activities harming the environment and aimed at benefitting individuals or groups or companies from the exploitation of, damage to, trade or theft of natural resources, including serious crimes and transnational organized crime.¹

Over 1,000 protected-area-officers² have been killed worldwide and many more injured over the last 12 years.³ Over 740 of those from 2009-2017.⁴

Vast sums of money generated from environmental crimes not only harm the environment and threaten protected-area officers, but these funds also keep sophisticated international criminal gangs in business, fueling insecurity around the world. Armed and unarmed groups worldwide use environmental crimes as a low-risk high-profit source of revenue: depriving governments of revenues while threatening peace, development and security. The economic loss due to environmental crime is estimated at \$91-258 billion annually. Weak laws and poorly funded security forces enable international criminal networks and armed rebels to profit from a trade that fuels conflicts, devastates ecosystems and is threatening species with extinction.⁵

Species are going extinct at a faster than historic rate. If ecosystems collapse, some human existence and civilizations as we know them may become impossible or extinct. A global system-collapse is possible and with it, the world’s economic and political systems face systematic risks because of their intricate and interconnected natures.

¹ The Rise of Environmental Crime, A UNEP-INTERPOL Rapid Response Assessment, 2016, Page 17. <http://web.unep.org/environmentalgovernance/erl/resources/publications/rise-environmental-crime>

² Employees of a “clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.” (IUCN Definition 2008 - <https://www.iucn.org/theme/protected-areas/about>)

³ Park Rangers on the Frontline being Killed at an Astonishing Rate from India to Thailand to Africa, Global Conservation, March 31, 2016. <http://globalconservation.org/news/park-rangers-frontline-being-killed-astonishing-rate-new-solution/>

⁴ World Ranger Day 2017 – Ranger Roll of Honour In Memoriam, International Ranger Federation, 2017. http://www.internationalrangers.org/wp-content/uploads/2017/08/1.-2016_2017-Honour-Roll.pdf

⁵ The Rise of Environmental Crime, A UNEPA-INTERPOL Rapid Response Assessment, 2016, Page 7. <http://web.unep.org/environmentalgovernance/erl/resources/publications/rise-environmental-crime>

Researchers agree that more work needs to be done to clarify what parts of the system(s) could collapse and destroy civilization. They define a civilization-collapse as a “drastic decrease in human population size and political/economic/social complexity, globally and for an extended time.”

The environment provides the foundation for sustainable development, our health, food security, and our economies. Ecosystems provide a clean water supply, clean air, and secure food and ultimately both physical and mental well-being. Natural resources also provide livelihoods, jobs and revenues to governments that can be used for education, health care, development and sustainable business models.

The increase of environmental crimes is extraordinary. The diversity of environmental crimes has grown and the impacts go beyond those thought of as traditional crimes. Environmental crimes impede our ability to have and retain a sustainable and healthy planet. They add to the cost and impact to the environment and the cost to future generations. Deforestation, chemical-dumping, and illegal fisheries cause loss of ecosystem services such as clean air and clean water, extreme weather mitigation, food security and yes, health and well-being. They also deprive governments of critical revenue and undermine legal businesses.

Referenced by a UNEP-INTERPOL Rapid Response Assessment Report 2016 (UNEP-INTERPOL RRAR 2016), enhanced law enforcement response can help address these trends. The responses can be either formal or informal and can help put responses into context for action. Enforcement cases show an increase in the scale and organization of environmental crimes. Those who have been prosecuted and found guilty of illegal logging and laundering of hundreds of millions of dollars (US), for example, dwarf the resources that would otherwise be available for enforcement, investigation and prosecution.

Financially, the large and growing scale of environmental crimes requires a new approach and coordinated responses. It requires international cooperation including international jurisdictions and collaboration across borders.

The ability to coordinate and help control environmental crimes is more important today as they often cause direct threats to peace, security and civilization. Worldwide, armed terrorist and non-state groups are benefiting financially from these crimes to fund their activities. Examples are the common smuggling of drugs and guns, oil, antiques, migrants and anything for profit. Environmental crimes provide a relatively low-risk, high-profit source of revenue compared to other forms of revenue.

Three examples of effective coordinated responses:

1. In Brazil, a sector-wide Plan for Protection & Combating Deforestation in the Amazon (PPCDAM), is reducing deforestation in the Amazon by 76% in five years. One office in Brazil was given the sole responsibility for coordination in close collaboration with 13 ministries, additional partners and others. 3.9 billion in fines were issued and over one million cubic meters of timber seized.
2. The Montreal protocol played a role in reducing illegal trade in ozone-depleting substances with a number of coordinated programs including “Informal Prior-Informed Consent” with UNEP. With this and related projects over 800 tons of ozone depleting substances were seized from 2006-2010. The scale of illegal trade in CFC’s has been reduced as a result of global agreement on phasing out these substances, also affecting criminal markets. These types of programs demonstrate how implementing environmental rule of law with global agreements such as the Stockholm, Rotterdam and Basel conventions can meet environmental goals and reduce global trade of these goods or commodities by not allowing safe-haven for the activity and helping to close criminal markets.
3. In 2017 the Environmental Crimes Committee of the International Association of Chiefs of Police (IACP) developed an online application to assist field and safety professionals in their response to and investigation of environmental crimes. The application is called *ChemSafety*. It is readily available online and its effectiveness is supported with the following statistics: In one month (April-May 2018) data show over 71,000 sessions; 171,427 views and over 50,000 individual users. The application guides field and safety professionals through the S.A.F.E. acronym in response to environmental crimes:

S: Safety and health for the law enforcement officer

A: Acute & chronic chemical, biological and radiation exposures

F: Forensic evidence protection & preservation

E: Environment, human health and wildlife impacts

This web application is intended to enhance the abilities of law enforcement officers and other safety professionals to safely respond to incidents of potential or suspected environmental crimes and hazardous materials incidents by providing information and best practices in the key areas for safe, effective response to and investigations of environmental crimes.⁶

⁶ International Assoc. of Chiefs of Police, Environmental Crimes Committee
<http://www.theiacp.org/chemsafety/>

CHEMSAFETY

For Law Enforcement Officers

The ChemSafety web application enhances the abilities of law enforcement officers to safely respond to incidents of potential or suspected environmental crimes and hazardous materials incidents by providing:

- Emergency response considerations
- Recommended safety equipment

- Reference materials and contact information
- Scene documentation recommendations



Residential Incidents



Transportation Incidents



Agricultural Incidents



Industrial Incidents



Wildlife Incidents

Intended to decrease exposures to hazardous chemicals via:

- Motor Vehicle Accidents
- Toxic Synthetic Opioids
- Chemical Hoarders
- Marijuana Grow Pesticides
- Chemical Suicides
- Environmental Crimes

ALWAYS PLAY IT SAFE

S: Safety and health for the officer in the field

A: Acute & chronic chem/bio/rad exposure

F: Forensic evidence protection & preservation

E: Environment, human health & wildlife impacts

www.theIACP.org/ChemSafety

Developed by the IACP Environmental Crimes Committee



HOW TO ACCESS & USE CHEMSAFETY





Navigate to the application on your phone, tablet, or computer via www.theIACP.org/ChemSafety.

APPLICATION SECTIONS

RESPONSE

Respond safely to a chemical hazard emergency

SAFETY

Plan and prepare for a chemical hazard emergency

CONTACTS

Manage reference and contact information

DOCUMENTATION

Document chemical hazard emergency scene information



SUNFLOWER
systems

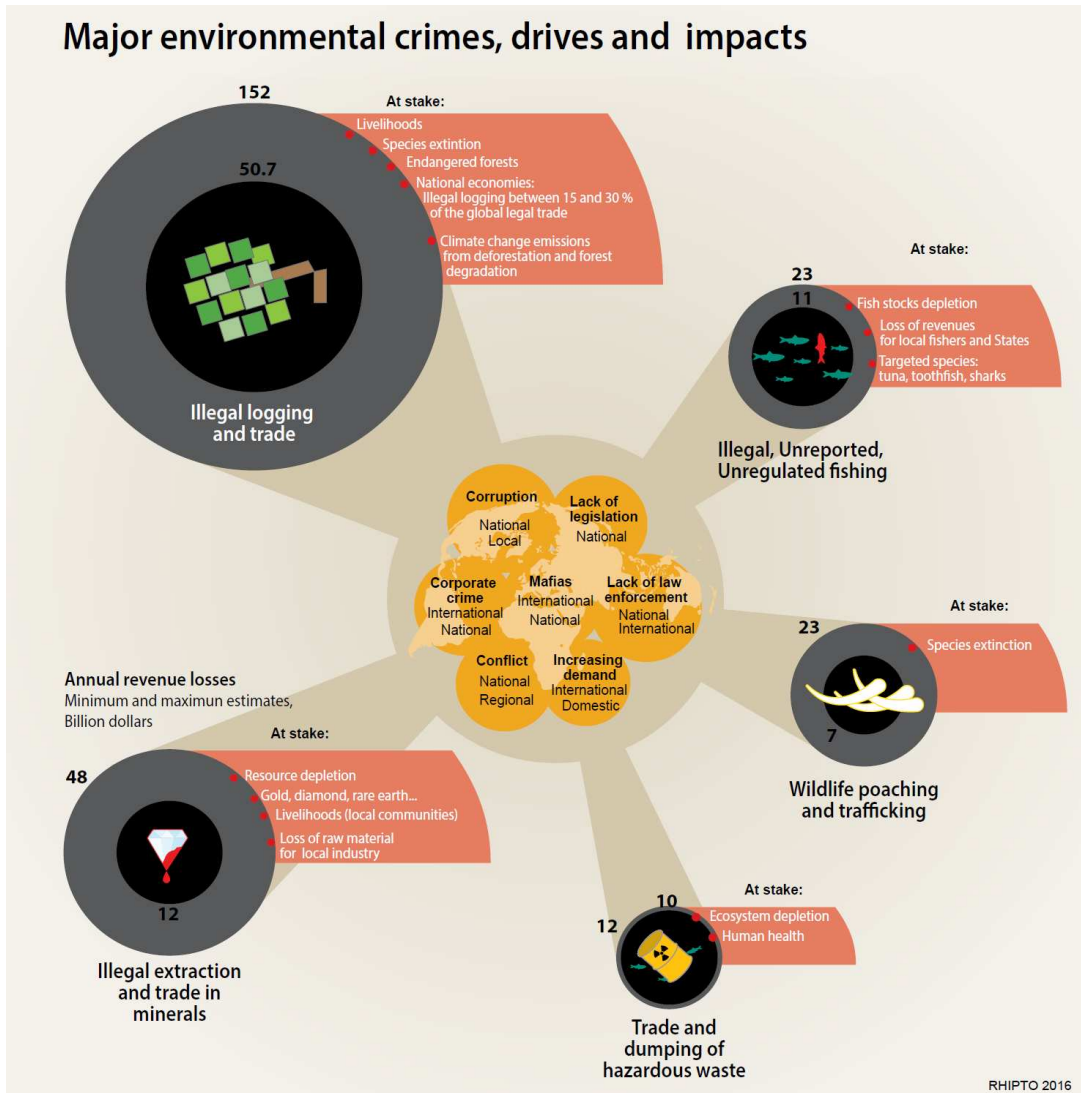
Law enforcement asset management solutions



INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE
SINCE 1893

Figure 1. Courtesy IACP Environmental Crimes Committee Online Application 2018

Figures 2 & 3 illustrate the major environmental crimes, annual economic loss, their drivers and their resulting impacts. Beginning at the center, primary key drivers of environmental crime show the nexus and scale of these drivers: corruption; corporate crime; conflicts; domestic and international demand; lack of law enforcement at the national and international levels; lack of legislation; and both international and national mafias.



Environmental Crimes Illustrated.
Figure 2. Courtesy of UNEP-INTERPOL RRA 2016

Different forms of environmental crimes and their approximate estimated scale^{T1}

Environmental crime	Annual loss of resources pre 2014 estimate (USD) ^{T2}	Annual loss of resources 2016 estimate (USD)	Source or reviews
Illegal logging and trade	30–100 billion	50.7–152 billion	New Sources: UNEP, 2014 (10–30%), updated by FAOSTAT 2014: ^{T3} Roundwood including woodfuel: 3.7 billion m ³ x average export unit price of 137 USD/m ³ = global wood trade of USD 507 billion. With 10–30% possibly illegal this accounts for USD 50.7–152 billion.
Illegal, Unreported and Unregulated fisheries	11–30 billion	11–23.5 billion	MRAG and UBC 2008 ^{T4} (10–23 billion) UNODC 2011 ^{T5} and Agnew 2009 ^{T6} (10–23.5 billion) (12–32% of the global trade). No new updates available. However, this does not include illegal open sea discard of approximately one-third of the global catch. Hence discards may account for tens of billions of USD in addition.
Illegal extraction and trade in minerals/ mining	12–48 billion	12–48 billion	Estimated as only 1–4% of by industry of the global trade (GFI, 2011; GA 2012). New source GI 2016 ^{T7} indicates –28–90% of mined gold was illegal in five South America countries, accounting alone for 7 billion USD on gold alone in five countries) suggesting that this is a gross underestimate. However it has been kept as this for now as more research is needed.
Illegal trade and dumping of hazardous waste	10–12 billion	10–12 billion US\$	US Department of Justice 2000 ^{T8} (10–20 billion); GA 2012. New source UNEP 2015 (Unaccounted or illegally traded E-waste alone accounted for 12.2–19 Billion USD in 2015). ^{T9} The ratio between illegal and unregulated is not clear, hence previous estimate is kept.
Illegal trade and poaching of plants and other wildlife	7–23 billion	7–23 billion US\$	Wyler and Sheik 2008 ^{T10} (5-20 billion), Haken 2011 ^{T11} (7.8–10 billion). US Government agencies 2000 cited OECD 2012 ^{T12} (USD 6-10 billion excluding wood and fish). New estimates UNODC including mainly endangered species cf. CITES. This estimate is somewhat confounded with forestry data, hence original estimate is kept but needs revision. No new estimate currently available, but see separate section on growth in environmental crimes.
Sum environmental crime	70–213 billion	91– 259 billion US\$ (30–22% higher ie. 26% on average)	All converted to 2016 USD. ^{T13}

Impacts from Environmental Crimes
Figure 3. Courtesy UNEP-INTERPOL RRA 2016

Other non-environmental crimes	Annual loss of resources pre 2014 estimate (USD)	Annual loss of resources 2016 estimate (USD)	Source or reviews
Drugs		344 billion USD	UNODC 2005 (cannabis herb and resin USD 142 billion), ^{T14} UNODC 2011 (2009 cocaine 85 billion + opiates/heroin 68 billion) ^{T15}
Human trafficking (excl. recent migrant to Europe)		157.1 billion	International Labour Organisation 2014 (forced labour generates USD 150 billion in illegal profits per year. 2/3 is from sexual exploitation and the rest other economic exploitation) ^{T16} EUROPOL-INTERPOL 2016 (Recent migration wave Europe USD 5.5 billion) ^{T17}
Counterfeit crimes		288 billion USD	OECD 2007 ^{T18} and UNODC ^{T19} (USD 250 billion) does not include domestically produced and consumed products, or non-tangible digital products.
Small arms illegal trafficking		1.5–3 billion USD	10-20% of the licit small arms trade, which is USD 10.3 billion incl. parts and sights per year (Small Arms Survey 2012) ^{T20} Ammunition USD 4.2 billion per year (Janes Intelligence Review 2013) ^{T21}

These estimates are derived from published reports, UN statistics on legal trades and estimates from criminal intelligence through INTERPOL on the extent based on reporting from National Central Bureaus in member states. Given that criminals do not report statistics on their activities, considerable uncertainties exist not only regarding the accuracy of the estimates, but also the delineation amongst the different crime groups and the commodity prices applied in the different sectors. For example, some agencies include only CITES registered species, others include fisheries and forestry but not the much larger trade in timber and wood fuel. Hence wide ranges are provided.

- T1 "Transnational Crime in the Developing World," (Global Financial Integrity).
T2 "The Environmental Crime Crisis."
T3 "Global Forest Resources Assessment 2015," www.fao.org/3/a-i4808e.pdf.
T4 "The Global Extent of Illegal Fishing," (Fisheries Ecosystems Restoration Research, Fisheries Centre, University of British Columbia; MRAG).
T5 "Transnational Organized Crime in the Fishing Industry: Focus on Trafficking in Persons, Smuggling of Migrants, Illicit Drugs Trafficking," in Focus on: Trafficking in Persons, Smuggling of Migrants, Illicit Drugs Trafficking (Vienna).
T6 "Estimating the Worldwide Extent of Illegal Fishing," Plos One 4, no. 2.
T7 "Organized Crime and Illegally Mined Gold in Latin America".
T8 Cited in "Illegal Trade in Environmentally Sensitive Goods," in OECD Trade Policy Studies, 37.
T9 "Waste Crime – Waste Risks: Gaps in Meeting the Global Waste Challenge," in A Rapid Response Assessment, ed. Nellemann C. Rucevska I., et al (Nairobi and Arendal: United Nations Environment Programme and GRID-Arendal).
T10 "International Illegal Trade in Wildlife Threats and U.S. Policy," (Congressional Research Service).

- T11 "Transnational Crime in the Developing World."
T12 "Illegal Trade in Environmentally Sensitive Goods," 37.
T13 US Department of Labor Inflation calculator: www.bls.gov/data/inflation_calculator.htm
T14 "World Drug Report 2005: Volume 1 Analysis," (UNODC), 17.
T15 "World Drug Report 2011," (New York: UNODC).
T16 "Profits and Poverty: The Economics of Forced Labour," (Geneva: ILO).
T17 "Migrant Smuggling Networks."
T18 "Magnitude of Counterfeiting and Piracy of Tangible Products: An Update," (OECD).
T19 "The Illicit Trafficking of Counterfeit Goods and Transnational Organized Crime," in Focus on.
T20 Small Arms Survey 2012: Moving Targets (Cambridge: Cambridge University Press), chapter 8; *ibid*.
T21 "Under the Gun: Can a Global Treaty Regulate Small Arms Trade?," IHS Jane's Intelligence Review.

Impacts from Environmental Crimes

Figure 3.(continued) Courtesy UNEP-INTERPOL RRA 2016

The UNEP-INTRPOL 2016 RRAR describes ecosystems as providing a range of services and providing the very foundations of our economy, human health, livelihoods and well-being. They can include clean air, water supply, extreme weather mitigation, storm protection, food security and pollination, to list a few. The report describes the environmental impacts of illegal trade in wildlife. However, there is no current assessment of environmental impacts for the wider range of environmental crimes and their full implications for sustainability and development goals and this consolidated information is needed.

A Legal Framework — Identifying the Crimes, Jurisdictions, Prosecution:

An environmental crime can only be prosecuted if the specific jurisdiction decides that the offense is to be pursued by way of law. Identifying the environmental crime as a criminal offense itself can be leveraged to help enforce environmental law. Jurisdictions worldwide have different approaches to carrying out enforcement. Approaches from varying jurisdictions come with varying penalties and sanctions. Even with strong environmental laws, if a jurisdiction does not have the full capacity to enforce the laws, they cannot be effective.

Capacity to monitor, enforce and prosecute environmental crimes varies. For example, while Mongolia has enacted strong environmental laws they are experiencing an explosion of mining projects, wildlife poaching, development and other resource threats. Their protected-area-officers cover vast areas of open space far removed from modern infrastructure and legal support systems. Even with good laws and good officers, their enforcement capacity needs improvement in order to show substantial results with environmental enforcement of existing laws.

It is important to identify criminal offenses so that they can be incorporated into legal responses, prosecution and restoration where possible. Simply identifying offenses as criminal acts has the ability at times to serve as a deterrent and allows for collective education of environmental laws. Globally however, the varying degrees to which crimes are identified, incorporated into law, listed, and subsequently prosecuted allows for criminal elements to hedge the differences amongst countries and states.

Legislation:

In 2014 the INTERPOL General Assembly passed a Resolution in response to emergency threats in Environmental Security. In that Resolution, instead of defining environmental crime, INTERPOL focused on “environmental security” by recognizing the impact that environmental crime can have on a nation’s political stability, environmental quality, its natural resources, biodiversity, economy and human life. INTERPOL also recognizes that criminal networks engaged in financial crime, fraud, corruption, illicit trade and human trafficking are also engaged in or facilitating environmental crime.⁷

Increasingly, illicit use of natural resources is driving conflicts. It is becoming a nexus of organized crime and the emphasis on security for the environment is needed more than ever.

⁷ The Rise of Environmental Crime, A UNEP-INTERPOL Rapid Response Assessment, 2016, Page 26, <http://web.unep.org/environmentalgovernance/erl/resources/publications/rise-environmental-crime>

Encouraged by the United Nations Security Council, member states are being asked to work together to collect, analyze and share intelligence to help prevent terrorism and transnational organized crime. To increase effectiveness, a broader definition of environmental crime is needed in addition to referring to environmental crime as a serious crime.

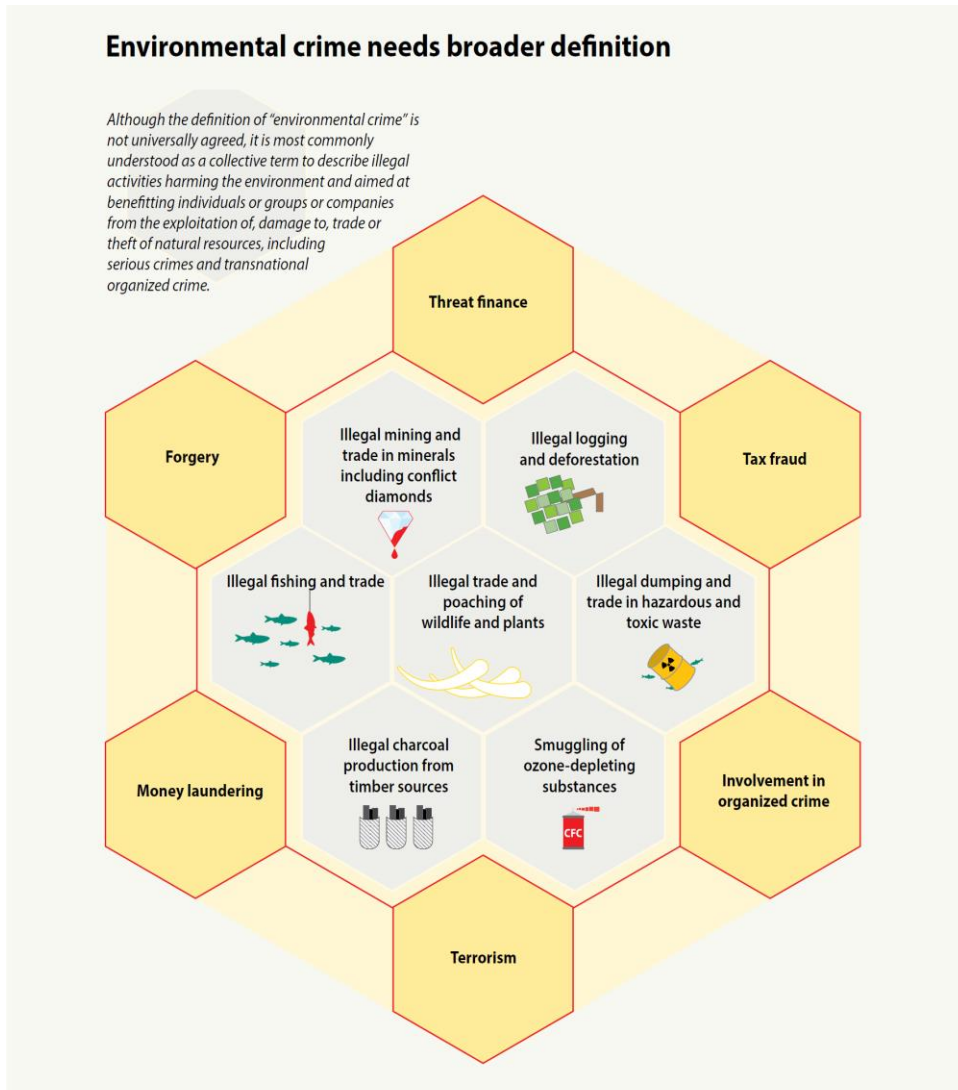


Figure 4. Broad Definition for Environmental Crimes Needed:
Courtesy UNEP-INTERPOL RRAR 2016

The United Nations Environmental Program (UNEP) Governing Council plays a key role in maintaining focus and awareness of the legislative efforts across vested interests in order to support the rule of environmental law.

The efforts are largely driven by the increase in organized criminal groups trafficking in hazardous waste, wildlife and illegal timber harvesting. It has been recognized that environmental crime undermines environmental goals and effective governance. UNEPA Governing Council's decision 27/9, in part, emphasized the strengthening of environmental governance and expertise for prosecutors, judges and law enforcement.⁸

In April 2016 IUCN World Environmental Law Congress met in Rio de Janeiro. A number of forward thinking actions resulted from the congress. These actions included core principles to strengthen the collective efforts including implementation and enforcement strategies; laws that can be enforced; implementation and accountability; coordination of roles and treating environmental crimes as serious crimes. Figure 5 below illustrates an informal network of international organizations that are needed for effective collaboration.

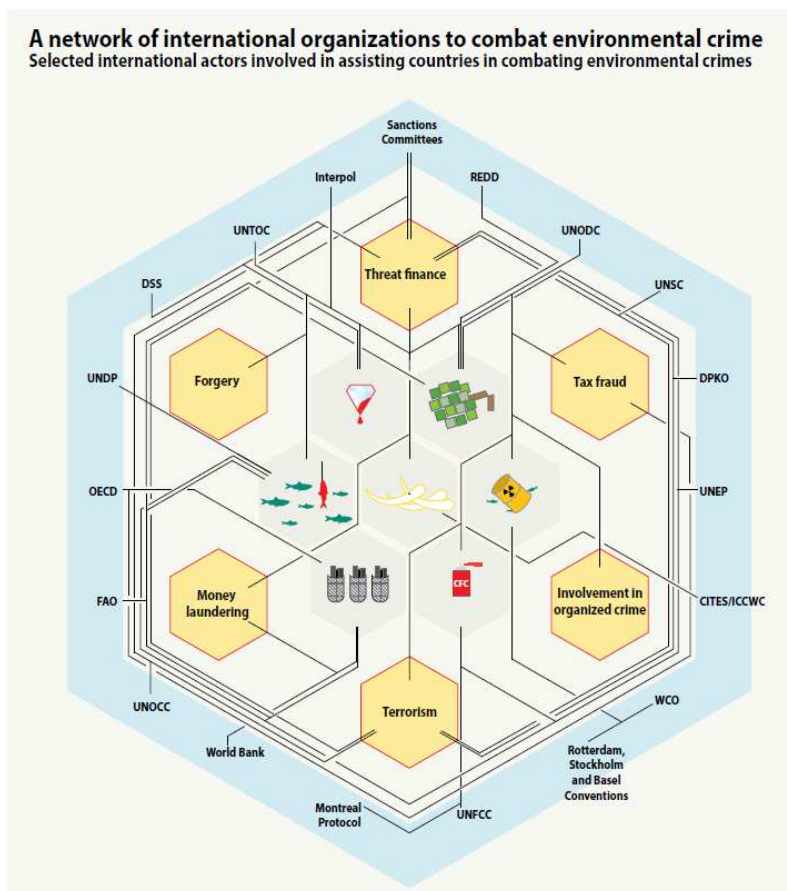


Figure 5. International Organizations Influenced by Environmental Crime.
Courtesy UNEP-INTERPOL RRAR 2016

⁸ United Nations Environmental Program UNEPA Multilateral Agreements 5/e:
<https://www.informea.org/en/decision/advancing-justice-governance-and-law-environmental-sustainability#decision-body-field>

Statistics for environmental crimes are difficult to measure due to the sheer volume of underground activity. However, it is generally recognized that progress in combating individual cases has grown while realizing these crimes are a significant threat to peace, civilizations, society, health, security and development.

In addition to extremely varying wildlife poaching, illegal timber harvesting and the impacts of global waste and pollution is valued at 410 billion USD per year. The global waste sector takes several forms including legal industry, environmental protection, unregulated business, and trafficking in hazardous waste and chemicals by organized crime.⁹

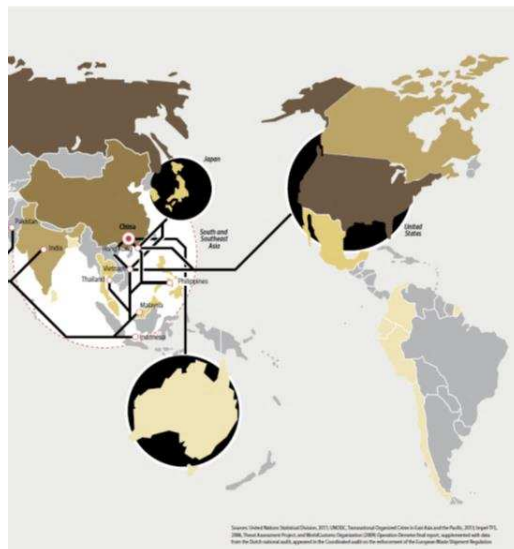
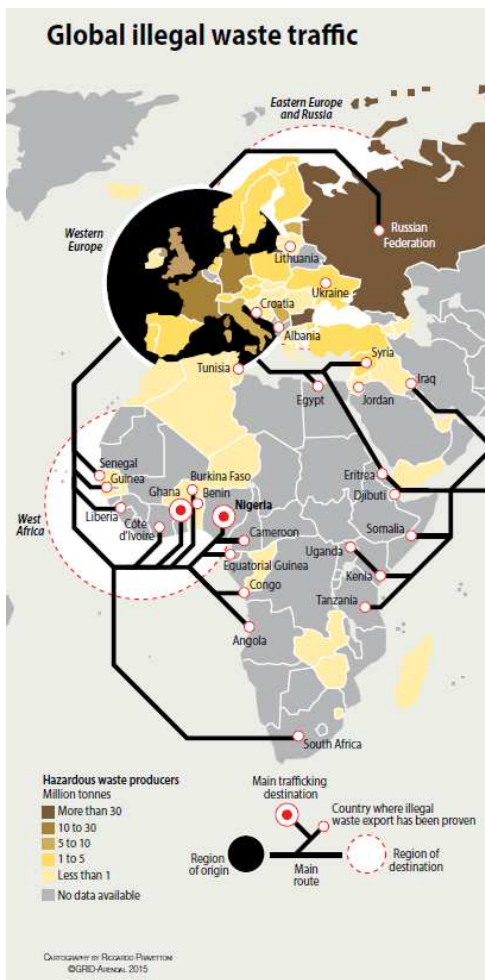


Figure 6 & 7. Illegal Trafficking Routes of Hazardous Waste.
Courtesy UNEPA-INTERPOL 2016 RRAR

⁹ The Rise of Environmental Crime, A UNEP-INTERPOL RRAR, 2016, Page 62,
<http://web.unep.org/environmentalgovernance/erl/resources/publications/rise-environmental-crime>

The links of environmental crimes to white collar, organized criminal networks have shown to be low risk with high profit margins. They harm our collective environment and security while exploiting natural resources to fund their illegal activities. At least 40 percent of global internal conflicts in the last 60 years have links to natural resources.¹⁰

Causes of Environmental Crime:

Poverty, demand and a permissive environment are root causes enabling environmental crime.

- Poverty is a driver of environmental crime because the poor are often vulnerable and easy to recruit at entry levels of activity.
- Demand for goods derived from natural resources such as wood, timber, wildlife, as well as the always growing and desperate need for waste disposal services, drives criminal activity due to readily available profits.
- Underfunding and lack of capacity to enforce laws and regulations leads to crime occurring almost by inertia or default.

Response & Restoration:

Coordinated, international operations highlighted in the UNEPA-INTERPOL 2016 RRAR outlined successful case studies to combat wildlife, fisheries and forestry crime, ozone layer depletion and pollution. Impacts on a global scale undermine peace for civilization and security of the world's people in addition to both legal business and trade.

Lester R. Brown, in *PLAN B 3.0*, writes that we are in a race between tipping points in nature and our political systems and suggests help for countries to stabilize our populations and ecosystems before they become failing states. In order to understand our current environmental dilemma, it helps to look at earlier civilizations that also got into environmental trouble. The question is how we will respond.¹¹ Some early societies were able to modify how they lived with the environment in a way to avoid their collapse or decline.

¹⁰ Ibid. page 67

¹¹ Brown, Lester R. *PLAN B 3.0* Earth Policy Institute W.W.Norton & Company New York – London 2018

Current civilization, across borders, states, and oceans, is threatened. This is due in part to the violations and sheer scale of environmental crimes that must be curtailed. Our quality of life and civilization itself is at stake. Engaged response, sound laws, along with more and better monitoring, enforcement and restoration will help ensure our ability to maintain clean air and water, the basics of life as we know it, as we would like to leave them for the next generations.