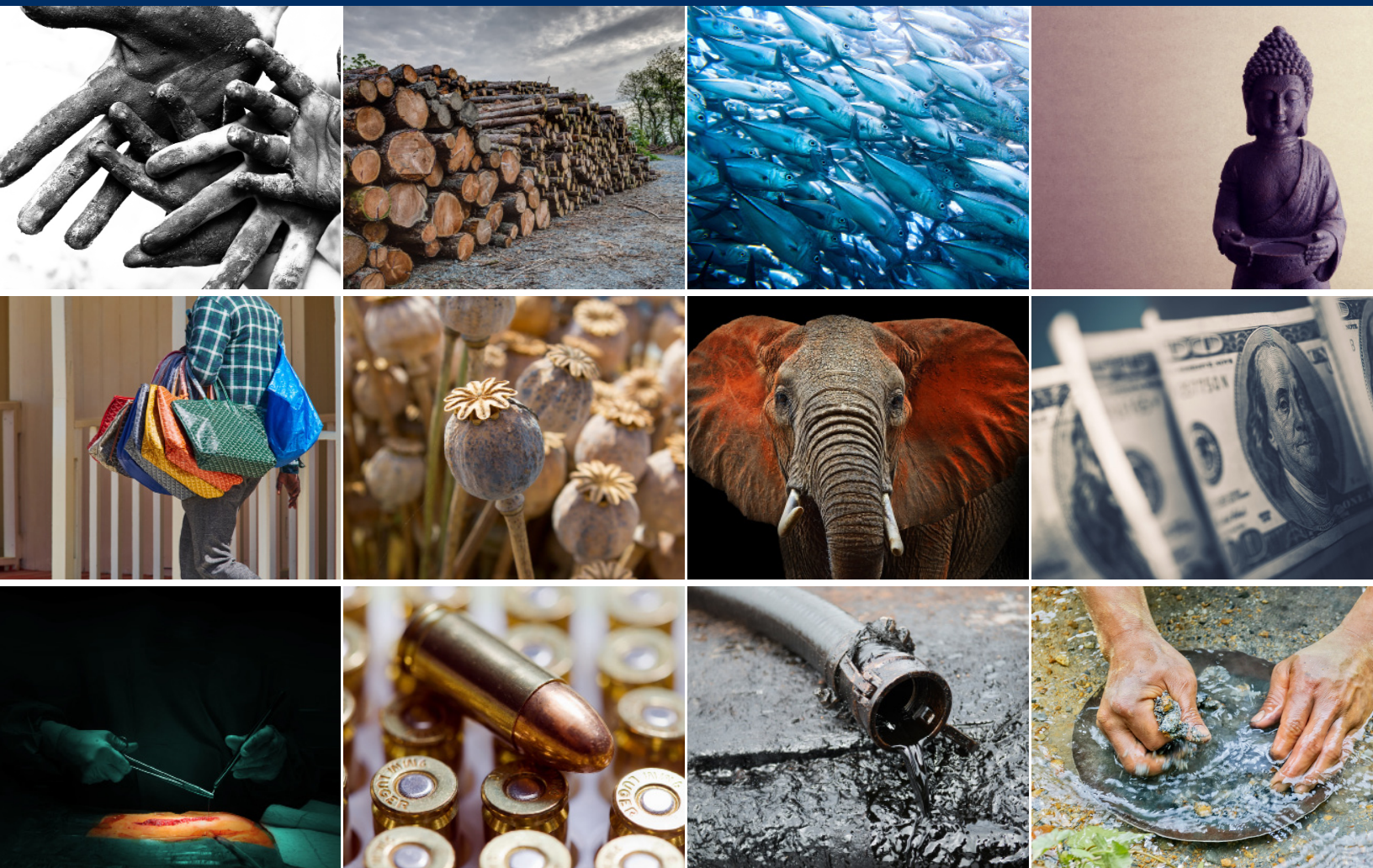




GLOBAL FINANCIAL INTEGRITY

Transnational Crime and the Developing World



Channing May
March 2017



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GLOBAL FINANCIAL INTEGRITY

Global Financial Integrity is pleased to present here its analysis of *Transnational Crime and the Developing World*. This follows a similarly named report we produced in 2011, which received considerable attention around the world. Unfortunately, transnational crime in multiple categories continues to grow in every region.

The international community has been aggressively combatting drug trafficking for more than 40 years, yet supplies of drugs are undiminished and prices have not risen. Often utilizing the same channels, human trafficking for forced labor and sexual exploitation has exploded. Counterfeiting and pirating of pharmaceuticals, consumables, luxury goods, and intellectual property is the biggest single transnational criminal activity, likely exceeding US\$1 trillion in retail value.

Illegal logging, mining, fishing, wildlife trade, oil theft, and trafficking in cultural property withdraw hundreds of billions of dollars of resources from developing countries. The illegal organ trade preys upon the poor, while arms trafficking protects the criminals.

The global community is failing in efforts to curtail transnational crime. Why? Largely because law enforcement is focused on the materials and manifestations of the crimes rather than on the money the crimes generate.

Take just one aspect of the transnational crimes analyzed in the following pages—drug trafficking—as an example. The United Nations Office of Drugs and Crime estimates that globally 40 percent of cocaine and heroin are interdicted somewhere between production and consumption, but less than one percent of drug money is ever recovered. The United States Drug Enforcement Administration and similar organizations across the globe concentrate heavily on seizing drug products and expend far fewer resources on tracking and blocking drug money. The truth is, drug traffickers can afford to lose not just 40 percent but 60 or 80 percent or even more of their product if they can keep more than 99 percent of the revenues.

The fight against transnational crime needs to be redirected to combatting the money the crimes generate. This means shutting down the global shadow financial system that facilitates the moving and secreting of illicitly generated funds. The good news is, none of this is technically difficult. It is a matter of political will.

Our great appreciation is extended to Channing May and Christine Clough for this thoughtful and comprehensive analysis of transnational crime, one of the most serious issues we must address in the 21st century.

Raymond Baker

President

Global Financial Integrity

March 27, 2017

Contents

Glossary.....	ix
Executive Summary.....	xi
I. Introduction.....	1
II. Drug Trafficking.....	3
III. Trafficking of Small Arms and Light Weapons.....	13
IV. Human Trafficking.....	21
V. Illegal Organ Trade.....	29
VI. The Illicit Trade in Cultural Property.....	35
VII. Counterfeiting and Piracy.....	43
VIII. Illegal Wildlife Trade.....	53
IX. Illegal, Unreported, Unregulated Fishing.....	61
X. Illegal Logging.....	69
XI. Illegal Mining.....	75
XII. Crude Oil Theft.....	83
XIII. Policy Recommendations.....	93
XIV. Conclusion.....	99
Appendix: Methodology.....	101
Bibliography.....	117
About.....	147

Tables and Figures in the Report

Table X1. The Retail Value of Transnational Crime.....	xi
Table A. Inflation Adjusted Value of Global Drug Market, 2014 (US\$).....	3
Table B. Price vs. Distance: Colombian Cocaine (US\$, street wholesale).....	5
Box 1. Brief History of Drug Trafficking in Mexico.....	10
Table C. Composition of Illicit Arms Trade.....	13
Table D. The Average of an AK-47 Around the World (US\$).....	14
Table E. Price vs. Distance: The Weapon's Route.....	15
Table F. Seizure by Location, 2013.....	17
Figure I. Estimated Annual Profits from Human Trafficking by Region (US\$ billion).....	21
Figure II. Profits and Victims.....	22
Table G. Human Smuggling vs. Human Trafficking.....	23
Table H. Regional Trends in Laundering the Proceeds of Human Trafficking.....	25
Table I. Retail Prices of Organs (US\$).....	29
Table J. Kidney Transplants: Vendors vs. Recipients.....	30
Table K. Prices Paid to Kidney Vendors Around the World.....	30
Table L. Participants in the Illegal Organ Trade.....	31
Table M. Notable Art Heists.....	36
Figure III. Trade-Based Money Laundering Scheme.....	40
Table N. Trade in Counterfeit and Pirated Goods, 2013 (US\$).....	43
Table O. Trade in Digitally Pirated Goods, 2015 (US\$).....	43
Table P. Top Counterfeited Items and Brands.....	46
Box 2. Pharmaceutical Crime.....	47
Figure IV. Terrorist Financing and Counterfeiting.....	49
Table Q. Sample Retail Market Prices (US).....	54
Table R. Poacher vs. Consumer Prices (US\$).....	55
Table S. Illegal Wildlife Markets.....	55
Box 3. Superstition vs. Reality: The Case of Ivory and Rhino Horn.....	56
Table T. What is IUU Fishing?.....	61
Table U. Flags of Convenience.....	64
Figure V. Trade Misinvoicing to Launder Illegally-Caught Fish.....	65
Table V. Value Chain for Peruvian Mahogany, per cubic meter (US\$).....	69
Table W. Value Chain for West African Rosewood, per 10-ton container (US\$).....	70
Figure VI. Division of Value: US\$140/m ³ of Russian timber.....	70
Figure VII. Mining Spectrum.....	75
Table Y. Annual Value of Illegal Gold Mining in Latin America (US\$ millions).....	76
Figure VIII. Illegal Mining, Trade Misinvoicing, and Tax Fraud.....	81
Table Z. Crude Oil Theft Volume and Value (US\$).....	83
Box 4. Oil and War.....	86
Figure IX. Pipelines and Drug Trafficking Organization Territory, 2015.....	87
Figure X. Cocaine and Crude.....	88
Table AA. The Retail Value of Transnational Crime.....	99
Appendix Table A. Global Drug Market Values by Rate of Inflation (US\$).....	101
Appendix Table B. Global Drug Market Value by Percent of GDP (current US\$).....	102
Appendix Table C. Global Drug Submarket Values by GDP Growth (US\$).....	102
Appendix Table D. The Average Cost of an AK-47 Around the World (US\$).....	103

Appendix Table E. Estimated Value of the Illegal Organ Trade.....	104
Appendix Table F. Prices Paid to Kidney Vendors Around the World.....	104
Appendix Table G. Price Range of Liver Transplants (US\$).....	105
Appendix Table H. Price Range of Heart Transplants (US\$).....	106
Appendix Table I. Price Range of Lung Transplants (US\$).....	107
Appendix Table J. Price Range of Pancreas Transplants (US\$).....	107
Appendix Table K. Kidney Transplants: Vendors vs. Recipients (US\$).....	108
Appendix Table L. Prices Paid to Kidney Vendors Around the World.....	108
Appendix Table M. Notable Art Heists.....	110
Appendix Table N. Global Illegal Wildlife Trade Values (US\$).....	111
Appendix Table O. Sample Retail Market Prices (US\$).....	112
Appendix Table P. Source vs. Market Country Prices (US\$).....	113
Appendix Table Q. Summary of Regional Estimates of Illegal Fishing, Averaged Over 2000-2003.....	114
Appendix Table R. Estimated Illegal Catch Volume, 2011-2014.....	115

Glossary

ACT	Anti-Counterfeiting Tool
AML	Anti-money laundering
ATS	Amphetamine-type stimulants
Avg.	Average
BACRIM	Bandas criminales (criminal gangs)
BPD	Barrels per day
CAR	Central African Republic
CFT	Combating the financing of terrorism
CIS	Commonwealth of Independent States
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DTO	Drug trafficking organization
EEZ	Exclusive economic zone
ELN	Ejército de Liberación Nacional (National Liberation Army)
ETA	Euskadi Ta Askatasuna (Basque Country and Freedom)
EU	European Union
EUC	End-user certificate
FAO	Food and Agriculture Organization of the United Nations
FARC	Fuerzas Armadas Revolucionarias de Colombia (Revolutionary Armed Forces of Colombia)
FATF	Financial Action Task Force
FBI	Federal Bureau of Investigation
FDLR	Forces démocratiques pour la libération du Rwanda (Democratic Forces for the Liberation of Rwanda)
FIU	Financial intelligence unit
FOC	Flag of convenience
FSI	Financial Secrecy Index
GDP	Gross domestic product
GFI	Global Financial Integrity
GLEI	Global legal entity identifier
HIV	Human immunodeficiency virus
HS	Harmonized system
ILO	International Labor Organization
IMO	International Maritime Organization
IP	Intellectual property
IPM	Interface Public-Members
IRA	Irish Republican Army
ISIL	Islamic State of Iraq and the Levant (also referred to as ISIS, IS, and Daesh)
IUU	Illegal, unreported, and unregulated
kg	Kilogram
Lao PDR	Lao People's Democratic Republic
LGBT	Lesbian, gay, bisexual, and transgender

LRA	Lord's Resistance Army
m³	Cubic meter
MDMA	3,4-methylenedioxymethamphetamine
MSB	Money service business
No.	Number
NPS	New psychoactive substances
OCG	Organized crime group
OECD	Organisation for Economic Co-Operation and Development
RUF	Revolutionary United Front
SALW	Small arms and light weapons
SARS	South African Revenue Service
SMS	Short message service
t	Ton
TBML	Trade-based money laundering
TJN	Tax Justice Network
TOC	Transnational organized crime
UN	United Nations
UNEP	United Nations Environment Programme
UNITA	União Nacional para a Independência Total de Angola (National Union for the Total Independence of Angola)
UNODC	United Nations Office on Drugs and Crime
US	United States
US\$	United States dollars
UVI	Unique vessel identifier
VAT	Value-added tax
WCO	World Customs Organization

Executive Summary

Overview

Transnational crime is a business, and business is very good. Money is the primary motivation for these illegal activities. The revenues generated from the 11 crimes covered in this report—**estimated to range between US\$1.6 trillion and \$2.2 trillion per year**—not only line the pockets of the perpetrators but also finance violence, corruption, and other abuses. These crimes undermine local and national economies, destroy the environment, and jeopardize the health and wellbeing of the public. **Transnational crime will continue to grow until the paradigm of high profits and low risks is challenged. This report calls on governments, experts, the private sector, and civil society groups to seek to address the global shadow financial system by promoting greater financial transparency.**

Table X1. The Retail Value of Transnational Crime

Transnational Crime	Estimated Annual Value (US\$)
Drug Trafficking	\$426 billion to \$652 billion
Small Arms & Light Weapons Trafficking	\$1.7 billion to \$3.5 billion
Human Trafficking	\$150.2 billion
Organ Trafficking	\$840 million to \$1.7 billion
Trafficking in Cultural Property	\$1.2 billion to \$1.6 billion
Counterfeiting	\$923 billion to \$1.13 trillion
Illegal Wildlife Trade	\$5 billion to \$23 billion
IUU Fishing	\$15.5 billion to \$36.4 billion
Illegal Logging	\$52 billion to \$157 billion
Illegal Mining	\$12 billion to \$48 billion
Crude Oil Theft	\$5.2 billion to \$11.9 billion
Total	\$1.6 trillion to \$2.2 trillion

Drug Trafficking

The global drug trafficking market was worth US\$426 billion to \$652 billion in 2014. It represents about one-third of the total retail value of the transnational crimes studied here. Cannabis was responsible for the largest share of drug trafficking, followed in order by cocaine, opiates, and amphetamine-type stimulants (ATS). ATS and cannabis are produced all over the world, while the production of cocaine and opiates is concentrated in South America and Afghanistan, respectively. Drug trafficking organizations (DTOs), organized crime groups (OCGs), guerrilla groups, and terrorist organizations are all involved in drug trafficking. OCGs in West Africa have increased their control of the drug market in the region, and the volume of heroin trafficked from Afghanistan through East Africa is escalating, stoking consumption.

Arms Trafficking

The trafficking of small arms and light weapons (SALW) is one of the least profitable transnational crimes studied in this report, but it is also one of the most consequential for human security in developing countries. This market was worth US\$1.7 billion to \$3.5 billion in 2014, which represents 10 to 20 percent of the legal arms trade. Three main factors drive prices: an area's level of conflict, political unrest, and political tension; the distance over which the items are smuggled; and, the levels of enforcement traffickers must overcome. **Internet-based trafficking represents a growing challenge to combatting SALW smuggling.** Decommissioned weapons that had been sold and then illegally reactivated **were used in several recent terrorist attacks in Western Europe and represent another trending threat of arms trafficking.**

Human Trafficking

Human trafficking, for labor and for sex, is one of the fastest-growing transnational organized crime markets. Twenty-one million men, women, and children around the world are currently thought to be victims of human trafficking, which the International Labor Organization estimates generates US\$150.2 billion in profits each year. The Asia-Pacific region is responsible for US\$51.8 billion of this market, with around 11.7 million victims. Developed Economies and the European Union is responsible for another third of the market value with US\$46.9 billion, even though there are “only” 1.5 million victims, one-eighth as many as the Asia-Pacific region. **Human trafficking is playing a growing role in terrorist and insurgent activities and groups, and the spread of the internet has provided traffickers with additional, far-reaching means to reach both victims and victimizers.**

Illegal Organ Trade

Organ trafficking conservatively generates approximately US\$840 million to \$1.7 billion annually from around **12,000 illegal transplants**. This estimate comprises the “sales” of the top five organs: kidney, liver, heart, lung, and pancreas. **Kidneys** are the most common for legal and illegal transplants and are the least expensive on the black market, because they **can come from living donors**. Brokers/scouts operate within sophisticated and specialized networks to recruit the vendors, the recipients, and the necessary medical professionals in traditional models of organ trafficking. In many cases the donor participates willingly, whereas there are further scenarios where they are pressured or forced into the transaction. **Organ traffickers coerce migrants and refugees to sell kidneys to pay for passage to Europe, among others.**

Cultural Property

The global annual revenue generated from the illicit trade in cultural property is estimated at approximately US\$1.2 billion to \$1.6 billion. This criminal market covers a range of illegal activities, including the theft of cultural property from museums, the illicit excavation and looting of archaeological sites, and the use of faked or forged documentation to enable both illegal import and export as well as illicit transfers in ownership. Estimates of ISIL's profits from the illicit antiquities trade cover a wide range, from several million dollars to a few billion each year. **China is one of the fastest growing art markets, legal and illegal, fueled in part by capital flight.**

Counterfeit and Pirated Goods

The trade in counterfeit and pirated goods is the most valuable illicit trade examined in this report at US\$923 billion to \$1.13 trillion annually. An estimated two-thirds to three-quarters of counterfeit and pirated goods come from China. Counterfeit pharmaceuticals represent 10 to 30 percent of available drugs in developing countries. Worldwide these illicit goods are estimated to be worth between US\$70 billion to \$200 billion annually, which represents up to 25 percent of the total counterfeit market. Hazardous counterfeit food and useless and/or **toxic counterfeit medicines endanger the health and safety of the public.** For organized crime groups, counterfeiting provides an ideal avenue for laundering the profits of other transnational organized crime as well as financing other crimes.

Illegal Wildlife Trade

Estimates place the annual retail value of the illegal wildlife trade between US\$5 billion and \$23 billion. Ivory and rhino horn are two of the biggest components of the market value and receive the most public attention, yet **the pangolin is actually the most trafficked animal in the world. Per kilo, the retail revenues for ivory or rhino horn can be equal to or greater than the equivalent amount of cocaine or heroin, yet the legal penalties are considerably more lenient.** The illegal wildlife trade relies on a sophisticated global supply chain, run by well-funded organized crime groups. In developing countries wildlife trafficking robs local communities of much-needed revenue streams and has deleterious impacts on the environment, security, and rule of law, and little of the profit goes into the domestic economy.

Illegal, Unreported, and Unregulated (IUU) Fishing

Annual illegal and unreported marine fishing generates **US\$15.5 billion to \$36.4 billion in illicit profits**; of that, the majority is generated off the coasts of developing countries. **This estimate is conservative** as it does not include unregulated fishing as well as any IUU fishing in inland fishing areas. It has major environmental, societal, and security impacts in developing countries, particularly in areas where the local economy and the local diet depend on fishing. **Firms that participate in IUU fishing have been linked to other crimes such as the smuggling of migrants and the trafficking of drugs and persons.** The primary business model uses “**flags of convenience**,” whereby jurisdictions like Panama provide vessel registration for anyone in the world and typically exercise minimal oversight of the vessels, including not requiring or verifying the true, ultimate owner.

Illegal Logging

Illegal logging is estimated to be valued at US\$52 billion to \$157 billion dollars per year; this makes it **the most profitable natural resource crime**. Illegally-procured timber accounts for 10 to 30 percent of the total global trade in timber products, however this crime principally occurs in **Southeast Asia, Central Africa, and South America**, where an estimated **50 to 90 percent of timber from these regions is acquired illegally**. Illegal logging in conflict zones often contributes to financing and fueling violence. Groups that engage in illegal logging continue to **use trade misinvoicing and anonymous shell companies to evade logging restrictions and avoid scrutiny**. **China is the primary destination** for the majority of illegally-sourced timber.

Illegal Mining

A 2016 United Nations Environment Programme and INTERPOL assessment estimates that the illegal extraction and trade in minerals is worth US\$12 billion to \$48 billion annually. **Illegal mining is largely confined to developing countries**. Experts estimate that illegal gold mining in nine Latin American countries is worth approximately US\$7 billion each year. Conflict diamonds are generally thought to represent less than one percent of global production, however **illicitly mined diamonds are estimated to account for 20 percent of worldwide production** and were worth approximately US\$2.74 billion in 2015. The exploitation of natural resources is a lucrative source of financing for organized crime groups, terrorist organizations, and insurgent groups.

Crude Oil Theft

Crude oil theft is estimated to be worth at least US\$5.2 billion to US\$11.9 billion annually as of 2015. However, this only includes data from six countries: Colombia, Indonesia, Mexico, Syria, Russia, and Nigeria, all of which have high levels of theft as well as available statistics. **Nigeria has in recent years been the epicenter of worldwide crude oil theft**. Crude oil theft in Syria currently represents the vast majority of the country's total oil production due to the **ISIL's control of principal oil fields**. **The volumes of crude oil stolen in Mexico and Colombia each day are very small, but the participation of violent DTOs in oil theft in Mexico, and its use in cocaine production in Colombia, renders this a more serious issue.**

Policy Recommendations

Greater financial transparency has the potential to simultaneously curtail every transnational crime in every part of the world. The networks involved in these illicit markets are akin to major global corporations, and they need access to finance and banking in order to be profitable and continue operating. Countries need to **require** that corporations registering and doing business within their borders declare the name(s) of the entity's true, **ultimate beneficial owner(s)**. Customs and central bank authorities should flag financial and trade transactions involving individuals and corporations in “**secrecy jurisdictions**” as high-risk and require extra documentation to try to ensure there is no illegal activity involved. **Customs officers should scrutinize import and export invoices for signs of misinvoicing**, which may indicate technical and/or physical smuggling. **Customs agencies can use world market price databases such as GFTTrade™ to estimate the risk of misinvoicing** for the declared values and investigate suspicious transactions. Government agencies and departments in each country also need

to **share more information on the illicit markets and actors** that exist within their borders. Sharing this data and this knowledge will help to avoid gaps, bolster investigations into possible abuses, and support stronger enforcement of the country's laws. Criminals cannot afford to face this level of risk of their money or goods being detected.

Methodology

The basis of the value estimates in this report is a compilation of numerous datasets and price statistics from governments, non-governmental bodies, law enforcement, and other experts. Each illicit market chapter briefly notes the methodology and data sources used for those goods, and **a detailed description of certain methodologies, as well as tables with all of the data and sources used, are provided in the Appendix.** Most of the estimates the report highlights are ranges rather than a single figure, because there is less precision in data pertaining to activities that are trying to stay hidden, such as transnational crime.

I. Introduction

The aim of this report is to provide an overview of 11 different transnational crimes and their overlapping trends and systems: the trafficking of drugs, arms, humans, human organs, and cultural property; counterfeiting; illegal wildlife crime; illegal fishing; illegal logging; illegal mining; and crude oil theft. Each chapter focuses on a different crime, exploring the value of the transnational market, its dynamics, how it impacts developing countries, and recent developments in how it operates.

Transnational Crime and the Developing World is an update to Global Financial Integrity's 2011 report *Transnational Crime in the Developing World*, which was written by Jeremy Haken. The same transnational crimes are covered in this report as in the 2011 report. All transnational crime has significant impacts on individuals, communities, and countries, and future reports may be expanded to include other major transnational crimes, such as cybercrime, illegal waste, and smuggling.

Any discussion of value, whether of entire markets or individual goods, is largely based on estimation. Much of the knowledge about these crimes comes from interdictions and seizures—the instances when transparency pierces the clandestine nature of the markets. These incidences represent only a small percentage of the total trade, but provide valuable intelligence that can inform policy. The illicit nature of these markets means that participants have an interest in keeping market operations opaque, limiting the amount and quality of data.

The point of considering estimated ranges of values is to illustrate that the magnitude of the funds generated by transnational crime are significant and have major impacts on the economic, social, political, and environmental stability of all countries. The negative effects of a given criminal market—whether it is worth US\$50 billion or US\$150 billion—remain predominately unchanged and require the same policy responses and coordination.

The transnational crimes examined in this report are frequently committed by organized crime groups (OCGs). For some, the mention of OCGs or organized crime brings to mind the mafia and films like *The Godfather*: glamorous, hierarchically-structured criminal organizations aligned along family and/or ethnic lines with codes of honor. These stereotypes represent a portion of organized crime, but they do not represent all OCGs. The United Nations Convention against Transnational Organized Crime defines an OCG as “a structured group of three or more persons, existing for a period of time and acting in concert with the aim of committing one or more serious crimes or offences... in order to obtain, directly or indirectly, a financial or other material benefit.”¹

Transnational OCGs are, at their core, businesses: they are overwhelmingly motivated by financial gain and seek out opportunities that offer high profits and low risks/costs. For both legal and illegal enterprises, financial management is critical to the success of the business. Criminals not only derive financial benefit from illicit revenues, they use the proceeds to sustain operations and to fund further criminal activity, all of which is a threat to individual nations and the international community.

OCGs as well as terrorist and insurgent organizations are often highly adaptive to changes and opportunities. They exploit crises such as natural disasters, social upheavals, and civil wars for the trafficking of illicit goods, including humans, organs, arms, and cultural property, all of which compounds the impacts of the situation. These groups are quick to adopt new technology, for example moving operations online or using anonymous digital currency, that enables them to maximize profits as well as stay ahead of law enforcement.

The report proceeds with 11 chapters on different transnational crimes, a section on recommended policy responses, a conclusion covering the main themes and takeaways, and an appendix with

¹ United Nations Office on Drugs and Crime, “United Nations Convention against Transnational Organized Crime and the Protocols Thereto” (New York: United Nations, 2004), 5, <http://www.unodc.org/documents/treaties/UNTOC/Publications/TOC%20Convention/TOCebook-e.pdf>. Emphasis added

methodologies and additional sources. The cumulative analysis will demonstrate that the dynamics, organizations, and impacts cut across and link seemingly disparate crimes with each other. Government and enforcement bodies in every country will benefit from applying this big-picture perspective to new and existing efforts to combat transnational organized crime.

II. Drug Trafficking

A. Overview

The United Nations Office on Drugs and Crime (UNODC) defines drug trafficking as the “cultivation, manufacture, distribution, and sale of substances which are subject to drug prohibition laws.”² Drug trafficking is the quintessential transnational crime, as no country is left untouched by its multifarious grip, from production and processing operations to distribution and consumption activities.

Drug trafficking has a destabilizing effect on all countries involved, regardless of whether they are a source, processing, transit, and/or market country. The burden placed by violence, public health threats, and economic distortions threatens the ability of developing countries to devote meaningful resources to domestic resource mobilization.

B. Value

Drug trafficking is the second most lucrative illicit market measured in this report, representing more than one-third of the total value of the transnational crimes studied. However, any discussion of the global market value of drug trafficking, as well as any other illicit market, must begin by emphasizing the difficulty in determining the market’s worth.

The principal difficulty arises from the fact that operations and transactions are covert. As a result, most available data come from seizures—the limited instances where clarity pierces the market—which typically represent only a small percentage of actual drug trafficking. In addition, there is not a universally agreed upon definition of drug trafficking; thus, countries may measure the activity differently, making what data are available difficult to compare across nations and regions.

The global market value of drug trafficking is derived from retail sales of the four main categories of illicit drugs: cannabis, cocaine, opiates, and amphetamine-type stimulants (ATS). **This report estimates that the global market in drug trafficking was worth US\$426 billion to \$652 billion in 2014.**³ Table A provides a summary of the global market values for all drug trafficking as well as the four major submarkets.

Table A. Global Drug Market Annual Values (US\$)

Market	Value
Cannabis	\$183 billion to \$287 billion
Cocaine	\$94 billion to \$143 billion
Opiates	\$75 billion to \$132 billion
ATS	\$74 billion to \$90 billion
Global Total	\$426 billion to \$652 billion

Two methods were used to arrive at these market values, one working forward and the other backward.⁴ Both methods use simple economic techniques and do not take into account market factors such as changes in demand and supply. Working forward, the rate of inflation was applied to the last submarket estimates produced by the UNODC, the sum of which provided the updated global market value.⁵

Working backward, the value of the global illicit drug market to world gross domestic product (GDP) was used. The UNODC estimated that the global drug market was worth US\$320 billion in 2003, equivalent

² “Drug Trafficking,” *United Nations Office on Drugs and Crime*, accessed October 14, 2016, <https://www.unodc.org/unodc/en/drug-trafficking/>.

³ The year 2014 was used because it is the most recent year with complete data.

⁴ See Appendix, Section A for detailed methodology.

⁵ ATS: \$63.4 billion (2006); cannabis: \$141.9 billion (2003); cocaine: \$85 billion (2009); and opiates: \$68 billion (2009).

to approximately 0.8 percent of global GDP.⁶ Assuming that the global market still represents the same percentage of global GDP, the illicit global drug market would be worth US\$651 billion in 2014.⁷ The individual submarket values were determined by assuming that these markets grew at the same rate as the global market.

The total global drug market value is conservative because it does not include the value of new psychoactive substances (NPS). NPS refers to drugs that were not included (i.e., controlled) in the 1961 Single Convention on Narcotic Drugs or the 1971 Convention on Psychotropic Substances because they were not traditionally abused or were not in existence at that time. The recognition and classification of NPS is relatively new in comparison to the other drug submarkets, and thus there is little solid data on global market prices.

The value of a particular submarket is largely dependent on both consumption trends as well as drug prices. High levels of consumption typically generate a high market value, yet high retail drug prices and low consumption levels can produce similar results to markets with modest prices and high consumption.⁸

Cannabis represents the largest submarket, worth approximately US\$183 billion to \$287 billion in 2014, or roughly 43 to 44 percent of the global market. This is because cannabis is by far the most widely cultivated, distributed, and consumed drug worldwide. Cannabis is a relatively inexpensive drug compared to cocaine and opiates, therefore the high value of its market is due to the large number of consumers. In 2014, it was estimated that 182.5 million people, or 2.5 percent of worldwide population, consumed cannabis.⁹

Cocaine and opiates are similar in both the value of the market as well as the number of global consumers. The submarkets are worth US\$94 billion to \$143 billion and US\$75 billion to \$132 billion, respectively, and have approximately 17 to 18 million users.¹⁰ ATS represent the smallest portion of the global drug market, worth around US\$74 billion to \$90 billion. There are approximately 55 million global ATS users,¹¹ which is greater than cocaine and opiate users combined, yet synthetic drugs are typically less expensive than cocaine or opiates.

The more factors of production—land, labor, and capital—that are needed to produce a drug, the greater the production costs, increasing the price of a drug. Large amounts of land are needed to cultivate coca and poppy plants, however cultivation is limited to certain geographic areas, which restricts the quantity of plants that can be cultivated and supplied, all of which increases price. The cultivation and processing of coca leaves and poppy flowers are also labor and capital intensive. Agriculture in general is labor intensive, and illicit agriculture typically requires additional labor, such as security, as well as capital expenses, such as bribes. Multiple steps, chiefly chemical manipulation, are required to process the plants to their consumable form, and the supplies as well as technical expertise increase production costs.

Though cannabis cultivation is also labor intensive, the plant can be cultivated virtually anywhere in the world, indoors and outdoors, and its production can be scaled up or down to desired levels. Cannabis can therefore be produced much closer to consumer markets, reducing transaction costs that are incurred when transporting the product to market. Indoor cultivation requires greater fixed capital requirements (e.g., lighting and hydroponic equipment), raising production costs, yet cultivation can be

⁶ The UNODC 2005 World Drug Report states that the global illicit drug market is worth 0.9 percent of global GDP at the retail level, however updated GDP figures from the World Bank show it to actually be 0.83 percent. United Nations Office on Drugs and Crime, *World Drug Report 2005* (Vienna: United Nations Office on Drugs and Crime, 2005), 127, http://www.unodc.org/pdf/WDR_2005/volume_1_web.pdf.

⁷ The value of the global illicit drug market in 2014 (US\$651 billion) based on the rate of growth does not match the total value shown in Table A due to rounding of the individual submarket values. See Appendix, Section A for additional information.

⁸ Organization of American States, *The Drug Problem in the Americas: Studies; The Economics of Drug Trafficking* (Washington, DC: Organization of American States, 2013), 7, http://www.cicad.oas.org/drogas/elinforme/informeDrogas2013/laEconomicaNarcotrafico_ENG.pdf.

⁹ United Nations Office on Drugs and Crime, *World Drug Report 2016* (Vienna: United Nations Office on Drugs and Crime, 2016), 43, <https://www.unodc.org/wdr2016/>.

¹⁰ *Ibid.*, 26, 35.

¹¹ *Ibid.*, 52.

done throughout the year, increasing yields (i.e., supply). There is much less labor and capital required to process cannabis after it has matured because cannabis is principally consumed in its natural state; chemical manipulation is not required like it is for cocaine and heroin.¹²

The manufacture of ATS is generally not labor or time intensive, can be done on a small to large scale and in relatively any location, and chemicals (i.e., precursors, reagents, and solvents) are not particularly expensive and can often be substituted. A certain level of specialized knowledge and equipment is needed for industrial-scale manufacturing, however the knowledge needed for small-scale “home brew” production can often be distilled from the internet.

The value of a unit of drugs increases as it proceeds from production to market due in part to two important factors: risk and retail. The risk of interdiction increases the further drugs must travel (and the more borders they must cross) to reach consumer markets. Higher levels of risk increase transaction costs, such as the need to use more sophisticated concealment methods or pay additional bribes, and traffickers pass these costs on to consumers. As shown in Table B, the wholesale price of a kilogram of cocaine increases dramatically as it moves from the production site in the interior of Colombia, along trafficking routes in Central America and Mexico, and arrives in market destinations.¹³ Australia, which is both isolated and far from production countries, unsurprisingly has the highest prices.

Table B. Price vs. Distance: Colombian Cocaine (US\$, street wholesale)

Location	Price (per kg)	Price Increase from Production Site
Colombian interior (production site)	\$2,200	.
Colombian ports	\$5,500-\$7,000	150%-218%
Central America	\$10,000	355%
Southern Mexico	\$12,000	445%
Northern Mexico	\$16,000	627%
United States	\$24,000-\$27,000	991%-1,127%
Europe	\$53,000-\$55,000	2,309%-2,400%
Australia	\$200,000	8991%

Seizures made at or near the consumer market therefore have a much greater negative impact on criminal profits than similar seizures made closer to the production level. For example, a drug trafficking organization (DTO) would lose US\$500,000 if 50 kilos of cocaine were seized by law enforcement in Central America (Table B), yet if the same amount was seized in the United States the group would suffer US\$1.2 million to \$1.35 million in losses because of the additional resources it had invested in transporting the commodity between Central America and the United States.

Drug prices also increase when they are “broken down” for sale—that is when they move from wholesale to retail quantities. Wholesale prices are lower than retail prices because the trafficker is purchasing/selling in bulk quantities and is typically just transporting the goods. At the retail level, dealers raise prices not only to improve their profit margins but to cover increased transaction costs, such as labor, logistics, and storage, since the drugs are sold to consumers in smaller quantities (e.g., a gram instead of a kilogram), requiring greater effort from the retailer on a per unit basis.

The price increase at the retail level is notable because, with the exception of cannabis, the purity of drugs is frequently diluted, sometimes significantly, as they move from wholesale to retail. Diluting drugs increases the volume of drugs that can be sold, which further boosts profits. Experts estimate that two-thirds of total drug revenues are earned at the retail level.¹⁴

¹² Cannabis is primarily consumed as herb/bud or hash, however some extraction methods used to produce wax and oil do use solvents

¹³ Scott Stewart, “Mexico’s Cartels and the Economics of Cocaine,” *Stratfor*, January 3, 2013, <https://www.stratfor.com/weekly/mexicos-cartels-and-economics-cocaine>.

¹⁴ Organization of American States, *Drug Problem in the Americas*, 5.

C. Dynamics

There are overall trends that define the global drug market, as well as unique elements for individual submarkets. Cocaine and heroin are produced from plants that grow in geographically-limited areas, thereby restricting supply and contributing to higher prices; certain countries and/or routes cater to specific markets. Since cannabis, ATS, and NPS can be produced nearly anywhere, most production is intended for local or regional markets, reducing transaction costs and resulting in lower prices.

i. Amphetamine-Type Stimulants and New Psychoactive Substances

ATS and NPS differ from cannabis, cocaine, and opiates in that the vast majority are synthetic, manufactured from chemicals, instead of plant-based. The ATS group of drugs refers to amphetamine, methamphetamine, and other stimulants including MDMA, whereas NPS have a much wider range of impacts as they are typically designed to reproduce the effects of traditional illegal or controlled drugs.

ATS and NPS present different, and sometimes greater, challenges to law enforcement compared to plant-based drugs. Although ATS and NPS, as synthetic drugs, can be produced around the world, production thrives in countries that have porous borders and/or weak controls on precursor chemicals. China's booming chemical and pharmaceutical industries are currently the primary sources of precursor chemicals, enabled by feeble regulations and inadequate monitoring. Organized crime groups (OCGs) in China divert legally exported shipments of precursor chemicals to illegal end users, often in Mexico and Central America, involved in the manufacture of methamphetamine.¹⁵ There have been instances when Chinese OCGs have been compensated with other illicit goods, such as illegally-mined minerals from Mexico and poached abalone from South Africa, in order to obtain precursors.¹⁶

The production of synthetic drugs also benefits from the ability to substitute different precursor chemicals as well as manufacturing processes. Enterprising groups have even taken to producing precursors from so-called "pre-precursors" when strong controls have limited access to supplies. Synthetic drugs can also be manufactured much more quickly than plant-based drugs because they are not reliant on, *inter alia*, growing cycles. Likewise, traditional supply-side interdiction efforts, particularly crop monitoring and aerial spraying, cannot be used, which makes detection and disruption more difficult.

Synthetic drugs can be clandestinely manufactured anywhere and in any size, from small scale "kitchen labs" to sophisticated industrial-scale laboratories.¹⁷ Much of the knowledge needed for small scale manufacture can be gleaned from the internet or local contacts, whereas large scale production, particularly of NPS, often requires the outsourcing of chemical expertise. Many labs are capable of being constructed and dismantled quickly, allowing traffickers to easily move locations in response to increased law enforcement action.

ii. Cannabis

Cannabis is by far the largest drug market, both in consumption and value generated. Two-thirds of countries reported cannabis cultivation between 2009 and 2014.¹⁸ Unlike coca bush and poppies, it is more difficult to determine levels of cultivation because cannabis can be grown both indoors and outdoors. Cannabis is also unique in that, as opposed to the vast majority of other drugs, it is common for cannabis to be cultivated on a small scale for personal consumption.

As cannabis is grown in many countries, it is unnecessary to traffic it across great distances. Thus, it is primarily cultivated for consumption in domestic and regional markets.¹⁹ For instance, the United States

¹⁵ Sean O'Connor, "Meth Precursor Chemicals from China: Implications for the United States," *Staff Research Report* (Washington, DC: U.S.-China Economic and Security Review Commission, July 18, 2016), 5, http://origin.www.uscc.gov/sites/default/files/Research/Staff%20Report_Precursor-ChemicalReport%20071816_0.pdf.

¹⁶ Keegan Hamilton, "The Golden Age of Drug Trafficking: How Meth, Cocaine, and Heroin Move Around the World," *VICE News*, April 25, 2016, <https://news.vice.com/article/drug-trafficking-meth-cocaine-heroin-global-drug-smuggling>.

¹⁷ United Nations Office on Drugs and Crime, *World Drug Report 2016*, 52.

¹⁸ *Ibid.*, 43.

¹⁹ United Nations Office on Drugs and Crime, *World Drug Report 2011* (Vienna: United Nations Office on Drugs and Crime, 2011), 189, http://www.unodc.org/documents/data-and-analysis/WDR2011/World_Drug_Report_2011_ebook.pdf.

market is primarily supplied domestically or with cannabis smuggled from Mexico or Canada. Cannabis resin, commonly referred to as hashish or hash, is principally consumed in Europe, the Middle East and North Africa. Like cannabis herb, though, it is produced and smuggled regionally: Morocco primarily supplies the North African and European markets, while Afghanistan and Lebanon supply neighboring countries in their region.²⁰

iii. Cocaine

The overwhelming majority of coca plant cultivation, from which cocaine is produced, occurs in three countries: Colombia, Peru, and Bolivia. Bolivia has the lowest levels of coca cultivation, and Colombia and Peru have alternated as the top producer country. Internal disruptions to cultivation and production in one country, such as the aggressive eradication efforts under Plan Colombia which began circa 2000, have typically triggered operations to increase in another country (e.g., Peru), essentially propelling the problem from one country to another rather than curtailing it in absolute terms.

Latin American DTOs have diversified into other lucrative criminal ventures, particularly illegal mining, further challenging government efforts to combating their activities and financing. Illegal mining has proven to be extremely profitable for DTOs in Colombia and Peru, equaling or surpassing the revenues from cocaine trafficking as well as providing a solid way to launder drug money. Peruvian DTOs earn an estimated US\$1 billion to \$1.5 billion each year from drug trafficking, however illegal mining in Peru is worth approximately US\$2.6 billion annually.²¹ Compared to drug trafficking, illegal mining grants greater revenues and lower risks of interdiction and/or punishment. Diversification also provides DTOs as well as farmers and other source-country participants with an alternative income source during periods of government crackdown on drug trafficking.²²

iv. Opiates

Of the roughly 50 countries in which opium is illicitly cultivated, Afghanistan is responsible for approximately 70 percent of the world's opium production.²³ The largest amount of opiates leave Afghanistan along the Balkan route, which stretches from Afghanistan through Iran, Turkey and Southeastern Europe to markets in Western and Central Europe. This heroin trade has an estimated monetary value of US\$28 billion each year.²⁴

The southern route runs from Afghanistan through Iran or Pakistan to the Arabian Sea. From there, shipments travel primarily to the Gulf countries, Africa, and South Asia but may be forwarded to other destinations. Although the largest volume of opiates travel by the Balkan route, the opiates trafficked by the southern route end up in the greatest number of markets. The northern route, running from Afghanistan through/to neighboring states and the Commonwealth of Independent States (CIS), supplies the fewest markets.

Most of the remaining opium production comes from the Golden Triangle (Myanmar, Lao PDR, and Thailand) and Latin America. Porous borders in the Golden Triangle allow opiates, as well as other drugs and illegal goods, to easily reach East and Southeast Asia as well as Oceania. In Latin America, Mexico and Colombia produce the largest amounts of opiates and typically supply for regional markets in the Americas. Mexican DTOs and farmers have increased the cultivation of poppies, in some instances replacing cannabis, in order to capitalize on the growing demand for opiates in the United States.²⁵

²⁰ United Nations Office on Drugs and Crime, *World Drug Report 2016*, 44.

²¹ Livia Wagner, *Organized Crime and Illegally Mined Gold in Latin America* (Geneva: Global Initiative against Transnational Organized Crime, 2016), 7–8, <http://globalinitiative.net/wp-content/uploads/2016/03/TGIATOC-OC-and-Illegally-Mined-Gold-in-Latin-America-Report-1718-digital.pdf>.

²² Hamilton, "The Golden Age of Drug Trafficking."

²³ United Nations Office on Drugs and Crime, *World Drug Report 2016*, 27.

²⁴ United Nations Office on Drugs and Crime, *Drug Money: The Illicit Proceeds of Opiates Trafficked on the Balkan Route* (Vienna: United Nations Office on Drugs and Crime, 2015), 41, http://www.unodc.org/documents/data-and-analysis/Studies/IFF_report_2015_final_web.pdf.

²⁵ Many illegal users of prescription opiates turn to heroin when pills are no longer available or their addiction becomes too expensive. Sanjay Gupta, "Unintended Consequences: Why Painkiller Addicts Turn to Heroin," *CNN*, June 2, 2016, <http://www.cnn.com/2014/08/29/health/gupta-unintended-consequences/index.html>; Keegan Hamilton, "How America's Legal Weed Is Changing the Black Market and Influencing Mexican Cartels," *VICE News*, August 25, 2015, <https://news.vice.com/article/how-americas-legal-weed-is-changing-the-black-market-and-influencing-mexican-cartels>.

D. Developing Countries

Drug trafficking has some of the greatest impacts on security and development of all transnational crimes. DTOs frequently use violence to maintain control of their markets and production, and governments are compelled to spend greater resources on law enforcement in order to address these attacks on domestic stability, directing funding away from sustainable development. Governments also lose large amounts of tax and customs revenues due to trade-based money laundering (TBML) schemes that likewise threaten the competitiveness of legitimate businesses.

DTOs, and indeed all OCGs, flourish in fragile areas. Governance is weak enough that organizations can operate relatively unencumbered, yet just strong enough to prevent the state from completely failing, the resulting mass unrest and conflict from which would make it difficult to conduct business, legal or illegal. Development, in particular improvements to governance, rule of law, delivery of social services, and employment, undermines the strength of DTOs. They thus have a strong interest in keeping countries destabilized with weak institutions, as it reduces transaction costs and increases profits.

Drug trafficking engenders some of the highest levels of violence for all transnational crimes. The groups involved in drug trafficking, from small OCGs and major DTOs to guerrilla groups and terrorist organizations, use violence to maintain and/or obtain control of territory and markets in order to secure profits, seriously threatening public safety. The fragmentation of and intensive infighting among Mexican DTOs over control of trafficking routes as well as conflict between DTOs and the government have been significant drivers of instability within the country, resulting in a substantial number of casualties.²⁶ In a nine-month period (January through September 2011), nearly 13,000 homicides were attributable to drug-related violence, equivalent to more than 48 homicides each day.²⁷

Violence destabilizes a country, forcing the government to divert additional resources to law enforcement, reducing the funding available for other public services. Countries that are unable to effectively combat drug trafficking jeopardize their ability to make meaningful, lasting improvements to their country's development. Unorganized, ineffective, and/or selective law enforcement can actually increase instability by creating power vacuums that incite greater competition.

Government crackdowns on drug consumption and trafficking sometimes also lead to major human rights abuses. Philippine President Rodrigo Duterte has launched a full-blown war on drugs in the country, fomenting a wave of extrajudicial killings by government agents as well as vigilantes. As of late January 2017, more than 7,000 people had been killed—a greater number by vigilantes than state forces—since Duterte's term began on June 30, 2016.²⁸

Like many other illicit trades, such as wildlife and antiquities trafficking, the majority of citizens in drug source countries receive little economic benefit and often bear the brunt of the trade's negative impacts. In Afghanistan, the cultivation, production, and distribution of opiates is an extremely valuable industry, representing nearly one-eighth of the country's GDP in 2014, however very little of the revenues remain within the country.²⁹ For example, poppy farmers in Afghanistan receive less than one percent of the total revenues generated from the heroin produced there and trafficked to the United Kingdom.³⁰ A 2012 report found that only 2.6 percent of the final retail value of cocaine produced in Colombia actually stays in country, while the remaining 97.4 percent are "reaped by criminal syndicates, and laundered by banks, in first-world consuming countries."³¹ For developing countries with large production markets, particularly for heroin and cocaine, drug-related activities can threaten the economy by crowding out legal economic activities when individuals opt for illicit employment because it offers better income than

²⁶ Jason M. Breslow, "The Staggering Death Toll of Mexico's Drug War," *FRONTLINE*, July 27, 2015, <http://www.pbs.org/wgbh/frontline/article/the-staggering-death-toll-of-mexicos-drug-war/>.

²⁷ "Mexico Drug War Fast Facts," *CNN*, December 19, 2016, <http://www.cnn.com/2013/09/02/world/americas/mexico-drug-war-fast-facts/index.html>.

²⁸ Phelim Kine, "Deadly Milestone in Philippines' Abusive 'Drug War,'" *Human Rights Watch*, January 24, 2017, <https://www.hrw.org/news/2017/01/24/deadly-milestone-philippines-abusive-drug-war>.

²⁹ United Nations Office on Drugs and Crime, *Drug Money*, 9.

³⁰ Organization of American States, *Drug Problem in the Americas*, 22.

³¹ Ed Vulliamy, "Western Banks 'Reaping Billions from Colombian Cocaine Trade,'" *The Guardian*, June 2, 2012, <https://www.theguardian.com/world/2012/jun/02/western-banks-colombian-cocaine-trade>.

legitimate work.

Money laundering is one of the most important components of transnational crime, and the laundering of drug proceeds, particularly through trade-based schemes, has negative effects on economies. TBML can serve as an informal value transfer system that allows DTOs to repatriate drug proceeds through the trade of goods rather than movement of money. For example, a Colombian DTO will use drug proceeds (in US dollars) to purchase goods, such as electronics, toys or appliances, in the United States, which are then exported to Colombia. Once in Colombia, the imported goods are sold (in Colombian pesos) and the DTO recoups its proceeds. According to TBML specialist John Cassara, DTOs may sell these goods at a deep discount in order to hasten the return of their money, yet this distorts market prices, creating unfair competition by undercutting legitimate businesses.³²

The large volume of dirty money moving through TBML schemes can cause governments to lose significant tax and customs revenues. Governments collect fewer tax revenues when goods are intentionally sold below market value, and the underinvoicing of imports likewise results in lost customs duties.³³ The budgets of developing countries are often heavily dependent on the ability of the government to collect taxes and customs duties, and tax fraud seriously undermines the government's ability to fulfill its obligations.

E. Recent Developments

Africa's role as a transit point for drug trafficking has been a major contributor to the growth in both drug production and consumption on the continent over the last decade. Increased drug trafficking will further destabilize already fragile countries and threaten public health in the region. In addition, global drug production is moving from fields to laboratories and distribution is moving to the internet.

West Africa—most notably Nigeria, Guinea-Bissau, Sierra Leone, Mali, Guinea, Ghana, and Senegal—became a hotspot for drug trafficking in the mid-2000s, in particular serving as a transshipment point for cocaine trafficking between South America and Europe. Nigerian OCGs, following a similar trajectory to Mexican DTOs (see Box 1), originally provided logistical support in West Africa to South American DTOs. These groups provided cocaine as payment for the Nigerians' services, and the Nigerian groups began to purchase cocaine themselves directly from South American DTOs, both of which allowed the Nigerian OCGs to transition from smugglers to wholesalers.³⁴ Drug trafficking has played a role in destabilizing certain countries in West Africa, and the increased revenues earned by OCGs from realizing a larger share of the market threaten to do even greater damage.³⁵

³² John A. Cassara, *Trade-Based Money Laundering: The Next Frontier in Money-Laundering Enforcement* (Hoboken, NJ: John Wiley & Sons, 2016), 39.

³³ U.S. Department of the Treasury, *National Money Laundering Risk Assessment 2015* (Washington, DC: U.S. Department of the Treasury, 2015), 29, <https://www.treasury.gov/resource-center/terrorist-illicit-finance/Documents/National%20Money%20Laundering%20Risk%20Assessment%20%E2%80%932006-12-2015.pdf>.

³⁴ Hamilton, "The Golden Age of Drug Trafficking"; United Nations Office on Drugs and Crime, *Transnational Organized Crime in West Africa: A Threat Assessment* (Vienna: United Nations Office on Drugs and Crime, 2013), 10–11, http://www.unodc.org/documents/data-and-analysis/tocta/West_Africa_TOCTA_2013_EN.pdf.

³⁵ Aïssata Maïga and Elizabeth Tompkins, "West Africa's New Drug of Choice: The Rise of Methamphetamine" (Stockholm: Institute for Security and Development Policy, June 12, 2014), 1–2, <https://www.files.ethz.ch/isn/184910/2014-maiga-tompkins-west-africas-new-drug-of-choice.pdf>; United Nations Office on Drugs and Crime, *World Drug Report 2010* (Vienna: United Nations Office on Drugs and Crime, 2010), 242, 244, https://www.unodc.org/documents/wdr/WDR_2010/World_Drug_Report_2010_lo-res.pdf; Lansana Gberie, "Crime, Violence, and Politics: Drug Trafficking and Counternarcotics Policies in Mali and Guinea" (Washington, DC: The Brookings Institution, 2016), 2–3, <https://www.brookings.edu/wp-content/uploads/2016/07/Gberie-Mali-and-Guinea-final.pdf>; West Africa Commission on Drugs, *Not Just in Transit: Drugs, the State and Society in West Africa* (Geneva: West Africa Commission on Drugs, 2014), 9, 20, 23, http://www.wacommissionondrugs.org/WACD_report_June_2014_english.pdf; Davin O'Regan and Peter Thompson, *Advancing Stability and Reconciliation in Guinea-Bissau: Lessons from Africa's Narco-State*, ACSS Special Report No. 2 (Washington, DC: Africa Center for Strategic Studies, 2013), 4, 18, 21, 32, <http://africacenter.org/wp-content/uploads/2016/06/ASR02EN-Advancing-Stability-and-Reconciliation-in-Guinea-Bissau-Lessons-from-Africa%E2%80%99s-First-Narco-State.pdf>.

Box 1. A Brief History of Drug Trafficking in Mexico

Beginning in the 1970s, cocaine from South America entered the United States principally through Florida via the Caribbean. Intensified interdiction along the Caribbean route pushed cocaine smuggling to the Central American-Mexican land corridor. While Mexican DTOs were originally paid cash for each kilo they smuggled, Colombian traffickers began to pay them in cocaine. This transition “realigned the power dynamics along the narcotics supply chain in the Americas, because it allowed the Mexicans to stop serving as logistical middlemen and invest in their own drugs instead.”³⁶

With greater leverage, Mexican DTOs have overtaken most trafficking activities down to cocaine processing. For DTOs, a greater role may increase risk, but it also brings greater rewards. Mexican DTOs have diversified their businesses, broadening their trades in heroin and cannabis as well as establishing a significant market for ATS production.

Nigerian OCGs have expanded into the production of synthetic drugs, principally methamphetamine. The manufacture and export of methamphetamine in West Africa has been successful in large part due to weak chemical and pharmaceutical controls, porous borders, and experienced OCGs with established routes, as well as weak rule of law and governments limited by insufficient technical and financial support.³⁷ Nigerian OCGs have in fact received help from Mexican DTOs: in March 2016, Nigerian authorities arrested four Mexican nationals who were allegedly serving as consultants in the establishment of a large-scale methamphetamine lab in Delta state that was capable of producing up to four tons each week.³⁸ The majority of the methamphetamine is destined for high-value markets in East and Southeast Asia, but enough is remaining in the region to stoke increased domestic consumption, endangering public health.³⁹

East Africa, particularly Tanzania and Kenya, is an established transit point for Afghan heroin traveling via the southern route from Pakistan and Iran to European markets. Heroin was traditionally transported along air routes, but the number of maritime shipments has greatly expanded beginning around 2010, allowing larger consignments to be smuggled.⁴⁰ In November 2014, two seizures off the coast of Kenya totaled over 700 kilograms, signaling the high volume of drugs that are being moved along this route.⁴¹

The transit of drugs through countries and/or regions can nurture the growth of domestic consumer markets. Heroin is frequently abused through intravenous injection, which can contribute to the spread of blood-borne infections. The UNODC estimates that as of 2013 more than half (55 percent) of African opiate users are located in East Africa, which has the second highest rate of HIV prevalence in the world.⁴² This large increase in heroin trafficking is a worrisome development for East Africa as it presents a serious threat to public health in the region as well as the continent.

Another development in the global illegal drug market is that the overall use of synthetic NPS has greatly increased over the last decade, in part a result of the ease of manufacture and accessibility. There is an ever-growing range of NPS due to frequent modifications to chemical designs by manufacturers who seek to circumvent legal restrictions. Authorities have detected more than 380 new substances in the last five years, with 100 alone in 2015.⁴³ When manufacturers invent NPS faster than legislators can regulate them, these so-called “legal highs” technically remain lawful substances and, as such, are often

³⁶ Patrick Radden Keefe, “Cocaine Incorporated,” *The New York Times*, June 15, 2012, <http://www.nytimes.com/2012/06/17/magazine/how-a-mexican-drug-cartel-makes-its-billions.html>.

³⁷ United Nations Office on Drugs and Crime, *Transnational Organized Crime in West Africa*, 20; United Nations Office on Drugs and Crime, *World Drug Report 2013* (Vienna: United Nations Office on Drugs and Crime, 2013), 23, <http://www.unodc.org/wdr2013/>.

³⁸ Quenton King, “Four Mexicans Arrested in Meth ‘Super Lab’ Bust in Nigeria,” *InSight Crime*, March 16, 2016, <http://www.insightcrime.org/news-briefs/four-mexicans-arrested-in-meth-super-lab-bust-nigeria>.

³⁹ United Nations Office on Drugs and Crime, *Transnational Organized Crime in West Africa*, 23.

⁴⁰ United Nations Office on Drugs and Crime, *The Afghan Opiate Trade and Africa: A Baseline Assessment* (Vienna: United Nations Office on Drugs and Crime, 2016), 22, https://www.unodc.org/documents/data-and-analysis/Afghanistan/Afghan_Opiate_trade_Africa_2016_web.pdf.

⁴¹ “The Smack Track,” *The Economist*, January 17, 2015, <http://www.economist.com/news/middle-east-and-africa/21639560-east-african-states-are-being-undermined-heroin-smuggling-smack-track>.

⁴² United Nations Office on Drugs and Crime, *Afghan Opiate Trade and Africa*, 21, 44.

⁴³ European Monitoring Centre for Drugs and Drug Addiction and Europol, *EU Drug Markets Report 2016: In-Depth Analysis* (Luxembourg: European Union, 2016), 141, <http://www.emcdda.europa.eu/publications/eu-drug-markets/2016/online>.

easily accessible, with some being sold in corner shops and online.⁴⁴

Internet-mediated drug trafficking is quickly growing in popularity, providing vendors and consumers a new way to connect. The majority of online sales occur in cryptomarkets on the dark web, such as the Silk Road, Agora, and Evolution, which offer participants a strong level of anonymity in a sales platform similar to Amazon. Most participants are in developed countries, and transaction sizes typically suggest personal consumption rather than wholesale distribution.⁴⁵ The online trade still represents a small portion of total global drug sales, however the market's value is rapidly expanding, increasing by more than 900 percent between 2012 and 2015 to reach US\$150 million to \$180 million.⁴⁶

F. Summary

Drug trafficking is the second most valuable transnational crime, generating revenues of US\$426 billion to \$652 billion each year. Cannabis is the largest submarket, representing 43 to 44 percent of total market value; ATS is the smallest submarket, yet the growing popularity of synthetic drugs, particularly NPS, is likely to increase the market share in the future as consumers look to “legal highs” to satisfy their demands.

Drug trafficking generates a considerable amount of violence, eroding domestic stability and compelling governments to devote greater financial resources to security. Narcotics undermine public health and commerce, and challenge a country's ability to commit meaningful resources to its growth. Recent developments have seen the illegal drug markets expand in Africa and online in the West, adding even greater value to the global trade.

⁴⁴ United Nations Office on Drugs and Crime, *World Drug Report 2013*, 61–62; Keith Humphreys, “How Powerful Synthetic Drugs Will Upend Drug Markets Globally,” *Washington Post*, December 2, 2014, <https://www.washingtonpost.com/news/wonk/wp/2014/12/02/how-powerful-synthetic-drugs-will-upend-drug-markets-globally/>; European Monitoring Centre for Drugs and Drug Addiction and Europol, *2016 EU Drug Markets Report*, 142.

⁴⁵ United Nations Office on Drugs and Crime, *World Drug Report 2016*, 25.

⁴⁶ “Shedding Light on the Dark Web,” *The Economist*, July 16, 2016, <http://www.economist.com/news/international/21702176-drug-trade-moving-street-online-cryptomarkets-forced-compete?cid1=cust/ednew/n/bl/n/20160714n/owned/n/n/nwl/n/n/NA/n>.

III. Trafficking of Small Arms and Light Weapons

A. Overview

Of all illicit trades, the trafficking of small arms and light weapons (SALW) has one of the most direct and damaging impacts on security and development. SALW trafficking is often estimated to be one of the most profitable illicit trades, however it is one of the least valuable transnational crimes examined in this report. Arms trafficking is the illicit transfer of SALW, their parts, accessories, and ammunition across international borders.⁴⁷ Table C provides a description of the different components of the illicit arms trade.⁴⁸

Table C. Composition of the Illicit Arms Trade

Market	Description
Small Arms	Small arms are weapons for individual use. This category includes revolvers and self-loading pistols; rifles and carbines; shotguns; sub-machine guns; and light machine guns.
Light Weapons	Most light weapons require a small team for operation. This category includes heavy machine guns; mortar systems of calibers of 120mm or less; hand-held, under-barrel, and automatic grenade launcher; hand grenades; portable rocket launchers; landmines; and improvised explosive devices.
Parts and Components	Parts and components refer to any elements or replacement elements “specifically designed for a firearm and essential to its operation.” Examples include the barrel; frame or receiver; slide or cylinder; and bolt or breech block.
Accessories	An accessory is “an item that physically attaches to the weapon and increases its effectiveness or usefulness but, generally speaking, is not essential for the basic, intended use of the weapon.” Examples of accessories include sights; aiming lasers; night vision devices; laser rangefinders; and fire controls systems.
Ammunition	Ammunition is the “complete round or its components...used in a firearm.” Examples include bullets or projectiles; cartridge cases; primers; and propellant powder.

Sources: Matt Schroeder; Janis Grzybowski, Nicholas Marsh, and Matt Schroeder; United Nations

Weapons are durable goods, providing longevity to the harm they can inflict; they typically circulate through a region, moving from conflict to conflict. A great deal of arms trafficking is accomplished through small-scale transfers, which is difficult to stop because of the volume of transfers rather than the size of the individual transactions.

B. Value

The opacity of the legal arms trade makes it difficult to determine the value of its market. Countries voluntarily report their trade data to the United Nations (UN) Comtrade database, however some government reporting may be incomplete if the country has undertaken clandestine arms transfers. Accordingly, while UN Comtrade data shows the global legal arms trade was worth US\$17.3 billion in 2014, this value is likely understated.⁴⁹

⁴⁷ A large amount of the illicit arms trade takes place domestically, however this report focuses only on the transnational trafficking of SALW. This report also does not address state-sanctioned illicit transfers.

⁴⁸ Matt Schroeder, “Drips and Drabs: The Mechanics of Small Arms Trafficking from the United States” (Geneva: Small Arms Survey, 2016), 2, 13, <http://www.smallarmssurvey.org/fileadmin/docs/G-Issue-briefs/SAS-IB17-Mechanics-of-trafficking.pdf>; Janis Grzybowski, Nicholas Marsh, and Matt Schroeder, “Piece by Piece: Authorized Transfers of Parts and Accessories,” in *Small Arms Survey 2012: Moving Targets* (Geneva: Small Arms Survey, 2012), 245, <http://www.smallarmssurvey.org/fileadmin/docs/A-Yearbook/2012/eng/Small-Arms-Survey-2012-Chapter-08-EN.pdf>; United Nations, “Protocol against the Illicit Manufacturing of and Trafficking of Firearms, Their Parts and Components and Ammunition, Supplementing the United Nations Convention against Organized Crime,” Pub. L. No. A/RES/55/255 (2001), 2–3.

⁴⁹ See Appendix, Section B for methodology. “UN Comtrade Database,” *United Nations*, accessed January 30, 2017, <https://comtrade.un.org/data/>.

Arms trafficking is estimated to represent 10 to 20 percent of the legal arms trade,⁵⁰ therefore the **trafficking of SALW, parts and components, accessories, and ammunition in 2014 is conservatively estimated to be worth US\$1.7 billion to \$3.5 billion.** Since the value of the legal arms trade is likely underestimated, as noted above, it is probable that the illegal arms trade is likewise undervalued.

The Kalashnikov family of assault rifles, to which the AK-47 belongs, is one of the most universally popular weapons, particularly in conflict zones, due to its relatively indestructible nature and ease of production. Table D displays the variety of prices around the world as well as the difference in price between industry-produced and craft-made AK-47s.⁵¹ In Pakistan, a country particularly known for its craft arms industry, a legitimate AK-47 was sold on average for US\$1,205 in 2011-2012, while the same model craft weapon was priced at only US\$148, a difference of more than 700 percent.⁵²

Table D. The Average Cost of an AK-47 Around the World (US\$)

Country	Price	Country	Price
Afghanistan	\$600-\$1,500	Online (Dark Web)	\$2,800-\$3,600
Belgium	\$1,135	Pakistan (2011-2012)	\$1,205
India	\$1,087-\$9,058	Pakistan, craft (2011-2012)	\$148
Iraq (Kurdistan)	\$700	Somalia (2011)	\$350
Lebanon (2011-2012)	\$1,606	Somalia (2013)	\$750
Mexico (at the Northern border)	\$1,200-\$1,600	Syria (2011)	\$1,200
Mexico (at the Southern border)	\$2,000-\$4,000	Syria (2012)	\$2,100
Nigeria	\$1,292-\$2,067	Yemen	\$1,396

Sources: See Appendix, Section B for sources.

There are many determinants that affect a weapon's price, some related to the market environment and others to the weapon itself. In addition to the condition of the weapon and market supply, there are at least four other factors that appear to have a relatively consistent and universal impact on price. First, political instability is one of the strongest drivers of both sale volumes and prices. The greater the level of conflict, civil unrest, and/or political tensions—in country or in the region—the greater the demand for arms. With high demand, weapons command higher prices, often regardless of supply.

Second, the price of a weapon generally increases the further it is smuggled. Transaction costs acquired by the trafficker, including concealment and transportation, are reflected in the price the buyer pays. The risk of detection/interdiction ordinarily increases according to the distance it must travel to market, particularly when crossing borders. For example, the price of a handgun that is trafficked from the United States to Canada increases as much as 560 percent just by crossing the border, and it increases another 100 to 150 percent between the border and its destination in Toronto; the price of an AK-47 moving from the United States through Mexico follows a similar pattern (Table E).⁵³

⁵⁰ Jana Arsovska, "Introduction: Illicit Firearms Market in Europe and Beyond," *European Journal on Criminal Policy and Research* 20, no. 3 (2014): 296, doi:<http://link.springer.com/article/10.1007/s10610-014-9254-6>; David Todd Kinsella, "The Illicit Arms Trade: A Social Network Analysis," Political Science Faculty Publications and Presentations (Portland, Oregon: Portland State University, 2008), 1, http://pdxscholar.library.pdx.edu/cgi/view-content.cgi?article=1011&context=polisci_fac; Matt Schroeder and Guy Lamb, "The Illicit Arms Trade in Africa: A Global Enterprise," *African Analyst Quarterly*, no. 1 (Third Quarter 2006): 69.

⁵¹ Craft-made typically refers to weapons that are copied from industry-made models and are manufactured through small-scale production outside of official channels.

⁵² Nicolas Florquin, "Price Watch: Arms and Ammunition at Illicit Markets," in *Small Arms Survey 2013: Everyday Dangers* (Geneva: Small Arms Survey, 2013), 257, <http://www.smallarmssurvey.org/fileadmin/docs/A-Yearbook/2013/en/Small-Arms-Survey-2013-Chapter-11-EN.pdf>.

⁵³ David Bruser and Jayme Poisson, "Star Investigation: How One U.S. Gun Broker Moved Firearms across the Border," *Toronto Star*, April 18, 2013, https://www.thestar.com/news/investigations/2013/04/18/star_investigation_how_one_us_gun_broker_moved_firearms_across_the_border.html; Rich Smith, "AK-47 Rifle Price Drops; Is This Gun a Good Investment?," *San Antonio Express-News*, November 29, 2014, <http://www.mysanantonio.com/business/fool/article/AK-47-Rifle-Price-Drops-Is-This-Gun-a-Good-5924215.php>; Eric L. Olson, "A Shared Responsibility: Counternarcotics and Citizen Security in the Americas," S. Hrg. 112-57, Committee on Foreign Relations (2011), 55, <https://www.gpo.gov/fdsys/pkg/CHRG-112shrg67800/pdf/CHRG-112shrg67800.pdf>.

Table E. Price vs. Distance: The Weapon's Route

Weapon	Location A	Price A	Location B	Price B	Location C	Price C
AK-47	United States	\$500	U.S.-Mexico Border	\$1,200-\$1,600	Southern Mexico	\$2,000-\$4,000
Handgun	United States	\$150	Windsor, Ontario	\$800-\$1,000	Toronto, Ontario	≥\$2,000

Sources: David Bruser and Jayme Poisson; Rich Smith; Eric L. Olson

Third, higher levels of governance and enforcement also affect the risks a trafficker faces, increasing the price; the reverse is also true. Research by the Small Arms Survey found a strong positive correlation between weapon prices and a country's level of governance: higher levels of effective governance and enforcement capability increase arms prices, since the trafficker confronts a greater chance of interdiction.⁵⁴ Conversely, prices for illicit arms tend to be lower in countries with porous borders, which are an indication of ineffective governance.⁵⁵ Porous borders reduce transaction costs for traffickers and allow a greater volume of weapons to enter the country, increasing supply.

Finally, local perceptions of quality can vary from market to market. Locals may perceive one country's make to be better than another's; for example, a Russian-made Kalashnikov may be seen as better than a Bulgarian or Chinese copy.⁵⁶ Perception is an important price determinant in many illicit markets. Although rhino horn is proven to have absolutely minimal medicinal effects, an urban myth circulating in Vietnam—that a former politician was cured of cancer after consuming rhino horn—has had a massive impact on public perception, driving up demand as well as price in the country and igniting a wave of poaching continents away.⁵⁷

C. Dynamics

Arms trafficking is conducted around the world, from the sale of a single handgun to large consignments and everything in between. Like art theft, popular culture has distorted the dynamics of arms trafficking, suggesting the trade to be made up of large-scale transactions brokered by so-called “merchants of death.” Sophisticated transnational illicit arms brokers with well-connected networks do exist, but they are only one conduit through which arms are trafficked.

Illegal arms brokers, such as Viktor Bout and Leonid Minin, frequently cater to governments as well as rebel groups, and therefore customarily move large consignments.⁵⁸ They provide a layer of anonymity and protection between buyer and seller, and are particularly responsible on the secondary market for connecting legal supplies to buyers by illegal means (i.e., illicit transfers).⁵⁹ Often operating on an intercontinental scale, their use of the global shadow financial system to mask their identity and activities facilitates their global sales.⁶⁰

However, a good percentage of arms trafficking is accomplished through numerous small-scale transfers, known as the ‘ant trade,’ by individuals and loosely-affiliated networks.⁶¹ As these are small sales, it is likely that most are in cash, since complex corporate structures are not needed for simple transactions. There is no one model, or even several models, employed by arms traffickers. Considerable differences exist between traffickers, from the types of weapons and methods of concealment to volume and sophistication.⁶²

⁵⁴ Philip Killicoat, “What Price the Kalashnikov? The Economics of Small Arms,” in *Small Arms Survey 2007: Guns and the City* (Geneva: Small Arms Survey, 2007), 266, <http://www.smallarmssurvey.org/fileadmin/docs/A-Yearbook/2007/en/full/Small-Arms-Survey-2007-Chapter-08-EN.pdf>.

⁵⁵ *Ibid.*, 266–67.

⁵⁶ Florquin, “Price Watch: Arms and Ammunition at Illicit Markets,” 258.

⁵⁷ Jonathan Watts, “‘Cure for Cancer’ Rumour Killed off Vietnam’s Rhinos,” *The Guardian*, November 25, 2011, <https://www.theguardian.com/environment/2011/nov/25/cure-cancer-rhino-horn-vietnam>.

⁵⁸ Nicholas Schmidle, “Disarming Viktor Bout,” *The New Yorker*, March 5, 2012, <http://www.newyorker.com/magazine/2012/03/05/disarming-viktor-bout>; Alain Lallemand, “Drugs, Diamonds and Deadly Cargoes,” *Center for Public Integrity*, November 18, 2002, <https://www.publicintegrity.org/2002/11/18/5697/drugs-diamonds-and-deadly-cargoes>.

⁵⁹ Gisela Bichler and Aili Malm, “Small Arms, Big Guns: A Dynamic Model of Illicit Market Opportunity,” *Global Crime* 14, no. 2–3 (2013): 262.

⁶⁰ Stefanie Ostfeld, “Why UN Arms Negotiations Must Include Talk of Ending Corporate Secrecy,” *Al Jazeera*, March 28, 2013, <http://www.aljazeera.com/indepth/opinion/2013/03/201332811291117590.html>.

⁶¹ Stimson Center, *Beyond the Merchants of Death - The Mechanics of Arms Trafficking* (Washington, DC, 2016), <https://www.youtube.com/watch?v=m1TmaJHIAa8>.

⁶² *Ibid.*

There are two methods of arms manufacturing: industrial and craft. Industrial manufacturing is performed by companies on a large scale and produces a high quality product. Craft production commonly involves fabrication of weapons by hand in limited quantities. Craft weapons are ordinarily much cheaper than the industry-made equivalents. Ghana, Pakistan, Peru, and the Philippines are some of the countries known for their craft arms industries, however most craft weapons remain within the domestic market.

The majority of trafficked weapons are manufactured and sold in the legal (white) market, and later enter the illicit trade through the gray or black market. The gray market involves legal acquisition but illicit distribution, most frequently through the misrepresentation of the end user. This is often accomplished by using straw purchasers for small-scale acquisition or with the falsification of end-user certificates (EUCs),⁶³ with or without bribery, for large international consignments. Forged EUCs and the broker's (or straw purchaser's) services add additional costs to gray-market transactions, typically raising final retail prices above legal market values.

One source of grey-market arms has been the stockpiles of weapons left over from the dissolution of the Soviet Union. Weapons in Russia, Ukraine, and Bulgaria have played a particularly large role in illicit arms trade in Africa.⁶⁴ Arms traffickers like Bout would legally purchase these weapons but would then illegally divert them to a different end-user, regularly in contravention of UN sanctions. For example, Bout used forged EUCs showing arms shipments from Bulgaria were destined for Togo, yet the arms were actually delivered to UNITA rebels in Angola.⁶⁵

A variation of legal arms diversion is the illegal reactivation of decommissioned firearms. Deactivated or decommissioned firearms are modified to prevent them from firing ammunition. When a weapon is deactivated improperly, though, it can be reactivated by someone with the appropriate skills, restoring its capability for live fire. Some of the weapons used in the January 2015 attack at the Paris headquarters of the satirical newspaper *Charlie Hebdo* were from Slovakia and had been decommissioned but later restored to full functionality.⁶⁶

Weapons acquired through the black market are both illegally acquired and sold. In arms trafficking, this commonly occurs through thefts from legally-held stocks, particularly government caches. Arms are either stolen outright or sold by corrupt officials. Black-market transactions occur primarily at the regional level or lower. As durable goods, arms are often recirculated regionally, generally keeping prices lower compared to extra-regional acquisition.

Thefts from government stockpiles commonly occur in countries where corruption is high and/or governance weak; thefts are also more frequent during or soon after conflict or unrest. There has been a high level of military-criminal diversion in Latin America, from stockpiles as well as through falsified EUCs.⁶⁷ In the Middle East, some Iraqi soldiers have sold U.S.-supplied weapons on the black market, some of which have ended up in the hands of Syrian rebel groups.⁶⁸ Weapons also end up in the wrong hands when they are seized from government forces during combat.

Arms traffickers typically use the same smuggling routes as those used for migrants or other illegal goods. Seizure data from both the World Customs Organization (WCO) and the United Nations Office

⁶³ Straw purchasers buy a firearm(s) at the request of a different individual (the final end user), often because the end user is unable to purchase the weapon lawfully. The majority of governments require the use of end-user certificates, or EUCs, in international arms transfers to certify that the listed buyer is the final recipient and will not transfer or sell the goods to another party.

⁶⁴ David Kinsella, "Illicit Arms Transfers to Africa and the Prominence of the Former Soviet Bloc: A Social Network Analysis," *Crime, Law and Social Change* 62, no. 5 (2014): 538, doi:<http://dx.doi.org.proxyau.wrlc.org/10.1007/s10611-014-9531-9>.

⁶⁵ Schmidle, "Disarming Viktor Bout."

⁶⁶ Naina Bajekal and Vivienne Walt, "How Europe's Terrorists Get Their Guns," *TIME*, December 7, 2015, <http://time.com/how-europes-terrorists-get-their-guns/>.

⁶⁷ Michael Lohmuller, "Video Exposes Southern Cone Illicit Gun Trade," *InSight Crime*, September 21, 2015, <http://www.insightcrime.org/news-briefs/video-exposes-southern-cone-illicit-gun-trade/>; Michael Lohmuller, "Attempted Thefts from Uruguay Military Arsenal Raise Concerns," *InSight Crime*, April 27, 2016, <http://www.insightcrime.org/news-briefs/attempted-thefts-uruguay-weapons-stockpile-raise-concern/>; Mimi Yagoub, "Dominican Military Accused of Trafficking Arms from US Suppliers," *InSight Crime*, January 28, 2016, <http://www.insightcrime.org/news-briefs/dominican-military-accused-of-trafficking-arms-from-us-suppliers/>; David Gagne, "Tracing the Evolution of Military-Criminal Networks in Guatemala, El Salvador," *InSight Crime*, January 8, 2016, <http://www.insightcrime.org/news-analysis/tracing-evolution-military-criminal-networks-in-guatemala-el-salvador/>.

⁶⁸ Elias Groll, "Where the Insurgent Groups of the World Get Their Weapons," *Foreign Policy*, June 1, 2015, <https://foreignpolicy.com/2015/06/01/where-the-insurgent-groups-of-the-world-get-their-weapons/>.

on Drugs and Crime (UNODC) show that illicit arms were more frequently smuggled over land than by air, sea, or mail.⁶⁹ This complements evidence that shows arms trafficking principally occurs among neighboring countries or within a region.

As shown in Table F, while the greatest number of weapons were seized at land boundaries (655,858), seizures at seaports had by far the greatest weapons per case volume, with an average of 1,367 weapons per seizure.⁷⁰

Table F. Seizures by Location, 2013

Seizure Location	No. of Cases	Quantity (Items)	Avg. No. of Items per Case
Land boundary	1,317	655,858	498
Seaport	352	481,297	1,367
Inland	1,362	160,018	118
Airport	1,154	137,287	110
Mail center	688	10,629	15
Rail	22	4,238	193
River	5	29	6
Unknown	2	3	2
Total	4,902	1,439,359	294

Source: Aaron Karp, Nicholas Marsh, and Giorgio Ravagli

Traffickers moving arms by freight or mail use various techniques for concealing their identity as well as the illicit cargo. This includes adopting fictitious or intermediary addresses and employing misinvoicing schemes, such as misidentifying the arms as objects of similar shape and density (e.g., metal tools or toy parts), as well as underinvoicing shipments.⁷¹

Some illicit weapons transactions involve the exchange of goods instead of money. Criminals exchange for what their market demands; illicit weapons are most often exchanged for drugs. In conflict zones, other illicit goods are traded or sold for arms, which exacerbates insecurity and prolongs the violence. Examples include conflict diamonds during the Sierra Leone Civil War (1991-2002),⁷² conflict minerals in eastern Democratic Republic of the Congo since independence (1960 to present),⁷³ looted antiquities during the Syrian Civil War (2011-present),⁷⁴ and poached ivory by the Lord's Resistance Army (active 1987-present).⁷⁵

D. Developing Countries

Arms trafficking directly undermines development by eroding security. Conflict and insecurity drive displacement and humanitarian crises, delaying human progress. Arms trafficking, as well as illicit financial flows, stolen assets, and organized crime, are recognized as such serious impediments to development that Target 16.4 of the Sustainable Development Goals calls on countries to significantly reduce all of them by 2030.⁷⁶

⁶⁹ Aaron Karp, Nicholas Marsh, and Giorgio Ravagli, *UNODC Study on Firearms 2015* (Vienna: United Nations Office on Drugs and Crime, 2015), 7, 55, https://www.unodc.org/documents/firearms-protocol/UNODC_Study_on_Firearms_WEB.pdf.

⁷⁰ Ibid., 7. Items include SALW, their parts and components, and ammunition.

⁷¹ Schroeder, "Drips and Drabs: The Mechanics of Small Arms Trafficking from the United States," 11.

⁷² Floreana Miesen, "Blood Diamonds Fuelled Sierra Leone's Civil War," *D+C | Development and Cooperation*, May 21, 2012, <https://www.dandc.eu/en/article/blood-diamonds-fuelled-sierra-leones-civil-war>.

⁷³ "Global Minerals, Arms Smuggling Networks Fuel DR Congo Conflict – UN Report," *UN News Centre*, December 7, 2009, <http://www.un.org/apps/news/story.asp?NewsID=33173#.V-kjxCERLIU>.

⁷⁴ Aryn Baker, "Syria's Looted Past: How Ancient Artifacts Are Being Traded for Guns," *Time*, September 12, 2012, <http://world.time.com/2012/09/12/syrias-looted-past-how-ancient-artifacts-are-being-traded-for-guns/>.

⁷⁵ Ledio Cakaj, *Tusk Wars: Inside the LRA and the Bloody Business of Ivory* (Washington, DC: The Enough Project, 2015), p25, footnote 85, <http://enoughproject.org/reports/tusk-wars-inside-lra-and-bloody-business-ivory>.

⁷⁶ "Sustainable Development Knowledge Platform: Goal 16," *United Nations*, accessed September 25, 2016, <https://sustainabledevelopment.un.org/>

More than half a million people die on average each year from armed violence, and while armed violence occurs in every country, low- and middle-income countries suffer a disproportionate level compared to the developed world.⁷⁷ Besides the enormous human cost, armed violence diverts funding away from development and damages infrastructure and industries. Governments are forced to spend larger portions of GDP on law enforcement and the military rather than on the delivery of social services. They may also have difficulty in providing services if some areas of the country are rendered inaccessible due to violence. In addition, insecurity is a strong driver of capital flight and inhibitor of domestic resource mobilization.

Instability in a country or region, such as civil war or political unrest, increases the demand for arms. Strained situations can become even more volatile when communities or countries are inundated in weapons. The fragile sectarian climate of Lebanon, which has festered since the 1960s, has been inflamed by the Syrian Civil War spilling over into the country; the porous border means that arms (and people) are flowing easily between the two countries.⁷⁸

As mentioned earlier, local demand is normally satisfied by regional arms supply, keeping transaction costs low. In unstable regions, weapons are typically recirculated from conflict to conflict. Even in post-conflict environments, excess weapons “keep prices low and contribute to the risk of conflict throughout the region for some time after the conflict has ended.”⁷⁹

E. Recent Developments

Arms trafficking through online sales and purchases has grown with the development and spread of the internet. Arms that are illegally sold to foreign buyers can be difficult to detect as the weapons and/or components are frequently disassembled and mailed separately. A small amount of arms trafficking is conducted on the dark web, but the bulk of online sales are through marketplaces on the surface web.⁸⁰

Internet-based trafficking is ideal because it provides a good level of anonymity, is often unregulated, and is difficult for authorities to control. In the United States, traffickers will purchase arms from online dealers or classified ads, have them delivered to an intermediary address, then repackage the weapons and illegally export them via post.⁸¹ This trend of online sales is not limited to the West; developing countries, such as Libya and Yemen, also have healthy social media-based trades.⁸²

Several terrorist attacks in Europe in 2015 and 2016 involved small arms, including reactivated weapons. In the November 2015 Paris attacks, terrorists using assault weapons were responsible for the overwhelming majority of those killed or injured.⁸³ One Slovak company in particular, AFG Security, was linked to reactivated weapons used in the Charlie Hebdo and kosher supermarket attacks in January 2015 and the Thalys train attack in August 2015.⁸⁴ In the attacks, deactivated guns were legally purchased from AFG by intermediaries and then transported to Belgium, where they were restored to full functionality.⁸⁵ The July 2016 shooting at the Olympia shopping center in Munich involved the use of a

sdg16.

⁷⁷ Luigi De Martino, “Reducing Armed Violence, Enabling Development” (Geneva: Small Arms Survey, July 2012), 1, http://www.smallarmssurvey.org/fileadmin/docs/H-Research_Notes/SAS-Research-Note-19.pdf.

⁷⁸ VICE News, *Lebanon’s Illegal Arms Dealers* (VICE News, 2014), <https://www.youtube.com/watch?v=XxumsOQMxLE>; Josh Wood, “Syria’s Unrest Felt by Military in Lebanon,” *The New York Times*, February 15, 2012, International edition, <http://www.nytimes.com/2012/02/16/world/middleeast/syrias-unrest-felt-by-military-in-lebanon.html>.

⁷⁹ Killicoat, “What Price the Kalashnikov?,” 258.

⁸⁰ Jessica Hullinger, “Do People Really Buy Guns On The Dark Web?,” *Fast Company*, January 7, 2016, <https://www.fastcompany.com/3055187/do-people-really-buy-guns-on-the-dark-web>.

⁸¹ Schroeder, “Drips and Drabs: The Mechanics of Small Arms Trafficking from the United States,” 4.

⁸² Saeed Al Batati, “Yemenis Trade in Weapons on Facebook,” *Gulf News*, April 4, 2014, <http://gulfnews.com/news/gulf/yemen/yemenis-trade-in-weapons-on-facebook-1.1312724>; N.R. Jenzen-Jones and Graeme Rice, “The Online Trade in Light Weapons in Libya” (Geneva: Small Arms Survey, 2016), 1, <http://www.smallarmssurvey.org/fileadmin/docs/R-SANA/SANA-Dispatch6-Online-trade.pdf>.

⁸³ “Paris Attacks: What Happened on the Night,” *BBC News*, December 9, 2015, <http://www.bbc.com/news/world-europe-34818994>.

⁸⁴ Georgi Kantchev et al., “Slovakian Shop Is Eyed as Source of Guns in Prior Terror Attacks,” *Wall Street Journal*, November 27, 2015, <http://www.wsj.com/articles/slovakia-shop-believed-to-be-source-of-guns-in-two-french-terror-attacks-1448629216>.

⁸⁵ Until July 2015, Slovakia had ambiguous requirements for deactivation as well as loose regulations for the sale of decommissioned weapons. Slovak law previously allowed those deactivating weapons to install several pins, also referred to as plugs, into the gun’s barrel to prevent it from firing lethal ammunition, however gun experts were able to restore functionality by changing the barrel. In addition, deactivated weapons did not need to be registered. Ibid.; Roman Cuprik, “Slovakia Was a Gun Shop for Terrorists, Crooks,” *The Slovak Spectator*, August 3, 2016, <http://spectator.sme.sk/c/20229910/slovakia-was-a-gun-shop-for-terrorists-crooks.html>.

reactivated handgun that had been sold as a prop weapon.⁸⁶

The European Single Market harmonizes legislation to allow for the free movement of people, goods, capital, and services throughout the European Union (EU), however the lack of unified gun control laws has left the EU vulnerable to arms trafficking. Countries with lower threshold requirements for the sale/purchase of arms as well as weapon deactivation serve as an easy entry point. The European Commission proposed legislation in December 2016 to strengthen and harmonize EU rules on firearms, including the regulation of deactivated firearms.⁸⁷ Cooperation will be extremely important in order to curtail the illegal arms trade and keep weapons out of the hands of criminals and terrorists.

F. Summary

At an estimated US\$1.7 billion to \$3.5 billion in 2014, the value of SALW trafficking is not among the highest examined in this report, but the human cost is exorbitant. Arms trafficking has always empowered organized crime groups and insurgencies and fueled civil wars, and in recent years trafficked arms are increasingly being used in terrorist attacks around the world.

Small arms and light weapons may not pack the same punch as heavy weaponry, yet the sheer volume being trafficked, their durable nature, and their universal availability causes havoc on a much greater scale. Following the money is a key technique for combatting any illicit trade, however there are gaps in the understanding of arms trafficking transactions. Further research into financial flows related to the illicit arms trade is necessary to better understand, and therefore fight, arms trafficking. This is particularly important with the growing role the internet and social media are playing in SALW trafficking over the globe.

⁸⁶ "Munich Shootings: What We Know about the Olympia Shopping Centre Attack," *BBC News*, July 24, 2016, <http://www.bbc.com/news/world-europe-36879067>.

⁸⁷ "Firearms: Agreement on Commission Proposal to Increase Citizens' Security," *European Commission*, December 20, 2016, http://europa.eu/rapid/press-release_IP-16-4464_en.htm.

IV. Human Trafficking

A. Overview

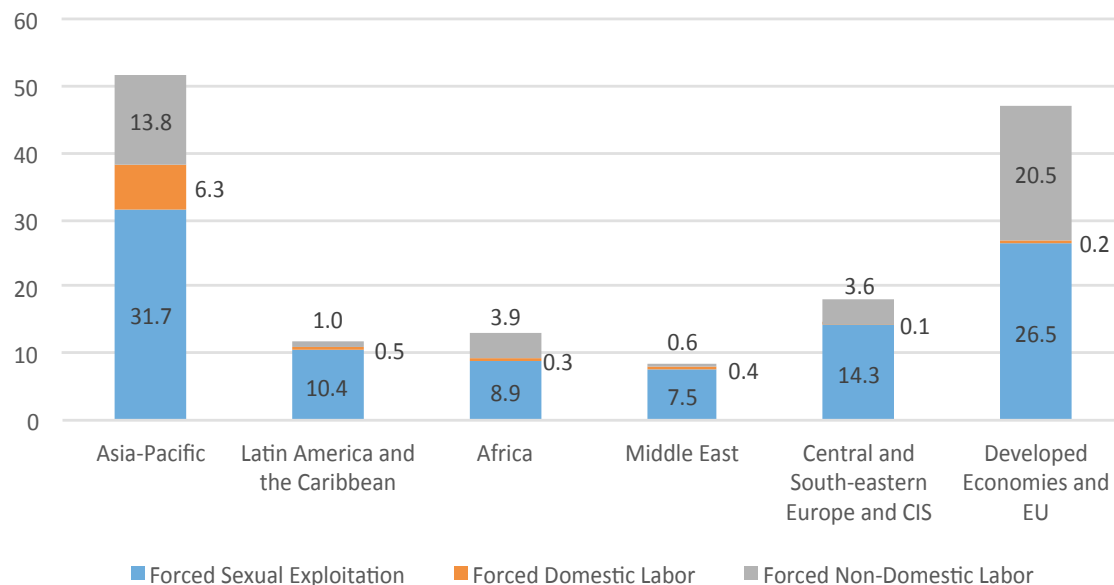
Human trafficking is one of the fastest-growing transnational organized crime (TOC) markets and has the greatest direct impact on individuals. For all the brutality and ruined lives it brings, human trafficking is motivated by profit maximization: exploiting vulnerable people for labor or sex for money.⁸⁸ Strong profits and weak penalties have attracted a wide variety of illicit actors, from organized crime groups (OCGs) to terrorist organizations, operating both domestically and transnationally.

Human trafficking refers to the “recruitment, transportation, harboring or receipt of persons, by means of coercion, abduction, deception or abuse of power or a vulnerability, for the purpose of exploitation,” with exploitation including, at a minimum, “sexual exploitation, forced labor, slavery or slavery-like practices.”⁸⁹ An estimated 21 million men, women, and children around the world are victims of human trafficking.⁹⁰

B. Value

Human trafficking is an extremely profitable business. The International Labor Organization (ILO) estimates that **human trafficking generates US\$150.2 billion in profits each year.**⁹¹ As shown in Figure I, two regions—Asia-Pacific and Developed Economies and the European Union (EU)⁹²—are each responsible for approximately one-third of the global profits, US\$51.8 billion and US\$46.9 billion respectively, while the four remaining regions are responsible for the final third. There are approximately 11.7 million victims in the Asia-Pacific region, nearly eight times greater than Developed Economies and the EU (1.5 million), yet the average annual profit per victim in the former is US\$5,000 whereas the latter is US\$34,800.⁹³

Figure I. Estimated Annual Profits from Human Trafficking by Region (US\$ billion)



Source: International Labor Organization

⁸⁸ Siddharth Kara, “Supply and Demand: Human Trafficking in the Global Economy,” *Harvard International Review* 33, no. 2 (2011): 66.

⁸⁹ United Nations, *Protocol to Prevent, Suppress and Punish Trafficking in Persons Especially Women and Children, Supplementing the United Nations Convention against Transnational Organized Crime*, 1953, <http://www.ohchr.org/EN/ProfessionalInterest/Pages/ProtocolTraffickingInPersons.aspx>.

⁹⁰ International Labor Organization, *Profits and Poverty: The Economics of Forced Labour* (Geneva: International Labor Organization, 2014), 17, http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_243391.pdf.

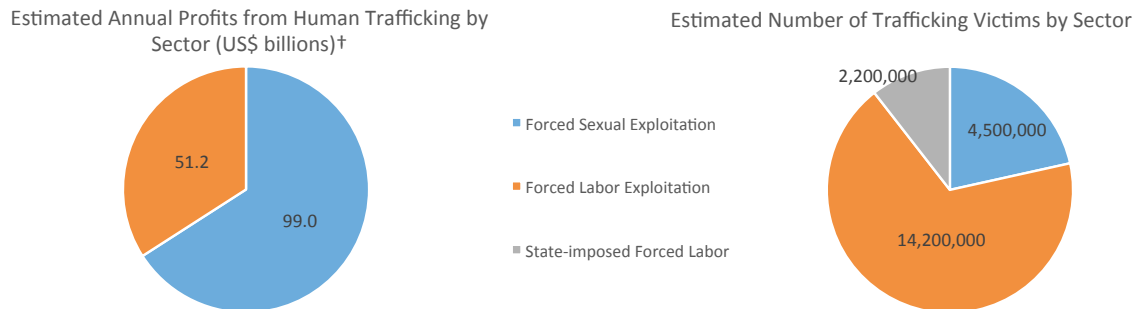
⁹¹ *Ibid.*, 13.

⁹² All developed and developing economies of the European Union plus all other developed countries in the world.

⁹³ International Labour Organization, *Profits and Poverty*, 14, 17.

According to ILO statistics, the greatest annual profits come from forced sexual exploitation (US\$99 billion), with an average annual profit of US\$21,800 per victim.⁹⁴ The sex “industry” is illicit itself, so prices, and thus profits, are elevated due to the risk, even though there are three times fewer victims (4.5 million) than forced labor (Figure II).⁹⁵ There is a particularly strong demand for prostitution, the principal form of sexual exploitation.

Figure II. Profits and Victims



Source: International Labor Organization

† Excludes state-imposed forced labor.

*Includes both domestic and non-domestic labor.

Forced labor exploitation affects the greatest number of victims (14.2 million, 68 percent), yet generates less profits (US\$51.2 billion) than sexual exploitation.⁹⁶ There are many more industries involved (e.g., construction, mining, and agriculture), hence there are a larger number of victims exploited. The average annual profit per victim is US\$2,300 from domestic labor and US\$2,500 to \$4,800 from non-domestic labor.⁹⁷ State-imposed forced labor represents less than 11 percent (2.2 million) of all human trafficking, including acts such as forced prison labor and military and paramilitary labor exploitation (excluding compulsory service laws).⁹⁸

C. Dynamics

There are an estimated 21 million victims of human trafficking around the world, exploited by individuals, groups, and businesses for sexual or labor purposes.⁹⁹ Sexual exploitation most often refers to prostitution but can also include pornography. Labor exploitation typically involves low- or unskilled jobs in industries such as agriculture, forestry, fishing, construction, mining, and manufacturing. Domestic work is a subset of labor, representing approximately 24 percent of all labor exploitation and generating the lowest level of profit.¹⁰⁰

Trafficking in persons exploits some of the most vulnerable populations and communities, such as the poor, young, homeless, uneducated, unemployed, and marginalized, as well as illegal migrants and others in crisis situations. Examples of high-risk human trafficking situations include the 2004 Indian Ocean earthquake and tsunami, the 2010 Haiti earthquake, the Syrian Civil War, and the ongoing sectarian conflict in the Central African Republic. These crises displace victims from their families, homes, and communities, as well as disrupt government services and security, which can leave them economically, socially, and physically vulnerable. Marginalized communities, such as indigenous groups, the lesbian, gay, bisexual and transgender (LGBT) community, religious minorities, and low social classes face greater risks in countries where discrimination and isolation reduce social and state protection.

⁹⁴ Ibid., 13, 16.

⁹⁵ Ibid., 17.

⁹⁶ Ibid., 13, 17.

⁹⁷ Domestic labor refers to labor performed in a household, not the country in which the labor is performed (i.e., in the victim's home country). Ibid., 16.

⁹⁸ Ibid., 17.

⁹⁹ Ibid.

¹⁰⁰ Ibid., 13, 18.

Human trafficking and human smuggling both involve the movement of people, yet there are major differences regarding transnationality, purpose, consent, and victimization (Table G).¹⁰¹ Human trafficking involves the *involuntary* exploitation of a person and does not require the crossing of international borders. Human smuggling is the *voluntary* transportation of a person across an international border. Migrants may be exploited, but that is not the primary purpose of the activity.

Table G. Human Smuggling vs. Human Trafficking

Criteria	Human Smuggling	Human Trafficking
Transnationality	Required	Not Required
Purpose	Transportation	Exploitation
Consent	Voluntary	Involuntary
Victimization	Country/Border	Person

Source: Financial Action Task Force; Christopher Johnson

Illegal migrants, particularly those who turn to smugglers, are more susceptible to exploitation. Similar to organ trafficking, human smuggling can turn into trafficking if the smuggler coerces or forces undocumented migrants into labor or sex work in order to pay for the smuggler's services.¹⁰² Illegal migrants are vulnerable because their status makes them less likely to seek help from authorities or to know from whom to solicit aid; they may not even speak the local language or be aware of their rights.

In Southeast Asia, individuals regularly go from being smuggled for employment to trafficked for labor exploitation, particularly in the Thai and Indonesian fishing industries. Smugglers here frequently act more as brokers, arranging employment and transportation for migrants, many of whom are from Myanmar.¹⁰³ In addition to the omission of contracts and opacity surrounding employment terms and conditions, brokers will charge "recruitment" fees that individuals must work off.¹⁰⁴ Fishing operations that use slave labor have a high incidence of illegal, unreported, and unregulated (IUU) fishing, both of which are tainting global supply chains.¹⁰⁵

Recruiters typically employ deception in order to exploit individuals, such as lying about the nature of the work. Women and girls are subjected to sex trafficking in illegal mining and logging camps, often being fraudulently recruited to work as cooks in the camps but then coerced or forced into prostitution or sexual slavery.¹⁰⁶ Another common method used throughout the world is debt bondage—using loans, cash advances, extreme interest rates, and/or excessive fees to trap victims into continued servitude. These debts are acquired or inherited, and it is not uncommon for more than one generation of a family to be engaged in forced labor. Their labor goes towards paying off the initial debt, so victims are generally not able to afford basic expenses like food, water, shelter, and medicine; their "employers" or the traffickers provide these at exorbitant prices, tacking on the cost and continually growing the debt.¹⁰⁷ The individuals and businesses that engage in debt bondage receive financial benefits far greater than the initial amount that they loan.

¹⁰¹ Financial Action Task Force, *Money Laundering Risks Arising from Trafficking in Human Beings and Smuggling of Migrants* (Paris: Financial Action Task Force, 2011), 12, <http://www.fatf-gafi.org/media/fatf/documents/reports/Trafficking%20in%20Human%20Beings%20and%20Smuggling%20of%20Migrants.pdf>; Christopher Johnson, "Combating Human Trafficking" (Homeland Security Investigations, 2015), <http://wcaml.lobel.com/wp-content/uploads/2015/02/Combating-Human-Trafficking.pdf>.

¹⁰² Clare Ribando Seelke, "Trafficking in Persons in Latin America and the Caribbean" (Washington, DC: Congressional Research Service, 2015), 6, <https://www.fas.org/sgp/crs/row/RL33200.pdf>.

¹⁰³ United Nations Office on Drugs and Crime, *Transnational Organized Crime in East Asia and the Pacific: A Threat Assessment* (Vienna: United Nations Office on Drugs and Crime, 2013), 9, 11, https://www.unodc.org/documents/data-and-analysis/Studies/TOCTA_EAP_web.pdf.

¹⁰⁴ International Organization for Migration, *Trafficking of Fishermen in Thailand* (Geneva: International Organization for Migration, 2011), 19, <https://publications.iom.int/system/files/pdf/traffickingoffishermenin thailand.pdf>.

¹⁰⁵ Valerie Farabee, "Pirate Fishing, Slavery and Third Party Risk," White Paper, Expert Talk (Washington, DC: Thomson Reuters, 2016), <https://risk.thomsonreuters.com/content/dam/openweb/documents/pdf/risk/white-paper/pirate-fishing-slavery-and-third-party-risk-white-paper.pdf>.

¹⁰⁶ Julia M. Urrunaga et al., *The Laundering Machine: How Fraud and Corruption in Peru's Concession System Are Destroying the Future of Its Forests* (Washington, DC: Environmental Investigation Agency, 2012), 16, <http://www.eia-international.org/wp-content/uploads/The-Laundering-Machine.pdf>; U.S. Department of State, *Trafficking in Persons Report 2016* (Washington, DC: U.S. Department of State, 2016), 65, <http://www.state.gov/documents/organization/258876.pdf>.

¹⁰⁷ U.S. Department of State, *Trafficking in Persons Report 2015* (Washington, DC: U.S. Department of State, 2015), 126, <http://www.state.gov/documents/organization/245365.pdf>.

No country, developed or developing, is immune from cross-border human trafficking. In countries with weak governance, porous borders facilitate many types of trafficking, as goods, people, and money can move relatively undetected and unencumbered. OCGs also exploit countries with open borders designed to facilitate the legal movement of money and persons, especially in regional economic communities. Free movement within the EU, afforded by the Schengen Agreement, allows OCGs engaged in human trafficking to easily conduct business between countries, yet law enforcement operations are still hindered by state borders. Europol estimates that during 2013 and 2014, 71 percent of identified victims and 70 percent of suspected traffickers were EU nationals.¹⁰⁸

Traffickers range from individuals, such as the victim's relatives, community members, independent brokers, and businessmen, to local gangs and sophisticated domestic and international groups. These different actors participate in a variety of roles, including recruiters, transporters, managers, and buyers, and collaborate on a situational basis. The groups and networks are frequently based on family, community, and/or ethnic ties.

Sex trafficking occurs everywhere, however urban areas, popular tourist destinations, and large events (e.g., World Cup, Olympics) generally experience higher rates.¹⁰⁹ OCGs are directly and indirectly involved in sex trafficking: owning brothels earns direct income, and taxing prostitutes and/or pimps who operate in their territory provides indirect revenue streams. Both direct and indirect participation in trafficking provides criminals with high profits and low risks.¹¹⁰ It is difficult for law enforcement to identify traffickers and victims due to the underground nature of the crime; some individuals who are trafficked may not understand that they are victims, or are isolated and controlled by traffickers, reducing the likelihood of them seeking help.¹¹¹

Many OCGs involved in human trafficking are engaged in other criminal activities as well, sometimes even using trafficking victims to perpetrate these crimes. In Europe, OCGs are most often involved in fraud, such as tax, social benefits, and identity, but also drug and arms trafficking and human smuggling.¹¹² For groups also engaged in drug trafficking, victims can serve as ideal drug mules since they are already coerced, inexpensive, and considered disposable. Some OCGs force children to engage in criminal activity, as children typically receive much more lenient punishment, if any, if caught by law enforcement.¹¹³

Human trafficking operates along basic economic principles. With few barriers to entry, there are a multitude of suppliers (traffickers) offering differentiated products (trafficking victims) to meet the demand (employers) for cheap labor.¹¹⁴ Many people stand to gain from human trafficking, from recruiters and transporters to brokers and money launderers, yet it is the individuals and businesses that exploit forced labor by underpaying or not paying workers that profit the most.¹¹⁵ These individuals and businesses utilize cheap labor as a “cost-effective” means of supplying goods and services.

Human trafficking, particularly for sexual exploitation, is a cash-intensive criminal enterprise. As such, money laundering schemes often revolve around cash couriers, money service businesses (MSBs), cash-intensive businesses, and structuring—intentionally organizing a cash transaction (e.g., breaking

¹⁰⁸ Europol, “Situation Report: Trafficking in Human Beings in the EU” (The Hague: Europol, 2016), 9, https://ec.europa.eu/anti-trafficking/sites/antitrafficking/files/situational_report_trafficking_in_human_beings_-_europol.pdf.

¹⁰⁹ Ribando Seelke, “Trafficking in Persons in Latin America,” 1.

¹¹⁰ Organization for Security and Co-operation in Europe, *Leveraging Anti-Money Laundering Regimes to Combat Trafficking in Human Beings* (Vienna: Organization for Security and Co-operation in Europe, 2014), 13, <http://www.osce.org/secretariat/121125?download=true>.

¹¹¹ Isolation includes the physical deprivation of liberty, or, if trafficked internationally, the inability to speak a foreign language. Traffickers use threats of violence, drugs, illegal migrant status, and control of passports, among other tactics, to intimidate victims.

¹¹² Europol, “The THB Financial Business Model: Assessing the Current State of Knowledge” (The Hague: Europol, 2015), 9, https://ec.europa.eu/anti-trafficking/sites/antitrafficking/files/europol_financial_business_model.pdf.

¹¹³ Europol, “Child Trafficking for Exploitation in Forced Criminal Activities and Forced Begging” (The Hague: Europol, October 2014), 2, https://ec.europa.eu/anti-trafficking/sites/antitrafficking/files/child_trafficking_for_exploitation_in_forced_criminal_activities.pdf; U.S. Department of State, *Trafficking in Persons Report 2016*, 72, 99; David Gagne, “Organized Crime Profits from Modern Slavery in Latin America,” *InSight Crime*, June 3, 2016, <http://www.insightcrime.org/news-analysis/how-organized-crime-profits-off-modern-slavery-in-latin-america>.

¹¹⁴ Elizabeth M. Wheaton, Edward J. Schauer, and Thomas V. Galli, “Economics of Human Trafficking,” *International Migration* 48, no. 4 (August 2010): 118, doi:10.1111/j.1468-2435.2009.00592.x.

¹¹⁵ International Labour Organization, *Profits and Poverty*, 9.

up deposits) to avoid currency reporting requirements.¹¹⁶ Traffickers regularly send multiple individuals, sometimes their victims, to structure transactions, a technique known as smurfing; this allows OCGs to mask the true beneficial owners. Money transmitters are useful in repatriating proceeds to source countries, with funds being sent by victims to families back home or by the groups to finance other criminal activities.

Table H. Regional Trends in Laundering the Proceeds of Human Trafficking

Region	Common Money Laundering Schemes
Africa	Informal banking, cash couriers, real estate
Americas	Casinos, wire transfers, trade-based money laundering
Asia	Informal value transfer systems
Europe	Cash-intensive businesses, real estate, high-value goods

Source: Organization for Security and Co-operation in Europe

Established OCGs engaged in multiple forms of TOC may employ more sophisticated or complex money laundering schemes, such as fictitious or fraudulent loans, the buyout of existing businesses to serve as front companies, and the use of offshore companies to purchase real estate.¹¹⁷ These groups may already own or use legal cash-intensive front businesses, often in the entertainment, food, retail and trade sectors, which allow them to commingle licit and illicit proceeds.¹¹⁸ Front companies in the hospitality industry provide OCGs both a legal and public business from which to operate, particularly for sex trafficking, and facilitates the laundering of proceeds. Companies engaged in cross-border trade also use misinvoicing to launder and repatriate their illicit proceeds.

D. Developing Countries

Human trafficking has serious security and economic impacts on individuals, communities, and countries. Trafficking in persons is a growing transnational crime, increasing the revenues for OCGs and terrorist groups, and combating it is stretching the resources of developing countries. Countries also lose much-needed remittances, human capital, and tax revenues as a result of trafficking and forced labor.

The criminal activity and corruption associated with human trafficking undermine domestic stability and rule of law.¹¹⁹ All countries—source, transit, and destination—experience a drain on resources due to money spent on combatting human trafficking, particularly through criminal justice (e.g., law and immigration enforcement) as well as victims assistance.

When victims are trafficked internationally, source countries lose human resources without a corresponding increase in remittances. Regular and irregular migration constitute a loss of human capital for source countries,¹²⁰ however migrants receive relatively fair wages and typically send a portion of their earnings back to their home countries. Remittance flows are critical for developing countries' economies and have an important impact on human welfare and development. In 2015, formal remittances to developing countries were worth US\$430 billion, more than three times greater than the amount received in official development assistance (US\$131.6 billion) that same year.¹²¹

Victims of human trafficking receive little or no income, thereby significantly reducing any remittances they may send home. When trafficking victims are paid a wage, the remittances to their home country are typically much lower than regular or irregular migrants who are not exploited. A study of sex

¹¹⁶ Organization for Security and Co-operation in Europe, *Leveraging Anti-Money Laundering Regimes*, 14.

¹¹⁷ Financial Action Task Force, *Money Laundering Risks*, 33–34.

¹¹⁸ Europol, "THB Financial Business Model," 7–8.

¹¹⁹ United Nations Office on Drugs and Crime, *An Introduction to Human Trafficking: Vulnerability, Impact and Action* (Vienna: United Nations Office on Drugs and Crime, 2008), 94, http://www.unodc.org/documents/human-trafficking/An_Introduction_to_Human_Trafficking_-_Background_Paper.pdf.

¹²⁰ Irregular migration takes place outside of regulatory norms (e.g., undocumented, working on a tourist visa) but is voluntary, unlike transnational human trafficking and forced labor.

¹²¹ "Remittances to Developing Countries Edge Up Slightly in 2015," *World Bank*, April 13, 2016, <http://www.worldbank.org/en/news/press-release/2016/04/13/remittances-to-developing-countries-edge-up-slightly-in-2015>; "Development Aid Rises Again in 2015, Spending on Refugees Doubles," *Organisation for Economic Co-Operation and Development*, April 13, 2016, <http://www.oecd.org/dac/development-aid-rises-again-in-2015-spending-on-refugees-doubles.htm>

trafficking from Bulgaria to Western Europe found that, despite other promises, prostitutes often received only 10 to 30 percent of their earnings, generally after they had covered any expenses such as accommodation, transportation, or protection.¹²²

Countries in which victims are exploited also experience serious economic impacts due to tax revenue loss and distorted market competition. Businesses that use forced labor likely engage in tax evasion by not paying payroll taxes, thereby reducing government revenues.¹²³ These businesses also distort the market by creating unfair competition for legitimate businesses. Forced labor greatly reduces input and production costs, allowing companies to charge lower prices, which undercuts companies that adhere to fair labor practices.¹²⁴

The greatest impacts of human trafficking are felt by the victims. Trafficking subjects victims to a myriad of human rights abuses including the deprivation of liberty and the violation of the right to fair wages and security of person. Victims of sexual exploitation regularly face social consequences such as stigmatization when they return home. Human trafficking harms families and communities as well. In some countries, such as India, whole families can be trapped by debt bondage, as individuals are forced to assume the debts taken on by their parents and grandparents.

Political, economic, environmental, and social crises as well as armed conflict exacerbate pre-existing conditions that already leave individuals and populations vulnerable to human trafficking. The economic impacts can force individuals to seek alternative income sources, overlooking possible risks to their safety and freedom, while reallocated government services reduce social protections for citizens.¹²⁵ The heightened insecurity and weaker rule of law allow OCGs and terrorist organizations to operate relatively unencumbered.

E. Recent Developments

Trafficking in persons is frequently associated with OCGs, but terrorist and insurgent groups also play a serious role. These groups use labor and sexual exploitation as a tactic to acquire fighters and funding as well as to subjugate opponents. The spread of the internet has provided traffickers with additional, far-reaching means to reach both potential victims and victimizers.

Human trafficking is playing a growing role in terrorist and insurgent activities and groups. Unlike human trafficking operations run by OCGs, which are primarily motivated by financial gain, terrorist organizations also use human trafficking as an operational tool. According to Louise Shelley, founder and director of the Terrorism, Transnational Crime and Corruption Center (TraCCC), terrorist groups engage in human trafficking to increase the number of fighters, to repress and weaken their enemies, and for financial gain.¹²⁶

The Islamic State of Iraq and the Levant (ISIL) has been involved in the trafficking of women and children, primarily from minority groups, to serve as sex slaves for its fighters. With prices for female slaves as low as US\$13 to \$25, it is likely that this trafficking is serving a greater role in rewarding and boosting the morale of their fighters as well as enemy suppression than as a major source of financing for the group.¹²⁷ Groups including ISIL, the Lord's Resistance Army (LRA), and the Revolutionary United Front (RUF) also have used human trafficking to directly acquire child soldiers, frequently by forcible recruitment.¹²⁸ Boko Haram has forced kidnapped girls and women to become wives for their fighters,

¹²² Georgi Petrunov, "Managing Money Acquired from Human Trafficking: Case Study of Sex Trafficking from Bulgaria to Western Europe," *Trends in Organized Crime* 14, no. 2/3 (June 2011): 173, doi:10.1007/s12117-011-9127-z.

¹²³ United Nations Office on Drugs and Crime, *Introduction to Human Trafficking*, 94.

¹²⁴ International Labour Organization, *Profits and Poverty*, 12.

¹²⁵ U.S. Department of State, *Trafficking in Persons Report 2016*, 32.

¹²⁶ Louise I. Shelley, "ISIS, Boko Haram, and the Growing Role of Human Trafficking in 21st Century Terrorism," *The Daily Beast*, December 26, 2014, <http://www.thedailybeast.com/articles/2014/12/26/isis-boko-haram-and-the-growing-role-of-human-trafficking-in-21st-century-terrorism.html>.

¹²⁷ Financial Action Task Force, *Financing of the Terrorist Organisation Islamic State in Iraq and the Levant (ISIL)* (Paris: Financial Action Task Force, 2015), 13, <http://www.fatf-gafi.org/media/fatf/documents/reports/Financing-of-the-terrorist-organisation-ISIL.pdf>; Shelley, "ISIS, Boko Haram, and the Growing Role."

¹²⁸ "History of the War: 1986 to Now," *Invisible Children*, accessed January 9, 2017, <http://invisiblechildren.com/challenge/history/>; "Sierra Leone Rebels Forcefully Recruit Child Soldiers," *Human Rights Watch*, May 31, 2000, <https://www.hrw.org/news/2000/05/31/sierra-leone-rebels-forcefully->

and it has used some others as suicide bombers.¹²⁹

As seen in other TOC markets, the internet has enabled human trafficking OCGs to expand their business and improve recruitment, transportation, control, and exploitation in their operations. Traffickers use social media and deceptive online advertisements to recruit individuals for both sex and labor trafficking.¹³⁰ The internet has also provided additional advantages for sexual exploitation. OCGs have expanded sex trafficking from the real world to cyber space, such as pornography, and are able to reach a greater number of clients through online advertisements and solicitation.¹³¹ In addition, the internet offers less exposure for criminals, as they operate in relative anonymity from almost anywhere in the world.

F. Summary

Human trafficking is one of the most profitable illicit markets studied in this report, generating more than US\$150 billion in profits each year. While most victims are trafficked for labor exploitation, trafficking for sexual exploitation generates the greatest profits. With 21 million victims, trafficking of persons also has the greatest impact on human rights and security, especially in developing countries.

Traffickers exploit vulnerable populations through the use of deception, coercion, and force. Labor and sexual exploitation cause developing countries to lose human capital, remittances, and tax revenues, creating obstacles to development. Trafficking also drives insecurity because the proceeds are used to support OCGs and terror and insurgent groups. In recent years, terrorist and insurgent groups have been engaging in human trafficking to finance operations, recruit and/or reward fighters, and demoralize opponents. The internet has also been providing traffickers with greater access to (potential) victims and victimizers, allowing them to expand their business.

recruit-child-soldiers; Salam Khoder, "Iraq's Child Soldiers: 'What Happened to Our Boys?'," *Al Jazeera*, June 8, 2016, <http://www.aljazeera.com/news/2016/05/iraq-child-soldiers-happened-boys-160523122213988.html>.

¹²⁹ "They Were Freed from Boko Haram's Rape Camps. But Their Nightmare Isn't Over.," *Washington Post*, April 3, 2016, https://www.washingtonpost.com/world/africa/they-were-freed-from-boko-harams-rape-camps-but-their-nightmare-isnt-over/2016/04/03/dbf2aab0-e54f-11e5-a9ce-681055c7a05f_story.html; Dionne Searcey, "Boko Haram Turns Female Captives Into Terrorists," *The New York Times*, April 7, 2016, <https://www.nytimes.com/2016/04/08/world/africa/boko-haram-suicide-bombers.html>.

¹³⁰ U.S. Department of State, *Trafficking in Persons Report 2016*, 75, 99, 121, 144, 218, 229, 273, 398.

¹³¹ *Ibid.*, 10, 26, 172, 199, 306–7, 318.

V. Illegal Organ Trade

A. Overview

The illegal organ trade is not one of the most lucrative transnational crimes, yet there are serious impacts on human security. Also referred to as organ trafficking or trafficking in persons for the removal of organs, the trade primarily involves the movement of people rather than harvested organs. With a severe shortage of legally-sourced organs around the world, organs have become a commodity to be bought and sold illicitly. The illegal organ trade has serious consequences for individuals and communities around the world.

Desperation and greed drive the illegal organ trade. Both recipient and vendor are desperate: the recipient may be facing certain death unless they get a transplant; the vendor is seeking to alleviate debt and/or escape poverty.¹³² Although both are breaking the law, neither fits the image of a typical criminal.¹³³ It is the brokers and scouts, however, who truly embody “man’s inhumanity to man” in striving to profit from the suffering of others.¹³⁴

B. Value

Even though only a fraction of all organ transplants rely on organs that have been illicitly acquired, the revenues from the illicit trade are significant. **The illegal organ trade conservatively generates approximately US\$840 million to \$1.7 billion annually.** This estimate comprises the “sales” of the top five organs: kidney, liver, heart, lung, and pancreas. Table I provides the typical price range recipients pay for these organs.

Table I. Retail Prices of Organs (US\$)

Organ	No. Illegal Transplants (per year)	Price Range
Kidney	7,995	\$50,000 to \$120,000
Liver	2,615	\$99,000 to \$145,000
Heart	654	\$130,000 to \$290,000
Lung	469	\$150,000 to \$290,000
Pancreas	233	\$110,000 to \$140,000
Total	11,966	\$840 million to \$1.7 billion

Transplants source: Global Observatory on Donation and Transplantation
See Appendix, Section C for a list of sources for retail prices.

It is estimated that up to 10 percent of all transplants rely on organs that have been illicitly acquired. In 2014, around 120,000 organ transplants were performed throughout the world, suggesting that approximately 12,000 transplantations were performed illegally that year.¹³⁵ Two-thirds of these illegal transplants were kidney transplants, followed by liver, heart, lung, and pancreas transplants, respectively. Using the 10 percent model generates a conservative estimate that nearly 8,000 illegal kidney transplants were performed in 2014. Research by Organs Watch estimates that at least 10,000 kidneys are sold every year, so the 8,000 figure in our report may well be understated.¹³⁶

Kidneys are the most commonly transplanted organs, legally and illegally, because donors are able to give up one kidney without considerable impacts to their health. Living donors increase the supply

¹³² The use of the term “vendor” does not necessarily indicate that the individual gave the organ willingly or without coercion, and/or that they were compensated.

¹³³ Commercial organ transplantation is illegal in every country with the exception of Iran, although the country places certain restrictions on sales/purchases.

¹³⁴ Ric Esther Bienstock, *Tales from the Organ Trade*, Documentary (HBO, 2013).

¹³⁵ Global Observatory on Donation and Transplantation, “Organ Donation and Transplantation Activities 2014” (Madrid: Organización Nacional de Trasplantes, April 2016), <http://www.transplant-observatory.org/data-reports-2014/>.

¹³⁶ Scheper-Hughes, “Perpetual Scars,” 15.

of available organs, thus lowering the price paid by recipients and received by donors. For the liver, heart, lung, and pancreas, partial organ transplants from living donors are possible, but whole-organ transplants require deceased donors. Prices for these organs are almost double since they can be much more difficult to acquire.

Table J. Kidney Transplants: Vendors vs. Recipients

Location of Transplant	Vendor		Recipient		Markup
	From	Received	From	Paid	
China	China	\$5,000	Israel	\$100,000	1,900%
Costa Rica	Costa Rica	\$18,500	Israel	\$175,000	846%
Kosovo	Moldova	\$12,000	Canada	\$120,000	900%
Peru	Peru	\$7,000	Mexico	\$125,000	1,686%
Singapore	Indonesia	\$18,700	Singapore	\$237,000	1,166%
South Africa	Israel	\$20,000	Israel	\$120,000	500%
South Africa	Brazil, Romania	\$6,000	Israel	\$120,000	1,900%
United States	Israel	\$10,000	Israel, U.S.	\$120,000	1,100%

Sources: See Appendix, Section C for list of sources.

There is a significant disparity between the fee the vendor receives and the amount the recipient pays. As seen in Table J, vendors frequently receive on average less than 10 percent of the recipient's payment, with the majority going to intermediaries. A scheme involving Netcare hospitals in South Africa originally used vendors from Israel, who were paid US\$20,000 for their kidneys, but the brokers later switched to vendors from Brazil and Romania who were willing to accept US\$6,000.¹³⁷

Table K. Prices Paid to Kidney Vendors Around the World

Vendor Country	Price Low	Price High	Vendor Country	Price Low	Price High
Bangladesh	\$2,000	\$3,000	Lebanon	\$3,000	\$7,000
Belarus	\$8,000	\$10,000	Moldova	\$2,500	\$3,000
Brazil	\$3,000	\$10,000	Nepal	\$200	\$900
Cambodia		\$3,000	Nicaragua		\$5,000
China	\$3,500	\$15,000	Pakistan	\$1,300	\$2,100
Colombia	\$1,000	\$3,000	Peru	\$5,000	\$12,000
Costa Rica	\$5,500	\$6,000	Philippines	\$1,000	\$2,500
Egypt		\$2,000	Romania	\$2,700	\$6,000
India	\$1,000	\$6,000	Syria		\$3,000
Indonesia	\$5,000	\$23,000	Turkey	\$7,500	\$10,000
Iraq		\$1,000	United States	\$20,000	\$30,000
Israel	\$10,000	\$25,000	Viet Nam		\$2,400
Japan		\$16,000	Yemen	\$5,000	\$7,000
Jordan	\$500	\$5,000			

Source: See Appendix, Section C for a list of sources.

The prices paid to vendors vary significantly and are strongly related to their nationality as well as where the transplantation is performed. Table K shows variation in prices that vendors are paid around the world. Vendors from developed countries almost always receive more than vendors from developing countries, regardless of the organ. For example, the median payment received by vendors from

¹³⁷ Swinger, "The Dark World of Internet Kidney Trafficking."

developed countries is US\$20,000, whereas vendors in developing countries receive US\$3,000 for the sale of their kidney, a difference of more than 500 percent.

C. Dynamics

Much of the focus of the illegal organ trade is placed on the vendor and recipient, but there are a variety of actors that play important roles in perpetrating this crime. A vendor, recipient, and transplant team, as well as various individuals from the public and private sectors are involved in every transaction; brokers are also involved in some instances. Table L describes the principal participants involved in the illegal organ trade.

Table L. Participants in the Illegal Organ Trade

Vendor	The individual from whom an organ is harvested. Vendors are customarily from developing countries and are poor and uneducated.
Recipient	The individual who purchases an organ/undergoes transplantation. Recipients are typically middle- and high-income individuals from developed countries or high-income individuals from developing countries.
Broker/Scout	The individual who recruits the vendor, recipient, and/or medical professionals. They often operate in small, specialized syndicates that are well organized and well funded, with established networks for recruitment and transplantation. They are not necessarily involved in every transaction, particularly those where the recipient recruits their own vendor.
Transplant teams	The surgeon(s), nephrologist(s), anesthesiologist(s), nurse(s), etc. involved in determining whether the vendor and recipient are a medical match as well as performing the actual transplantation.
Public and private sector services	The other actors, including medical services, such as hospitals, transplant centers, and laboratories, where the transplantation and associated procedures are performed; medical tourism agencies, some of which coordinate transplant tourism; airlines; law enforcement; and translators. The participation of some of these actors (e.g., airlines or insurance companies) does not mean that they are aware of the illegal activity.

The dynamics of the illicit organ trade follow basic economics, with both vendors and recipients being price takers. Brokers are able to profit off the desperation of vendors and recipients by engaging in arbitrage; they pay vendors a pittance in comparison to the large fees they charge recipients. They earn the largest share of the profit and face little risk of detection.¹³⁸ Brokers and scouts, by creating competition among donors, are able to increase their profits as vendors are willing to accept less money in order to be chosen.

There are four principal models of organ trafficking. The traditional kidney brokerage model sees the broker recruit the vendor, recipient, and surgeon. The emerging model for kidney transplants sees the recipient recruit the vendor themselves.¹³⁹ Recipient and vendor frequently connect online, through social media and transplant blog sites, but on the dark web as well. The recipient can often find willing transplant surgeons by going through agencies or medical centers that cater to medical tourism. These businesses usually connect patients with medical professionals in foreign countries for legal procedures, such as plastic surgery or dental work, however some agencies also facilitate illegal transplantations.

Mirroring tactics used in human trafficking, some brokers or recruiters have lured individuals with the promise of work abroad, only to be forced to sell a kidney upon arrival to their destination. A variation of this sees a creditor, such as a landlord or smuggler, coerce an individual into selling a kidney in order to

¹³⁸ Michael Bos, *Trafficking in Human Organs* (Brussels: Policy Department, Directorate-General for External Policies, European Parliament, 2015), 25, [http://www.europarl.europa.eu/RegData/etudes/STUD/2015/549055/EXPO_STU\(2015\)549055_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2015/549055/EXPO_STU(2015)549055_EN.pdf).

¹³⁹ Campbell Fraser, "Human Organ Trafficking: Understanding the Changing Role of Social Media and Dark Web Technologies 2010-2015" (Presentation, George Mason University, Fairfax, Virginia, January 21, 2016).

settle a debt. The creditor, essentially acting as a recruiter, usually receives a finder's fee from the broker that is greater than what the vendor actually owes them (e.g., a debtor sells their kidney for US\$3,000, and repays the US\$300 owed to the creditor, but the creditor also receives a US\$500 fee for recruiting the debtor/vendor).¹⁴⁰

There are also instances where an individual is killed for their organs. China previously had a policy of forced organ donation from executed prisoners, harvesting organs via a reverse-matching scheme;¹⁴¹ the country largely moved toward ending this practice in 2015.¹⁴² Minority groups, particularly those that are persecuted, are liable to be targeted due to their social status. The Special Investigative Task Force, assembled by the European Union to investigate crimes committed during the Kosovo War (1998-1999), found compelling evidence that ethnic minorities were killed for organ trafficking on a limited scale, having been authorized by senior officials from the Kosovo Liberation Army.¹⁴³ Killing for the purpose of organ extraction happens on a limited scale in comparison to the number of vendors who choose, with or without coercion, to sell an organ.

Conflict zones are ideal for recruitment, as refugees and internally-displaced persons are more vulnerable and desperate. Like other offenses such as human trafficking and sexual assault, organ trafficking compounds the devastation and suffering of those living in refugee camps. These individuals, with limited employment options and having left most of their possessions behind, feel compelled to sell an organ in order to try to support themselves and their family.

D. Developing Countries

Compared to other illicit trades, organ trafficking has a much greater impact at the personal and community level than it does on the economy or security of a country. The vast majority of vendors are from developing countries and are poor, uneducated, and desperate. For many, their kidney is their only valuable possession. Most seek a quick payment to alleviate an immediate debt, others to raise themselves out of poverty. Some end up with chronic health complications. Few are better off.

For vendors, selling an organ can have negative health and financial consequences. Would-be vendors typically have little to no formal education, and brokers and scouts are able to convince them that selling a kidney is a safe, advantageous transaction. The brokers downplay the risk of future complications—sometimes even doctors tell potential vendors that their kidney will grow back.¹⁴⁴ Serious post-operative complications, such as infection, chronic pain, fatigue, and impaired function of the remaining kidney, are common.

These complications, besides the obvious impact on the vendor's health, sometimes actually drive a vendor deeper into debt. Vendors are typically employed in manual labor and are unable to return to work, sometimes permanently, after the operation. Some vendors are forced to use their fee, or even borrow money, to pay for medicine and follow up care.¹⁴⁵ What seemed like a step out of poverty has frequently left vendors in a worse position than before the surgery.

Selling an organ provides quick cash, but the money rarely has a long-lasting benefit to the vendor or the community. Previous vendors often recruit their family, friends, and neighbors to earn extra income. If a significant number of individuals in a village choose to sell an organ, their inability to work saps human resources from the community. Ultimately, these communities will be left behind, unable to advance at the same rate as other communities, and the consequences can extend across multiple generations.

¹⁴⁰ Ibid.

¹⁴¹ Reverse-matching of prisoners to recipients involves executing a prisoner based on the need and compatibility of a specific pre-selected recipient(s), rather than executing a prisoner and then finding a recipient(s) who is compatible.

¹⁴² Vivekanand Jha, "Reforms in Organ Donation in China: Still to Be Executed?," *Hepatobiliary Surgery and Nutrition* 4, no. 2 (2015): 139, doi:10.3978/j.issn.2304-3881.2015.03.02; Fraser, "Human Organ Trafficking."

¹⁴³ Clint Williamson, "Statement of the Chief Prosecutor of the Special Investigative Task Force," *Special Investigative Task Force*, July 29, 2014, <http://video.consilium.europa.eu/en/embed/474bd27f-2151-40fa-be5e-dc2d63b01700>.

¹⁴⁴ Ulrike Putz, "Lebanese Black Market: Syrian Refugees Sell Organs to Survive," *Spiegel Online*, November 12, 2013, <http://www.spiegel.de/international/world/organ-trade-thrives-among-desperate-syrian-refugees-in-lebanon-a-933228.html>; Babson College, "The Price of Life: Responding to the Global Black Market in Illicit Organs," (Webinar, Initiative on Human Trafficking and Modern Slavery, June 17, 2015).

¹⁴⁵ *The Cruellest Cut - Pakistan's Kidney Mafia*, 2007, https://www.youtube.com/watch?v=vi7A_jK64qc.

E. Recent Developments

The considerable upsurge in migration from Africa and the Middle East has put more people at risk of exploitation. There are reports of organ trafficking merging with human smuggling in Africa. Migrants heading to Israel via Egypt or through North Africa to Europe are targeted by smugglers for organ trafficking. Smugglers taking migrants across the Mediterranean have coerced migrants into selling a kidney in order to cover their travel costs. Some smugglers are allegedly selling migrants to organ traffickers, however independent observers have yet to verify these reports.¹⁴⁶

Brokers have wasted no time in targeting the Syrian refugees in the Middle East. The refugees are reportedly being compelled to sell a kidney, to earn money to build a new life within the region or to pay for their and/or their family's passage to Europe.¹⁴⁷ Syrian officials estimate that between 18,000 and 20,000 Syrians have sold an organ, chiefly kidneys, since the beginning of the country's civil war.¹⁴⁸

At the time of writing there are speculations about the Islamic State of Iraq and the Levant's (ISIL) participation in organ harvesting, but no concrete evidence has come to light.¹⁴⁹ According to a fatwa released in January 2015, ISIL does sanction the harvesting of organs from captured "apostates" to give to "Muslims in need."¹⁵⁰ If ISIL is engaged in organ trafficking, it is unlikely that this is providing a significant source of funding, especially in comparison to the money they are estimated to be getting from extortion and oil theft, among other crimes.

F. Summary

Illicitly acquired organs are only involved in up to 10 percent of all transplants, but organ trafficking generates US\$840 million to \$1.7 billion annually. The vast majority of vendors are from developing countries and are poor, uneducated, and desperate, while recipients are generally middle- to high-income individuals from developed countries. But they are united in their desperation to improve their lives. It is typically the broker that benefits the most, paying a pittance to the vendor while charging the recipient an exorbitant fee.

The illicit organ trade compounds the devastation of poverty and conflict. For many vendors, selling an organ appears to be a simple, quick solution to financial troubles, but a good number suffer from post-operative complications that push them deeper into debt. With a lot of individuals from the same village choosing to sell an organ, human resources can be sapped from communities, causing damage that can take generations to heal. The economic, social, and political upheavals that have occurred over the last decade have increased the number of individuals, particularly migrants, who are vulnerable to exploitation through the illegal organ trade.

¹⁴⁶ McKenna, "Migrants Who Cannot Pay Are Being Sold for Organs, Smuggler Tells Italian Authorities"; Barbie Latza Nadeau, "Italy's Gruesome Migrant Organ Transplant Murders," *The Daily Beast*, July 6, 2016, <http://www.thedailybeast.com/articles/2016/07/06/italy-s-gruesome-migrant-organ-transplant-murders.html>.

¹⁴⁷ Fraser, "Human Organ Trafficking"; Putz, "Lebanese Black Market."

¹⁴⁸ Ahmad Haj Hamdo, "The Underbelly of Syria's War: A Thriving Trade in Human Organs," *UPI*, May 12, 2016, http://www.upi.com/Top_News/World-News/2016/05/12/The-underbelly-of-Syrias-war-a-thriving-trade-in-human-organs/5301462896201/.

¹⁴⁹ Ray Sanchez, "United Nations Investigates Claim of ISIS Organ Theft," *CNN*, February 19, 2015, <http://www.cnn.com/2015/02/18/middleeast/isis-organ-harvesting-claim/index.html>; Fraser, "Human Organ Trafficking."

¹⁵⁰ Warren Strobel, Jonathan Landay, and Phil Stewart, "Exclusive: Islamic State Sanctioned Organ Harvesting in Document Taken in U.S. Raid," *Reuters*, December 25, 2015, <http://www.reuters.com/article/us-usa-islamic-state-documents-idUSKBN0U805R20151225>.

VI. The Illicit Trade in Cultural Property

A. Overview

The illicit trade of cultural property is a far more corrupt and impactful crime than it appears.¹⁵¹ It covers a wide range of activities, from the theft of artwork from museums and the illicit excavation and looting of archaeological sites, to the trafficking of cultural property during armed conflict and the use of faked or forged documentation to enable both import and export as well as transfers in ownership.¹⁵² The demand typically comes from developed countries, and in the case of antiquities trafficking, the supply often comes from developing countries.

Major art heists grab the headlines, yet it is the volume of smaller, modest thefts that actually make up the majority of the illicit art market. The looting of antiquities presents the greatest challenge in combatting art crime, because it is difficult to detect artifacts plucked from obscurity. Ingrained secrecy, lack of oversight, and the use of the global shadow financial system have allowed the illicit art and antiquities market to thrive in the shadow of the licit market.¹⁵³

B. Value

According to Robert Wittman, former Federal Bureau of Investigation (FBI) Special Agent and founder of the Bureau's National Art Crime Team, fraud is the major component of art crime, accounting for up to 80 percent of the illicit art market, which is estimated to be worth US\$6 billion to \$8 billion annually.¹⁵⁴ Assuming that fraud also constitutes 80 percent of the value of global art crime, **the global annual revenue generated from the illicit trade in cultural property is estimated at approximately US\$1.2 billion to \$1.6 billion.**

The extent of global art theft and antiquities trafficking is likely underestimated due to many thefts being unnoticed or unreported. Those individuals and institutions who do not perform regular audits of their collection may not even realize when an item has gone missing.¹⁵⁵ Bonnie Magness-Gardiner, manager of the FBI's Art Theft Program, notes that the artwork "could be in a storage facility, or in the basement of someone's house, and it can often be years before anyone notices it's gone."¹⁵⁶ Additionally, police often do not distinguish between the theft of art and antiquities and other more common property crimes, which makes it difficult to parse instances of art theft from official data.

The market for stolen art is comprised mostly of moderately priced, lesser-known pieces, which attract less scrutiny.¹⁵⁷ The theft of artwork by distinguished artists such as Rembrandt and Picasso only periodically inflates the value of the illicit art market, as is seen in Table M.

¹⁵¹ UNESCO defines cultural property as any property which, for either religious or secular grounds, is defined by a state, society, or people as "being of importance for archaeology, prehistory, history, literature, art or science." This includes items found through archaeological excavations, historical monuments, rare collections of flora and fauna, antiquities more than one hundred years old, and items of artistic interest such as paintings, sculptures, and engravings. See UNESCO, "Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property" (1970), 4.

¹⁵² "Fighting Illicit Traffic," *International Council of Museums*, accessed March 29, 2016, <http://icom.museum/programmes/fighting-illicit-traffic/>. For the purpose of this report, fraud, forgery and vandalism are not included in the definition of the illicit trade in cultural property.

¹⁵³ The illicit art and antiquities markets are defined as the markets for stolen art and looted/trafficked antiquities, respectively, for the purposes of this report.

¹⁵⁴ John Powers, "Fakes, Forgeries and Dirty Deals: Global Fight against Amorphous Art Fraud," *Association of Certified Fraud Examiners*, February 2016, <http://www.acfe.com/article.aspx?id=4294991131>; Kris Hollington, "After Drugs and Guns, Art Theft Is the Biggest Criminal Enterprise in the World," *Newsweek*, July 22, 2014, <http://www.newsweek.com/2014/07/18/after-drugs-and-guns-art-theft-biggest-criminal-enterprise-world-260386.html>.

¹⁵⁵ "Stolen Items Difficult to Trace, Chance of Recovery Slim," *The Buffalo News* (New York), July 24, 2015.

¹⁵⁶ James Tarmy, "What Happens to Stolen Art After a Heist?," *Bloomberg.com*, June 15, 2015, <http://www.bloomberg.com/news/articles/2015-06-15/what-happens-to-stolen-art-after-a-heist->.

¹⁵⁷ Anthony Amore, Interview by the author, March 1, 2016; Ilana Ozerney, "The Art of the Heist," *U.S. News & World Report*, October 10, 2005.

Table M. Notable Art Heists

Year	Artwork Stolen	Location	Estimated Value
1911	<i>Mona Lisa</i> by da Vinci	The Louvre Paris, France	\$794 million
1990	13 pieces including <i>Storm on the Sea of Galilee</i> by Rembrandt and <i>The Concert</i> by Vermeer	Isabella Stewart Gardner Museum Boston, Massachusetts, United States	\$500 million
1991	20 paintings including <i>Sunflower</i> and <i>The Potato Eaters</i> by van Gogh	The Van Gogh Museum Amsterdam, Netherlands	\$500 million
2008	4 paintings including <i>Poppies near Vetheuil</i> by Monet and <i>Boy in a Red Waistcoat</i> by Cézanne	Foundation E.G. Bührle Zurich, Switzerland	\$163 million
2010	5 pieces including <i>Le Pigeon aux petits-pois</i> by Picasso and <i>La Pastorale</i> by Matisse	Musée d'Art Moderne de la Ville de Paris Paris, France	\$123 million
2004	<i>The Scream</i> (1910) and <i>Madonna</i> by Munch	The Munch Museum Oslo, Norway	\$121 million
1994	<i>The Scream</i> (1893) by Munch	National Gallery Oslo, Norway	\$100 million
2002	Two pieces by van Gogh including <i>View of the Sea at Scheveningen</i>	The Van Gogh Museum Amsterdam, Netherlands	\$100 million
2007	Three pieces including <i>Maya and Her Doll</i> and <i>Portrait of Jacqueline</i> by Picasso	Private residence Paris, France	\$68 million
2010	<i>Poppy Flowers</i> by van Gogh	Mohamed Mahmoud Khalil Museum Cairo, Egypt	\$55 million
2007	<i>Portrait of Suzanne Bloch</i> by Picasso and <i>O Lavrador de Café</i> by Portinari	São Paulo Museum of Art São Paulo, Brazil	\$55 million
2003	<i>Madonna of the Yarnwinder</i> by da Vinci	Drumlanrig Castle Dumfriesshire, Scotland	\$47 to \$79 million
1985	140 Maya, Aztec, Zapotec, and Mixtec artifacts, including jade and gold pieces	National Museum of Anthropology Mexico City, Mexico	>\$27 million
2012	7 pieces including <i>Tête d'Arlequin</i> by Picasso and <i>Femme devant une fenêtre ouverte</i> by Gauguin	Kunsthal Museum Rotterdam, Netherlands	\$24 million
2005	<i>Reclining Figure</i> , a 2-ton bronze sculpture by Moore	Henry Moore Foundation Much Hadham, England	\$5.3 million

Sources: See Appendix, section D for a list of sources.

There are several aspects of the licit fine art and antiquities market, particularly value and pricing, that make it favorable for money laundering. Economist Nouriel Roubini aptly stated: “While art looks as if it is all about beauty, as a business it is full of shady stuff.”¹⁵⁸ First, the legal art market generates billions of dollars in sales every year—US\$63.8 billion in 2015.¹⁵⁹ The high value means that spurious

¹⁵⁸ Henry Lydiat, “Regulating the Art Industry,” *Artquest*, 2015

¹⁵⁹ The European Fine Art Foundation, “U.S. Art Market Reports Highest Ever Level of Sales While Overall Global Market Values Fall” (Press Release, Helvoirt, Netherlands, March 2, 2016), <https://www.tefaf.com/getattachment/Press/Press-releases/US-Art-market-reports-highest-ever-level-of-sales-while-overall-global-market-values-fall.pdf?lang=en-US>.

or illicit transactions can get buried in the large volume of legal transactions. This is compounded by the fact that more than half of transactions are conducted as private sales, which make them relatively untraceable.

Second, unlike other high-value goods such as gold, there are no established world market prices for most cultural property. In addition, prices are subjective; some pieces may have intrinsic value to certain buyers, making them willing to pay more. The Financial Action Task Force (FATF) notes that customs agencies have greater difficulty in recognizing over- and under-invoicing when it involves complex goods with “highly ‘speculative’ values.”¹⁶⁰

Third, there is an overall absence of transparency or regulation of the art market. The market operates without the safeguards required of other high-value, high-risk markets and industries, such as real estate, insurance, casinos, and dealers of precious stones and metals. Of 212 surveyed countries and jurisdictions, only 35 had anti-money laundering and combatting the financing of terrorism rules (AML/CFT) on customer due diligence that specifically included dealers in art and/or antiquities.¹⁶¹ The vast majority of countries also do not regulate the sale of art, unlike the sale of other high-value items such as real estate and automobiles. There is no transaction record, no reporting to authorities, and no recorded transfer of title. Kris Hollington makes a strong argument against the practice: “We wouldn’t buy a house without a deed, yet people do this with art worth millions of dollars all the time.”¹⁶²

Finally, the art market is global, and the majority of pieces are easily portable. Similar to diamonds or gold, it can be much easier to transport and transfer artwork than the equivalent value in hard currency. Art and antiquities also can serve as an alternative currency and be exchanged for other illicit goods such as arms or drugs. This is not to say that the majority of the global art market, or even a robust minority, operates illicitly; nonetheless, opacity provides an environment for crime to flourish.

C. Dynamics

With movies such as *Ocean’s Twelve*, *Entrapment*, and *The Thomas Crowne Affair*, Hollywood and popular culture have promoted the idea that art theft is a glamorous, highly organized act perpetrated by sophisticated career criminals. This fanciful narrative represents only a sliver of actual thefts; the truth is that art theft is quite mundane. The idea of a professional art thief is a fallacy according to Anthony Amore, director of security at the Isabella Stewart Gardner Museum in Boston.¹⁶³ While some criminals may collaborate and demonstrate some level of organization in planning and commission, it is likely that extremely few “art theft” groups could be classified as transnational organized crime groups.

For thieves, therefore, the actual “art” of art theft is the ability to profit from the crime.¹⁶⁴ Opportunistic actors, often common criminals and petty thieves, see the theft of cultural property as an easy score—a low risk, high reward situation. “What [thieves] don’t understand,” says Wittman, “is that the value of art is dependent on three things: authenticity, provenance—the history of the art—and legal title.”¹⁶⁵ Thieves focus on the authenticity of a piece and the notoriety of its artist, envisioning a huge payday; they fail to realize that once stolen, and thus with no legal title, the piece has largely become worthless.

Despite very bad odds, if a thief is successful in stealing a well-known piece, there are three primary ways to profit from the theft. First, thieves can attempt to sell the painting, but even if they are successful they are likely to receive only 5 to 10 percent of the painting’s legitimate value.¹⁶⁶ Second, thieves may

¹⁶⁰ Financial Action Task Force, *Trade Based Money Laundering* (Paris, France: Financial Action Task Force, June 23, 2006), 5, <http://www.fatf-gafi.org/media/fatf/documents/reports/Trade%20Based%20Money%20Laundering.pdf>.

¹⁶¹ U.S. Department of State, *Money Laundering and Financial Crimes Country Database*: June 2015 (Washington, DC: Bureau for International Narcotics and Law Enforcement Affairs, U.S. Department of State, 2015), <http://www.state.gov/documents/organization/239329.pdf>.

¹⁶² Hollington, “After Drugs and Guns, Art Theft Is the Biggest Criminal Enterprise in the World.”

¹⁶³ Amore, Interview by the author.

¹⁶⁴ Ozernoy, “The Art of the Heist.”

¹⁶⁵ Jordan Weissmann, “Have You Ever Tried to Sell a Stolen Painting?,” *The Atlantic*, October 16, 2012, <http://www.theatlantic.com/business/archive/2012/10/have-you-ever-tried-to-sell-a-stolen-painting/263682/>.

¹⁶⁶ Tarmy, “What Happens to Stolen Art After a Heist?”; Tim Murphy, “The Biggest Unsolved Art Heist—and the Detective Who Came Close to Cracking It,” *Mental Floss*, March 17, 2015, <http://mentalfloss.com/us/go/53527>; Colleen Curry, “The Most Valuable Works of Stolen Art No One Can Find,” *ABC News*, April 14, 2012, <http://abcnews.go.com/US/worlds-valuable-missing-works-art/story?id=16131807>; Ed Caesar, “What Is the Value of Stolen Art?,” *The New York Times*, November 13, 2013, <http://www.nytimes.com/2013/11/17/magazine/what-is-the-value-of-stolen-art.html>.

opt to use the painting as collateral for a loan or exchange it for drugs, albeit still at a fraction of its true value.¹⁶⁷ Finally, the most profitable option is typically to return the stolen property for a “finder’s fee,” essentially ransom for the painting.

Art theft is frequently a crime of opportunity, and it is smaller thefts, particularly those worth several thousand dollars or less and from private residences, which make up the majority of the goods in the illicit art market. These pieces attract less scrutiny and are thus easier to sell. In addition, because the pieces come with modest price tags, it is unlikely that provenance will be requested and/or verified.

Compared to art theft, the looting and trafficking of antiquities are especially challenging for states to combat due to issues of ownership and identification. Most governments argue that cultural property and antiquities, particularly those in situ, are property of the state; overall, this claim has been accepted by the international community since the early 20th century.¹⁶⁸ However, it is difficult to assert ownership over objects whose existence is unknown, which is frequently the issue with unearthed antiquities.

In many countries there are often disparities between the degree to which regulations on exports of cultural objects are enacted and enforced on the one hand, and the strength of regulations on imports on the other. It is common for a country to have much more stringent restrictions on the exportation of cultural property, such as requiring permits, than it does on importation. Exporters presumably face a greater burden of proof in establishing the legality (i.e., legal title and acquisition) of a cultural object, whereas upon importation the onus shifts to customs to prove that the item was acquired illegally.¹⁶⁹ These differences can often lead to a form of trade misinvoicing where an exporter will intentionally conceal the nature of the object(s) being shipped on the export invoice, but describe it accurately on the import invoice.¹⁷⁰ The misinvoicing is motivated primarily by the need to conceal the illicit nature of the goods rather than the “traditional” motives of tax evasion and/or capital flight.

Looters are positioned at the bottom of the antiquities trafficking network. Like poachers and other low-level participants, looters reportedly receive only around one percent of the final sales price of a looted antiquity, even though they have the greatest amount of exposure.¹⁷¹ Most of the profit goes to the middlemen.

Looters are supported by smuggler networks that have the connections to move illicit antiquities out of the source country and into the market country. Conflict and political unrest are good for smugglers as their skills are in high demand, and they will move anything that is profitable—be it cigarettes, antiquities, arms, or stolen goods. The network of smugglers along the Syrian, Lebanese, and Turkish borders has been able to take advantage of the Syrian Civil War by purchasing looted antiquities cheaply from armed groups and then selling weapons to them for high prices.¹⁷²

The global shadow financial system, particularly anonymous shell companies, increases the opacity of

¹⁶⁷ Courtney Willis, “The 50 Greatest Art Heists of All Time: The Russborough House Is Robbed Again, in Six Minutes,” *Complex*, June 19, 2013, <http://www.complex.com/style/2013/06/the-biggest-art-heists-of-all-time/the-russborough-house-is-robbed-again-in-six-minu>; Donna Yates, “Museo Nacional de Antropología Theft,” *Trafficking Culture*, August 8, 2012, <http://traffickingculture.org/encyclopedia/case-studies/museo-nacional-de-antropologia-theft/>; “Stolen Renoir Recovered,” *BBC*, April 6, 2001, <http://news.bbc.co.uk/2/hi/entertainment/1263808.stm>.

¹⁶⁸ Prior to the mid-20th century, when archaeology was still developing as a serious academic discipline, the issue of the ownership of antiquities was not widely considered and the concept of protecting cultural heritage was uncommon. Items of national historical significance were bought and sold through questionable agreements, archaeologists often kept the artifacts they unearthed, and foreign occupiers took liberties with looting. See Liz Alderman, “Greece Rules Out Suing British Museum Over Elgin Marbles,” *The New York Times*, May 14, 2015, <http://www.nytimes.com/2015/05/15/world/europe/greece-british-museum-elgin-marbles.html>; Tony Waters, “Why Is Queen Nefertiti’s Bust in Berlin, and Not Egypt?,” *Ethnography.com*, July 3, 2015, <http://www.ethnography.com/2015/07/why-is-queen-nefertitis-bust-in-berlin-and-not-egypt/>; Terril Yue Jones, “Two Bronze Animal Heads, Stolen 153 Years Ago, Returned to China,” *Reuters*, June 28, 2013, <http://www.reuters.com/article/us-china-sculptures-idUSBRE95R0HW20130628>.

¹⁶⁹ Stefan Gruber, “The Fight Against the Illicit Trade in Asian Cultural Artefacts: Connecting International Agreements, Regional Co-Operation, and Domestic Strategies,” *Asian Journal of International Law* 3, no. 2 (July 2013): 346, doi:<http://dx.doi.org.proxyau.wrlc.org/10.1017/S2044251313000052>.

¹⁷⁰ Raymond Fisman and Shang-Jin Wei, “The Smuggling of Art, and the Art of Smuggling: Uncovering the Illicit Trade in Cultural Property and Antiques,” NBER Working Paper Series (Cambridge, MA: National Bureau of Economic Research, 2007), 2–3, <http://www.nber.org/papers/w13446>.

¹⁷¹ Jessica Dietzler, “On ‘Organized Crime’ in the Illicit Antiquities Trade: Moving beyond the Definitional Debate,” *Trends in Organized Crime* 16, no. 3 (2013): 330–31, doi:<http://dx.doi.org.proxyau.wrlc.org/10.1007/s12117-012-9182-0>.

¹⁷² Aryn Baker, “Syria’s Looted Past: How Ancient Artifacts Are Being Traded for Guns,” *Time*, September 12, 2012, <http://world.time.com/2012/09/12/syrias-looted-past-how-ancient-artifacts-are-being-traded-for-guns/>.

trafficking transactions, providing traffickers with anonymity and security. Beginning in the 1960s and continuing for nearly four decades, infamous Italian antiquities trafficker Giacomo Medici used multiple anonymous shell companies, in addition to the companies with which he was openly associated, to launder stolen and/or looted antiquities. One of the ways this worked in practice is he would consign an item to Sotheby's in London with his Swiss-based front company, Editions Services, and then he would buy the item back with his anonymous shell company, Arts Franc.¹⁷³ Medici's laundering operation served to create a (false) provenance, or ownership history, for trafficked antiquities, as the reputable auction house sale gave future buyers the impression that the items were obtained legitimately.¹⁷⁴

Art dealers have also used anonymous shell companies to increase prices, both in the market itself as well as for specific pieces. Until his arrest in 1997 and conviction in 2004, Medici used his laundering operation to manipulate the market by driving up prices during bidding, augmenting market values.¹⁷⁵ Anonymous shell companies are also used for more than just insulating buyer from seller. Middlemen can use an anonymous shell company to purchase artwork, then reinvoice it for an inflated amount before selling it on to clients.

D. Developing Countries

The illicit trade in cultural property has long been seen as a victimless crime, and some authorities have thus treated it with greater leniency. Compared to drugs or arms, antiquities trafficking does not cause the same level of damage, yet it still directly harms communities and countries.

As a finite resource, cultural property provides a strong connection to a country's culture and identity, and its theft strips a nation of its heritage. Besides the notable exceptions of Greece and Italy, the majority of looted antiquities are sourced from developing countries, whereas demand markets are frequently in developed countries. The looting and trafficking of antiquities is in essence then a transfer of both cultural and financial resources from developing to developed countries.

The illicit trade in cultural property also has a negative impact on economic development. Archaeological sites are popular tourist destinations, but looting and destruction strips income derived from travel and tourism as well as reduces job opportunities. This is particularly damaging when archaeological sites lie within conflict zones. Prior to 2011, Syria earned 12 percent of its national income from tourism, however the destruction inflicted on archaeological sites around the country will likely reduce the impact tourism can have on future post-conflict economic development.¹⁷⁶

E. Recent Developments

For some, the best use of cultural property lies in its ability to store and transport value. One of the fastest growing art markets is China, where legal sales generated US\$11.8 billion in 2015.¹⁷⁷ Besides a burgeoning art market, China also has strict currency controls that allow citizens to send no more than US\$50,000 out of the country each year. In order to evade these controls, wealthy Chinese use trade misinvoicing schemes involving the purchase of high-value goods, particularly art and real estate, to move money out of the country. As shown in Figure III, a Chinese buyer will purchase a piece of art in a foreign country, for example the United States, at an inflated price. The dealer, after subtracting the true value of the artwork, transfers the remaining funds to the buyer's offshore account.¹⁷⁸

¹⁷³ Peter Watson and Cecilia Todeschini, *The Medici Conspiracy: The Illicit Journey of Looted Antiquities, from Italy's Tomb Raiders to the World's Greatest Museums* (New York: Public Affairs, 2007), 136–40.

¹⁷⁴ *Ibid.*, 141.

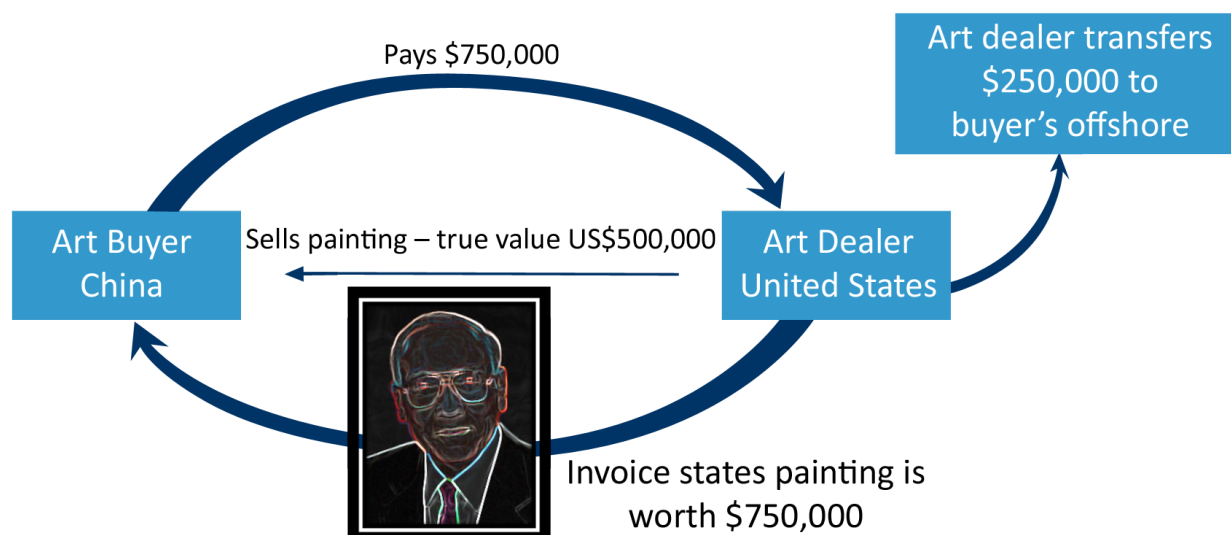
¹⁷⁵ *Ibid.*, 137–42.

¹⁷⁶ Baker, "Syria's Looted Past."

¹⁷⁷ Eileen Kinsella, "What Does TEFAF 2016 Art Market Report Tell Us About the Global Art Trade?," *Artnet News*, March 9, 2016, <https://news.artnet.com/market/tefaf-2016-art-market-report-443615>.

¹⁷⁸ Sophia Yan, "Chinese Snap up Fine Art for Use in Laundering Schemes," *CNN Money*, February 21, 2014, <http://money.cnn.com/2014/02/20/news/economy/china-art-laundering/index.html>.

Figure III. Trade-Based Money Laundering Scheme



Although terrorist and insurgent organizations have used the trafficking of antiquities as a source of financing in the past, the Islamic State of Iraq and the Levant (ISIL) differs in the professionalization of its operations in this market. It has established an “Antiquities Division” within its pseudo-government and gains both active and passive income from the antiquities trade. ISIL earns passive income from selling excavation permits and from taxing the sale of antiquities. Its active income comes from the direct sale of antiquities acquired from its own excavations, thefts from museums, and confiscations from existing owners.¹⁷⁹

A February 2015 FATF report notes that there are more than 4,500 archaeological sites under ISIL control, and that “90 percent of [Syria’s] cultural artefacts are located in war torn areas, which has allowed for large scale looting.”¹⁸⁰ There is much more evidence on ISIL’s destruction of cultural property than the penetration of ISIL-looted antiquities into international trade.¹⁸¹ Estimates of ISIL’s revenues from the illicit antiquities trade range widely, from several million to a few billion dollars each year.¹⁸² This is less than what ISIL earns from oil theft, however there is a significantly lower risk of coalition airstrikes targeting archaeological sites in comparison to oilfields.

A third key development has been the growth of “artnapping”—the theft of artwork for the express purpose of ransoming it.¹⁸³ The release of stolen cultural property in return for payment typically involves a third party who contacts the owner or insurer informing them that, for a “finder’s fee,” the stolen property can be returned. According to Belgian art expert Jacques Lust, artnapping is increasing in frequency, although the public may be unaware as negotiations are, unsurprisingly, kept quiet.¹⁸⁴

¹⁷⁹ Yaya J. Fanusie and Alexander Joffe, *Monumental Fight: Countering the Islamic State’s Antiquities Trafficking* (Washington, D.C.: Center on Sanctions & Illicit Finance, 2015), 9.

¹⁸⁰ Financial Action Task Force, *Financing of the Terrorist Organisation Islamic State in Iraq and the Levant (ISIL)* (Paris: Financial Action Task Force, 2015), 17, <http://www.fatf-gafi.org/media/fatf/documents/reports/Financing-of-the-terrorist-organisation-ISIL.pdf>.

¹⁸¹ Judith H. Dobrzynski, “Antiquities and ISIS: Something Doesn’t Add Up,” *Real Clear Arts*, January 10, 2016, <https://www.artsjournal.com/real-cleararts/2016/01/antiquities-and-isis-something-doesnt-add-up.html>; Ben Taub, “The Real Value of the ISIS Antiquities Trade,” *The New Yorker*, December 4, 2015, <http://www.newyorker.com/news/news-desk/the-real-value-of-the-isis-antiquities-trade>.

¹⁸² Andrew Keller, “Documenting ISIL’s Antiquities Trafficking: The Looting and Destruction of Iraqi and Syrian Cultural Heritage; What We Know and What Can Be Done” (Remarks, New York, NY, September 29, 2015), <http://www.state.gov/e/eb/rls/rm/2015/247610.htm>; Vitaly Churkin, “Letter Dated 31 March 2016 from the Permanent Representative of the Russian Federation to the United Nations Addressed to the President of the Security Council,” *United Nations*, March 31, 2016, http://www.un.org/ga/search/view_doc.asp?symbol=S/2016/298; Steven Lee Myers and Nicholas Kulish, “‘Broken System’ Allows ISIS to Profit From Looted Antiquities,” *The New York Times*, January 9, 2016, <https://www.nytimes.com/2016/01/10/world/europe/iraq-syria-antiquities-islamic-state.html>.

¹⁸³ Paal Uvaag Espeland, “Skeptisk Til Å Forhandle Med Toska,” *Dagbladet Nyheter*, August 22, 2006, <http://www.dagbladet.no/nyheter/2006/08/22/474557.html>; Hili Perlson, “Robbers Ask Van Buuren Museum for Ransom,” *Artnet News*, April 21, 2015, <https://news.artnet.com/art-world/robbers-ransom-van-buuren-museum-289788>; Egmont R Koch and Nina Svensson, “How the Tate Found Its Turners,” *BBC*, November 8, 2005, http://news.bbc.co.uk/2/hi/programmes/this_world/4414120.stm; “L’Artnapping Ou L’art de Kidnapper Des Oeuvres D’art Contre Rançon,” *RTBF.be*, March 18, 2014, https://www.rtbf.be/info/societe/detail_l-artnapping-le-kidnapping-d-uvres-d-art?id=8225604.

¹⁸⁴ Paul Black, “Artnapping: Should Museums Pay The Ransom Or Lose The Art?,” *Artlyst London*, April 22, 2015, <http://www.artlyst.com/articles/artnapping-should-museums-pay-the-ransom-or-lose-the-art>.

Paying ransom demands, as well as the advertising of rewards, raises ethical questions similar to those provoked by traditional kidnapping for ransom schemes.

F. Summary

The illicit trade in cultural property represents 20 percent of all art crime and generates an estimated US\$1.2 billion to \$1.6 billion in illicit revenues each year. Museum heists and the thefts of masterpieces grab the headlines, but these pieces are actually extremely difficult to sell once stolen. Rather, the value of the illicit art market is found in the theft of moderately priced, lesser-known pieces that attract far less scrutiny. Looted antiquities are often undiscovered, and therefore unrecorded, making it much easier to traffic and sell compared to stolen artwork.

For criminals, cultural property can serve as an ideal portable commodity: it has subjective pricing, it can act as financing or collateral, the market is unregulated, and its innocuous nature makes it relatively easy to conceal and transport. In addition, opacity pervades the art and antiquities markets, contributing to a culture of secrecy and a pervasive deficiency of outside scrutiny. The global shadow financial system enables criminals to purchase licit and illicit cultural property anonymously and to use trade misinvoicing to both evade taxes as well as launder money. Criminals as well as terrorists have capitalized on the ability to use cultural property as a vehicle for quick financing, including the Syrian Civil War and the practice of ransoming high-value pieces.

VII. Counterfeit and Pirated Goods

A. Overview

The trade in counterfeit and pirated goods, which includes the theft of intellectual property (IP), is the most profitable illicit trade examined in this report. Combatting counterfeiting and piracy is not simply about protecting corporate profits; it has direct implications on global health, safety, and security as well as economic growth.

Counterfeit and pirated products, as well as packaging, are tangible goods that violate a trademark, design rights, and/or patent (counterfeit), or a copyright (piracy), whereas digital piracy involves intangible goods.¹⁸⁵ IP theft, in one form or another, is essentially found in every country. The counterfeit and pirated goods market is largely responsive to the same dynamics of the trade in legal goods—if there is a strong demand for a product, it is likely to be counterfeited or pirated.

B. Value

Besides being one of the fastest growing illicit markets, counterfeiting and piracy is also the most valuable. **The global trade in counterfeit and pirated goods is estimated to generate between US\$923 billion to \$1.13 trillion annually**, which includes cross-border trade, domestic trade, and digital piracy.¹⁸⁶

A 2017 study by Frontier Economics provides the most recent and comprehensive assessment of the global trade in counterfeit and pirated products (Table N). The international trade in counterfeit and pirated products was the most valuable, worth an estimated US\$461 billion in 2013, followed by counterfeit and pirated goods that were produced and consumed domestically, valued at US\$249 billion to \$456 billion.¹⁸⁷

Table N. Trade in Counterfeit and Pirated Goods, 2013 (US\$)

Component	Value
International trade in counterfeit and pirated goods	\$461 billion
Domestic trade in counterfeit and pirated goods	\$249 billion to \$456 billion
Total	\$710 billion to \$917 billion

Source: Frontier Economics

The same study also analyzed the global value of digitally pirated goods—specifically film, music, and software—in 2015, estimating these three forms of digital piracy to be worth US\$213 billion (Table O).¹⁸⁸ Digital film piracy is the most valuable at US\$160 billion, whereas digitally pirated music and software are worth US\$29 billion and US\$24 billion, respectively.

Table O. Trade in Digitally Pirated Goods, 2015 (US\$)

Component	Value
Film	\$160 billion
Music	\$29 billion
Software	\$24 billion
Total	\$213 billion

Source: Frontier Economics

¹⁸⁵ Organisation for Economic Co-operation and Development and European Union Intellectual Property Office, *Trade in Counterfeit and Pirated Goods: Mapping the Economic Impact* (Paris: OECD Publishing Office, 2016), 16, <http://www.oecd.org/gov/risk/trade-in-counterfeit-and-pirated-goods-9789264252653-en.htm>.

¹⁸⁶ Frontier Economics, *The Economic Impacts of Counterfeiting and Piracy* (London: Frontier Economics, 2017), 57, http://www.inta.org/Communications/Documents/2017_Frontier_Report.pdf.

¹⁸⁷ *Ibid.*, 14, 20.

¹⁸⁸ *Ibid.*, 38.

Just as human trafficking runs on the demand for cheap labor, so does counterfeiting thrive on the global demand for cheap goods. Low production costs for counterfeit goods result in higher profits for criminals, but it also means that goods are often substandard and could therefore be potentially hazardous. The World Customs Organization (WCO) points out that when already affordable foodstuffs and beverages, such as energy drinks, olive oil, and cookies, are counterfeited, the quality of the ingredients are likely to be extremely low so that the criminals can make a profit.¹⁸⁹

The global trade in counterfeit pharmaceuticals is one of the largest components of total counterfeit trade. Estimates have placed the value of the worldwide counterfeit pharmaceuticals trade between US\$70 billion to \$200 billion annually.¹⁹⁰ This represents up to 25 percent of the total counterfeit market. The market for counterfeit electronics is also high, valued at US\$169 billion each year.¹⁹¹ Illicit tobacco products are some of the most frequently seized items by law enforcement, and the total illicit trade is worth US\$40 billion annually.¹⁹² Of the total trade in illicit tobacco products, approximately 13 percent is represented by illegal and counterfeit items, worth roughly US\$5.2 billion each year.¹⁹³

C. Dynamics

The magnitude of counterfeit and pirated products is significant: from the “traditional” handbags, watches, and movies, to cigarettes, computers, laundry detergent, and olive oil. Criminals will counterfeit or pirate almost any product as long there is profit to be made. The availability and variety of counterfeit and pirated goods varies from country to country, with much dependent on ease of supply chain infiltration (primary, or legal, market), consumer demand (primary and secondary, or black, market), and state enforcement of IP laws.

Counterfeit and pirated goods are destined for two principal markets: primary and secondary. The primary market involves the intentional deceit of the final consumer, while consumers knowingly participate in the secondary market.¹⁹⁴ On the primary market, counterfeit goods compete head-on with legitimate goods. The products appear to be genuine and are priced similarly to or lower than the typical retail prices, therefore consumers are unaware that they are purchasing a counterfeit or pirated item. Goods sold on the secondary market are purchased by consumers who are aware that the items are not legitimate, for example, purchasing a Louis Vuitton handbag or Rolex watch on the street. The items are generally priced well below retail value, however criminals still make a strong profit.

Counterfeit and pirated goods are often produced in middle-income countries, which typically lack strong IP legislation and enforcement, a characteristic of low-income countries, but have the resources and capacity to produce a variety of goods like high-income countries.¹⁹⁵ China, Hong Kong, and India are the top provenance countries of IP seizures, and while this does not necessarily indicate that the seized items were produced in those countries, China and India are known for their large counterfeit and piracy industries.¹⁹⁶

China is a global leader in manufacturing, and likewise plays a prominent role in the manufacture of counterfeit and pirated goods. It is estimated that between two-thirds and three-quarters of counterfeit

¹⁸⁹ World Customs Organization, *Illicit Trade Report 2014* (Brussels: World Customs Organization, 2015), 65, <http://www.wcoomd.org/en/media/news-room/2015/december/-/media/6FDDFF08E365E49D49C0B6DC375C492B5.ashx>.

¹⁹⁰ Brian D. Finlay, *Counterfeit Drugs and National Security* (Washington, DC: Stimson Center, 2011), 1, http://www.stimson.org/sites/default/files/file-attachments/Full_-_Counterfeit_Drugs_and_National_Security_1.pdf; Counterfeit Goods, *Crime Inc.* (CNBC, 2010), <http://www.hulu.com/watch/390535>; John Irish, “Customs Group to Fight \$200 Bln Bogus Drug Industry,” *Reuters*, June 10, 2010, <http://www.reuters.com/article/us-customs-drugs-idUSTRE65961U20100610>; NetNames, *The Risks of the Online Counterfeit Economy* (London: NetNames, 2016), 3, <https://www.netnames.com/assets/shared/whitepaper/pdf/The-Online-Counterfeit-Economy-web-FINAL.pdf>.

¹⁹¹ NetNames, *The Risks of the Online Counterfeit Economy*, 3.

¹⁹² “Illicit Trade in Tobacco Products,” *Euromonitor International*, November 2016, <http://www.euromonitor.com/illicit-trade-in-tobacco-products/report>.

¹⁹³ Euromonitor International, *Tobacco: Illicit Trade in Tobacco Products* (London: Euromonitor International, 2012), 3, http://www.portal.euromonitor.com.proxyau.wrlc.org/Portal/Handlers/accessPDF.ashx/Illicit_Trade_in_Tobacco_Products_2012.pdf?c=75\PDF&f=F-247068-24705475.pdf&saveAsName=Illicit_Trade_in_Tobacco_Products_2012&code=%2bOTwjltdFosprU24%2bvDpOCly%2f%2bY%3d.

¹⁹⁴ Organisation for Economic Co-operation and Development and European Union Intellectual Property Office, *Trade in Counterfeit and Pirated Goods*, 21.

¹⁹⁵ *Ibid.*, 63.

¹⁹⁶ *Ibid.*, 51; World Customs Organization, *Illicit Trade Report 2014*, 66.

and pirated goods come from China.¹⁹⁷ The Chinese government has taken steps to crack down on counterfeiting, however it is still far from meeting the demands of affected companies and countries. Counterfeiting is essentially an industry in itself in China, and there are hundreds of thousands of people employed in the trade. A serious effort by the Chinese government to significantly curtail counterfeiting could lead to a huge increase in unemployment and a major impact on the economy.

Counterfeit and pirated goods are not just financial crimes; they also pose significant health and safety risks to the public. Pharmaceutical counterfeiting is an opportunistic crime, and weak regulation in some countries has made it easier for illicit actors to insert the counterfeits into the supply chain (See the Box 2. Pharmaceutical Crime). This is why counterfeits are showing up in both formal and informal settings: hospitals, pharmacies, as well as street vendors. It is estimated that counterfeits represent 10 to 30 percent of available pharmaceuticals in developing countries, compared to approximately one percent in most developed countries.¹⁹⁸

Food counterfeiting, also known as food fraud or food crime, is more prevalent than consumers would believe, impacting both their pocketbooks and their health. Extra virgin olive oil is one of the most widely counterfeited food items;¹⁹⁹ criminals sell lesser-quality olive oil in its place, adulterate it with other refined vegetable oils, or mislabel from where it comes. Up to 50 percent of olive oil in Italy may be fraudulent, a figure which increases to 75 to 80 percent in the United States.²⁰⁰ Meat can also be adulterated: in 2013, a food scandal rocked Europe when horsemeat was found in beef and beef products in seven different countries.²⁰¹

Counterfeiting is not just limited to the product; another aspect of the counterfeit industry is packaging. Some counterfeit manufacturers put great effort into production and packaging in order to facilitate market penetration and directly compete with legitimate products. Companies are employing increasingly stronger product security, but criminals keep pace with these changes. Criminals have purchased fake safety certificates, security features, logos, packaging, and have even gone so far as to set up fake stores to sell illicit products.²⁰²

As mentioned earlier in the chapter, the production of counterfeit and pirated goods closely follows the demand of equivalent goods in the legal market. Thus, if there is a strong demand for an item or brand in the legal market, criminals will follow with illegal copies. Table P shows the top counterfeited items (A.) and brands (B.) as indicated by global seizures.²⁰³

¹⁹⁷ United Nations Office on Drugs and Crime, *Transnational Organized Crime in East Asia and the Pacific: A Threat Assessment* (Vienna: United Nations Office on Drugs and Crime, 2013), 123, https://www.unodc.org/documents/data-and-analysis/Studies/TOCTA_EAP_web.pdf; Geoff D'Eon and Jay Dahl, *Counterfeit Culture*, Doc Zone (CBC, 2013), <http://www.cbc.ca/doczone/counterfeit-culture>.

¹⁹⁸ "The Illicit Trafficking of Counterfeit Goods and Transnational Organized Crime" (United Nations Office on Drugs and Crime, 2013), https://www.unodc.org/documents/counterfeit/FocusSheet/Counterfeit_focussheet_EN_HIRES.pdf.

¹⁹⁹ Extra virgin olive oil is produced solely by mechanical means (i.e., pressing), and has not been refined by any means involving chemicals or heat.

²⁰⁰ "Don't Fall Victim to Olive Oil Fraud," accessed December 21, 2016, <http://www.cbsnews.com/news/60-minutes-overtime-how-to-buy-olive-oil/>; Erik Sherman, "That Olive Oil You're Cooking With? It's Probably Fake," *Time*, May 12, 2016, <http://time.com/money/4326354/fake-olive-oil-food-fraud/>.

²⁰¹ Felicity Lawrence, "Horsemeat Scandal: The Essential Guide," *The Guardian*, February 15, 2013, <https://www.theguardian.com/uk/2013/feb/15/horsemeat-scandal-the-essential-guide>.

²⁰² Loretta Chao and Sue Feng, "Fake Apple Store Clerk Speaks Out," *Wall Street Journal*, July 21, 2011, <http://blogs.wsj.com/chinareal-time/2011/07/21/china-fake-apple-store-clerk-speaks-out/>.

²⁰³ Items and brands are listed in no particular order. World Customs Organization, *Illicit Trade Report 2014*, 62-63.

Table P. Top Counterfeited Items and Brands

Items (A.)	Brands (B.)
Consumer Electronics	Adidas
Clothing and Footwear	Angry Birds
Computers and Accessories	Apple
Cosmetics, Perfume, and Toiletries	BIC
Electronic Appliances	Calvin Klein
Foodstuff and Beverages	Chanel
Games and Toys	Cialis
Household Goods	D&G
Luxury Goods	Duracell
Mobile Phones and Accessories	Elite
Pharmaceutical Products	Faskit
Textiles Other Than Clothing	FIFA
Transportation and Spare Parts	Gucci
	ICOS
	Louis Vuitton
	MAC Cosmetics
	Michael Kors
	Nike
	Otterbox
	Rainbow Loom
	Ray Ban
	Rock
	Rolex
	Samsung
	Viagra
	Walt Disney

Source: World Customs Organization

The global supply chain allows counterfeiters to split production, assembly, and packaging among multiple countries in order to stay ahead of law enforcement.²⁰⁴ In addition, counterfeiters use complex shipment routes to “launder” counterfeit and pirated goods, obfuscating the country of production, which makes it more difficult for authorities to investigate and shut down counterfeiting operations.²⁰⁵

It is much easier to penetrate the legal market when there are weak supply chains. The United States has a huge, lucrative legal pharmaceutical market and would therefore be an ideal market to exploit. Yet, strong supply chain regulation and low corruption make it difficult to insert counterfeits into the primary market, so most counterfeits are sold on the secondary market. Prices for pharmaceuticals are cheaper in most parts of Africa and Asia compared to the United States, so there is a lower profit margin, however the rate of counterfeit penetration in the primary market is substantially higher, due in large part to weak oversight and corruption.

Like the “ant-trade” in arms trafficking, a large volume of counterfeit and pirated goods are distributed via the post.²⁰⁶ These shipments are commonly linked to purchases by individual customers and/or online purchases, which support evidence that, like many other illicit trades, counterfeiters have taken advantage of e-commerce to reach a much larger and more global consumer market. Although there are a greater number of shipments sent through the post, a greater volume of goods per shipment are moved through containerized cargo, signaling the presence of organized networks.²⁰⁷

²⁰⁴ “Stamping It out,” *The Economist*, April 23, 2016, <http://www.economist.com/news/international/21697218-china-grew-richer-and-more-innovative-people-assumed-it-would-counterfeit-less-think?zid=317&ah=8a47fc455a44945580198768fad0fa41>.

²⁰⁵ Organisation for Economic Co-operation and Development and European Union Intellectual Property Office, *Trade in Counterfeit and Pirated Goods*, 61.

²⁰⁶ *Ibid.*, 55–56; World Customs Organization, *Illicit Trade Report 2014*, 69.

²⁰⁷ United Nations Office on Drugs and Crime, *TOC in East Asia and the Pacific*, 126.

Box 2. Pharmaceutical Crime

Counterfeit pharmaceuticals are particularly dangerous and pose a greater risk to consumer health and safety. The term refers to pharmaceuticals that have been deliberately and fraudulently mislabeled with respect to identity and/or source. There are several reasons why a drug would be considered counterfeit: its chemical content and potency are modified so that it contains little to no active ingredient; any drug, regardless of the chemical content, which has packaging that misrepresents the manufacturer; or, it could be an authentic product but the expiration dates have been altered.

Counterfeit pharmaceutical markets differ greatly between developed and developing countries. While most licit pharmaceutical sales occur in developed countries, which would suggest a greater opportunity for penetration, counterfeits usually only make up about one percent of all pharmaceuticals.²⁰⁸ The most commonly counterfeited pharmaceuticals in developed countries are so-called “lifestyle drugs” such as Viagra, slimming pills, or steroids; these drugs are usually purchased through online pharmacies and shipped directly to the consumer.²⁰⁹

China and India are the leading producers of counterfeit drugs, and there are two primary actors who produce counterfeit pharmaceuticals: unlicensed manufacturers and licensed manufacturers that produce both legitimate and counterfeit pharmaceuticals. In India, unlicensed manufacturers typically operate out of “small cottage factories,” whereas in China counterfeits are often manufactured by “chemical companies that are not licensed to produce pharmaceuticals.”²¹⁰

More insidious are the licensed manufacturers that produce both legitimate and counterfeit drugs. An undercover investigation in India found that many of these manufacturers are ready to fill consignments placed by unscrupulous entrepreneurs, accepting “shopping lists” of the desired counterfeit brands and levels of potency and also offering the packaging to go along with them.²¹¹ Because licensed manufacturers are already connected to the legitimate supply chain, they are well positioned to connect these clients to wholesalers and distributors.

Table X. Top 15 Seized Pharmaceutical Products by Volume, 2014

1.	Analgesics (painkillers)	9.	Vitamins
2.	Anti-inflammatory treatments	10.	Condoms
3.	Tuberculosis treatments	11.	Cough/bronchitis treatments
4.	Erectile dysfunction treatments	12.	Cancer treatments
5.	Antibiotics	13.	Antihistamines/anti-allergies treatments
6.	Inhibitors (gastro)	14.	Ulcer treatments
7.	Veterinary treatments	15.	Psychiatric disorders treatments
8.	Antimalarials		

Source: World Customs Organization, *Illicit Trade Report 2014*, 66.

Well-known organized crime groups (OCGs), such as the Camorra, ‘Ndrangheta, and Chinese Triads, have long been connected to counterfeiting and piracy, supplied by both domestic and international production. The Camorra’s control of certain legal commercial activities has allowed it to easily insert counterfeit and pirated goods into the legal market.²¹² The immense profits and weak penalties have attracted greater participation by OCGs and terrorist organizations since the mid-2000s. It is estimated that Italian OCGs involved in food fraud, dubbed the “Agromafia,” earn US\$16 billion annually from this market alone.²¹³

²⁰⁸ “Drug Safety and Availability - Counterfeit Drugs Questions and Answers,” U.S. Food and Drug Administration, April 27, 2016, <http://www.fda.gov/Drugs/DrugSafety/ucm169898.htm>.

²⁰⁹ United Nations Office on Drugs and Crime, *The Globalization of Crime: A Transnational Organized Crime Threat Assessment* (Vienna: United Nations Office on Drugs and Crime, 2010), 184, https://www.unodc.org/documents/data-and-analysis/tocta/TOCTA_Report_2010_low_res.pdf.

²¹⁰ *Ibid.*, 187.

²¹¹ *Deadly Trade: The Global Traffic in Counterfeit Drugs* (New York: Films Media Group, 2008), <http://films.com/title/39622>.

²¹² Business Action to Stop Counterfeiting and Piracy (BASCAP), *Confiscation of the Proceeds of IP Crime: A Modern Tool for Deterring Counterfeiting and Piracy* (Paris: International Chamber of Commerce; United Nations Interregional Crime and Justice Research Institute, <http://www.iccwbo.org/advocacy-codes-and-rules/bascap/library/publications-by-year/>), 10.

²¹³ *Agromafia*, 60 Minutes (CBS, 2016), <http://www.cbsnews.com/news/60-minutes-agromafia-food-fraud/>.

For OCGs, counterfeiting provides an ideal avenue for laundering the profits of other transnational organized crime as well as financing other crimes. The penetration and sale of counterfeit and pirated goods in the legitimate supply chain is a money laundering scheme in itself, as the illicit funds used to produce the goods are laundered by their sale.²¹⁴ OCGs involved in other illicit markets will also reinvest the proceeds from counterfeiting into other criminal ventures, such as drug trafficking.²¹⁵

According to the United Nations Office on Drugs and Crime, the primary roles in this market are brokers and logisticians, who “invest the money, coordinate production and transport, unload the merchandise, and reap the rewards.”²¹⁶ Counterfeiting has exploded in part due to the incorporation of industrial production logistics. No longer is counterfeiting and piracy conducted as a cottage industry, rather production is achieved through greater access to technology, allowing OCGs and other criminal actors to achieve economies of scale.²¹⁷

D. Developing Countries

Counterfeiting and piracy have deep impacts on the economy, security, and welfare of developing countries. Counterfeit goods cost governments and legitimate businesses revenues while providing OCGs and terrorist groups with financing. In addition, they impact the health and safety of the general public.

For developing countries, one of the biggest impacts of counterfeit and pirated goods is lost tax revenue. In international trade, counterfeit goods are often under-invoiced or smuggled (undeclared) when imported, causing governments to lose beneficial excise and value added tax. Domestically, countries lose sales tax when goods are sold below fair market value or if they are sold on the black market. Kenya’s counterfeit goods market is worth approximately US\$900 million annually, which robs the government of US\$84 million to \$490 million in tax revenues.²¹⁸

Another issue for developing countries is job loss, as counterfeit production can push out legitimate suppliers. Counterfeit and pirated goods are frequently priced lower than genuine products, which can cause legitimate companies to lose business. Companies whose products compete against counterfeits may be forced to let employees go or even close in response to lost business. In addition, insufficient protection of intellectual property rights deters innovation, as counterfeiting reduces the ability for investors to recoup money spent on research and development.²¹⁹

The proceeds from the sale of counterfeit and pirated items provide financing to OCGs as well as terrorist groups. Organizations such as the Basque separatist group Euskadi Ta Askatasuna (ETA) have been involved since at least the 1970s, whereas the involvement of Al-Qaeda and the Irish Republican Army (IRA) began in the 1990s. Al-Qaeda propaganda has actually instructed militants to engage in the counterfeit trade to generate greater funding.²²⁰ Figure IV shows a list of terrorist organizations and some of the counterfeit and pirated products they have traded in order to raise financing.²²¹

²¹⁴ “Illicit Trafficking of Counterfeit Goods.”

²¹⁵ Business Action to Stop Counterfeiting and Piracy (BASCAP), *Confiscation of the Proceeds of IP Crime*, 13.

²¹⁶ United Nations Office on Drugs and Crime, *TOC in East Asia and the Pacific*, 126.

²¹⁷ Union des fabricants, *Counterfeiting & Terrorism* (Paris: Union des fabricants, 2016), 8, http://www.unifab.com/wp-content/uploads/2016/06/Rapport-A-Terrorisme-2015_GB_22.pdf.

²¹⁸ Louise I. Shelley, “The Diverse Facilitators of Counterfeiting: A Regional Perspective,” *Journal of International Affairs* 66, no. 1 (2012): 23.

²¹⁹ Frontier Economics, *The Economic Impacts of Counterfeiting and Piracy*, 40.

²²⁰ Union des fabricants, *Counterfeiting & Terrorism*, 14.

²²¹ *Ibid.*, 12–18.

Figure IV. Terrorist Financing and Counterfeiting



[†] Islamic State of Iraq and the Levant

[‡] Fuerzas Armadas Revolucionarias de Colombia

Source: Union de fabricants

Counterfeit and pirated goods have a direct impact on the welfare of developing countries by endangering the health and safety of the public. Counterfeits are produced illegally, usually with the cheapest materials available in order to increase profit margins; they are therefore very unlikely to be manufactured to regulated standards, increasing the probability of product failure. Saudi Arabia's customs department, Saudi Customs, estimates that approximately 50 percent of domestic road accidents are attributable to counterfeit vehicle parts.²²² Counterfeit tobacco typically has carcinogens such as tar and carbon monoxide outside legal levels and may contain toxic substances, including "human feces, dead flies, mold, and insect eggs."²²³

All forms of pharmaceuticals, from painkillers to vaccines, are counterfeited for markets in developing countries, particularly those in Southeast Asia and Africa. Average market penetration of counterfeits is 30 percent but increases to more than 60 percent for antimalarials in some countries.²²⁴ In Angola in 2012, a shipment of loudspeakers from China contained 1.4 million packets of counterfeit malaria drugs; this is equivalent to the number of doses needed to treat more than half of the country's malaria cases each year.²²⁵ Fake antimalarials not only cause adverse side effects but have directly resulted in the deaths of some of the people who took them. Counterfeit pharmaceuticals are estimated to kill one million people annually.²²⁶

Counterfeit medicines also contribute to public health crises. Reduced or missing levels of active ingredients in anti-infective medicines and combination drug therapies can lead to microbial resistance and more virulent strains in addition to failing to treat the disease, thereby helping it to continue to

²²² INTERPOL, *Against Organized Crime: INTERPOL Trafficking and Counterfeiting Casebook 2014* (Lyon: INTERPOL, 2014), 66, <http://www.interpol.int/Crime-areas/Trafficking-in-illicit-goods-and-counterfeiting/Trafficking-in-illicit-goods-and-counterfeiting>.

²²³ "Counterfeit Cigarettes Contain Disturbing Toxic Substances," *ICC Fraud Net*, accessed December 1, 2016, <https://icc-ccs.org/home/news/85-news/360-counterfeit-cigarettes-contain-disturbing-toxic-substances>.

²²⁴ Jocelyne Sambira, "Counterfeit Drugs Raise Africa's Temperature," *Africa Renewal Online*, May 2013, <http://www.un.org/africarenewal/magazine/may-2013/counterfeit-drugs-raise-africa%E2%80%99s-temperature>; "Fake Medicines and Malaria," *Fight the Fakes*, September 8, 2014, <http://fight-thefakes.org/resources/fake-medicines-and-malaria/>.

²²⁵ "Fake Medicines and Malaria."

²²⁶ Kristina Lybecker, "Illicit Trade in Counterfeit Medicines," in *Illicit Trade: Converging Criminal Networks* (Paris: OECD Publishing, 2015), 93, <http://dx.doi.org/10.1787/9789264251847-en>.

spread.²²⁷ Developing countries that are already challenged with combatting high rates of infectious diseases, such as malaria, tuberculosis, and HIV, face even greater difficulties when common regimens fail to treat new strains. In addition, counterfeit pharmaceuticals, when provided unwittingly by governments, undermine the public's confidence in health systems.

E. Recent Developments

For terrorist groups, as well as OCGs, the profits from IP theft can be equal to or greater than drug trafficking, but draw far less enforcement and result in significantly more lenient penalties. Terrorist organizations have taken a more active role in counterfeiting by organizing production and distribution.²²⁸ Groups as well as lone actors and small cells are involved, because the sale of counterfeits tend to provide quick financing with relatively little buy-in cost.²²⁹

Financing for the Charlie Hebdo attack in Paris in January 2015 was achieved in part through counterfeiting. The Kouachi brothers received funding from their sale of counterfeit products, particularly footwear and clothing, which they purchased from China.²³⁰ The Molenbeek neighborhood of Brussels—labeled a “breeding ground” for terrorism because of its links to several terrorist attacks and supply of foreign fighters in Syria—is also challenged by counterfeiting as well as drugs and arms trafficking.²³¹

Despite the seriousness of counterfeit pharmaceutical crime and its potential to impact global health, there are no international agreements to address this illicit trade like there are for other crimes in this report. The closest is the regional 2010 Council of Europe Medicrime Convention, which criminalizes the manufacture and distribution of counterfeit medicine. INTERPOL notes that most countries do not even have legislation that addresses pharmaceutical crime but instead treat it as a category of intellectual property crime or illegal narcotics crime.²³² For countries that do have strong legislation and legal remedies to prevent and punish IP theft, the value of these measures is reduced if there are weak enforcement and/or penalties, posing little deterrent to counterfeiters and traffickers.²³³

Some organizations have introduced technology that allows for the verification and monitoring of products in an attempt to protect legitimate businesses as well as consumers. The organization TechTrace introduced the Anti-Counterfeiting Tool (ACT), which provides a platform for stakeholders—brands, consumers, governments, and others—to monitor cases involving the illicit trade in counterfeit goods.²³⁴ The WCO has developed a similar product called Interface Public-Members (IPM) that connects customs agents to rights holders, aiding the detection of counterfeit goods in real time.²³⁵ Another group, Sproxil, has harnessed the worldwide popularity of mobile phones to combat counterfeiting by embedding scratch-off SMS verification codes in products, from agricultural goods to pharmaceuticals, that consumers can use to check if the item they are purchasing is genuine.²³⁶

²²⁷ Ibid., 94.

²²⁸ Union des fabricants, *Counterfeiting & Terrorism*, 8.

²²⁹ Financial Action Task Force, *Emerging Terrorist Financing Risks* (Paris: Financial Action Task Force, October 2015), 10, <http://www.fatf-gafi.org/media/fatf/documents/reports/Emerging-Terrorist-Financing-Risks.pdf>.

²³⁰ Union des fabricants, *Counterfeiting & Terrorism*, 16.

²³¹ Ibid., 17; Aaron Williams et al., “How Two Brussels Neighborhoods Became ‘a Breeding Ground’ for Terror,” *Washington Post*, April 1, 2016, <https://www.washingtonpost.com/graphics/world/brussels-molenbeek-demographics/>; Selina Sykes, “Molenbeek: Inside Belgium’s Seething City of Jihad Where ISIS Are Heroes,” *Express.co.uk*, November 25, 2015, <http://www.express.co.uk/news/world/620763/Molenbeek-Paris-terror-attacks-Belgium-ISIS-jihadis-Europe>; Roger Cohen, “The Islamic State of Molenbeek,” *The New York Times*, April 11, 2016, <http://www.nytimes.com/2016/04/12/opinion/the-islamic-state-of-molenbeek.html>.

²³² Pharmaceutical Crime Sub-Directorate, *Pharmaceutical Crime and Organized Criminal Groups* (Lyon: Interpol, 2014), 16.

²³³ Organisation for Economic Co-operation and Development and European Union Intellectual Property Office, *Trade in Counterfeit and Pirated Goods*, 25.

²³⁴ “Anti-Counterfeiting Tool (ACT),” *TechTrace*, accessed January 11, 2017, <http://www.anti-counterfeiting-tool.com/>.

²³⁵ “The WCO Tool in the Fight Against Counterfeiting” (World Customs Organization, 2015), http://www.wcoipm.org/_resources/userfiles/file/IPM-Brochure.pdf.

²³⁶ “Sproxil Defender,” *Sproxil*, accessed December 23, 2016, <https://www.sproxil.com/defender/>.

F. Summary

With an estimated US\$923 billion to \$1.13 trillion in annual revenues, the market for counterfeit and pirated goods is the largest covered in this report. Counterfeiting and piracy have often been seen as victimless crimes, yet there are many potential hazards. Some consumers may willingly purchase counterfeit goods, while many are deceived to their potential detriment.

The effects of counterfeiting extend beyond just financial losses to rights holders: there are impacts to the economy, security, and welfare of developing countries. Counterfeiting costs developing countries valuable tax revenues and threatens the health and safety of the public while serving as a solid source of financing for criminals and terrorists. Criminal and terrorist organizations as well as multilateral institutions and business have paid attention to the growth of counterfeiting and piracy, however legislative responses have been slow to produce.

VIII. Illegal Wildlife Trade

A. Overview

The illegal wildlife trade refers to crimes involving live wildlife, wildlife products, or their derivatives, both flora and fauna. While ivory and rhino horn dominate the headlines, the illegal wildlife trade is much more complex, involving a multitude of species and a variety of markets and drivers.

This trade has had a disastrous impact on species conservation. High prices and low enforcement risk have lured a legion of participants, from subsistence poachers to transnational criminal networks and armed rebel groups, eager to satisfy and profit from a growing demand. Per kilo, the retail revenues for ivory or rhino horn can be equal to or greater than the equivalent amount of cocaine or heroin, yet the legal penalties are considerably more lenient.

B. Value

The ugliness of poaching profits on the beauty of nature, and this trade is lucrative. **Estimates place the annual value of the illegal wildlife trade between US\$5 billion and \$23 billion.**²³⁷ Two of the biggest components of the market value are the trades in ivory and rhino horn.

Rhino horn has always been sought for its (spurious) health benefits,²³⁸ particularly as a cure for cancer but also as a hangover remedy.²³⁹ Recently, however, there has been a growing trend of conspicuous consumption in Vietnam whereby the affluent (or those trying to appear so) consume rhino horn just to flaunt their status and wealth.²⁴⁰ With prices averaging US\$27,000 to \$65,000 per kilo, it is one of the most expensive animal products available, and the high price has fueled aggressive poaching.²⁴¹ At least 1,342 rhinos were poached in Africa in 2015, representing a retail value of between US\$91 million and \$698 million.²⁴² In South Africa alone, more than 4,500 rhinos were killed from 2011 through 2015, flooding the retail market with approximately US\$304 million to \$2.3 billion worth of rhino horn.²⁴³

At the peak of the elephant poaching epidemic between 2010 and 2012, Wittemyer et al. estimate that nearly 100,000 African elephants were killed for their ivory, or roughly 33,000 per year.²⁴⁴ Despite declines in poaching beginning in 2013, elephants are still being killed at an alarming rate. According to the Born Free Foundation, around 24,000 elephants were killed in 2015.²⁴⁵ This represents approximately 240 tons of new ivory entering the market, with a total retail value of approximately US\$240 million to \$720

²³⁷ Data from more than a dozen sources were combined to create this estimate. See the Appendix, Section E for a complete list of sources.

²³⁸ The horn of a rhinoceros is composed of keratin, the same type of protein that makes up hair and fingernails, which has been shown in medical studies to have negligible healing properties. See Ruth Becker, "Medical Claims for Rhino Horn: You're Better on an Aspirin or Biting Your Nails," *Africa Check*, September 22, 2012, <https://africacheck.org/reports/medical-claims-for-rhino-horn-youre-better-on-an-aspirin-or-biting-your-nails/>.

²³⁹ Gwynn Guilford, "Why Does a Rhino Horn Cost \$300,000? Because Vietnam Thinks It Cures Cancer and Hangovers," *The Atlantic*, May 15, 2013, <http://www.theatlantic.com/business/archive/2013/05/why-does-a-rhino-horn-cost-300-000-because-vietnam-thinks-it-cures-cancer-and-hangovers/275881/>.

²⁴⁰ Marile van Heerden, "The Illicit Rhino Horn Trade: A South African Perspective" (Presentation, International Association of Prosecutors 17th Annual Conference and General Meeting, Bangkok, October 29, 2012), http://www.iap-association.org/Conferences/Annual-Conferences/17th-Annual-Conference-and-General-Meeting,-Bangko/WS1D_speech_Marile_van_Heerden_AC17.aspx.

²⁴¹ The Poachers Pipeline: Dealers, Diplomats & The Illegal Horn Trade, Al Jazeera Investigates (Al Jazeera, 2016), <https://www.youtube.com/watch?v=JMguWY99q6s>; Bradley Anderson and Johan Jooste, "Wildlife Poaching: Africa's Surging Trafficking Threat" (Washington, DC: Africa Center for Strategic Studies, May 2014), 1, <http://africacenter.org/wp-content/uploads/2015/12/ACSS-Africa-Security-Brief-No.-28-EN.pdf>.

²⁴² Average weight for both front and rear horns is between 2.5 and 8 kilograms, at an average retail price of US\$27,000 to \$65,000 per kg. Julian Rademeyer, *Tipping Point: Transnational Organized Crime and the "War" on Poaching* (Geneva: Global Initiative against Transnational Organized Crime, 2016), 3, <http://globalinitiative.net/wp-content/uploads/2016/07/Global-Initiative-Tipping-Point-Part1-July-2016.pdf>; Ed Stoddard, "Legalising Rhino Horn, Ivory Trade in Focus," *Reuters*, April 26, 2012, <http://www.reuters.com/article/ozatp-africa-money-idAFJOE83P03N21020426>; *The Poachers Pipeline: Dealers, Diplomats & The Illegal Horn Trade*.

²⁴³ At least 4,510 rhinos were poached from the beginning of 2011 through the end of 2015; assuming an average weight for both front and rear horns between 2.5 and 8 kilograms, at an average retail price of between US\$27,000 and \$65,000. *The Poachers Pipeline: Dealers, Diplomats & The Illegal Horn Trade*; Stoddard, "Legalising Rhino Horn, Ivory;" "Update on Rhino Poaching Statistics (17 January 2014 Update)," *Department of Environmental Affairs, South Africa*, January 17, 2014, https://www.environment.gov.za/mediarelease/rhinopoaching_statistics_17jan2014; "Minister Edna Molewa Highlights Progress in the War against Poaching and Plans for 2015," *Department of Environmental Affairs, South Africa*, January 22, 2015, https://www.environment.gov.za/mediarelease/molewa_waragainstpoaching2015; "Minister Edna Molewa Highlights Progress in the Fight against Rhino Poaching," *Department of Environmental Affairs, South Africa*, January 21, 2016, https://www.environment.gov.za/mediarelease/molewa_highlightsprogress_againstrhinopoaching.

²⁴⁴ George Wittemyer et al., "Illegal Killing for Ivory Drives Global Decline in African Elephants," *Proceedings of the National Academy of Sciences* 111, no. 36 (2014): 13119, doi:10.1073/pnas.1403984111.

²⁴⁵ "24,000 Elephants Poached for Ivory in 2015," *Born Free Foundation*, accessed August 9, 2016, http://www.bornfree.org.uk/index.php?id=34&tx_tnews%5Btt_news%5D=1979&cHash=ff6dc8a80ad85ea74af7213540ad6b8d.

million.²⁴⁶

While its products are not as valuable as rhino horn and ivory, the pangolin is actually the most trafficked animal in the world. Approximately 100,000 pangolins are poached each year, targeted for their meat and scales. Like rhino horn, pangolin scales are composed of keratin and are wrongly believed to have healing properties. The average retail value for raw scales can range from US\$316 to \$2,500 per kilogram, depending on the market.²⁴⁷ According to Professor Ray Jansen, Co-Chair of the African Pangolin Working Group, the illegal trade in pangolin scales is worth an estimated US\$46 million annually.²⁴⁸

Like narcotics, most wildlife products, show strong price inelasticity, and this strong demand emboldens suppliers. Coupled with the perceived luxury of these items, such as tiger pelts and shark fin soup, higher prices can attract consumers looking to display their upwardly mobile status. High prices also attract new participants to the supply side who are willing to accept the risks in order to access the growing rewards. Table Q provides a sampling of prices for different live animals and wildlife parts from around the world.

Table Q. Sample Retail Market Prices (US\$)

	Item	Price
Live	African grey parrot	\$2,000
	Slow loris	\$5,000
	Baby elephant (Thailand)	\$7,000
	Gorilla	\$400,000
Product	Raw bear bile extract (per gram)	\$19
	Whole pangolin (restaurant in Viet Nam)	\$1,750
	Tiger bone glu (per kilogram, Hanoi)	\$10,000
	Shahtoosh shawl (each, international market)	\$20,000

Sources: See Appendix, Section E for a list of sources.

Similar to other types of trafficking, such as drugs or antiquities, the value of a particular wildlife commodity, be it a wild parrot or ivory or bear bile, increases exponentially as it makes its way from source to market. Table R shows a comparison of the amount the poacher receives and the animal/product's final retail price.

²⁴⁶ Approximately 10kg of ivory per elephant at an average market country price of US\$1,000 to \$3,000 per kilogram. United Nations Office on Drugs and Crime, *World Wildlife Crime Report* (New York: United Nations Office on Drugs and Crime, 2016), 42, https://www.unodc.org/documents/data-and-analysis/wildlife/World_Wildlife_Crime_Report_2016_final.pdf; Patterson Clark and Darryl Fears, "The Horn and Ivory Trade," *Washington Post*, August 10, 2014, <https://www.washingtonpost.com/apps/g/page/national/the-horn-and-ivory-trade/1163/>; Agence France-Presse, "Price of Ivory in China Triples," *The Guardian*, July 3, 2014, <https://www.theguardian.com/environment/2014/jul/03/price-ivory-china-triples-elephant>; Anderson and Jooste, "Wildlife Poaching: Africa's Surging Trafficking Threat".

²⁴⁷ Alec Russell, "Rhino Poaching: Inside the Brutal Trade," *Financial Times*, October 2, 2015, http://www.ft.com/cms/s/2/f71d53ea-67b3-11e5-97d0-1456a776a4f5.html?ftcamp=traffic/social_promo/annotation/YouTube/article/auddev; John D. Sutter, "The Most Trafficked Mammal You've Never Heard Of," *CNN*, April 2014, <http://www.cnn.com/interactive/2014/04/opinion/sutter-change-the-list-pangolin-trafficking/index.html>; United Nations Office on Drugs and Crime, *World Wildlife Crime Report*, 68; Jani Actman, "Four Tons of 'Plastic' Discovered to Be Smuggled Pangolin Scales," *National Geographic News*, June 26, 2016, <http://news.nationalgeographic.com/2016/06/pangolin-scales-smuggling-hong-kong/>; Neeraj Santoshi, "How China Turned India into a Hub for Poaching of Endangered Mammal Pangolin," *Hindustan Times*, February 28, 2017, <http://www.hindustan-times.com/india-news/how-china-turned-india-into-a-hub-for-poaching-of-endangered-mammal-pangolin/story-Lk3XhBIPuTvKrlBTQbPmAL.html>.

²⁴⁸ *Financial Times*, *Big Game, Big Money: Illegal Wildlife Trade*, 2015, <https://www.youtube.com/watch?v=lzYrRkGcuo>.

Table R. Poacher vs. Consumer Prices (US\$)

	Commodity	What the Poacher Receives	What the Consumer Pays	Rate of Markup (%)
Live	Macaw	\$2 to \$20	\$600 to \$10,000	29,900% to 49,900%
	Chimpanzee	\$50	\$20,000	39,900%
	Falcon	\$500	\$50,000 to \$100,000	9,900% to 19,900%
Product	Pangolin meat (per kilogram)	\$22.50	\$250 to \$350	1,011% to 1,456%
	Bear gall bladder (whole)	\$100 to \$150	\$5,000 to \$10,000	4,900% to 6,567%
	Tiger pelt	\$1,500	\$16,000	967%

Sources: See Appendix, Section E for a list of sources.

The structure of the illicit supply chain has the intermediaries and retailers in market countries receiving the greatest compensation; little profit remains in the source countries. Following the profit trail is key to identifying and disrupting trafficking networks, particularly the senior individuals responsible for financing and orchestrating the network's operations.

C. Dynamics

Most actors in the illicit supply chain are involved for financial gain, whereas consumers are motivated by a variety of reasons, from the desire to own a luxury status symbol or an exotic pet to the mistaken belief that consuming certain wildlife products will provide medicinal benefits. The top markets for the illegal wildlife trade are exotic pets, food, traditional medicine, fashion, and status goods. Certain species and products can have multiple purposes—for example, rhino horn is consumed both for its perceived medicinal properties as well as a status symbol, or they can be desired for separate uses, such as pythons, which are sought for both the exotic pet and fashion trades.

Table S. Illegal Wildlife Markets

Exotic Pet	Rare and/or unusual wild species that are not commonly kept as pets. boa constrictor, iguana, frog, parrot, falcon, slow loris, chimpanzee, spider, scorpion, caracal
Food	Some species are hunted solely for subsistence (i.e., bushmeat), whereas others are hunted because their meat is considered a delicacy. bushmeat: elephants, primates, spotted deer, turtles delicacy: shark fins, sturgeon (caviar), pangolin, tiger bone (wine), glass eel, abalone
Traditional Medicine	Wildlife, their parts, and products which are sought due to assumed healing properties. rhino horn, totoaba bladder, bear bile, tiger bone, pangolin scales, ginseng, seahorses
Fashion and Décor	Skins, pelts, and furs that are desired for fashion items such as purses, shoes, and coats, as well as exotic woods used for furniture or art. skins of snakes and alligators, tortoise shell, tiger pelt, rosewood, ebony
Status Good	Goods that serve as status symbols, allowing the owner to display their wealth; they often have long-standing cultural significance. ivory, rhino horn, and the pelts, teeth, and claws of big cats and bears

Box 3. Superstition vs. Reality: The Case of Ivory and Rhino Horn

The surge in the poaching of elephants and rhinos is driven by the intersection of old beliefs and new trends. Ivory and rhino horn have long been seen as symbols of status and wealth in many societies in East and Southeast Asia, and rhino horn in particular is (incorrectly) believed to have healing properties. With the recent growth in the middle- and high-income classes in Asia, there are now many more individuals seeking to conspicuously display their status than there were ten years ago.

The poaching of African elephants and rhinoceroses accelerated sharply beginning around 2008. While rates for elephants peaked in 2011-2012 and have relatively plateaued (albeit still at unsustainable levels), the rates for rhinoceroses are still quite high. The poaching trends have mirrored the equally dramatic surge in demand and the subsequent rise in prices for ivory and rhino horn. In South Africa, which has by far the largest rhino populations on the continent, 13 rhinos were poached in 2007 while 1,175 were poached in 2015, an increase of more than 8,900 percent.¹²

Historically, the prices for ivory and rhinoceros horn were based on “practical” uses, such as piano keys, however skyrocketing prices have reached a point where the value is now tied more to cultural significance.¹³ With prices either holding steady or increasing (and with no end in sight), these items have gained a sort of investment value for collectors, akin to the purchase of artwork or real estate. The whims of consumers and collectors are quickly driving these important species towards extinction.

The illegal wildlife trade relies on a sophisticated global supply chain. The planning, collection, and smuggling of large quantities of wildlife and wildlife products demonstrate a high degree of coordination that is indicative of well-funded organized crime groups (OCGs). Criminal networks may finance the poaching (e.g., providing weapons or money for weapons) so as to fill orders, but typically they do not take part in the actual hunting. The active participation of these networks usually begins after the animal has been poached, when brokers and middlemen purchase and/or collect the goods, assemble caches, smuggle them to transit and exit points, and launder the money.²⁵¹

The international freight transport stage(s), be it by air, sea, or land, is one of the most vulnerable points in the illicit supply chain. Criminal networks often set up anonymous shell companies to consign and receive cargo, masking the true (i.e., beneficial) ownership of the shipment.²⁵² The lack of beneficial ownership information allows participants to act in secrecy and lowers the risk of detection by law enforcement. In regards to the actual shipments, large volume consignments of wildlife products are typically hidden among cover materials, often common bulk goods, such as cashews, soya, and timber. There have been instances where illegal wildlife products have been concealed in freight shipments of tires that, as part of trade-based money laundering schemes, are being returned by consignees in African countries to China as “defective.”²⁵³

D. Developing Countries

Wildlife is a natural resource, and the illegal wildlife trade is siphoning this living capital away from the environment and community and into the pockets of criminal networks and armed groups. Although the overwhelming majority of poached wildlife comes from developing countries, both developed and developing countries are responsible for the demand.

As natural resources, wildlife and wildlife products are no different from gold, diamonds, timber, or oil. The illegal wildlife trade is “a giant illicit resource transfer” which has profound micro and macro level impacts.²⁵⁴ At the micro level, wildlife trafficking robs local communities of much-needed revenue streams.

²⁴⁹ “Poaching Statistics,” *Save the Rhino*, 2016, https://www.savetherhino.org/rhino_info/poaching_statistics.

²⁵⁰ United Nations Office on Drugs and Crime, *World Wildlife Crime Report*, 41.

²⁵¹ Anderson and Jooste, “Wildlife Poaching,” 3.

²⁵² Varun Vira, Thomas Ewing, and Jackson Miller, *Out of Africa: Mapping the Global Trade in Illicit Elephant Ivory* (Washington, DC: C4ADS, 2014), 14–17, <https://static1.squarespace.com/static/566ef8b4d8af107232d5358a/t/56af83ee1f40390e88337743/1454343151910/Out+of+Africa.pdf>.

²⁵³ John A. Cassara, *Trade-Based Money Laundering: The Next Frontier in Money-Laundering Enforcement* (Hoboken, NJ: John Wiley & Sons, 2016), 85.

²⁵⁴ Varun Vira and Thomas Ewing, *Ivory’s Curse: The Militarization & Professionalization of Poaching in Africa* (Washington, DC: C4ADS, 2014), 11,

Community-based ecotourism is a powerful tool that can benefit both economic development and conservation. From the jungles of the Amazon to the African savannas, tourists flock to view indigenous flora and fauna, yet poachers are continuing to divest wildlife from local ecosystems. While one elephant may yield up to US\$21,000 in ivory, of which a meager portion goes to the poacher, the David Sheldrick Wildlife Trust estimates that the same elephant would generate US\$1.6 million in tourism over its lifetime.²⁵⁵

At the macro level, the illegal wildlife trade has deleterious impacts on the environment, security, and rule of law. Poaching has serious negative repercussions on species conservation as well as the on the health of the ecosystem, especially with the removal of keystone species.²⁵⁶ In regards to security and rule of law, the profits from the illegal wildlife trade finance violence, instability, and corruption. While some have called ivory the new conflict resource, it has actually been used by both state and non-state actors in Africa to fund and sustain conflict since the 1970s and 1980s.²⁵⁷

Today ivory is a favored bush currency of armed rebel and militia groups, most notably the Séléka (Central African Republic (CAR)), Janjaweed Militia (Sudan), and the Lord's Resistance Army (CAR, Democratic Republic of the Congo, South Sudan, and Uganda), all of which are actively involved in poaching. As of the end of 2015, the sectarian conflict between the Séléka and the Anti-balaka in the CAR has resulted in the deaths of thousands and produced approximately 456,000 refugees and another 447,000 internally displaced persons.²⁵⁸ Some Karen rebel groups in Myanmar, including the Democratic Karen Buddhist Army and New Mon State Party, have also used poaching as an ancillary source of funding for operations.²⁵⁹

Wildlife trafficking and corruption have a symbiotic relationship: corruption enables all aspects of the illegal trade, from poaching to the final sale, and part of the profits from the trade are recycled back into bribes for corrupt officials. Small-scale smuggling—an ivory bangle, shahtoosh shawl, or a few juvenile turtles—may involve some small bribery. It is the large-scale movement of consignments that demonstrates a much more institutionalized level of corruption, from the individual customs agent or wildlife ranger, to the upper echelons of government. Tanzania's former Natural Resources and Tourism Minister Lazaro Nyalandu alleged in 2013 that grand corruption in the Tanzanian government—from parliamentarians and the army to the Tanzanian Port Authority and Immigration Services Department—made it very difficult to fight ivory trafficking.²⁶⁰ Indeed, two of Tanzania's ports, Dar es Salaam and Zanzibar, along with Mombasa in Kenya, are major ivory export hubs on the continent.

E. Recent Developments

Criminal networks are increasingly involved in the illegal wildlife trade in countries around the world, most often at the middle to higher levels. Opportunistic and indiscriminate, OCGs have taken notice of the profit to be made from the illegal wildlife trade. These groups, with their established trafficking routes and sophisticated networks, have been able to coordinate large consignments of wildlife and wildlife products. While some ivory still trickles to market piece by piece in passengers' luggage, trafficking networks have increasingly put together large shipments: in 2013, almost 42 tons of ivory were seized from at least 18 shipments, mirroring the size of some shipments of drugs and arms.²⁶¹

<https://static1.squarespace.com/static/566ef8b4d8af107232d5358a/t/571a2d5459827ebe07596a71/1461333351821/Ivory%27s+Curse.pdf>.

²⁵⁵ David Sheldrick Wildlife Trust, *Dead or Alive? Valuing an Elephant* (Surrey, UK: The David Sheldrick Wildlife Trust, 2015), <http://iworry.org/wp-content/uploads/2013/09/Dead-or-Alive-Final-LR.pdf>.

²⁵⁶ According to the National Geographic Society, a keystone species is "a plant or animal that plays a unique and crucial role in the way an ecosystem functions. Without keystone species, the ecosystem would be dramatically different or cease to exist altogether." "Keystone Species," *National Geographic Society*, January 21, 2011, <http://nationalgeographic.org/encyclopedia/keystone-species/>.

²⁵⁷ Vira and Ewing, *Ivory's Curse*, 8.

²⁵⁸ Human Rights Watch, "Central African Republic," in *World Report 2016* (New York: Seven Stories Press, 2016), 163, https://www.hrw.org/sites/default/files/world_report_download/wr2016_web.pdf.

²⁵⁹ Adam H. Oswell, *The Big Cat Trade in Myanmar and Thailand* (Petaling Jaya, Malaysia: TRAFFIC Southeast Asia; World Wildlife Fund, 2010), 17, http://d2ouvy59p0dg6k.cloudfront.net/downloads/traffic_species_mammals61_1.pdf.

²⁶⁰ Florence Majani, "Corrupt Officials Ensure the Battle against Poaching Remains Futile," *The M&G Online*, August 8, 2013, <http://mg.co.za/article/2013-08-08-00-corrupt-officials-ensure-the-battle-against-poaching-remains-futile/>.

²⁶¹ Jackson Miller, Varun Vira, and Mary Utermohlen, *Species of Crime: Typologies & Risk Metrics for Wildlife Trafficking* (Washington, DC: C4ADS, 2015), 6, <http://static1.squarespace.com/static/566ef8b4d8af107232d5358a/t/56af8242cf80a1474b572b85/1454342724100/Species+of+Crime.pdf>.

The illegal wildlife trade often flows through the same corridors used for other types of trafficking, such as drugs, arms, and humans. Criminal organizations that control trafficking routes tax other smugglers for use of these routes; wildlife traffickers pay a fee and are able to use an established route, lowering the risk of detection and seizure, while drug traffickers gain extra income. There have been some instances where traffickers have even used animals or animal products to conceal drug shipments.²⁶² In a particularly notorious incident that occurred in 1993, United States Drug Enforcement Administration agents at Miami International Airport came across 223 boa constrictors containing approximately 36.3kg (80lb) of packaged cocaine. This cocaine would have had an estimated retail value (i.e., street value) of more than US\$3.1 million at the time.²⁶³

The involvement of transnational criminal organizations has also increased the financing of poaching. Financiers are responsible for the operation of the poaching network, and C4ADS, a non-profit security and conflict analysis organization, explains that while they may never come into contact with the product, their “political and social capital is critical.”²⁶⁴ According to Marshall Jones, senior conservation advisor at the Smithsonian Conservation Biology Institute, those who finance the trade are reaping the greatest financial rewards, and they may also be involved in other illicit trades such as drugs, arms, and human trafficking.²⁶⁵ For example, Chinese organized criminal syndicates engaged in drug smuggling and human trafficking have become involved in the illicit abalone trade in South Africa, bartering drug precursors with local gangs and compensating abalone divers with drugs.²⁶⁶

Two important steps were taken at the end of 2016 to combat the poaching of pangolins and elephants. At the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 17th meeting of the Conference of the Parties in September-October 2016, member countries approved a ban on the worldwide trade of pangolins. The species has been relatively overlooked by policymakers, despite being the most widely trafficked animal in the world, so this ban is an important step in bringing attention to the pangolin’s plight. It is important to note that CITES bans only apply to international trade, and therefore individual countries must take the lead in effectively administering both the CITES ban and national anti-wildlife trafficking legislation.

In comparison to pangolins, the dire situation of elephants has been widely recognized, yet the international community has struggled to fight the poaching of elephants. Despite CITES bans, the presence of legal domestic ivory markets has played an important part in fueling the demand for ivory. In a major advance, China, the world’s largest ivory market, announced in December 2016 a ban on all domestic trade in ivory to be fully implemented within one year. This follows a similar move by the United States in June 2016 to institute a virtually complete ban on ivory trade. Shuttering domestic markets is a critical step in fighting elephant poaching.

F. Summary

The illegal wildlife trade has always existed, but the depths of the market have grown dramatically over the last 10-15 years. Surging demand and skyrocketing retail prices have opened the floodgates for a trade with an estimated retail value of US\$5 billion to \$23 billion annually.

Like the trafficking of antiquities, the seriousness of wildlife trafficking was widely overlooked by most governments until various armed groups and criminal organizations, lured by the huge profits and low risk, became increasingly involved in the trade. The participation of these groups has transformed what

²⁶² Victoria Rossi, “Colombia Police Rescued Over 46,000 Illegally Trafficked Animals in 2012,” *InSight Crime*, September 4, 2012, <http://www.insight-crime.org/news-briefs/colombia-46000-illegally-trafficked-animals-2012>.

²⁶³ Lisa Ocker, “Agents Intercept 223 Live Snakes Stuffed With Drugs,” *SunSentinel*, July 3, 1993, http://articles.sun-sentinel.com/1993-07-03/news/9301220086_1_snakes-customs-and-dea-smugglers; “10.5. Cocaine and Heroin Prices in Western Europe and United States, 1990-2014” (United Nations Office on Drugs and Crime, 2016), <https://www.unodc.org/wdr2016/en/maps-and-graphs.html>. 36,300 grams at US\$86/g = US\$3,121,800.

²⁶⁴ Vira, Ewing, and Miller, *Out of Africa*, 28.

²⁶⁵ World Wildlife Fund, *It’s Dead Serious*, vol. 1, 5 vols., Stop Wildlife Crime: The Series, 2013, https://www.youtube.com/watch?v=Ss58fP7qxEA&list=PL0WSjIIFKH_g1qkGzdk4wb-_G0BkvABY-.

²⁶⁶ Kimon De Greef and Serge Raemaekers, *South Africa’s Illicit Abalone Trade: An Updated Overview and Knowledge Gap Analysis* (Cambridge, UK: TRAFFIC International, 2014), 6, <http://static1.1.sqspcdn.com/static/f/157301/25583011/1414148973007/W-TRAPS-Abalone-report.pdf?token=HrJHFoZ2hgfs6p7wc613rb7V9gl%3D>.

was traditionally seen as a conservation issue into a matter of national and international security.

Wildlife trafficking is facilitated by corruption, apathy, ignorance, and weak legislation and enforcement. With no decline in sight, countries around the world must work to reduce the ease and profitability of the trade.

IX. Illegal, Unreported, and Unregulated Fishing

A. Overview

Illegal, unreported, and unregulated (IUU) fishing is a serious issue that impacts not only conservation but development and security as well. Fishing is a major industry around the world, and even a small level of IUU fishing can generate billions of dollars in illicit profits. With an estimated 90 percent of the world's fisheries classified as fully exploited or overexploited, legal and sustainable fishing operations are critical to maintain the integrity of global fishery resources.²⁶⁷

IUU fishing covers a variety of fishing activities, such as fishing in contravention to a State's laws, using illegal gear, and misreporting catch volumes. Table T provides a summary of the Food and Agriculture Organization (FAO) of the United Nations' definition of IUU fishing.²⁶⁸

Table T. What is IUU Fishing?

Component	Description
Illegal	"Fishing activities that are i) conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations; ii) conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organization but operate in contravention of the conservation and management measures adopted by that organization and by which the States are bound, or relevant provisions of the applicable international law; or iii) in violation of national laws or international obligations, including those undertaken by cooperating States to a relevant regional fisheries management organization."
Unreported	"Fishing activities i) which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations; or ii) undertaken in the area of competence of a relevant regional fisheries management organization which have not been reported or have been misreported, in contravention of the reporting procedures of that organization."
Unregulated	"Fishing activities i) in the area of application of a relevant regional fisheries management organization that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organization; or ii) in areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law."

Source: Food and Agriculture Organization

²⁶⁷ Food and Agriculture Organization of the United Nations, *The State of World Fisheries and Aquaculture 2016: Contributing to Food Security and Nutrition for All* (Rome: Food and Agriculture Organization of the United Nations, 2016), 38, <http://www.fao.org/3/a-i5555e.pdf>. According to the FAO, "31.4 percent of assessed fish stocks were estimated as fished at a biologically unsustainable level and therefore overfished. Of all the stocks assessed in 2013, 58.1 percent were fully fished and 10.5 percent underfished."

²⁶⁸ "International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing," *Food and Agriculture Organization of the United Nations*, 2001, <http://www.fao.org/docrep/003/y1224e/y1224e00.HTM>.

B. Value

Like all transnational crime, IUU fishing is motivated by profits. In 2014, legal world capture fisheries production (i.e., wild ocean-caught) was worth US\$109.2 billion.²⁶⁹ Contracting supply and rising prices have led to an increase in IUU fishing.²⁷⁰

Annual illegal and unreported marine fishing generates US\$15.5 billion to \$36.4 billion in illicit profits.²⁷¹ This estimate is conservative as it does not take into account unregulated fishing as well as any IUU fishing in inland fishing areas. Illegal and unreported fishing represents approximately 14 to 33 percent of the global marine capture value.

Developing countries were responsible for 82.7 percent of the total international trade in fishery commodities in 2014.²⁷² Assuming that percentage is the same for developing countries' share of illicit proceeds, US\$12.8 billion to \$30.2 billion was generated by illegal and unreported marine fishing in developing countries in 2014. This is a serious loss for developing countries, some of which rely heavily on fishing for exports, livelihoods, and food.

Illegal and unreported fishing represents on average approximately 15 to 35 percent of total fisheries production volume, which equated to 12 million to 28 million tons of fish.²⁷³ The rate is actually much higher in hard-hit regions such as West Africa, where it is estimated that 37 to 40 percent of the catch is illegal.²⁷⁴ Much of the illegal fishing there is performed by foreign vessels, so both the resources and the revenues leave the region.

Species that are targeted for illegal fishing often have high market values. Examples include tuna, Patagonian toothfish, crab, shrimp, and abalone. Patagonian toothfish, more commonly known as Chilean sea bass, are so lucrative that they are nicknamed "white gold."²⁷⁵ This species usually has a legal-market value of more than US\$10,000 per ton, while other highly sought species like tunas and lobsters average US\$2,320 and US\$9,000 per ton, respectively.²⁷⁶

C. Dynamics

The act of fishing illegally is relatively uncomplicated, however the business of illegal fishing is generally well-organized and sophisticated. IUU fishing operations employ complex business structures and exploit legal regimes to engage in this illicit business, avoiding scrutiny and accountability. Firms that participate in IUU fishing have been linked to other crimes such as human trafficking.

There are a variety of actors involved in IUU fishing, from individual operators and small enterprises to multinational companies and organized criminal syndicates. Some of the most damaging illegal fishing is conducted by seemingly legitimate enterprises, often fleets of corporate trawlers, which engage in harmful and unlawful fishing practices in order to maximize profits by dodging regulations.²⁷⁷ The veneer of legitimacy makes it difficult to detect the underlying illegal activity.

²⁶⁹ Food and Agriculture Organization of the United Nations, *Fishery and Aquaculture Statistics: 2014 FAO Yearbook* (Rome: Food and Agriculture Organization of the United Nations, 2016), 7, 50, <http://www.fao.org/3/a-i5716t.pdf>. Marine capture production 81,549,353 tons x \$1,339/ton.

²⁷⁰ Johan Bergenstam and Ariella Knight, "How Illegal Fishing Threatens Development and Security," *World Politics Review*, January 30, 2015, <http://www.worldpoliticsreview.com/articles/14973/how-illegal-fishing-threatens-development-and-security>.

²⁷¹ This estimate was arrived at by following the methodology set out by Agnew et al. in their 2009 study "Estimating the Worldwide Extent of Illegal Fishing" and using updated world marine capture production volumes and values from the FAO. See Appendix, Section F for complete methodology. David J. Agnew et al., "Estimating the Worldwide Extent of Illegal Fishing," *PLoS ONE* 4, no. 2 (2009): e4570, doi:10.1371/journal.pone.0004570; Food and Agriculture Organization of the United Nations, *2014 FAO Yearbook*, 8, 50.

²⁷² Food and Agriculture Organization of the United Nations, *2014 FAO Yearbook*, 43. This does represent both world capture and aquaculture production.

²⁷³ See Appendix, Section F for methodology.

²⁷⁴ "The Problem of Illegal Fishing in West Africa," *Stop Illegal Fishing*, accessed September 12, 2016, http://stopillegalfishing.com/wp-content/uploads/2016/02/10016_WATF_ENGLISH_WEB_FINAL-1.jpg; Maira Martini, *Illegal, Unreported and Unregulated Fishing and Corruption*, U4 Expert Answer (Bergen, Norway: U4 Anti-Corruption Resource Center, 2013), 2, <http://www.u4.no/publications/illegal-unreported-and-unregulated-fishing-and-corruption/>.

²⁷⁵ Alexandra Clare, "The Quest to Combat the Illegal Fishing of 'White Gold' in the Southern Ocean," *Australian Journal of Maritime and Ocean Affairs* 2, no. 3 (2010): 69.

²⁷⁶ L. Griggs and G. Lugten, "Veil over the Nets (Unravelling Corporate Liability for IUU Fishing Offences)," *Marine Policy* 31, no. 2 (2007): 161, doi:10.1016/j.marpol.2006.05.015; Food and Agriculture Organization of the United Nations, *2014 FAO Yearbook*, 49.

²⁷⁷ Don Liddick, "The Dimensions of a Transnational Crime Problem: The Case of IUU Fishing," *Trends in Organized Crime* 17, no. 4 (2014): 297, doi:<http://dx.doi.org.proxyau.wrlc.org/10.1007/s12117-014-9228-6>.

IUU fishing particularly flourishes in regions with poor governance, conflict, and/or corruption. These countries typically do not have the political will and/or resources necessary to effectively prevent and combat IUU fishing. A prime example is the explosion of illegal activities, including IUU fishing and illegal waste dumping, which occurred in Somalia after the overthrow of the Barre government in 1991. With the collapse of the state, many services that were previously provided by the government broke down, including the coast guard. Industrial fishing fleets from Europe and Asia swarmed to the country's territorial waters, known as exclusive economic zones (EEZ), to fish.²⁷⁸ Even in 2006, the High Seas Task Force estimated that some 700 foreign vessels were engaged in IUU fishing in Somalia's EEZ,²⁷⁹ with their operations valued at approximately US\$90 million to \$100 million annually.²⁸⁰

Flags of convenience (FOCs) are a maritime legal regime that allows a vessel to be registered outside the country of ownership. The flag state (i.e., the country in which the vessel is registered) has legal authority over the vessels under its flag and is responsible for enforcing national regulations. Many countries that offer FOCs are also considered tax havens or share similar characteristics, such as the lack of a diversified economy as well as legal regimes that are organized to attract foreign capital.

Countries that “specialize” in offering FOCs principally do so to collect revenues from fees, services, and taxes. They routinely do not have the ability and/or desire to exercise adequate control over vessels flying their flag, particularly those operating in distant waters. Panama has the largest ship registry in the world, with approximately 8,600 registered vessels as of 2014, and earns roughly US\$500 million a year in fees, services, and/or taxes from the FOC “industry;” this is more than twice the number of vessels registered in China (3,700) and the United States (3,400) combined, two countries which do not offer FOCs.²⁸¹ Panama is also notable for its use as a tax haven and secrecy jurisdiction, as evidenced by the 2016 International Consortium of Investigative Journalists' release of the Panama Papers, a leak of more than 11.5 million financial and legal documents from the Panamanian law firm Mossack Fonseca.

The International Transport Workers' Federation, as seen in Table U, has declared 33 countries and territories as offering FOCs;²⁸² of these, 23 are developing countries. With other more urgent issues to address, developing countries are willing to accept the licensing and registration fees but are frequently unable to fulfill their responsibilities and obligations.

²⁷⁸ The OECD defines an EEZ as a zone extending 200 nautical miles from a country's coastline in which the country “assumes jurisdiction over the exploration and exploitation of marine resources.” “Exclusive Economic Zone (EEZ) Definition,” *OECD Glossary of Statistical Terms*, 2003, <https://stats.oecd.org/glossary/detail.asp?ID=884>; Abdi Ismail Samatar, Mark Lindberg, and Basil Mahayni, “The Dialectics of Piracy in Somalia: The Rich Versus the Poor,” *Third World Quarterly* 31, no. 8 (2010): 1385, doi:10.1080/01436597.2010.538238.

²⁷⁹ High Seas Task Force, *Closing the Net: Stopping Illegal Fishing on the High Seas* (London: Governments of Australia, Canada, Chile, Namibia, New Zealand, and the United Kingdom, WWF, IUCN and the Earth Institute at Columbia University, 2006), 81, http://www.imcsnet.org/imcs/docs/hstf_final_report.pdf.

²⁸⁰ Marine Resources Assessment Group, *Review of Impacts of Illegal, Unreported and Unregulated Fishing on Developing Countries* (London: Marine Resources Assessment Group, Ltd., 2005), 6, http://www.imcsnet.org/imcs/docs/iuu_fishing_synthesis_report_mrag.pdf.

²⁸¹ Aliyya Swaby, “Why So Many Shipowners Find Panama's Flag Convenient,” *BBC News*, August 5, 2014, <http://www.bbc.com/news/world-latin-america-28558480>.

²⁸² “Flags of Convenience: Avoiding the Rules by Flying a Convenient Flag,” *International Transport Workers' Federation*, accessed September 12, 2016, <http://www.itfglobal.org/en/transport-sectors/seafarers/in-focus/flags-of-convenience-campaign/>. Flag icons from: <http://www.iconarchive.com>, Nuno Tavares and Denelson83 at Wikimedia Commons.

Table U. Flags of Convenience

	Antigua and Barbuda		Equatorial Guinea		Marshall Islands
	Bahamas		Faroe Islands		Mauritius
	Barbados		Georgia		Moldova
	Belize		Gibraltar		Mongolia
	Bermuda		Honduras		Myanmar
	Bolivia		Jamaica		Panama
	Cambodia		Korea, Dem. People's Republic		São Tomé and Príncipe
	Cayman Islands		Lebanon		St. Vincent and the Grenadines
	Comoros		Liberia		Sri Lanka
	Curaçao		Madeira		Tonga
	Cyprus		Malta		Vanuatu

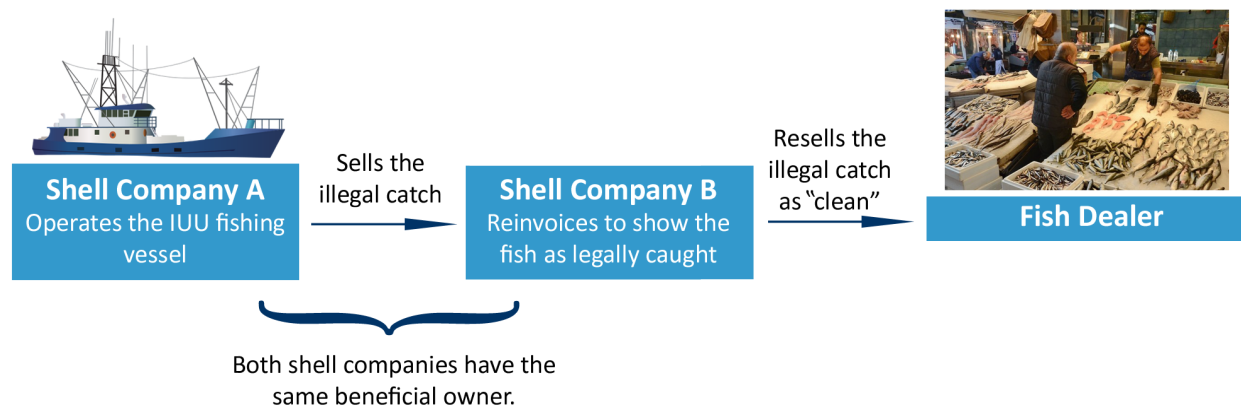
Although legal, the use of FOCs is a major enabling factor because it often allows vessel owners to avoid accountability. This is the same issue presented by anonymous shell companies, as the absence of transparency allows beneficial owners to avoid identification and accountability. Countries that offer FOCs typically have much less stringent maritime regulations and are “either incapable of, or deficient at, monitoring their vessels.”²⁸³ Three of the countries listed above—Bolivia, Moldova and Mongolia—are landlocked. In addition, vessel owners employ FOCs in order to take advantage of minimal fees and low or no taxes.

The use of anonymous shell companies not only conceals beneficial ownership but allows organizations to reinvoice catches, obfuscating their illegal origin.²⁸⁴ As shown in Figure V, Shell Company A operates the IUU fishing vessel, which sells its catch to Shell Company B. This company reinvoices the catch to make it appear that the fish are legally caught, essentially laundering the catch. The fish are then resold to a fish dealer with “legal” documentation; the dealer may or may not be aware that the fish were caught illegally.

²⁸³ Griggs and Lugten, “Veil over the Nets,” 160.

²⁸⁴ Clare, “Quest to Combat Illegal Fishing,” 72.

Figure V. Trade Misinvoicing to Launder Illegally-Caught Fish²⁸⁵



Illegal fishing operations also employ reinvoicing to engage in fraud, such as mislabeling the species to charge higher prices or misstating where the fish were caught in order to meet regulations or legal standards. In a 2011 misinvoicing scheme that occurred in the Gulf of Mexico, both individuals and companies would fraudulently label Vietnamese catfish as more valuable species, such as grouper. By doing so, they were able to evade a U.S. import tariff on Vietnamese catfish, equal to US\$9.3 million in this case, as well as sell the (mis-labeled) catfish at a higher market price.²⁸⁶

These complex and opaque multinational corporate structures also make it extremely difficult for authorities to investigate and prosecute those involved in the illegal operations. Owners of IUU fishing vessels also employ tactics such as concealing ship markings, not flying a country flag, or disabling required tracking devices, in order to avoid detection.

There are also established links between the fishing industry, human security, and transnational organized crime, particularly trafficking in persons, smuggling of migrants, and drug trafficking. Trafficking for the purpose of forced labor “in furtherance of both sea- and shore-based operations” is frequent; it is a global problem, but West Africa and South and Southeast Asia are particular hotspots.²⁸⁷ Trafficking of children in the fishing industry is commonplace in these regions, as is physical abuse, forced labor, and debt bondage.

The fishing industry is vulnerable to such human rights abuses because, unlike merchant vessels, there are no international regulations or port state control measures that govern on-board living and working conditions.²⁸⁸ With fishing stocks depleted in many parts of the world, fishing vessels must travel much further away from shore to fish and can remain there for long periods of time. Crews in these circumstances are more susceptible to abuse as they are isolated from aid and unable to escape.

D. Developing Countries

Illegal fishing is a global phenomenon, however it is particularly concentrated in developing countries as they are responsible for 82.7 percent of the total international trade in fishery commodities.²⁸⁹ Illegal fishing operations regularly target port states with weak monitoring and enforcement because they can

²⁸⁵ Longline tuna boat graphic: Kim Kraeer and Lucy Van Essen-Fishman, Integration and Application Network, University of Maryland Center for Environmental Science, <http://ian.umces.edu/imagelibrary/displayimage-112-5574.html>; Fish market photo: Skitter Photo, Freepik, [http://www.freepik.com/free-photo/fresh-fish-market_757225.htm#term=fish market&page=1&position=17](http://www.freepik.com/free-photo/fresh-fish-market_757225.htm#term=fish%20market&page=1&position=17).

²⁸⁶ Russell F. Smith III, “Legislative Hearing on H.R. 69, to Strengthen Enforcement Mechanisms to Stop Illegal, Unreported, and Unregulated Fishing,” Serial No. 113-66, Subcommittee on Fisheries, Wildlife, Oceans and Insular Affairs, Committee on Natural Resources (2014), 20, <https://www.gpo.gov/fdsys/pkg/CHRG-113hhrg87535/pdf/CHRG-113hhrg87535.pdf>.

²⁸⁷ United Nations Office on Drugs and Crime, *Transnational Organized Crime in the Fishing Industry* (Vienna: United Nations Office on Drugs and Crime, 2011), 25, https://www.unodc.org/documents/human-trafficking/Issue_Paper_-_TOC_in_the_Fishing_Industry.pdf.

²⁸⁸ The International Maritime Organization defines port state control as “the inspection of foreign ships in national ports to verify that the condition of the ship and its equipment comply with the requirements of international regulations and that the ship is manned and operated in compliance with these rules.” See “Port State Control,” *International Maritime Organization*, accessed January 13, 2017, <http://www.imo.org/en/ourwork/msas/pages/portstatecontrol.aspx>; INTERPOL, “Study on Fisheries Crime in the West African Coastal Region” (Lyon: INTERPOL, September 2014), 27.

²⁸⁹ Food and Agriculture Organization of the United Nations, *2014 FAO Yearbook*, 43.

operate with relative impunity. Developing countries, which often lack the resources, rule of law, and/or political will to sufficiently monitor and enforce fishing regulations, bear the greatest burden, frequently economic, of illegal fishing due to their reliance on the fishing industry.

Developing countries are at risk to IUU fishing because they are usually ill-equipped to sufficiently monitor and control fishing in their EEZ. Even legal fishing that is not adequately tracked and managed can lead to overexploitation or depletion of fish stocks.²⁹⁰ Illegal fishing compounds these problems as the additional fishing, besides the actual depletion of fish stocks, is further unaccounted for, impairing fisheries management.

IUU fishing has major environmental, societal, and economic impacts, all of which are connected. The global demand for fish is strong and has been steadily increasing for decades. Some fishing operations are willing to engage in IUU fishing in order to profit from this demand. Yet this only produces short-term gains, as these practices result in unsustainable levels of fishing, destroying ecosystems and pushing fisheries towards collapse.

At the societal level, IUU fishing can threaten food security and endanger the livelihoods of communities dependent on the fishing industry.²⁹¹ Coastal communities often rely on fish as a protein source for their diets, typically sourcing the fish themselves or purchasing it from fishermen in the community. Artisanal fishers cannot compete with illegal industrial fishing trawlers and get squeezed out of the market. In Sierra Leone, illegal operators not only deplete resources but are also known to harass local fishermen and destroy their nets and gear.²⁹²

These same communities frequently depend on the fishing industry for employment as well. More than 500 million people in the developing world directly or indirectly rely on the fishing industry for employment.²⁹³ Reductions in fishing stocks due to IUU fishing have a strong impact on the livelihoods of those employed by the legal fishing sector. Many IUU vessels are part of distant water fleets. In the Gulf of Guinea, for example, foreign fleets mainly come from China, Taiwan, Russia, South Korea, Spain, France, and Thailand.²⁹⁴ When fisheries become overexploited from unsustainable and illegal fishing practices, foreign vessels can move on to other fishing areas. Local communities, however, are left to bear the consequences.

At the country level, illegal fishing can also cost governments tax revenue. According to the OECD, the three primary ways that fishing operators commit tax fraud are by “disguising the origin of fish, under-declaring the size of a catch and incorrectly describing the species or products caught or sold.”²⁹⁵ As mentioned earlier, a fraudulent trade misinvoicing scheme executed in the Gulf of Mexico amounted to approximately US\$9.3 million in evaded tariffs.²⁹⁶ This defrauds consumers and deprives developing country governments of important tax revenue.

The net-export fishery revenues for developing countries totaled US\$42 billion in 2014, which is higher than the combined value of other major agricultural goods.²⁹⁷ Fishing is a very important industry for many developing countries, and trade misinvoicing such as the above can have a significant negative impact. Sustainable development of the fisheries sector in developing countries can help to improve standards of living, but only if the countries are able to mobilize domestic resources.

²⁹⁰ The FAO defines overexploitation as the fishery being “exploited... above a level which is believed to be sustainable in the long term, with no potential for further expansion and a higher risk to stock depletion/collapse,” while depletion refers to catches that are “well below historical levels, irrespective of the amount of fishing effort exerted.” See “General Situation of World Fish Stocks” (Food and Agriculture Organization of the United Nations), accessed September 13, 2016, <http://www.fao.org/newsroom/common/ecg/1000505/en/stocks.pdf>.

²⁹¹ Liddick, “Dimensions of a Transnational Crime,” 292.

²⁹² “Hunting Pirate Fishermen on the High Seas,” *Al Jazeera*, 2015, <http://aljazeera.com/piratefishing>.

²⁹³ Organisation for Economic Co-Operation and Development, *Evading the Net: Tax Crimes in the Fisheries Sector* (Paris: Organisation for Economic Co-Operation and Development, 2013), 11, <http://www.oecd.org/ctp/crime/evading-the-net-tax-crime-fisheries-sector.pdf>.

²⁹⁴ “The Problem of Illegal Fishing in West Africa.”

²⁹⁵ Organisation for Economic Co-Operation and Development, *Evading the Net*, 26.

²⁹⁶ Smith III, Legislative Hearing on H.R. 69, to Strengthen Enforcement Mechanisms to Stop Illegal, Unreported, and Unregulated Fishing, 20.

²⁹⁷ Food and Agriculture Organization of the United Nations, *The State of World Fisheries and Aquaculture 2016: Contributing to Food Security and Nutrition for All*, 7.

E. Recent Developments

The fishing industry is experiencing a push for transparency similar to that seen in finance and extractives. Advocates are working to institute a global record of fishing vessels. According to the Environmental Justice Foundation, the adoption of a global record “with consistent and validated vessel, company and owner information, underpinned by an International Maritime Organization (IMO) number as a unique vessel identifier (UVI), is a practical, feasible and cost-effective step to combat illegal, unreported and unregulated (IUU) fishing by driving transparency and traceability throughout the seafood supply chain.”²⁹⁸

Currently, only non-fishing commercial vessels are required by the IMO to be registered with the vessel numbering scheme. Coupled with the ability to easily change a vessel's name, call sign, ownership, and registration, the lack of UVIs and a global record of fishing vessels enable IUU fishing operations to evade accountability. The Pew Charitable Trusts explains that regional management organizations and flag states “could take a significant step toward preventing fraud, ensuring the safety and security of fishing operations, and promoting fairness for law-abiding commercial fishermen and vessel owners” by requiring fishing vessels to obtain an IMO number.²⁹⁹ This initiative is similar to the international effort to establish a universal system of global legal entity identifiers for companies, or GLEIs, which are unique 20-digit alphanumeric codes registered to individual entities that can be used to identify entities across jurisdictions. If adopted and mandated for companies globally, it would allow for the instant and precise identification of parties to financial transactions, increasing transparency and reducing risks.

F. Summary

Illegal and unreported fishing is a profitable activity, generating US\$15.5 billion to \$36.5 billion annually. IUU fishing operations are enabled by unique aspects of the fishing industry, such as flags of convenience and the lack of unique vessel identifiers, as well as tools of the global shadow financial system, particularly anonymous shell companies and trade misinvoicing.

Like other environmental crimes, IUU fishing, long seen as a conservation problem, actually has deep impacts on development and security. IUU fishing is particularly concentrated in developing countries; the depletion of fish stocks has major repercussions on communities' food and job security as well as the governments' ability to mobilize domestic resources. The use of UVIs for fishing vessels will bring greater transparency and accountability to the fishing industry, curtailing IUU fishing.

²⁹⁸ “Bringing Fishing Vessels out of the Shadows: The Urgent Need for a Global Record of Fishing Vessels and a Unique Vessel Identifier” (Environmental Justice Foundation; FishWise, 2013), http://fishwise.org/images/pdfs/out_of_the_shadows_ejf_fishwise.pdf.

²⁹⁹ “Why Fishing Vessels Need Mandatory, Unique Identification Numbes” (The Pew Charitable Trusts, June 2013), <http://www.pewtrusts.org/~media/assets/2013/06/05/iuuiattcuniquevehicleidentificationbrief.pdf>.

X. Illegal Logging

A. Overview

Illegal logging is a lucrative and destructive crime, yet authorities have allowed it to flourish relatively unchecked due to its perceived innocuous nature. It causes harm not just to the environment but to human security and economic development as well. The revenues provide very little long-term benefit to loggers and indigenous communities but serve as valuable financing for violent groups. With the livelihoods of 1.6 billion people around the world dependent on forests, illegal logging is not a victimless crime.³⁰⁰

The tropical forests of Southeast Asia, the Amazon basin, and Central Africa are at the heart of the illegal timber trade. Illegal logging, like illegal fishing and illegal mining, divests developing countries of much-needed revenues and jeopardizes sustainable development initiatives. Groups that engage in illegal logging have developed new schemes involving anonymous shell companies and fraudulent agricultural plantations to evade logging restrictions and avoid scrutiny.

B. Value

Illegal logging is the most profitable natural resource crime, outpacing wildlife trafficking, illegal fishing, illegal mining, and crude oil theft. Illegally-procured timber accounts for 10 to 30 percent of the total global trade in timber products,³⁰¹ and this figure jumps to 50 to 90 percent for some tropical wood countries.³⁰² The global forestry products trade was worth US\$522 billion in 2014, thus **illegal logging is estimated to be valued at US\$52 billion to \$157 billion dollars per year.**³⁰³

Little of the profit from illegal logging accrues to those engaged in harvesting the timber, while the largest sums are earned by those who finance the operation. In Table V on Peruvian mahogany, the loggers or the indigenous community that agrees to the logging earn US\$70 per cubic meter (m³), whereas the headman or *patrón* sees the greatest return, earning US\$626 for the same piece of timber that they purchased for US\$155, an increase of more than 300 percent.³⁰⁴ By the time the wood reaches the importer, the price has increased by 5,200 percent from what was paid to the loggers and/or indigenous community.

Table V. Value Chain for Peruvian Mahogany, per cubic meter (US\$)

Participant	Amount Receives	% Increase from Original Purchase Price
Loggers/Indigenous Community	\$70	.
Merchant/Lender/Habilitador	\$155	121%
Headman/Patrón	\$626	794%
Sawmill	\$1,251	1,687%
Exporter	\$1,804	2,477%
Importer	\$3,710	5,200%

Source: Julia M. Urrunaga et al.

³⁰⁰ Global Witness, *On Dangerous Ground: The Killing and Criminalization of Land and Environmental Defenders Worldwide* (London: Global Witness, 2016), 18, http://www.illegal-logging.info/sites/files/chlogging/On_Dangerous_Ground_GlobalWitness.pdf.

³⁰¹ Christian Nellemann and INTERPOL Environmental Crime Programme, eds., *Green Carbon, Black Trade: Illegal Logging, Tax Fraud and Laundering in the World's Tropical Forests, A Rapid Response Assessment* (Arendal, Norway: United Nations Environment Programme; GRID-Arendal, 2012), 6, http://www.unep.org/pdf/RRALogging_english_scr.pdf.

³⁰² Christian Nellemann et al., eds., *The Environmental Crime Crisis, A Rapid Response Assessment* (Oslo: United Nations Environment Programme, 2014), 8, <http://www.unep.org/unea/docs/RRACrimecrisis.pdf>.

³⁰³ Food and Agriculture Organization of the United Nations, *FAO Yearbook of Forest Products 2014*, FAO Forestry Series No. 49 (Rome: Food and Agriculture Organization of the United Nations, 2016), 226.

³⁰⁴ Julia M. Urrunaga et al., *The Laundering Machine: How Fraud and Corruption in Peru's Concession System Are Destroying the Future of Its Forests* (Washington, DC: Environmental Investigation Agency, 2012), 19, <http://www.eia-international.org/wp-content/uploads/The-Laundering-Machine.pdf>.

The high demand for rosewood, a protected species, in Asian markets has led to the growth of an illicit market for this good. It is the middleman, or financier, who earns the most from the sale of illegally harvested rosewood from West Africa (Table W), receiving revenues 19,000 to 28,000 percent greater than what they pay to the logger.³⁰⁵

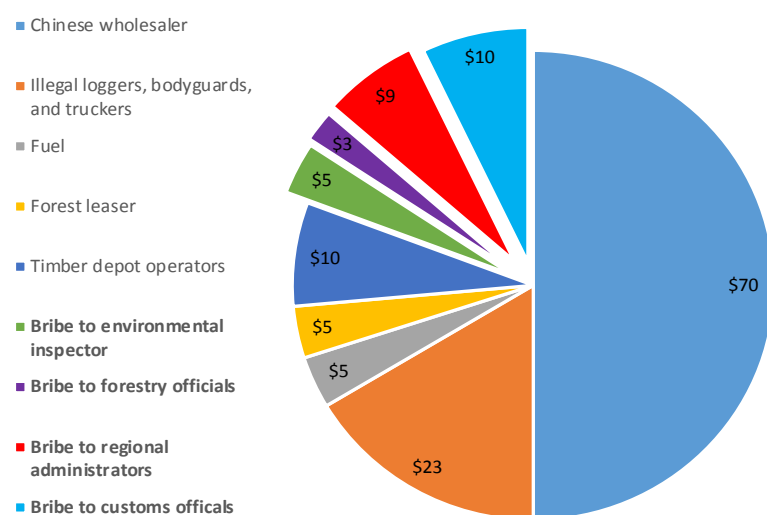
Table W. Value Chain for West African Rosewood, per 10-ton container (US\$)

Transaction	Value
Logger to Middleman	\$17 to \$34
Middleman to Exporter	\$4,900 to \$6,550
Exporter to Chinese Company	\$9,800 to \$11,500

Source: Christian Nellemann et al.

Law enforcement and government officials can earn income (i.e., bribes) along the entire supply chain, reducing the incentive to intervene in illegal logging operations. As shown in Figure VI, nearly 20 percent of the proceeds from a typical transaction per cubic meter of Russian timber at the Russia-China border goes toward bribes.³⁰⁶

Figure VI. Division of Value: US\$140/m³ of Russian timber



Source: Vanda Felbab-Brown

The illicit charcoal trade is a valuable component of illegal logging, particularly for criminals, as well as militia and terrorist groups in Africa.³⁰⁷ Exports of illicit charcoal from Somalia alone are worth approximately US\$360 million to \$384 million annually, and the Democratic Forces for the Liberation of Rwanda (FDLR) earns an estimated US\$35 million each year from the trade in Rwanda.³⁰⁸ Groups such as Al-Shabaab and the FDLR earn both passive (taxation) and active (sale) income from illicit charcoal.

³⁰⁵ Christian Nellemann et al., *The Rise of Environmental Crime: A Growing Threat to Natural Resources, Peace, Development and Security*, A UNEP-INTERPOL Rapid Response Assessment (Oslo: United Nations Environment Programme; RHIPTO Rapid Response-Norwegian Center for Global Analyses, 2016), 55, http://unep.org/documents/itw/environmental_crimes.pdf.

³⁰⁶ Vanda Felbab-Brown, *Not As Easy As Falling Off a Log: The Illegal Logging Trade in the Asia-Pacific Region and Possible Mitigation Strategies*, Working Paper No. 5 (Washington, DC: Brookings Institution, 2011), 17, https://www.brookings.edu/wp-content/uploads/2016/06/03_illegal_logging_felbabbrown.pdf.

³⁰⁷ The production of charcoal typically involves the clearcutting of trees that are then burned in a low-oxygen environment, resulting in pieces that are nearly pure carbon. See Brandon Blackburn-Dwyer, "Charcoal: A Boom for Africa That May Be Killing It," *Global Citizen*, June 27, 2016, <https://www.globalcitizen.org/en/content/charcoal-africa-power-good-bad/>.

³⁰⁸ Nellemann et al., *Environmental Crimes Crisis*, 81; Holly Dranginis, *The Mafia in the Park: A Charcoal Syndicate Is Threatening Virunga, Africa's Oldest National Park* (Washington, DC: Enough Project, 2016), 5, http://www.enoughproject.org/files/report_MafiaInThePark_Dranginis_Enough_June2016.pdf.

C. Dynamics

Illegal logging, like other transnational organized crime, typically occurs in permissive environments that are enabled by corruption and ineffective enforcement. The illegal and legal timber trades are frequently intertwined, making it difficult to detect illegal activity. Like the vast exclusive economic zones in illegal fishing, the remote locations and immense size of many forested areas also makes it very difficult for authorities to effectively monitor logging concessions and prevent illegal logging. Geographically, illegal logging principally occurs in Southeast Asia, Central Africa, and South America; an estimated 50 to 90 percent of timber from these regions is acquired through illegal practices.

Criminals engage in illegal logging in a multitude of available ways, ranging from harvesting protected species and logging outside concessions, to logging in conflict zones and establishing fictitious plantations. The majority of schemes involve deceit and/or bribery. Some of the most common methods used in illegal logging include:³⁰⁹

- Logging in protected areas
- Logging of protected species
- Logging without permits
- Logging in conflict zones
- Logging in excess of permit or concession quotas
- Logging with forged or reused permits
- Obtaining permits through bribes
- Establishing or expanding plantations
- Agricultural expansion by small-scale farmers
- Cattle ranching and soy production
- Widening road corridors, mining, or other felling

Illegal logging uses similar techniques to trade misinvoicing to disguise the quantity, quality, value, or origin in order to launder the timber. For example, logging operations may over-invoice legal timber quantities in order to introduce illegal timber for transport, but then under-invoice official sale amounts in order to be able to harvest more without scrutiny.³¹⁰ Illicit actors also mirror methods employed to launder illegally caught fish. When transported by ship, a load of illegal timber from Country A may be traded on paper multiple times, often with the use of anonymous shell companies. By the time the shipment arrives in Country B, the timber is owned by a company from Country C, disguising both the timber's origins as well as the beneficial owner.³¹¹

According to the United Nations Office on Drugs and Crime, “formal business enterprises operating through fraudulent methods” are responsible for the majority of illegal logging.³¹² These businesses engage in illegal logging in an attempt to circumvent or mitigate the costs associated with acquiring legal permits and concessions in order to improve profit margins. In Brazil, there is evidence that criminals have hacked government computer systems to illegally acquire logging-related permits.³¹³ By avoiding the costs related to legal operations, illegal logging operations have lower production costs and are thus able to undercut the prices of legitimate competitors.

Extensive bureaucracy is a unique driver of illegal logging in Russia.³¹⁴ Otherwise legitimate logging operations may engage in illegal logging, such as logging without a permit, to circumvent cumbersome application processes and exorbitant fees. The result is that up to 50 percent of logging in the vast forests of the Russian Far East is illegal.³¹⁵

³⁰⁹ Nellemann and INTERPOL Environmental Crime Programme, *Green Carbon, Black Trade*, 29–37.

³¹⁰ *Ibid.*, 47.

³¹¹ *Ibid.*

³¹² United Nations Office on Drugs and Crime, *Transnational Organized Crime in East Asia and the Pacific: A Threat Assessment* (Vienna: United Nations Office on Drugs and Crime, 2013), 89, https://www.unodc.org/documents/data-and-analysis/Studies/TOCTA_EAP_web.pdf.

³¹³ Nellemann and INTERPOL Environmental Crime Programme, *Green Carbon, Black Trade*, 41.

³¹⁴ Tanya Wyatt, “The Russian Far East’s Illegal Timber Trade: An Organized Crime?,” *Crime, Law and Social Change* 61, no. 1 (February 2014): 21, doi:<http://link.springer.com/article/10.1007/s10611-013-9461-y>.

³¹⁵ *Ibid.*, 20, 23.

China is the leading importer and exporter of timber in the world as well as a major processing center; it is also the primary destination for the majority of illegally-sourced timber exports.³¹⁶ The country still lacks legislation that prohibits the import of timber derived from illegal logging.³¹⁷ Six of the top 10 countries from which China imports timber—Russia, Thailand, Indonesia, Viet Nam, Lao PDR, and Papua New Guinea—have a very high risk for illegal logging.³¹⁸ The Environmental Investigation Agency estimates that approximately 10 percent of China's unfinished wood product imports are illegal timber.³¹⁹

Illegal logging is an attractive criminal enterprise because it involves little risk of interdiction and punishment. Although timber and arms both have legal and illegal markets, shipments of timber draw much less scrutiny from authorities than do arms. The transaction costs for illegal timber are therefore typically less than other criminal markets because timber is a relatively innocuous commodity.

Criminals use fraudulent documentation, such as invoices and permits, to facilitate the laundering and smuggling of illegal timber, a tactic also seen in the trafficking of arms and cultural property. Most illicit timber can be laundered without difficulty, but easily identifiable protected species such as rosewood may require additional obfuscation. Ninety-two tons of illegally harvested rosewood, some from Honduras, were transported to Mexico, where it was then shipped to Hong Kong, misinvoiced as scrap rubber from Guatemala.³²⁰

D. Developing Countries

There are serious environmental impacts from illegal logging as well as considerable negative externalities on the economies and security of developing countries. Illegal logging threatens timber supplies and is a significant driver of deforestation and habitat destruction. The practice also deprives communities and developing economies of indispensable revenues while financing violent groups.

Illegal logging occurs at unsustainable levels, severely depleting timber supplies and threatening biodiversity and species conservation through habitat destruction and the exposure of wildlife to poaching. In addition, the rampant deforestation of the planet is a significant cause of man-made carbon emissions. Approximately 12 to 15 percent of greenhouse gas emissions stem from forest loss, which is greater than the entire transportation sector worldwide.³²¹ Forests are extremely important sources of food, goods, and employment for rural communities in developing countries, thus the environmental impacts of illegal logging can have direct impacts on the well-being of communities.

Illegal logging and deforestation have been tied to drug trafficking in many cocaine-producing countries. In Colombia, hundreds of thousands of hectares have been illegally logged in order to clear land for coca cultivation; trees are also felled in cocaine production and transit countries to make room for landing strips.³²² In addition, organized crime groups (OCGs) have laundered drug money by financing timber extraction.³²³

Illegal logging robs developing country governments around the world collectively of at least US\$10

³¹⁶ China imported US\$22.8 billion and exported US\$14.5 billion in lumber in 2014. Trade data based on Harmonized System (HS) Classification 07 for HS commodity code 44 in 2014. "UN Comtrade Database," *United Nations*, accessed January 30, 2017, <https://comtrade.un.org/data/>; United Nations Office on Drugs and Crime, *TOC in East Asia and the Pacific*, 96.

³¹⁷ Laura Wellesley, "Trade in Illegal Timber: The Response in China," A Chatham House Assessment (London: Chatham House, December 2014), 8, https://indicators.chathamhouse.org/sites/files/reports/CHHJ2361_China_Logging_Research_Paper_FINAL.pdf.

³¹⁸ "UN Comtrade Database."

³¹⁹ Environmental Investigation Agency, *Appetite for Destruction: China's Trade in Illegal Timber* (London: Environmental Investigation Agency, 2012), 7, <https://eia-international.org/wp-content/uploads/EIA-Appetite-for-Destruction-lo-res.pdf>.

³²⁰ Kyra Gurney, "Hong Kong Seizes Record Shipment of Honduran Wood," *InSight Crime*, December 18, 2014, <http://www.insightcrime.org/news-briefs/hong-kong-seizes-record-shipment-of-honduran-wood>.

³²¹ According to Global Witness, forests absorb and store significant amounts of carbon dioxide, and "when forests are destroyed or degraded, they releases large amounts of this carbon back into the atmosphere as carbon dioxide." See Global Witness, *Forest Carbon, Cash & Crime: The Risk of Criminal Engagement in REDD+* (London: Global Witness, 2011), 3, <https://www.globalwitness.org/en/reports/forest-carbon-cash-crime/>.

³²² Edward Fox, "Colombia Seizes 450 Tons of Illegal Timber," *InSight Crime*, July 19, 2012, <http://www.insightcrime.org/news-briefs/colombia-seizes-450-tons-of-illegal-timber>; Matt McGrath, "Drug Trafficking Is Speeding Deforestation in Central America," *BBC News*, January 30, 2014, <http://www.bbc.com/news/science-environment-25960481>.

³²³ Quenton King, "Drug Traffickers Laundered \$250 Million in 2015: Peru Official," *InSight Crime*, April 28, 2016, <http://www.insightcrime.org/news-briefs/drug-traffickers-laundered-250-million-in-2015-peru-official>; Brian Clark Howard, "Drug Trafficking Poses Surprising Threats to Rain Forests, Scientists Find," *National Geographic News*, January 30, 2014, <http://news.nationalgeographic.com/news/2014/01/140130-drug-trafficking-deforestation-central-america-environment-policy-reform/>.

billion in revenues and taxes annually.³²⁴ In addition to tax evasion, illegal logging is connected to white collar crimes, including fraud related to carbon trading and “eco-certified schemes.”³²⁵ Russia, like many countries, allows for deferred payment of export duties. Illicit enterprises in Russia will register a temporary anonymous shell company and bank account with tax authorities and establish export contracts. After the timber shipments, legally or illegally sourced, are exported, the company either closes or goes bankrupt, leaving outstanding taxes and duties unpaid.³²⁶

Local communities may or may not receive income from illegal logging. Even if compensation is received, since the logging is not sustainable, neither are the revenues. Indigenous groups generally receive a fraction of the revenues for allowing illegal logging on their land compared to what they could earn from equitable, legal logging operations. Many illegal loggers provide no compensation to indigenous communities, illegally logging tribal lands without permission. In Brazil, the destruction of land is further compounded when illegal loggers set wildfires to the area they have cleared in order to cover up their theft.³²⁷

Some illicit operators expel local communities from their land instead of paying concessions in order to more easily access and exploit the natural resources.³²⁸ Displacement is more common in remote areas where populations have less protection or recourse. Forests and forest products are an extremely important source of income for many people around the world. Of those individuals who survive on less than a dollar a day, over 90 percent rely on forest products to earn a living.³²⁹

Illegal logging has serious consequences on human security, from trafficking in human beings to its use as a source for financing conflict. There are direct links between illegal logging and labor exploitation. The International Labor Organization estimates that illegal logging in the Peruvian Amazon engages approximately 33,000 people, primarily from indigenous groups, in forced labor.³³⁰ This is due in part to the country’s *habilitación* system of granting logging concessions that places loggers in situations similar to debt peonage, which can trap them in debt.³³¹

Like drug trafficking, militias, armed groups, and terrorist organizations are actively and passively involved in illegal logging. Illegal logging in conflict zones often contributes to financing arms purchases. Militia and terrorist groups in African countries with ongoing conflicts earn an estimated US\$111 million to \$289 million each year in passive and active income from the illegal and unregulated charcoal trade.³³²

E. Recent Developments

Illegal logging operators are honing and developing new methods involving “plantations” to avoid scrutiny. In particular, individuals and companies are using anonymous shell companies to invest in timber and agricultural plantations, often palm oil, as a cover to evade logging moratoriums and other laws. These “plantations” never progress to actual agricultural production, because clearing the land (i.e., logging) is the ultimate goal rather than a necessary pre-production step.³³³

In Indonesia, these fictitious plantations are sometimes established with the assistance of government subsidies, compounding the amount of fraud perpetrated against the government.³³⁴ It is estimated that

³²⁴ Nellemann and INTERPOL Environmental Crime Programme, *Green Carbon, Black Trade*, 13.

³²⁵ Nellemann et al., *Rise of Environmental Crime*, 65.

³²⁶ Wyatt, “The Russian Far East’s Illegal Timber Trade,” 25.

³²⁷ Scott Wallace, “Illegal Loggers Wage War on Indigenous People in Brazil,” *National Geographic News*, January 21, 2016, <http://news.nationalgeographic.com/2016/01/160120-brazil-illegal-logging-indigenous-people-Amazon-Basin-Awa-Ibama/>.

³²⁸ Nellemann and INTERPOL Environmental Crime Programme, *Green Carbon, Black Trade*, 29; Jeff Abbott, “Indigenous Community Wins Land Rights Victory in Guatemala After 200 Years of Struggle,” *Upside Down World*, August 6, 2015, <http://upside-downworld.org/archives/guatemala/indigenous-community-wins-land-rights-victory-in-guatemala-after-200-years-of-struggle/>; Bonnie Jo Mount, “Amazon Residents Resort to Militias to Keep out Illegal Loggers,” *Washington Post*, October 6, 2015, <http://www.washingtonpost.com/sf/world/2015/10/06/loggers/>.

³²⁹ Global Witness, *Forest Carbon, Cash & Crime*, 3.

³³⁰ Felipe Abreu, “Inside Peru’s Illegal Logging Industry,” *InSight Crime*, July 31, 2014, <http://www.insightcrime.org/news-analysis/inside-peru-illegal-logging-industry>.

³³¹ Urrunaga et al., *Laundering Machine*, 13.

³³² Nellemann et al., *Environmental Crimes Crisis*, 8.

³³³ *Ibid.*, 63.

³³⁴ Nellemann and INTERPOL Environmental Crime Programme, *Green Carbon, Black Trade*, 48.

one-half to two-thirds of all industrial timber plantations in Indonesia are covers for illegal operations.³³⁵

An alternative that is growing in popularity is the use of fictitious (i.e., a plantation that exists only on paper) or even real timber plantations to launder illegally harvested timber from other sources and declare it as a product of the plantation.³³⁶ Criminals over-report the harvesting levels of the plantations, allowing them to easily introduce the illegal timber into the legal supply. These new methods do a good job of masking illegal logging activities, making it much more difficult for authorities to detect and halt illicit operations.

F. Summary

Illegal logging is a serious transnational organized crime that is damaging to the land and the people. With an annual value of US\$52 billion to \$157 billion, illegal logging is one of the most lucrative transnational organized crimes. Typically, few of the profits trickle down to the communities—they remain in poverty while only a handful benefit.

Illegal logging robs governments around the world of significant tax income from trade as well as permits and concessions. The involvement of OCGs, militias, and terrorist organizations leads to serious impacts on human security and domestic stability.

The forestry industry cannot contribute to sustainable development if logging is not conducted in a sustainable manner. The quick profits participants receive translate not into long-term benefits, but environmental damage that lasts generations.

³³⁵ Nellemann et al., *Rise of Environmental Crime*, 65.

³³⁶ Nellemann and INTERPOL Environmental Crime Programme, *Green Carbon, Black Trade*, 45.

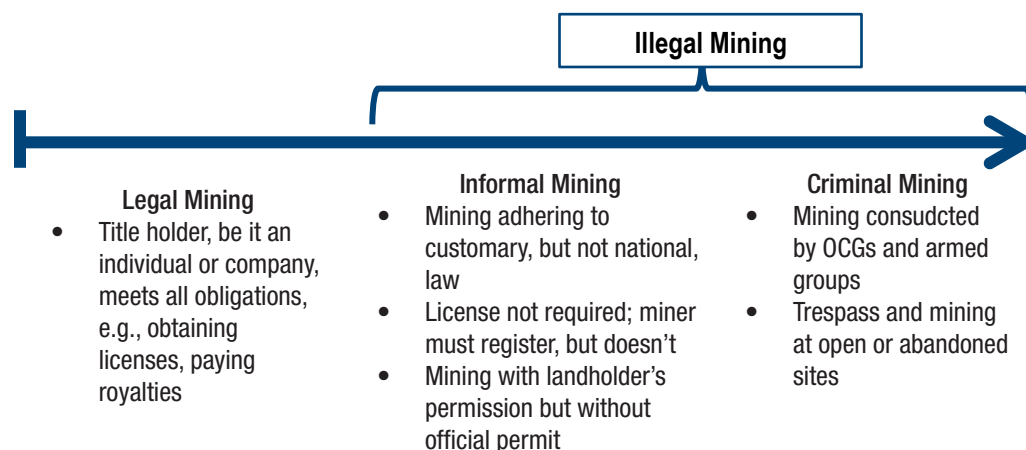
XI. Illegal Mining

A. Overview

Mineral wealth is found around the world, but the problem of illegal mining is largely confined to developing countries. The high value of many of the illegally mined minerals has attracted a variety of participants, still it is typically the small-scale miners that face the greatest risk yet receive the smallest profits. Illegal mining has serious environmental, economic, and security impacts on the global community.

A discussion of illegal mining must first address its definition. Following a strict sense, illegal mining is any mining conducted without a title and/or license that does not meet national regulations. However there remains a large grey area with a variety of activities that fall on the scale of illegal mining, from informal mining to criminal mining. Figure VII depicts the mining spectrum and provides examples of legal, informal, and criminal mining.

Figure VII. Mining Spectrum



As shown above, legal mining is mining that is done in full compliance with national laws. Informal mining, while illegal in the sense that it does not fully comply with domestic laws and/or regulations, is not necessarily criminal. Informal mining often refers to community-based artisanal and small-scale mining that adheres to customary law.³³⁷ Miners may extract minerals on community land or with the permission of landholders, yet they do not obtain the permits and/or licenses required by the government.

B. Value

There are important gaps in the research on the global value of illegal mining. This is due in large part to the ambiguity concerning what constitutes illegal mining as well as a narrow concentration on certain minerals and regions. The most recent figure comes from a 2016 United Nations Environment Programme (UNEP) and INTERPOL assessment that estimated **the illegal extraction and trade in minerals to be worth US\$12 billion to \$48 billion annually.**³³⁸ This is equivalent to roughly one to four percent of global industry trade, which highlights the fact that even a small percentage of illicit activity can still generate significant revenues.³³⁹

³³⁷ Kgothatso Nhlengetwa, "Why It Doesn't Make Sense That All Informal Mining Is Deemed Illegal," *The Conversation*, April 12, 2016, <http://theconversation.com/why-it-doesnt-make-sense-that-all-informal-mining-is-deemed-illegal-57237>.

³³⁸ Christian Nellemann et al., *The Rise of Environmental Crime: A Growing Threat to Natural Resources, Peace, Development and Security*, A UNEP-INTERPOL Rapid Response Assessment (Oslo: United Nations Environment Programme; RHIPTO Rapid Response-Norwegian Center for Global Analyses, 2016), 20, http://unep.org/documents/itw/environmental_crimes.pdf.

³³⁹ Ibid.

A greater amount of research has been done on the value of illegal mining at a country and at a mineral level. The surge of illegal mining that began in Latin America circa 2002 has received strong attention. Illegal gold mining in nine Latin American countries is worth approximately US\$7 billion each year (Table Y).³⁴⁰ Colombia and Peru have the largest amount of illegal gold mining in terms of value (US\$2 billion and US\$2.6 billion, respectively), and Venezuela and Colombia suffer the highest rate of illegal gold mining (86 to 91 percent and 80 percent of all gold mining, respectively). Mexico has the lowest rate of illegal gold mining, at nine percent, yet that is still worth approximately US\$500 million annually.

Table Y. Annual Value of Illegal Gold Mining in Latin America (US\$ millions)

Country	Annual Value	% of Total Gold Mining
Bolivia	\$100	31-45%
Brazil	\$400	10-14%
Colombia	\$2,000	80%
Ecuador	\$400	70-77%
Guyana	\$200	15-22%
Mexico	\$500	9%
Nicaragua	\$100	13%
Peru	\$2,600	22-28%
Venezuela	\$700	86-91%
Total	\$7,000	.

Source: Global Initiative against Transnational Organized Crime

The global value of illegal diamond mining has received more attention than other minerals largely due to the work on conflict diamonds and the Kimberley Process. Conflict diamonds are generally thought to represent less than one percent of global production, however illicitly mined diamonds are estimated to account for 20 percent of worldwide production, worth approximately US\$2.74 billion in 2015.³⁴¹

There are no official statistics regarding the percentage of illegal colored gemstones in global trade, so until further research is produced, for the purposes of this discussion we will make the assumption that the illegal production of colored gemstones occurs at the same rate as diamonds. Therefore, the global value of illegal mining of natural gemstones other than diamonds was worth an estimated US\$500 million in 2013.³⁴²

The high profits discussed above are not shared equally among all participants; it is the middlemen, traders, and exporters who benefit the most. Illegal miners, at the bottom of the production chain, are price takers and thus receive the smallest profit. Some indigenous communities in Brazil allow illegal mining on their land in exchange for a percentage of sales, but middlemen frequently collude to undervalue the diamonds by as much as 30 to 40 percent.³⁴³ Illegal miners in Sierra Leone fare worse, receiving roughly one-fifth the export value of diamonds they dig up.³⁴⁴

³⁴⁰ Livia Wagner, *Organized Crime and Illegally Mined Gold in Latin America* (Geneva: Global Initiative against Transnational Organized Crime, 2016), 8, <http://globalinitiative.net/wp-content/uploads/2016/03/TGIATOC-OC-and-Illegally-Mined-Gold-in-Latin-America-Report-1718-digital.pdf>.

³⁴¹ Sigismund A. Wilson, "Sierra Leone's Illicit Diamonds: The Challenges and the Way Forward," *GeoJournal* 76, no. 3 (2011): 193, doi:<http://dx.doi.org/proxyau.wrlc.org/10.1007/s10708-009-9321-6>; De Beers, "The Diamond Insight Report 2016" (De Beers, 2016), 26, https://cdgwebsites.com/debeers/impact_2016/stable/downloads/De_Beers_Insight_Report_2016_web-ready.pdf.

³⁴² U.S. Geological Survey, "2013 Minerals Yearbook: Gemstones" (Washington, DC: U.S. Department of the Interior, U.S. Geological Survey, 2016), 29.5, <http://minerals.usgs.gov/minerals/pubs/commodity/gemstones/myb1-2013-gemst.pdf>.

³⁴³ Felipe Abreu and Luiz Felipe Silva, "How Illegal Diamond Mining Threatens Brazil's Indigenous Communities," *InSight Crime*, October 14, 2015, <http://www.insightcrime.org/news-analysis/how-illegal-diamond-mining-threatens-brazil-s-indigenous-communities>.

³⁴⁴ "The Truth About Diamonds" (Global Witness, 2006), 3, https://www.globalwitness.org/sites/default/files/import/the_truth_about_diamonds.pdf.

C. Dynamics

The discussion of conflict minerals has traditionally focused on five specific minerals—diamonds, gold, tin, tungsten, and tantalum—which finance conflict and violence in Africa. However the connection between conflict and mineral resources is not limited to these five in the context of violent unrest in Africa. Illegal mining involves a variety of mineral resources around the world, and it is responsible for inciting and perpetuating conflict, crime, and human rights abuses.

There are two primary types of mining: underground (sub-surface) mining and alluvial (surface) mining. Underground mining operations are typically large-scale and conducted by legal companies, since extraction normally requires significant upfront investment costs and specialized equipment. As the mining operations are underground and confined to a relatively limited area, it is easier for mining companies to secure the sites against illegal mining activities.

Illegal sub-surface mining commonly occurs in disused or abandoned mining sites that have been abandoned by legal commercial operations. Illegal miners travel deep underground in an attempt to retrieve any minerals that still remain, often using dangerous explosives to access new rock. These miners face serious risks such as collapses and the accumulation of noxious fumes.

Alluvial mining, on the other hand, takes place on the surface, with mineral deposits spread over a wide area. The minerals are much easier to access, generally requiring only simple tools to dig and sift the earth. Artisanal small-scale mining, legal and illegal, dominates at alluvial sites due to these low costs compared to underground mining. In addition, the dispersal of alluvial deposits over a widespread area makes it more difficult for governments and commercial operations to monitor for illegal activity, particularly when the mining sites are located in remote areas of the country.

For many individuals, illegal mining is the best, and sometimes only, employment opportunity and it can often provide higher revenues than formal work. The rise in world gold prices circa 2008 to present has attracted many to engage in illegal gold mining. In Peru, for example, agrarian laborers are able to earn five times more from illegal mining compared to local employment wages.³⁴⁵

The exploitation of natural resources is a lucrative source of financing for organized crime groups (OCGs), terrorist organizations, and insurgent groups, because it offers a “low level of detection, prosecution and lower penalties” in comparison to other funding sources.³⁴⁶ Mexican drug trafficking organizations, including Los Zetas, the Sinaloa Cartel, and the Knights Templar (Caballeros Templarios), expanded their interests into illegal gold mining beginning around 2010, extorting both illegal miners and legal mine operators, as well as actually controlling mining operations from production to export.³⁴⁷ According to one assessment, combined extortion payments from extraction, transportation, and export earn the Knights Templar US\$12 to \$13 per ton of iron; in one month alone they earn an estimated US\$7.2 million from iron exports at a single port.³⁴⁸

Illegally-extracted minerals typically must be laundered before they leave the source country. Minerals, like timber, may be comingled with legally-sourced pieces in order to launder them. Another option is the use of fraudulent documentation to certify that minerals, such as diamonds, have been ethically sourced. Some illegal mining operations use recycled and/or forged Kimberley Process certificates to launder illegally-mined diamonds.³⁴⁹

Indigenous communities in Colombia have long mined for tungsten and tantalum. Tiger Hill (Cerro

³⁴⁵ “Beyond Deforestation: Illegal Gold Mining and Human Health,” *Public Policy Peru* 2016, March 19, 2016, <https://umdpolycyperu2016.wordpress.com/2016/03/19/beyond-deforestation-illegal-gold-mining-and-human-health/>.

³⁴⁶ Financial Action Task Force, *Emerging Terrorist Finance Risks* (Paris: Financial Action Task Force, 2015), 39, <http://www.fatf-gafi.org/media/fatf/documents/reports/Emerging-Terrorist-Financing-Risks.pdf>.

³⁴⁷ Patrick Corcoran, “Illegal Mining a Golden Opportunity for Mexico Crime Groups,” *InSight Crime*, September 29, 2016, <http://www.insightcrime.org/news-analysis/mexico-crime-groups-increasing-involvement-illegal-mining>.

³⁴⁸ Laurence Cuvillier, “How Chinese Mining Companies Sustain Organized Crime in Mexico,” *VICE News*, June 25, 2014, <https://news.vice.com/article/how-chinese-mining-companies-sustain-organized-crime-in-mexico>.

³⁴⁹ Financial Action Task Force, *Money Laundering and Terrorist Financing through Trade in Diamonds* (Paris: Financial Action Task Force, 2013), 111, <http://www.fatf-gafi.org/media/fatf/documents/reports/ML-TF-through-trade-in-diamonds.pdf>.

Tigre), the only established tungsten mine in Colombia, is located on Amazon Indian land, however the Revolutionary Armed Forces of Colombia (FARC) controlled the territory. Despite the only known source of tungsten being under the control of a guerrilla organization, more than 500 tons of tungsten were exported from Colombia from 2011 to 2015, valued at approximately US\$8 million.³⁵⁰ Companies allegedly falsified the tungsten ore's origin, reporting that it came from other mines, such as Caney de los Cristales, which these companies claim have tungsten deposits.³⁵¹ The use of these "shell" mines, where no actual ore and/or mining occurs, is similar to the "shell" plantations used to launder illegally-sourced timber.

Brokers and middlemen launder gemstones in order to separate them from their illicit origin as well as to increase their value. Some illegally-mined Afghan emeralds are smuggled through Pakistan into Colombia, where they are then marketed as Colombian emeralds since they are considered to be of a higher quality, thus fetching higher prices.³⁵²

Precious stones and metals, particularly diamonds and gold, are commonly used as an alternative form of currency around the world. They are excellent commodities for terrorist financing and money laundering. The following is a list of the advantages of precious stones and metals for terrorist financing and money laundering:³⁵³

- Liquid, i.e., easily convertible
- Easily altered
- Offer anonymity
- Maintain stable value and market price
- Easy to conceal
- High value-to-size ratio
- High demand
- Exempt from cross-border currency declarations

According to the Financial Action Task Force, countries are more vulnerable to money laundering and terrorist financing through illegal mining when alluvial mining is prevalent.³⁵⁴ Alluvial deposits are more susceptible to illegal mining, because less effort is required to access the minerals and because they are spread over a large area, making it harder to detect illegal operations.³⁵⁵ It is also much easier to launder minerals from unsupervised deposits into the legal trade, allowing criminal and terrorist groups to profit as well as use the minerals to transfer value.

Gold and gemstones are particularly adept vehicles for trade misinvoicing. The value of gold is based on its weight and purity (e.g., 24 karat and 14 karat), however it is difficult to determine the purity with the naked eye. Criminals may misinvoice 24 karat gold as 14 karat gold so as to undervalue an export, allowing for capital flight.

The four qualities used to evaluate diamonds—cut, clarity, carat, and color—allow for a high level of subjectivity in pricing; there is no set market price for diamonds from which customs officers can easily detect misinvoicing. These features allow for easy price manipulation, particularly because customs classification (and therefore taxes and duties) is based only on the number of carats.³⁵⁶

D. Developing Countries

Illegal mining, like other natural resource crimes, has major environmental, security, and economic impacts. Pollution and violence rob communities of land, water, and human resources, resulting in

³⁵⁰ "UN Comtrade Database," *United Nations*, accessed November 2, 2016, <http://comtrade.un.org/data/>.

³⁵¹ Michael Smith, "Terrorist Tungsten in Colombia Taints Global Phone-to-Car Sales," *Bloomberg.com*, August 8, 2013, <http://www.bloomberg.com/news/articles/2013-08-08/terrorist-tungsten-in-colombia-taints-global-phone-to-car-sales>.

³⁵² Adnan R. Khan, "The Dangerous World of Pakistan's Gem Trade," *Macleans*, May 24, 2014, <http://www.macleans.ca/news/world/pakistans-blood-stones/>.

³⁵³ Cassara, *Trade-Based Money Laundering*, 91–95.

³⁵⁴ Financial Action Task Force, *ML and TF through Trade in Diamonds*, 59.

³⁵⁵ *Ibid.*

³⁵⁶ *Ibid.*, 53.

damages that can affect generations. The extractive industry can play an important role in developing economies and serve as a source of domestic resource mobilization, but weak rule of law and the lack of effective governmental oversight for natural resources can enable and fuel conflict and inequality.

There are high environmental costs associated with illegal mining practices. Illegal mining is a significant driver of deforestation, as illegal miners will clear large swaths of forest in order to access mineral deposits. An estimated 50,000 hectares of forests had been lost to illegal gold mining in the Madre de Dios region of Peru as of September 2012.³⁵⁷ Deforestation leads to significant habitat loss, negatively impacting wildlife and contributing to climate change, soil erosion, and flooding.

Illegal mining also has a serious impact on species conservation. Illegal miners push into distant territory in order to access new mineral deposits, which requires them to source food from the local environment. Artisanal miners in eastern Democratic Republic of the Congo operate at remote illegal mining sites for extended periods of time, and they have turned to poaching local wildlife for bushmeat. This poaching has been a primary driver of the decline of the Grauer's gorilla, which was recently declared a critically endangered subspecies after its population fell by more than 77 percent between 1995 and 2015.³⁵⁸

Artisanal miners frequently use inexpensive, toxic substances in the refining process, substances which regularly end up contaminating local food and water supplies. Mercury is effective at separating and amalgamating gold particles, however this heavy metal is extremely toxic, and exposure to it, even in small amounts, can cause irreversible organ damage as well as neurological and behavioral disorders in humans.³⁵⁹ The Peruvian government declared a 60-day state of emergency in May 2016 in 11 districts of Madre de Dios due to extensive mercury poisoning, affecting approximately 50,000 people, particularly indigenous communities.³⁶⁰ In the Amazon, an estimated 2.8 grams of mercury waste is left over from every one gram of gold extracted; miners extract 15 tons of gold each day, creating approximately 42 tons of dumped mercury waste.³⁶¹

Exposure to lead, another heavy metal that causes serious mental and physical impairment, is also a hazard of illegal mining. Artisanal miners typically grind gold ore in order to process it, a method which releases a significant amount of dust; when ore with high lead content is ground, the lead dust is released as well, resulting in direct and indirect contamination. In Nigeria's Zamfara and Niger states, thousands have suffered from lead poisoning, with children being the most vulnerable. In May 2015, at least 28 children in Niger state died from lead poisoning, attributed to unsafe processing of illegally-mined gold; five years earlier in Zamfara state, at least 400 children died from similar circumstances.³⁶²

Illegal mining impacts human security not just in terms of health but also safety. There is a high incidence of crime and violence that coincides with illegal mining, control of territory, and its associated revenues, a common flashpoint. In South Africa, there are more than 14,000 illegal miners, known locally as "zama zamas," which operate in armed gangs.³⁶³ While illegal mining in itself is dangerous enough, there have been many incidences of gang shootings and sabotage for the control of the numerous abandoned gold mines that litter the Witwatersrand Basin.³⁶⁴

Human trafficking, particularly labor and sexual exploitation, frequently occurs in conjunction with illegal

³⁵⁷ Gregory P. Asner et al., "Elevated Rates of Gold Mining in the Amazon Revealed through High-Resolution Monitoring," *Proceedings of the National Academy of Sciences of the United States of America* 110, no. 46 (November 2013): 18455, doi:10.1073/pnas.1318271110.

³⁵⁸ Ed Stoddard, "Illegal Mining Hits Congo Gorilla Population: Conservationists," *Reuters*, April 6, 2016, <http://www.reuters.com/article/us-africa-gorillas-idUSKCN0X30T2>; "Largest Gorilla Subspecies Declared Critically Endangered by IUCN Red List," *Wildlife Conservation Society*, September 4, 2016, <https://newsroom.wcs.org/News-Releases/articleType/ArticleView/articleId/9247/Largest-Gorilla-Subspecies-Declared-Critically-Endangered-by-IUCN-Red-List.aspx>.

³⁵⁹ "Mercury and Health," *World Health Organization*, January 2016, <http://www.who.int/mediacentre/factsheets/fs361/en/>.

³⁶⁰ Simeon Tegel, "Peru Declares State of Emergency in Its Jungles Due to Rampant Mercury Poisoning," *VICE News*, May 24, 2016, <https://news.vice.com/article/peru-declares-state-of-emergency-in-its-jungles-due-to-rampant-mercury-poisoning>.

³⁶¹ "Beyond Deforestation."

³⁶² "Lead Poisoning 'Kills 28 Children' in Central Nigeria," *The New Vision*, May 15, 2015, <http://search.proquest.com.proxyau.wrlc.org/docview/1681035632/citation/96F1896EAF924079PQ/43>.

³⁶³ Channing May, "Good as Gold? South Africa's Problem with Illegal Gold Mining Is Severe and Growing," *Global Financial Integrity*, November 20, 2014, <http://www.gfintegrity.org/good-gold-south-africas-problem-illegal-gold-mining-severe-growing/>.

³⁶⁴ *South Africa's Illegal Gold Mines*, *VICE News*, 2014, https://www.vice.com/en_uk/video/south-africas-illegal-gold-mines.

mining, as mining recruiters usually employing deception to recruit miners. Illegal miners, like illegal loggers, are routinely forced to play inflated prices for goods due to limited options in remote areas; if they don't have the money, they can fall into debt bondage, borrowing against future earnings. It is often the most marginalized who are exploited the most, such as indigenous communities, undocumented citizens, and migrants.

The sexual exploitation of women and children at mining camps and towns is common. Some women, like the miners, are deceived, led to believe that they are only to work as cooks in the mining camps, while many others are forced against their will. The Global Initiative against Transnational Organized Crime has described the scale of sex trafficking in Peruvian mining camps as “staggering” and has noted that in one mining area of Madre de Dios, 60 percent of sex workers were minors.³⁶⁵

Illegal mining has regularly been used as a source of financing during times of conflict. Armed rebel groups can earn indirect and direct revenues from illegal mining operations, and they also trade some minerals, particularly diamonds, for other goods, such as arms and supplies. The Muslim Séléka and the mostly Christian Anti-balaka militias have tapped much of the mineral resources in the Central African Republic for financing during the country's ongoing civil war (2012-present). The Séléka have been earning roughly US\$150,000 from the taxation of illegal gold mining annually at just the Ndassima mine.³⁶⁶

Governments that are unable to effectively control illegal and/or informal mining lose revenues, sometimes significant amounts. This includes revenues from licensing and concessions as well as any taxes and duties on illegally-extracted minerals that are smuggled out of the country. The Afghan government is still unable to significantly mobilize the country's mineral wealth—gold, emeralds, rubies, lapis lazuli, chromite, and copper, among others—into development resources. The government loses approximately US\$5.4 million in revenues annually from the illegal mining of chromite in the Khost province alone, whereas terrorist organizations such as the Taliban have been able to capitalize on these resources for decades.³⁶⁷

Economic losses are magnified when illegal mining is combined with other financial crimes. Precious metals and stones are good commodities for money laundering, particularly trade-based money laundering. Illicit actors can easily over- or under-invoice these minerals in order to evade taxes and duties or send capital into or out of countries unseen.

In South Africa, individuals and groups combine illegal gold mining, trade misinvoicing, and tax fraud to smuggle illegal gold out of the country as well as increase criminal revenues (Figure VIII). The South African Revenue Service (SARS) does not charge value-added tax (VAT) on mined gold, instead it imposes a 14 percent tax on processed (e.g., scrap) gold. Company A uses a falsified paper trail to misinvoice illegally mined gold as scrap gold and sells it to Company B; Company A does NOT pay VAT on the sale but claims it did on the invoice.³⁶⁸ Company A exports the gold and Company B, again using forged documentation, applies for and receives a VAT refund from SARS.³⁶⁹

³⁶⁵ Wagner, *Organized Crime and Illegally Mined Gold*, 31.

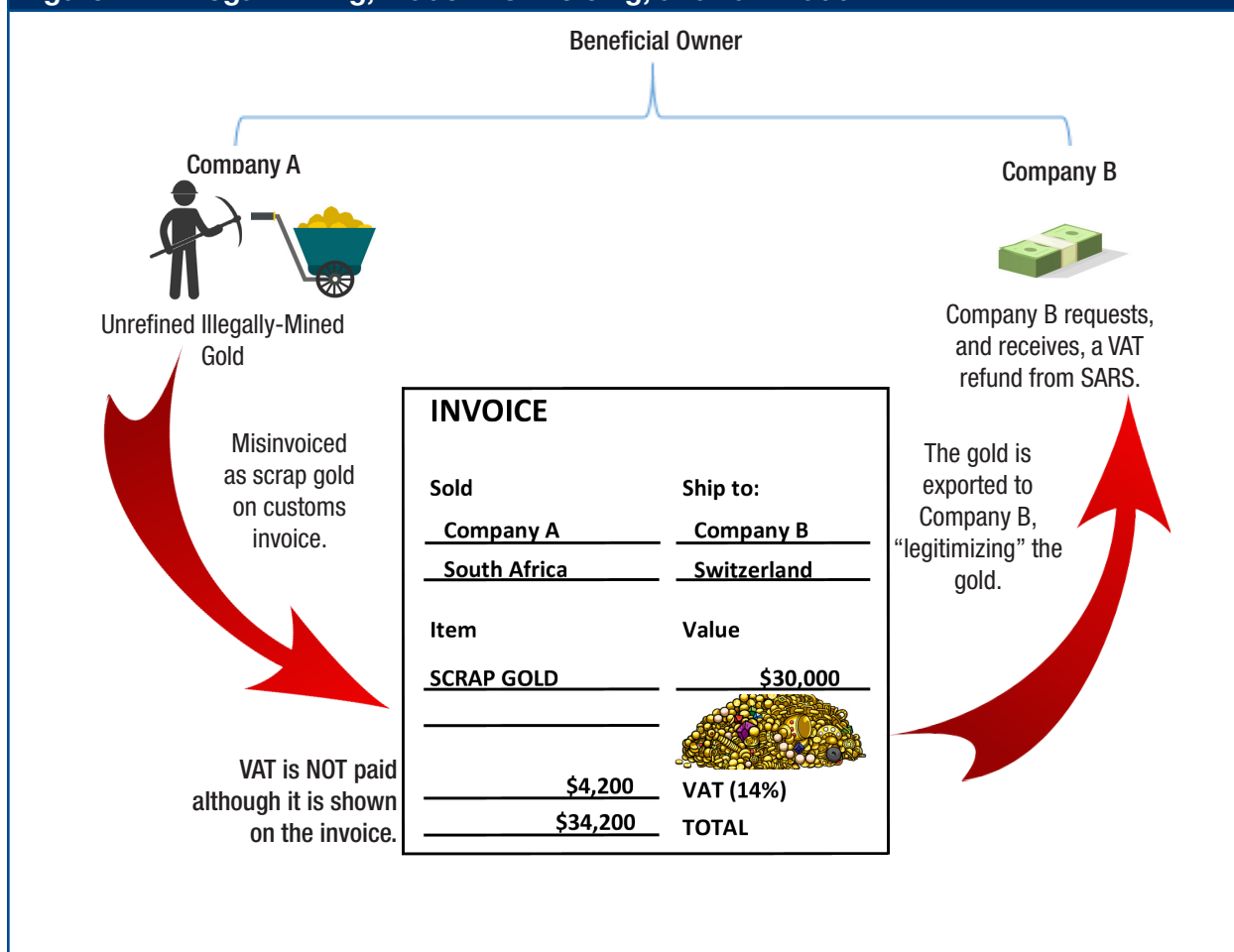
³⁶⁶ United Nations Security Council, “Letter Dated 28 October 2014 from the Panel of Experts on the Central African Republic Established pursuant to Security Council Resolution 2127 (2013) Addressed to the President of the Security Council” (S/2014/762, New York, October 29, 2014), 3, http://www.un.org/ga/search/view_doc.asp?symbol=S/2014/762.

³⁶⁷ Matthew DuPee, “Afghanistan's Conflict Minerals: The Crime-State-Insurgent Nexus,” *Combating Terrorism Center at West Point*, February 16, 2016, <https://www.ctc.usma.edu/posts/afghanistans-conflict-minerals-the-crime-state-insurgent-nexus>.

³⁶⁸ Cassara, *Trade-Based Money Laundering*, 103–4.

³⁶⁹ Naomi Fowler, “Exposed: Illegal Gold, Trade Mis-Invoicing And Tax Fraud In South Africa,” *Tax Justice Network*, September 29, 2014, <http://www.taxjustice.net/2014/09/29/exposed-illegal-gold-trade-mis-invoicing-tax-fraud-south-africa/>.

Figure VIII. Illegal Mining, Trade Misinvoicing, and Tax Fraud



Many countries have attempted initiatives to bring illegal mining into compliance, encouraging informal artisanal and small-scale miners to register, pay taxes and fees, obtain titles, and follow environmental, labor, and safety regulations. This has met with limited success as it has proven difficult to square formal and customary laws as well as regulate long-standing traditional mining rights.

Some governments have also faced challenges in determining licensing and tax schedules. Governments must strike a balance between setting licensing fees and taxes high enough as to make it profitable and making them too high as to make them unaffordable to the average citizen. Licensing fees and taxes in Sierra Leone are typically affordable, but the bribes miners must pay to mining officials and community leaders, known as "handshakes," roughly triple their expenses.³⁷⁰ Even if a miner is willing to operate formally, rent-seeking behavior of government and mining officials can actually push them to illegal mining, causing the government to lose revenues.

E. Recent Developments

Chinese investment and presence in Africa has grown sharply since the mid-2000s, a trend that has been reflected in illegal mining. Africa, and Ghana in particular, has experienced a unique phenomenon of illegal foreign miners who have come from halfway around the world. Illegal gold mining, known as "galamsey," is not a new activity in Ghana, however the country has undergone an "illegal gold rush" due in large part to the influx of illegal Chinese miners.

³⁷⁰ Wilson, "Sierra Leone's Illicit Diamonds," 199.

It is illegal for foreigners to engage in small-scale mining in Ghana, yet Chinese migrants have been largely undeterred due to rising gold prices. The arrival of these Chinese miners, often entering Ghana illegally from neighboring countries, has caused significant conflict with Ghanaian citizens, especially local artisanal miners.³⁷¹ Allegations have arisen that Chinese miners, sometimes armed, have destroyed farmlands and polluted water sources in order to look for gold, regularly leading to clashes between them and the local population.³⁷²

Facing rising tensions, violence, and pollution, Ghana has stepped up the arrest and deportation of illegal Chinese miners. In June and July 2013 alone more than 4,500 illegal Chinese gold miners were deported from Ghana.³⁷³ More recently, the Ghanaian government deported more than 30 illegal miners, the majority of whom were Chinese, in August 2016.³⁷⁴ Ghana relies on China for billions of dollars in loans and trade, and the crackdown on illegal foreign miners has created a difficult situation for Ghana.³⁷⁵

The increase in anti-Chinese sentiment in Ghana is mirrored throughout much of Africa, due in large part to conflict between locals and Chinese migrants. Natural resource extraction is a common flashpoint, but any sector or activity that puts migrants and locals into competition is sensitive. Resentment is commonly evident when locals are not employed in foreign-financed projects or when they feel the operations of foreign companies are plunderous rather than mutually advantageous.

F. Summary

Illegal mining is a valuable transnational crime, estimated to be worth US\$12 billion to \$48 billion annually. To better combat the trade in conflict minerals, the discussion must be broadened to include the illegal mining of any mineral that generates conflict, regardless of type, location, or circumstances. Illegal miners typically receive a fraction of the value of the minerals they extract but accrue the greatest amount of risk. For OCGs, terrorist organizations, and paramilitary groups, illegal mining provides a high profit, low risk financing source as well as an opportunity to launder dirty money from other activities.

Mineral resources have the ability to greatly contribute to a country's domestic resource mobilization and development, however illegal mining undermines these opportunities. Illegal mining has serious, long-lasting repercussions on the environment, human security, and economic development that must be combatted in order to benefit both nations and their citizens. The incursion of illegal Chinese gold miners in some African countries, particularly Ghana, has triggered serious conflict between the immigrants and local populations.

³⁷¹ "Ghana Arrests Chinese over 'Illegal Mining,'" *Al Jazeera*, June 7, 2013, <http://www.aljazeera.com/news/africa/2013/06/201367934304981.html>.

³⁷² *The Price of Gold: Chinese Mining in Ghana* (*The Guardian*, 2013), <https://www.youtube.com/watch?v=ohrrE1rjzLo>.

³⁷³ Afua Hirsch, "Ghana Departs Thousands in Crackdown on Illegal Chinese Goldminers," *The Guardian*, July 15, 2015, <https://www.theguardian.com/world/2013/jul/15/ghana-deports-chinese-goldminers>.

³⁷⁴ Joseph Afrane, "Ghana Departs over 30 Chinese Nationals," *World Today Press*, August 1, 2016, <http://worldtodaypress.com/2016/08/ghana-deports-over-30-chinese-nationals/>.

³⁷⁵ Hirsch, "Ghana Departs Thousands in Crackdown on Illegal Chinese Goldminers."

XII. Crude Oil Theft

A. Overview

Crude oil theft involves the theft of state- or privately-owned oil, most commonly from pipelines but also from facilities, tankers, or even offshore platforms. Similar to illegal mining, while oil production occurs in developed and developing countries around the world, developing countries experience the greatest level of oil theft, often due to weak rule of law, higher levels of criminal activity, and/or economic desperation.

A variety of actors have been enticed by the revenues that can be earned, particularly when world oil prices are high. However, oil theft is not simply about lost government or corporate revenues: it frequently involves criminal or terrorist activity, environmental harm, and impacts on human health and security. There is still a strong demand for stolen oil, and profits to be made, despite the significant drop in oil prices that began in late 2014.

B. Value

The value of worldwide crude oil theft is directly tied to production volumes and world market prices for oil. When oil prices were averaging US\$100 or more per barrel, oil theft was valued much higher; for example, bunkering in Nigeria was estimated to be worth US\$12 billion in 2012.³⁷⁶ Oil prices fell by half throughout 2015 and had slowly begun to recover as of December 2016, thus the overall value of the criminal market has likewise fallen, though the levels of theft have remained relatively unchanged.

Crude oil theft is estimated to be worth at least US\$5.2 billion to \$11.9 billion annually as of 2015.³⁷⁷

This is a conservative estimate as it is based on crude oil theft in six countries: Colombia, Indonesia, Mexico, Syria, Russia, and Nigeria. Crude oil theft occurs in any country that produces oil, yet these six countries (listed in Table AA) have both high levels of theft as well as available statistics.

Table Z. Crude Oil Theft Volume and Value (US\$)

Country	Barrels Per Day		Daily Value Lost	
	Low	High	Low	High
Colombia	440	4,700	\$20,928	\$245,904
Indonesia	1,000	5,000	\$52,320	\$261,600
Mexico	10,000	23,500	\$523,200	\$1,229,520
Syria	10,000	40,000	\$523,200	\$2,092,800
Russia	150,000		\$7,848,000	
Nigeria	100,000	400,000	\$5,232,000	\$20,928,000
Daily Total	271,440	623,200	\$14,201,741	\$32,605,824
Annual Total	99,075,600	227,468,000	\$5,183,635,392	\$11,901,125,760

Sources: See discussion below for data sources.

The volume of stolen oil compared to total global production is very small yet there are significant financial effects, both for government revenues lost as well as criminal profits gained. Approximately 99 million to 227 million barrels of oil are stolen each year from these six countries, which is equivalent to roughly 0.3 to 0.6 percent of global annual production.³⁷⁸ For developing countries, though, the daily loss of tens of thousands to millions of dollars in oil revenues has a direct impact on the ability of the government to mobilize domestic resources for development. Furthermore, organized crime groups (OCGs) often use these revenues to finance criminal activities that seriously undermine domestic

³⁷⁶ Lisa Otto, "Westward Ho! The Evolution of Maritime Piracy in Nigeria," *Portuguese Journal of Social Science* 13, no. 3 (September 2014): 319, doi:10.1386/pjss.13.3.313_1.

³⁷⁷ Based on the average Brent crude oil price of US\$52.32 per barrel in 2015. "Short-Term Energy Outlook," *U.S. Energy Information Administration*, November 8, 2016, <https://www.eia.gov/forecasts/steo/report/prices.cfm>.

³⁷⁸ An estimated 35 billion barrels for 2016. "Oil," *International Energy Agency*, accessed November 29, 2016, <https://www.iea.org/about/faqs/oil/>.

stability.

Nigeria has in recent years been the epicenter of worldwide crude oil theft, with 100,000 to 400,000 barrels stolen each day, which is equal to roughly 4.3 to 17.2 percent of daily domestic production.³⁷⁹ Oil theft results in significant direct financial losses for the Government of Nigeria—more than US\$1.9 billion to \$7.6 billion in 2015, as well as additional indirect losses related to reduced production, pollution, and insecurity.

Russia and Indonesia are frequently cited as being “plagued” by oil theft, but there is very little context on volume, dynamics, or value outside specific incidences, pipelines, or regions. Russia suffers from the second highest level of oil theft, yet there is scant open-source information for what is a major criminal enterprise. The country loses an estimated US\$7.8 million each day (150,000 barrels per day (BPD)), from Transneft pipelines in the Caucasus region alone, particularly Dagestan.³⁸⁰ Data on the theft of crude oil in Indonesia is sparse, and the 1,000 to 5,000 BPD stolen, worth approximately US\$52,000 to \$261,000, is representative only of the loss from pipelines in Sumatra.³⁸¹

Crude oil theft in Syria is currently estimated at 10,000 to 40,000 BPD, which, due to the Islamic State of Iraq and the Levant’s (ISIL) control of principal oil fields, represents the majority of the country’s total oil production.³⁸² The stolen crude has a daily international market value of about US\$523,000 to \$2.1 million, however much of it remains within the domestic market and is sold at below-market prices.

The volume of crude oil stolen in Mexico each day is less than one percent of total domestic daily production, but the participation of violent drug trafficking organizations (DTOs) in oil theft has increased the direct and indirect costs to the country. Thieves steal approximately 10,000 to 23,500 barrels each day, worth an estimated US\$523,000 to \$1.2 million; however, Mexico suffers additional losses from the theft of refined fuel products, such as gasoline.³⁸³ Pemex, Mexico’s state-owned oil company, loses an estimated US\$1 to \$5 billion a year to fuel theft.³⁸⁴

Colombia has the lowest level of oil theft of the six countries, but this small amount has a serious impact since the majority of the stolen crude, once refined, is used by DTOs to produce cocaine. Ecopetrol, Colombia’s state-owned oil company, estimated that more than 160,000 barrels of oil were stolen nationwide in 2014, equal to almost 440 barrels per day.³⁸⁵ In 2015, a surge in oil theft in the northeastern department of Norte de Santander led to approximately 4,700 BPD stolen in that area alone.³⁸⁶ A best

379 Akintunde Akinleye, “As Oil ‘Bunkering’ Rises in Nigeria, Thieves Say They Have No Choice,” *The Globe and Mail*, January 16, 2013, <http://www.theglobeandmail.com/report-on-business/international-business/african-and-mideast-business/as-oil-bunkering-rises-in-nigeria-thieves-say-they-have-no-choice/article7435665/>; Nirit Ben-Ari, “Piracy in West Africa,” *Africa Renewal Online*, December 2013, <http://www.un.org/africarenewal/magazine/december-2013/piracy-west-africa/>; Jon Gambrell and Associated Press, “Oil Bunkering Threatens Nigeria’s Economy, Environment,” *Washington Post*, July 20, 2013, https://www.washingtonpost.com/national/oil-bunkering-threatens-nigerias-economy-environment/2013/07/18/e38cb4a0-e273-11e2-ae33-339619eab080_story.html; Otto, “Westward Ho!,” 13; Christina Katsouris and Aaron Sayne, *Nigeria’s Criminal Crude: International Options to Combat the Export of Stolen Oil* (London: Chatham House, 2013), 16, https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Africa/0913pr_nigeriaoil.pdf.

380 Katsouris and Sayne, *Nigeria’s Criminal Crude*, 16.

381 Amahl S. Azwar and Linda Yulisman, “Government Calls for Crackdown on Oil Thefts,” *The Jakarta Post*, July 30, 2013, <http://www.thejakartapost.com/news/2013/07/30/government-calls-crackdown-oil-thefts.html>; Katsouris and Sayne, *Nigeria’s Criminal Crude*, 16.

382 Erika Solomon, Robin Kwong, and Steven Bernard, “Inside Isis Inc: The Journey of a Barrel of Oil,” *Financial Times*, December 11, 2015, <http://ig.ft.com/sites/2015/isis-oil/>; “Oil Market Report - 14 October 2014,” *International Energy Agency*, October 14, 2014, 20–21, <https://www.iea.org/oilmarketreport/reports/2014/1014/>.

383 Christopher Woody, “Drug Cartels Have Been Stealing Huge Amounts of One of Mexico’s Biggest Revenue Sources,” *Business Insider*, May 12, 2016, <http://www.businessinsider.com/mexico-oil-theft-from-pipelines>; Marguerite Cawley, “Mexico Fuel Theft: Big Earner for the Zetas?,” *InSight Crime*, August 4, 2014, <http://www.insightcrime.org/news-briefs/mexico-fuel-theft-big-earner-zetas/>; Lucia Bird, “Mexico Fuel Theft Remains Lucrative Despite Oil Price Drop,” *InSight Crime*, March 15, 2016, <http://www.insightcrime.org/news-briefs/mexico-fuel-theft-remains-lucrative-despite-oil-price-drop>.

384 Mike LaSusa, “Mexico State Oil Company Lost \$1.5 Billion to Theft in 2016,” *InSight Crime*, February 3, 2017, <http://www.insightcrime.org/news-briefs/mexico-state-oil-company-lost-billion-theft-2016/>; Woody, “Drug Cartels Have Been Stealing”; Dex Dunford, “Oil Thefts Surge In Mexico As Cartels Become Specialized,” *OilPrice.com*, February 15, 2016, <http://oilprice.com/Energy/Oil-Threats-Surge-In-Mexico-As-Cartels-Become-Specialized.html>; “Pemex to Stop Sending Finished Fuels through Pipelines to Fight Theft,” *Agencia EFE*, February 18, 2015, <http://www.efe.com/efe/english/business/pemex-to-stop-sending-finished-fuels-through-pipelines-fight-theft/50000265-2540139>; “Why Drug Cartels Are Stealing Mexico’s Fuel,” *Stratfor*, October 21, 2015, <https://www.stratfor.com/analysis/why-drug-cartels-are-stealing-mexicos-fuel>; Bird, “Mexico Fuel Theft Remains Lucrative”; Ioan Grillo, “Stolen Oil: A Gusher of Cash for Mexican Drug Cartels,” *Time*, March 9, 2011, <http://content.time.com/time/world/article/0,8599,2058007,00.html>.

385 Michael Lohmuller, “Colombia-Venezuela Border Closure Contributes to Oil Theft,” *InSight Crime*, November 17, 2015, <http://www.insightcrime.org/news-briefs/colombia-venezuela-border-closure-contributes-to-oil-theft>.

386 A Colombian official stated that the amount of oil stolen daily from the Caño Limón-Coveñas pipeline in Norte de Santander was worth approxi-

estimate places the daily loss of crude oil at around US\$20,000 to \$245,000, which translates into significant savings for guerrilla groups and OCGs, since they can refine the stolen crude rather than purchase gasoline for use in cocaine production.

C. Dynamics

Crude oil theft is a spectrum of methods, motivations, and markets. Thefts occur both onshore and offshore and target all aspects of the oil industry, from crude oil and refined products to pipelines and tankers. Groups engaged in the large-scale sale of crude seek lucrative profits or financing, while the individuals involved in small-scale theft and refining are seeking to earn a living. Stolen crude that is refined typically remains within the domestic market, whereas unrefined fuel is smuggled to international markets.

The methods used to steal crude oil largely depend on the country's oil infrastructure and the sophistication of the individual or group. The most common source of stolen oil is pipelines; thieves penetrate the pipelines using tools as simple as hacksaws and load the crude into cans and drums, or install more sophisticated taps to which hoses can be connected. Pipelines are the most vulnerable point for crude oil theft because they regularly run through remote and/or hard-to-control territory, making monitoring and protection difficult as well as expensive. Another more direct option is to take the oil straight from wellheads.³⁸⁷ Brazen OCGs even siphon oil directly from holding facilities and export terminals using tankers.³⁸⁸ Groups also target oil tankers offshore, selling the cargo straight away or transferring it to another ship for later sale.³⁸⁹

Individuals in developing countries commonly engage in crude oil theft and illegal refining as an economic alternative to unemployment or poverty. Those employed in bunkering in Nigeria can earn upwards of US\$50 to \$60 a day, far surpassing the country's 2015 GDP per capita of US\$3,203.³⁹⁰ Many from the Niger Delta region do not view bunkering as illegal, holding the opinion that the oil belongs to the people, and see bunkering as the sole way to benefit from the (often) mismanaged domestic resource. In Mexico, the theft of 10,000 liters of oil (nearly 62 barrels) returns roughly US\$4,600; for 20 to 40 minutes of work, small teams earn nearly half of the country's annual GDP per capita (US\$10,353).³⁹¹ While greater revenues could be earned from drug trafficking, the lower risks of arrest and violence in oil theft may be more attractive to some.

mately US\$10,000, which, at US\$52.32/barrel average price in 2015, is equivalent to roughly 4,700 barrels. Ibid.

³⁸⁷ Nabih Bulos, "How Does Islamic State Make Money off Oil Fields in Syria and Iraq?," *Los Angeles Times*, December 6, 2015, <http://www.latimes.com/world/middleeast/la-fg-islamic-state-oil-qa-20151206-story.html>.

³⁸⁸ VICE News, *Mexican Oil and Drug Cartels: Cocaine & Crude*, 2014, <https://www.youtube.com/watch?v=mPEfArQU7tc#t=639>; Katsouris and Sayne, *Nigeria's Criminal Crude*, 4.

³⁸⁹ Otto, "Westward Ho!," 320.

³⁹⁰ Alan Taylor, "Nigeria's Illegal Oil Refineries," *The Atlantic*, January 15, 2013, <http://www.theatlantic.com/photo/2013/01/nigerias-illegal-oil-refineries/100439/>; "World DataBank," [Online Database], *The World Bank*, accessed December 22, 2016, <http://databank.worldbank.org/data/home.aspx>.

³⁹¹ VICE News, *Mexican Oil and Drug Cartels*; "World DataBank."

Box 4. Oil and War

Due to the ongoing Syrian Civil War, the lack of work and extensive displacement of citizens have driven many to crude oil theft and refining. In late 2013, and while under the control of the Free Syrian Army, individuals engaged in refining stolen crude into fuel at makeshift refining sites near the city of Deir ez-Zor earned roughly US\$15–\$18 per barrel (3,000 Syrian pounds).¹⁷ In 2014, the Syrian Arab Republic had a GDP per capita of US\$1,821, or roughly US\$7 per day, so an individual potentially earned more than twice the average daily wage by refining just one barrel of stolen oil.¹⁸

Crude oil theft has played a significant role in ISIL's ability to self-finance the majority of its budget. At the peak of its territorial control in late 2014, ISIL produced an estimated 80,000 to 120,000 BPD between Syria and Iraq, which generated daily revenues of approximately US\$2 million to \$4 million.¹⁹ Most of the stolen crude in Syria is refined into low quality fuels which are used by citizens to supplement fuel shortages due to the continuing conflict.²⁰ According to the Financial Action Task Force, ISIL's control of oilfields provides the greatest benefits to the group through its use of the oil and oil products as well as the sales to local customers.²¹ These revenues demonstrate the serious threat of territorial control, because ISIL has been able to fund much of its operations internally. Payments for oil sales are largely completed in cash, informal value transfer, or trade.²² Methods commonly used to interrupt terrorist financing, such as sanctions, are not effective at directly targeting these transactions since they do not move through the formal financial system.

The theft of crude oil has provided OCGs with profits comparable to other more “traditional” transnational crimes, such as arms trafficking, while presenting much lower risks of arrest and punishment. The coordination and sophistication of these larger organizations allow for greater amounts of oil to be stolen in comparison to individual operators or small groups, which result in much higher losses for governments. Their involvement has also undermined security in some areas as groups use violent means to protect territory and profits.

Individuals and local criminal groups were typically responsible for oil theft in Nigeria, but the high profits and low risks attracted more sophisticated OCGs, which are largely responsible for the sale of crude to foreign buyers.³⁹⁸ Their networks have allowed them to connect with international markets, and stolen Nigerian crude has allegedly made its way to other countries in Africa as well as much farther away to the United States, Latin America, Eastern Europe, and Asia.³⁹⁹ These transactions threaten the security of the Niger Delta by funding violent criminal groups and creating a strong incentive for them to perpetuate conflict between the people and the government.

DTOs and OCGs have diversified into oil theft and other criminal activities due to increased pressure on drug trafficking. DTOs in Mexico, and Los Zetas and the Gulf Cartel in particular, greatly expanded their involvement in oil theft around 2010. They have developed a sophisticated, large-scale criminal industry with significant profits. Los Zetas have allegedly devoted an entire specialized unit to oil theft since a large number of fuel pipelines run through their territories (See Figure IX).⁴⁰⁰

³⁹² “Syria’s Illegal Oil Wells,” *VICE*, 2014, <http://www.vice.com/video/syria-syrian-oil>.

³⁹³ Based on an average work year of 260 days. “Syrian Arab Republic,” *UN Data*, accessed December 6, 2016, <http://data.un.org/CountryProfile.aspx?crName=Syrian%20Arab%20Republic>.

³⁹⁴ Jean-Charles Brisard and Damien Martinez, “Islamic State: The Economy-Based Terrorist Funding” (London: Thomson Reuters, October 2014), 7, http://cat-int.org/wp-content/uploads/2016/06/White-Paper-IS-Funding_Final.pdf.

³⁹⁵ Ben Hubbard, “ISIS-Imposed Fuel Embargo Threatens Syria’s Medical Centers,” *The New York Times*, June 18, 2015, <https://www.nytimes.com/2015/06/19/world/middleeast/isis-imposed-fuel-embargo-threatens-syrias-medical-centers.html>.

³⁹⁶ Financial Action Task Force, *Financing of the Terrorist Organisation Islamic State in Iraq and the Levant (ISIL)* (Paris: Financial Action Task Force, 2015), 13, <http://www.fatf-gafi.org/media/fatf/documents/reports/Financing-of-the-terrorist-organisation-ISIL.pdf>.

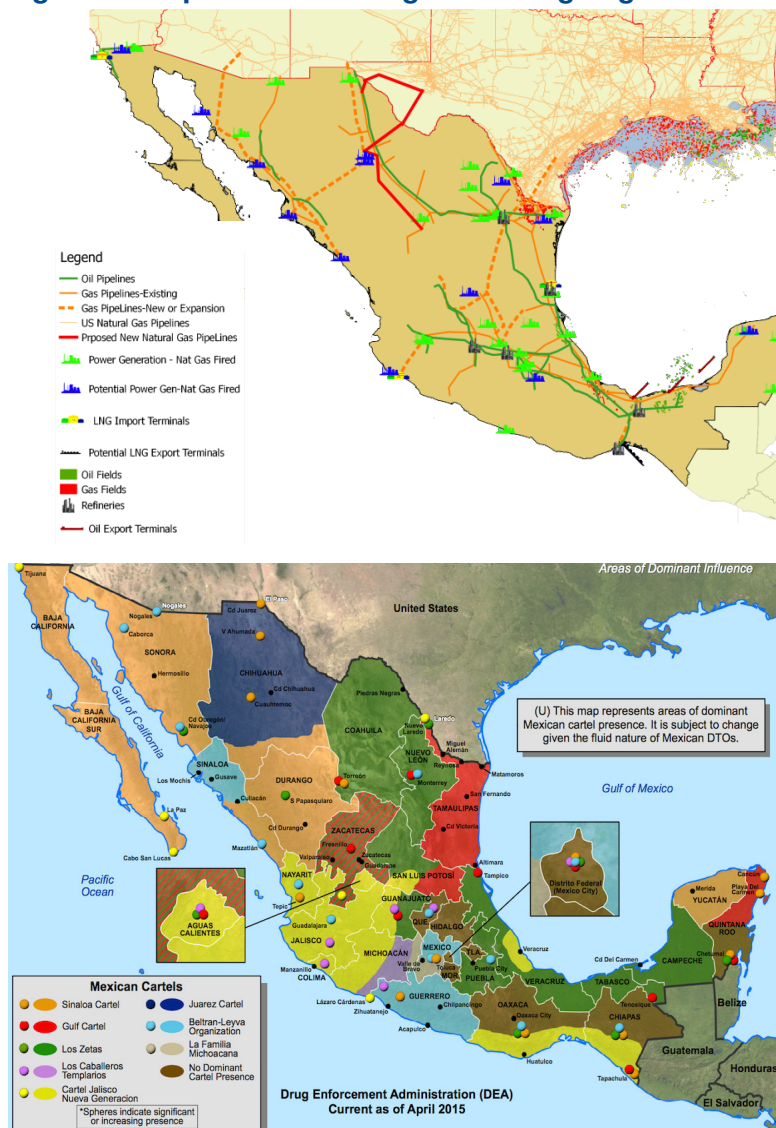
³⁹⁷ *Ibid.*, 14.

³⁹⁸ Katsouris and Sayne, *Nigeria’s Criminal Crude*, 2–3.

³⁹⁹ *Ibid.*, 33–34.

⁴⁰⁰ Dunford, “Oil Thefts Surge In Mexico.”

Figure IX. Pipelines and Drug Trafficking Organization Territory, 2015



Sources: Drug Enforcement Administration; The Energy Consulting Group

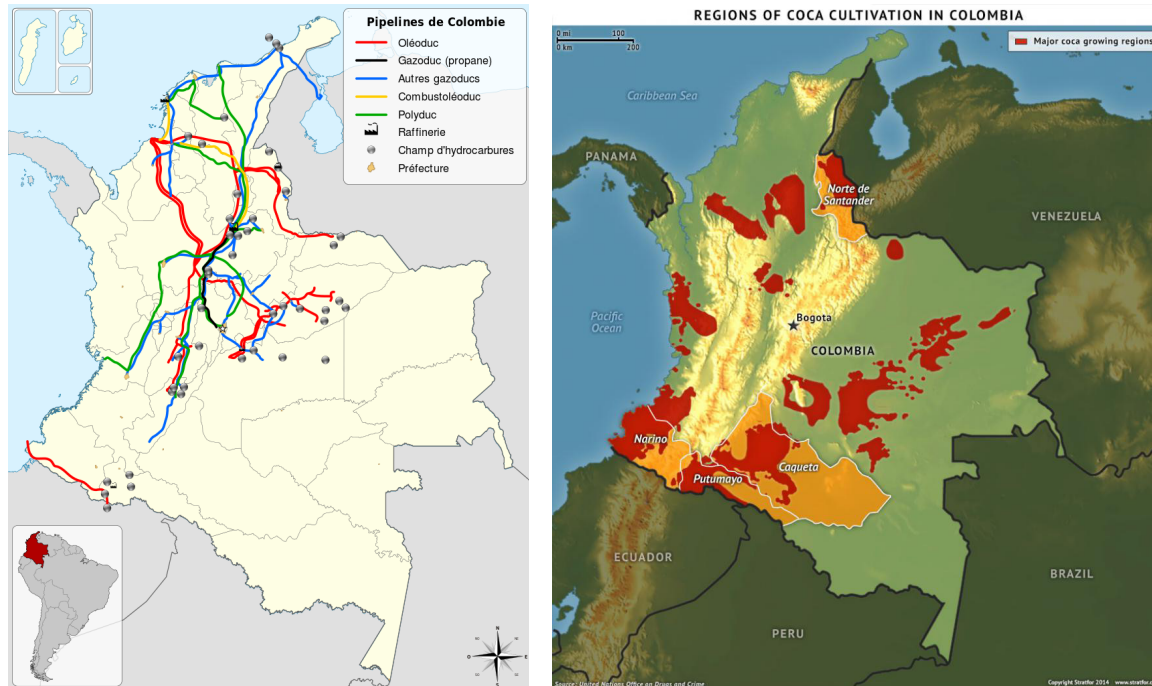
Mexico and Russia have a much greater capacity to refine crude oil compared to the other four countries covered in this chapter and there are therefore numerous refined fuel pipelines traversing the two countries—pipeline that can be illegally tapped. There is a vibrant (and documented) market for the theft of all fuel products in Mexico, refined and unrefined. Stealing refined products is more profitable than stealing crude as the gasoline is easy to sell domestically, both informally by the roadside or formally through gas stations. Los Zetas and the Gulf Cartel combined earn as much as US\$268 million annually from the sale of stolen gasoline to distributors, despite the gasoline being sold for less than half of the official sale price.⁴⁰¹

There is a strong connection between crude oil theft and drug trafficking in Colombia. Coca leaves are typically processed into coca base by soaking them in gasoline before being further refined into cocaine. Colombia's state-owned oil company Ecopetrol announced that more than 160,000 barrels of oil were stolen in 2014, the overwhelming majority (92 percent) of which was stolen in the southwestern departments of Nariño and Putumayo, which are also two of the principal coca growing regions of the

⁴⁰¹ Kyra Gurney, "Mexico Criminal Groups Running Sophisticated Distribution Networks for Stolen Oil," *InSight Crime*, June 18, 2014, <http://www.insightcrime.org/news-briefs/mexico-criminal-groups-running-sophisticated-distribution-networks-for-stolen-oil>.

country (see Figure X).⁴⁰² The National Liberation Army (ELN) and the now-demobilized Revolutionary Armed Forces of Colombia (FARC), as well as BACRIM (*bandas criminales* – criminal gangs) such as the Rostros and Urabeños (also known as Clan Usuga), are all known to be involved in stealing and refining crude oil to use in the processing of cocaine.

Figure X. Cocaine and Crude



Sources: Strafor; Sémhur, Wikimedia Commons

Oil theft occurs on land and offshore. The theft of large volumes of oil from vessels in Nigeria has wide economic impacts. Maritime piracy in the Gulf of Guinea has been strongly influenced by illegal oil theft in Nigeria, spurring an industry of petro-piracy, which can generate millions of dollars per stolen cargo load of petroleum products.⁴⁰³ In the first half of 2016, Nigeria experienced 24 actual and attempted piracy attacks, with many more attacks unreported.⁴⁰⁴ Pirates are well armed and routinely target tankers with oil cargo. With the waters of the region described as dangerous, traffic in the gulf has decreased as maritime companies and insurers attempt to reduce risks, which leads to negative impacts on government revenues.⁴⁰⁵

The transnational smuggling of stolen crude customarily requires the use of fraudulent documentation in order to launder the illicit oil. OCGs in Mexico steal both refined and unrefined fuel, therefore it is neither necessary nor profitable to refine stolen products. Rather, crude and gas condensate are sometimes smuggled to buyers in the United States with the use of misinvoicing and falsified documents to obfuscate the fuel's illicit origins.⁴⁰⁶ Pemex has filed lawsuits and sought criminal charges against U.S. oil brokers and companies that have purchased stolen oil products.⁴⁰⁷

⁴⁰² Lohmuller, "Colombia-Venezuela Border Closure."

⁴⁰³ United Nations Office on Drugs and Crime, *Transnational Organized Crime in West Africa*, 51.

⁴⁰⁴ International Maritime Bureau, "Piracy and Armed Robbery against Ships: Report for the Period 1 January - 30 June 2016" (London: International Chamber of Commerce, International Maritime Bureau, July 2016), 5, 18, <http://icc.se/wp-content/uploads/2016/07/2016-Q2-IMB-Piracy-Report-Abridged.pdf>.

⁴⁰⁵ Ben-Ari, "Piracy in West Africa."

⁴⁰⁶ "Black Gold on the Black Market," *The Economist*, August 4, 2012, <http://www.economist.com/node/21559962>.

⁴⁰⁷ "Mexico: An Oil Nation in Crisis," *Council on Hemispheric Affairs*, October 22, 2009, <http://www.coha.org/mexico-an-oil-nation-in-crisis/>; "Mexico's Pemex Sues 9 U.S. Companies in Oil Thefts," *Associated Press*, June 2, 2011, <http://www.foxnews.com/us/2011/06/02/mexicos-pemex-sues-us-companies-in-oil-thefts.html>; Laurel Brubaker Calkins, "Shell, Conocophillips Defeat Pemex Suit Over Stolen Gas," *Bloomberg*, May 30, 2014, <https://www.bloomberg.com/news/articles/2014-05-30/shell-conocophillips-defeat-pemex-suit-over-stolen-gas>.

Small-scale oil theft and refining is typically cash-based, which can easily be laundered through bulk cash smuggling and cash-intensive businesses, whereas sizable transactions with foreign entities are likely to involve the use of the formal financial system, such as wire transfers, trade misinvoicing, or the purchase of luxury goods or real estate.⁴⁰⁸ An estimated 80-90 percent of stolen crude in Nigeria is smuggled out of the country.⁴⁰⁹ Groups involved in the large-scale sale of crude use a series of boats to transfer stolen crude onshore to larger ships waiting offshore, which is normally destined for the international market.⁴¹⁰

D. Developing Countries

The damage of crude oil theft extends beyond lost revenues since governments are forced to expend additional funds to combat theft as well as to repair damages and clean up pollution. Oil theft and refinement is a dangerous profession and the involvement of OCGs, guerrilla groups, and terrorist organizations escalates insecurity and furthers risks to those involved. Crude oil theft frequently results in long-term environmental damage from oil spills, which in turn have serious impacts on the ability of local communities to secure income, employment, and clean food and water. Damage to communities can also undermine support for the government, often to the direct benefit of insurgent groups.

Crude oil is an incredibly valuable natural resource that can serve as an important revenue source for developing countries. The theft of crude oil can therefore have serious impacts on oil exporting countries' ability to mobilize domestic resources. Mexico's Pemex estimates that the company loses as much as US\$5 billion each year to fuel theft, a serious loss of income as oil revenues customarily subsidize roughly a third of the government's budget.⁴¹¹ The loss of substantial amounts of revenues due to illegal oil theft has direct impacts on the government's budget and, by extension, its ability to provide public services, invest in infrastructure, manage public debt, and fulfill other roles and obligations.

Oil theft also causes significant indirect financial losses to companies and governments due to increased expenses attributable to repairs, security, and environmental cleanup. The theft of refined products from pipelines seriously interrupts delivery, which can trigger domestic fuel shortages.⁴¹² Sustained, unmitigated theft can drive private companies to suspend production, minimize development, and terminate in-country operations, further harming foreign direct investment.⁴¹³

The efforts of OCGs, guerrilla groups, and terrorist organizations to maintain control of territory and resources inevitably produces security threats to communities as well as legitimate operators. The theft and sale of crude oil is used to finance, and therefore perpetuate, conflict, terror, and insecurity. Stolen crude oil has been a significant source of financing for ISIL, providing the group with billions of dollars in funding that has been particularly challenging for the international community to combat. When active, the FARC received indirect financial benefits from crude oil theft, since the crude was refined and then used in the processing of cocaine. Governments have a difficult time in combating TOC and terrorism if they are unable to separate OCGs, guerrilla groups, and terrorist organizations from their financing.

Oil theft and refining typically involve rudimentary methods that endanger the safety of those involved as well as local populations. Oil thieves generally tap pipelines using simple tools such as hacksaws and blades, which increases the risk of accidents.⁴¹⁴ In the small Mexican town of San Martin Texmelucan, a leak from an illegal pipeline tap set off a large explosion; the resulting fire decimated the town and killed many of the residents.⁴¹⁵ Makeshift refinery operations are equally dangerous because the refining process produces noxious fumes as well as unstable fuel products which can also lead to explosions.

⁴⁰⁸ Katsouris and Sayne, *Nigeria's Criminal Crude*, 38.

⁴⁰⁹ Ibid., 28; Akinleye, "As Oil 'Bunkering' Rises in Nigeria."

⁴¹⁰ Katsouris and Sayne, *Nigeria's Criminal Crude*, 8, 33-34.

⁴¹¹ "Pemex to Stop Sending Finished Fuels"; "Mexico Plans Fresh Budget Cuts in 2017 as Oil Slump Bites," *Reuters*, April 1, 2016, <http://www.reuters.com/article/mexico-budget-idUSL2N17502A>.

⁴¹² "Ten Mexican States Hit by Gasoline Shortages, Pemex Blames Theft from Pipelines," *ETEnergyworld*, December 25, 2016, <http://energy.economictimes.indiatimes.com/news/oil-and-gas/ten-mexican-states-hit-by-gasoline-shortages-pemex-blames-theft-from-pipelines/56165181>.

⁴¹³ Elisha Bala-Gbogbo, "Shell to Chevron Move Offshore as Nigerian Risks Mount," *Bloomberg*, July 31, 2013, <https://www.bloomberg.com/news/articles/2013-07-30/shell-flees-to-nigerian-offshore-fields-amid-onshore-woes>; Amy Stillman, "Mexico's Fuel Market Is Open, But the Imports Aren't Flowing," *Bloomberg*, June 28, 2016, <https://www.bloomberg.com/news/articles/2016-06-28/mexico-s-fuel-market-is-open-but-the-imports-aren-t-flowing>.

⁴¹⁴ Gambrell and Associated Press, "Oil Bunkering Threatens Nigeria's Economy, Environment."

⁴¹⁵ Grillo, "Stolen Oil."

Oil theft-related pollution also has serious impacts on the health and livelihoods of local communities, similar to illegal mining. Food and water sources are contaminated in the immediate aftermath of spills, while long-term pollution can prevent farming and decimate fisheries, negatively impacting communities that depend on agriculture and fishing for food and livelihoods. Chronic oil theft and its associated pollution has left the Niger Delta ecosystem as one of the most damaged in the world; the United Nations estimates that reversing the damage would require at least US\$1 billion and 30 years (as of 2011).⁴¹⁶

E. Recent Developments

The value of crude oil theft is directly tied to world oil prices, however falling crude oil prices have had relatively little impact on the level of the theft. Between 2014 and 2015, the average annual price per barrel of crude oil dropped by nearly 50 percent, from US\$98.97 to \$52.32, yet worldwide theft has continued unabated. Changes in the volume of crude oil theft are connected more to product profitability, demand, and ease of business/production.

Crude oil theft is a high-profit activity with minimal to moderate investment costs that are generally quickly recouped. Stolen crude oil is essentially free, which contributes to criminals being able to maintain profitability from the sale of crude during drops in world market prices; oil theft will continue as long as the profits outweigh the costs and the risks. However, rising market prices do usually lead to increased oil theft from new participants entering the market to take advantage of stronger profits.

The frequency and volume of crude oil theft is sometimes linked to the availability of refined fuel products. The eastern department of Norte de Santander, a major region for coca cultivation, experienced a surge in oil theft in 2015, losing 4,700 barrels each day, which was largely attributed to the August 2015 closure of the Colombia-Venezuela border that led to an increased demand for crude.⁴¹⁷ Guerrilla and insurgent groups in Norte de Santander typically sourced cheap gasoline (US\$0.01 per liter) from Venezuela. With the border closures, some cocaine processors have turned to refining stolen crude oil rather than purchasing domestic gasoline.

The volume of oil theft is also connected to access as well as ease of production. ISIL's income from crude oil theft has suffered mostly from airstrikes and territory losses rather than the drop in fuel prices. At its highest point of territorial control, ISIL had the ability to earn up to an estimated US\$1.5 billion annually from crude oil theft, however the continuing loss of territory has caused ISIL to lose nearly half of the oil fields it controlled in Syria, from approximately 60 percent to one third, and to lose complete control of all oilfields in Iraq.⁴¹⁸ In addition, Russian and coalition airstrikes, particularly the campaign Tidal Wave II, have majorly disrupted the group's production and distribution operations.⁴¹⁹ Since ISIL consistently sold stolen crude far below market value, it was relatively insulated from plummeting oil prices; decreased production volumes, however, have constricted supply and have had a much greater impact on the group's financing.

⁴¹⁶ Otto, "Westward Hol" 318.

⁴¹⁷ Lohmuller, "Colombia-Venezuela Border Closure Contributes to Oil Theft."

⁴¹⁸ Brisard and Martinez, "Islamic State," 7; Tim Daiss, "Why Islamic State's (ISIS) Oil Revenue Is Plunging," *Forbes*, August 26, 2016, <http://www.forbes.com/sites/timdaiss/2016/08/26/why-islamic-states-oil-revenue-is-plunging/>; "Islamic State Loses Control of Last Oil Wells in Iraq: Oil Ministry," *Reuters*, September 28, 2016, <http://www.reuters.com/article/us-mideast-crisis-iraq-oil-idUSKCN11Y1UA>.

⁴¹⁹ Matthew M. Reed, "2016: The Best Year Yet for Coalition Strikes Against ISIS Oil," *The Fuse*, January 30, 2017, <http://energyfuse.org/2016-best-year-coalition-strikes-isis-oil/>.

F. Summary

The theft of crude oil robs governments and enriches criminals, insurgents, and terrorists. Thefts in Colombia, Indonesia, Mexico, Syria, Russia, and Nigeria are equal to less than one percent of global annual production, yet the stolen oil provides significant revenues of at least US\$5.2 billion to \$11.9 billion annually. Crude oil theft can occur in any country that produces oil, but the weak rule of law and economic desperation found in many developing countries facilitate and drive oil theft. The stolen crude is either sold internationally or refined for sale on the domestic market.

Governments lose not only considerable revenues to crude oil theft but are also forced to dispense additional financial resources to repair pipelines, increase security, and clean up spills. Oil theft and refining routinely results in serious environmental pollution which can have generational effects, contaminating food and water sources as well as threatening livelihoods that rely on the land and waterways. Crude oil is an extremely beneficial natural resource that, if managed correctly, can serve as an important revenue source for developing countries.

XIII. Policy Recommendations

Overview

The previous 11 chapters demonstrate how transnational crime is a systemic problem, and why curtailing it thus requires a broad approach. This global illicit economy is more than just one network, one country, or one crime—it is an industry with a retail value of at least US\$1.6 trillion to \$2.2 trillion per annum. Laundering the proceeds of, and therefore sustaining, this industry is the global shadow financial system: a vast network of banks, intermediaries, and secrecy jurisdictions around the world that move all forms of illicit money, from the proceeds of tax evasion, to revenue from organized crime, to the resources of terrorist organizations. Increasing financial transparency, especially through the creation of public registries of beneficial ownership information, limiting secrecy jurisdictions, and curtailing trade misinvoicing, along with improved information sharing across government agencies, has the potential to significantly shrink all forms of transnational crime simultaneously.

Beneficial Ownership Transparency

The most important financial transparency tool for combatting transnational crime is being able to identify the person or people behind an account or business entity, known as the beneficial owner. Criminal investigators routinely run into dead-ends when trying to follow the money trail of a given transnational criminal transaction or network because layers upon layers of anonymous companies and secret bank accounts can be insurmountable. This is equally true in developed and developing countries.

Anonymous companies are a feature in every transnational criminal market in this report, whether to hide connections to particular individuals or to hide the origins of revenues or goods—or both. For example, sex trafficking rings disguise their ownership of legitimate hospitality businesses, such as nightclubs, to facilitate prostitution and to launder the revenue from this illegal activity by adding it to the nightclub's accounts so that it appears to be legally earned revenue from the nightclub's ordinary business (see page 25). Another example comes from Italy, where Giacomo Medici used numerous anonymous companies over several decades to traffic illicit antiquities and disguise the origin of these items. Unknown to major auction houses and wealthy buyers, Medici bought and sold the same items successively among the various companies he owned, giving the goods the appearance of a legitimate history or provenance (see page 38-39). This scheme would not have been possible if he had been required to disclose his ultimate ownership or control of these entities. The Panama Papers investigation provides further examples of the vast scale of secret companies operating in the global financial system.⁴²⁰

The most comprehensive way for countries to combat the creation and use of these anonymous companies is to require beneficial ownership information to be provided by companies when they are formed, require that the information be updated regularly, and for countries to keep beneficial ownership information in a central register. In addition, it is important to require that banks and other gatekeepers to the financial system identify the beneficial owners of their corporate clients.⁴²¹ Certain minimum standards apply to these efforts, starting with ensuring that laws and regulations include strong definitions of beneficial ownership—definitions that capture the natural persons who directly or indirectly own or control a company and that exclude persons who act solely as nominees or employees of that company.⁴²² Because anonymous companies can be used anywhere in the world, it is important that law enforcement agents around the globe have easy access to beneficial ownership information in all countries. The information would also be particularly helpful for banks and other financial institutions in their efforts to identify those who may be trying to use their services to launder money. Furthermore, companies operating internationally could use the information to better understand

⁴²⁰ Martha M. Hamilton, "Panamanian Law Firm Is Gatekeeper To Vast Flow of Murky Offshore Secrets," *The Panama Papers*, April 3, 2016, <https://panamapapers.icij.org/20160403-mossack-fonseca-offshore-secrets.html>.

⁴²¹ The Financial Action Task Force, the international standard-setting body for anti-money laundering, refers to these gatekeepers as designated non-financial businesses and professions or DNFBPs.

⁴²² "Beneficial Ownership," *Financial Transparency Coalition*, accessed February 27, 2017, <https://financialtransparency.org/issues/beneficial-ownership/>.

with whom they may really be doing business and the risks that may result. For these reasons, it would be best for countries to make the beneficial ownership information they collect freely, or publicly, available. The United Kingdom and Ukraine have already begun implementing public registers of beneficial ownership information, and fourteen more countries have committed to implementing or exploring the implementation of public registers.⁴²³ In addition, all European Union Member States will soon be creating their own registers of beneficial ownership information that must be available to law enforcement and to financial institutions as well as to others person who can demonstrate that they have a legitimate interest in knowing the information; they also have the option of simply making their registers open to the public.⁴²⁴

By having access to the names of people behind any given account, banks will be better able to apply anti-money laundering (AML) safeguards, and investigators will be much more successful in tracking, charging, and convicting the people and groups involved in transnational crime. If a known criminal approached a bank to open an account, it would be fairly straightforward for the bank to check and learn, for instance, that he or she is wanted in France on suspicion of arms trafficking. As investigators identify players in the ivory smuggling business from East Africa to East Asia, for example, they could pass those names to banks to track relevant financial transactions, allowing the investigators to gather key evidence, freeze accounts, and work more quickly to identify additional illegal actors. Even where false beneficial ownership information is provided by a company, that information can provide invaluable clues and evidence for law enforcement that they would not otherwise have. For example, when law enforcement determines that a company provided a false name as a beneficial owner, they can search to see whether that same false beneficial ownership information was provided for other companies and connect the criminals to related crimes or expand their investigation appropriately.

Secrecy Jurisdictions

Financial institutions and intermediaries make use of numerous jurisdictions around the world that specialize in offering sophisticated financial anonymity to launder the vast sums of money generated by transnational crime. These “secrecy jurisdictions” are the result of carefully crafted laws that allow for fully anonymous companies or the use of nominee directors in place of the true beneficial owners and that make it virtually impossible for law enforcement or anyone else to ever connect the criminal with the money. Many secrecy jurisdictions do not even require the collection of any kind of beneficial ownership information when someone forms a company, or if they do they will also frequently have laws that prevent that information from ever being shared.⁴²⁵

The Tax Justice Network (TJN) produces a bi-annual “Financial Secrecy Index” (FSI) that measures the level of financial secrecy in 102 jurisdictions. The top five jurisdictions in TJN’s 2015 FSI were, starting from the top, Switzerland, Hong Kong, the United States, Singapore, and the Cayman Islands.⁴²⁶ This list helps illustrate the fact that the shadow financial system exists not in back alleys but parallel to and mixed in with the legitimate financial system.

Transnational crime cannot continue to exist on this US\$1.6 trillion to \$2.2 trillion scale without financial secrecy jurisdictions. This global network and the financial institutions and intermediaries doing business in these areas are laundering money and providing banking services that facilitate all of the crimes detailed in this report. Without these services, illicit actors and transnational networks would have a far more difficult time trying to run their criminal enterprises. Secrecy jurisdictions allow them to launder and spend their profits—the only reason they are involved in these illegal markets in the first place—and to make the necessary payments to their “employees” and suppliers of goods and services.

The current business model for illegal, unreported, and unregulated (IUU) fishing is heavily dependent

⁴²³ Global Financial Integrity and Global Witness, *Chancing It: How Secret Company Ownership Is a Risk to Investors* (Washington, DC: Global Financial Integrity; Global Witness, 2016), 16, <http://www.gfintegrity.org/report/chancing-it-how-secret-company-ownership-is-a-risk-to-investors/>.

⁴²⁴ Ibid.

⁴²⁵ “What Is a Secrecy Jurisdiction?,” *Financial Secrecy Index*, accessed February 27, 2017, <http://www.financialsecrecyindex.com/faq/what-is-a-secrecy-jurisdiction>.

⁴²⁶ “Financial Secrecy Index - 2015 Results,” *Tax Justice Network*, accessed February 27, 2017, <http://www.financialsecrecyindex.com/introduction/fsi-2015-results>.

on the lack of oversight secrecy jurisdictions provide in exchange for fees. The chapter on IUU fishing in this report highlights the importance of “flags of convenience,” which vessels in this industry use on top of anonymous ownership to avoid thorough maritime, labor, and fishing regulations. The list of countries offering flags of convenience closely correlates with the list of secrecy jurisdictions. A good example of this is Panama, which the report notes had “approximately 8,600 registered vessels as of 2014, compared to 3,700 vessels in China and 3,400 in the United States” (see page 64). Panama was publicly exposed as one of the most notorious secrecy jurisdictions in 2016 by the Consortium of Investigative Journalists’ “Panama Papers” investigation, but those who rely on secrecy as part of their business models, such as IUU fishing fleets and organized crime, have been aware of Panama’s secrecy regime for many years.

Applying intergovernmental and public pressure to these jurisdictions to change their laws and closely scrutinizing transactions linked to these jurisdictions will result in significant strain on all transnational criminal markets. Switzerland, a long-time and well-known secrecy jurisdictions, has begun changing its laws to start to move away from playing a major role in the shadow financial system.⁴²⁷ These changes are the result of strong, sustained international pressure over the last several years, first from civil society organizations and increasingly from other Western governments, the latter largely motivated by tax evasion. The United States in particular has settled numerous lawsuits with banks in Switzerland, resulting in billions of dollars in fines, even causing some banks to close.⁴²⁸ Civil society and media campaigns, in connection with several high-profile whistleblowers in the financial sector as well as document leaks, have also helped to demonstrate the complicity of the Swiss financial system, enabled by Swiss bank secrecy laws, in a range of crimes and abuses.⁴²⁹

Governments in non-secrecy jurisdictions can almost immediately begin to limit the utility of secrecy jurisdictions for transnational crime by instructing their central banks and their customs agencies to scrutinize transactions involving people or entities located in these countries. People involved in transnational crime use secrecy jurisdictions and anonymous companies in order to avoid detection, both of their illicit transactions and of themselves. A policy of scrutinizing wire transfers and cross-border trade with these basic characteristics will greatly increase the risks these actors face. Raise the risk enough relative to the potential gains and buyers, sellers, middlemen and facilitators will scale back their involvement in transnational criminal markets, move their money and activities to an ever-decreasing number of available secrecy jurisdictions, or divest completely.

Trade Misinvoicing

Customs agencies, central banks, and private banks need to employ new techniques and strategies to detect the technical smuggling of the value of illicit goods through cross-border trade—which may help catch instances of physical smuggling of illicit goods as well. Specifically, these entities should focus on trade misinvoicing, of which trade-based money laundering (TBML) is a subset. Trade misinvoicing is a method of moving money illicitly across borders that involves deliberately misreporting the value of a commercial transaction on an invoice submitted to customs by fraudulently mis-reporting the quantity, quality, price per unit, type of good, or any other fact that would result in the shipment being over- or under-invoiced. Export over-invoicing creates a paper trail to transfer added value into the country of export, and import over-invoicing is used to justify the transfer of a higher amount of money out of a country. Criminals easily and quickly shift substantial sums of money across international borders by fraudulently manipulating the price, quantity, or quality of a good or service on an invoice to their desired level.⁴³⁰

Transnational criminals, and others wishing to disguise the movement of money from one country to another, provide fraudulent values on export and/or import invoices to justify the transfer of that same value of money from a financial account in one country to an account in another country. They use trade

⁴²⁷ Ralph Atkins, “Switzerland Moves Further to End Bank Secrecy,” *Financial Times*, December 29, 2016, <https://www.ft.com/content/890a4262-c795-11e6-8f29-9445cac8966f>.

⁴²⁸ “Swiss Bank Program,” *U.S. Department of Justice*, February 6, 2017, <https://www.justice.gov/tax/swiss-bank-program>.

⁴²⁹ “A Leak in Paradise,” *A Leak in Paradise*, 2016, <http://www.a leakinparadise.com/>.

⁴³⁰ “Trade Misinvoicing,” *Global Financial Integrity*, accessed February 27, 2017, <http://www.gfintegrity.org/issue/trade-misinvoicing/>.

misinvoicing to settle the accounts for the prior sale of illicit goods and as a method of laundering and moving their illicit money from one jurisdiction to another. Individuals and groups are successfully using this technique in every market covered in this report; some even do double-duty by moving both the value and the good(s) through the same misinvoiced trade. For example, the chapter on drug trafficking notes that organizations in Colombia have imported goods from the United States that they bought with proceeds of drug sales, which then transfers that value back to Colombia (see page 9). Groups involved in arms trafficking use misinvoicing to launder the value of and also to ship the illicit goods by misidentifying the items as goods of similar shape and density (see page 17).

The key to curtailing trade misinvoicing is for customs officers, central bank staff, bankers, and designated non-financial businesses and professions, such as auditors, to employ risk-based detection strategies to identify and flag transactions that warrant scrutiny. The first approach is for these four groups to have access to world market prices for goods, so that they are able to observe when the value on the invoice may be far too low or too high given the description of the goods. GFI launched such a system in 2016 called **GFTrade™**. It is a cloud-based system with trade data from most of the world's largest trading countries that shows graphically and numerically for any given invoice whether or not the recorded value for the good's classification—called a harmonized system (HS) code—is within a pre-determined range. A declared value outside of that range suggests that further investigation is warranted to determine whether it is a case of fraud.⁴³¹

The level of information available about the parties involved in the trade should be another indicator of risk and the need for further examination; what you do not know can hurt you. Beneficial ownership information can help customs agents determine whether a given transaction may be linked to persons involved in illegal activity—a significant risk factor. The importer or the exporter being registered in a secrecy jurisdiction should be another indicator of risk for tax evasion and for all other forms of criminal enterprise that rely on secrecy jurisdictions as a form of protection. Customs agencies can add these two indicators to their risk-flagging system.

Criminals need to manage risk and avoid detection, and a greater focus on catching instances of trade misinvoicing through the above measures will greatly increase the risk criminals face when trying to smuggle their illegal goods or their dirty money through cross-border trade. By implementing these measures, authorities can catch more illegal transactions, which will likely also provide them with further evidence to map the illicit networks and to successfully prosecute in courts. Criminals should also respond to the greater threat of detection and interception by discontinuing their use of these routes, which should create greater difficulties for them in moving their goods and their money where they need them to go. These difficulties will likely also discourage some buyers of illicit goods, due to the increased risks and costs that they too will likely face. Financial transparency both facilitates stronger enforcement against illegal activity and provides a powerful disincentive to engage in some such activities in the first place.

Interagency Cooperation

This report demonstrates that transnational crime requires a much broader response than just increased law enforcement, and successfully combatting these abuses requires greater information sharing and cooperation across numerous government agencies. The fundamental goal of the previous three recommendations is to increase the availability of information on the money flows underpinning transnational crime in order to combat it. Sharing that information within and across governments will amplify its impact by allowing connections to be made more easily between traditionally separate oversight and enforcement areas. Tax administrations, central banks, customs agencies, financial intelligence units (FIUs), natural resource bureaus, and law enforcement in particular need to work together to share intelligence related to the structures, finances of, patterns of, and individuals involved in transnational crime.

Productive interagency cooperation on combatting transnational crime includes regular coordination

⁴³¹ "GFTrade," *Global Financial Integrity*, accessed February 27, 2017, <http://www.gfintegrity.org/gftrade/>.

at the top levels, and authorized cooperation among staff, on cross-agency issues, and continuous information sharing in order to close gaps in enforcement and intelligence. Each agency collects through its daily operations and mandates key pieces of the information puzzle for identifying possible transnational criminal activity and mapping the scope of these crimes and the groups and individuals involved. The central bank has data on monetary flows in and out of the country; the mining agency knows the locations of resource deposits and who has contracts to extract and/or export these minerals; the navy and the coast guard have records of illegal fishing and smuggling activities they have intercepted offshore; and, the customs department has records of the types of goods and the values and quantities that companies are reporting for imports and exports. This is not an exhaustive list. The recommendations for collection of beneficial ownership information, the list of secrecy jurisdictions, and the data on cases of trade misinvoicing that will come from enhanced customs enforcement will add to the wealth of intelligence each government will possess relating to transnational crime. Sharing information on request is too slow, cumbersome, and limiting; experts within each agency need continuous access to relevant databases in order to keep up with the nimble and adaptive nature of transnational crime.

This report includes several examples of crimes that authorities did catch or could have caught as a result of interagency cooperation and information sharing. The chapter on the illegal wildlife trade notes that traffickers sometimes hide large shipments of their illegal goods among common bulk goods like cashews, soya, and timber (see page 54). Customs agencies in countries impacted by wildlife trafficking, including neighboring countries, could monitor and compile data on exports of these types of commodities and compare the names of companies involved and volumes exported with the agencies that oversee these markets to search for possible discrepancies and imbalances, such as annual soya exports exceeding total domestic production. Mining offers similar possibilities, especially with regard to gold, which criminals can misrepresent as a lower or higher quality to alter the cross-border value transfer—which may not match the quantities of particular value categories or HS codes that the mining ministry knows to exist domestically (see page 74).

Summary

Financial transparency is a powerful disincentive for illicit activity. This report estimates that the global annual value of transnational crime is US\$1.6 trillion to \$2.2 trillion; it is not possible to move such sums of money around the globe entirely in cash. The participants in these illegal markets depend on being able to access the global financial system, and that access in turn relies on their ability to keep their identities and the origins of their goods secret.

This chapter presented four key areas in which governments can take action to make it significantly harder for transnational criminals to hide their businesses. Creating registers of beneficial ownership information will eliminate the use of anonymous companies to disguise the names of those involved in illegal transactions, particularly if those registers are public. Scrutinizing cross-border transfers of goods tied to secrecy jurisdictions will further reduce the ease of anonymity, especially with IUU fishing. Trade misinvoicing, in particular TBML, features frequently in transnational crime of all types, particularly for large volumes or values, and combatting trade misinvoicing will significantly undercut the scale of TBML. Finally, governments should greatly enhance inter-agency cooperation and information sharing to monitor for patterns, discrepancies, and disparities between the data and knowledge each possesses to better identify and combat transnational illegal enterprises.

Shrink financial secrecy and the shadow financial system and you can reduce all transnational crimes in all countries.

XIV. Conclusion

Transnational crime is a business, and business is very good. As shown in Table X, the combined annual value of the 11 transnational criminal markets examined in this report is estimated to be US\$1.6 trillion to \$2.2 trillion. These massive revenues are the primary motivation for individuals, organized crime groups (OCGs), terrorists, and insurgent groups to engage in these illegal activities. Transnational crime will continue to grow until the paradigm of high profits and low risks is challenged; profits must be slashed and risks intensified.

Table AA. The Retail Value of Transnational Crime

Transnational Crime	Estimated Annual Value (US\$)
Drug Trafficking	\$426 billion to \$652 billion
Small Arms & Light Weapons Trafficking	\$1.7 billion to \$3.5 billion
Human Trafficking	\$150.2 billion
Organ Trafficking	\$840 million to \$1.7 billion
Trafficking in Cultural Property	\$1.2 billion to \$1.6 billion
Counterfeiting	\$923 billion to \$1.13 trillion
Illegal Wildlife Trade	\$5 billion to \$23 billion
IUU Fishing	\$15.5 billion to \$36.4 billion
Illegal Logging	\$52 billion to \$157 billion
Illegal Mining	\$12 billion to \$48 billion
Crude Oil Theft	\$5.2 billion to \$11.9 billion
Total	\$1.6 trillion to \$2.2 trillion

Dirty money begets dirty money: the revenues generated from crime not only line the pockets of perpetrators but also finance additional criminal activities and violence. A primary illustration of this is seen in drug trafficking organizations beginning to invest in other illegal markets, including illegal mining, wildlife trafficking, and crude oil theft. Stopping the flow of dirty money prevents criminals from profiting, and it combats the perpetuation of crime.

Interdiction of illegal commodities is important, but these are profit-motivated crimes—more action is needed that focuses on the money. Law enforcement must place a much greater emphasis on following and seizing the money in order to understand, identify, and disrupt trafficking networks.

The opacity of the global financial system—particularly anonymous shell companies and secrecy jurisdictions—greatly enables criminals to profit from transnational organized crime by providing anonymity and protection. The Panama Papers investigation includes numerous examples of these connections, including ties to drug trafficking, art theft, money laundering, terrorism, corruption, robbery, tax evasion, and fraud.⁴³² So long as there is a vibrant global shadow financial system, so too will transnational crime thrive.

Authorities have not regarded some crimes, including natural resource crimes as well as trafficking in counterfeit goods, as serious transnational organized crime. There is not an inherent high level of violence associated with these activities, unlike drugs and arms trafficking, and they have therefore been treated with less urgency and fewer resources. What is overlooked is the fact that the proceeds from these crimes can provide financing to violent OCGs, terrorists, and insurgent groups, as well as undermine the wellbeing of communities.

⁴³² International Consortium of Investigative Journalists, “Giant Leak of Offshore Financial Records Exposes Global Array of Crime and Corruption,” *The Panama Papers*, April 3, 2016, <https://panamapapers.icij.org/20160403-panama-papers-global-overview.html>.

For many developing countries, the abundance of natural resources, such as minerals, crude oil, and/or timber, is impeding development and increasing income inequality, due in part to high levels of corruption and weak rule of law. These are public goods that should benefit the many, yet they are being stolen for the private gain of a few. The control of natural resources, such as diamonds, timber, or narcotics, can lead to conflict when illicit networks perceive potential financial benefit.⁴³³

Very rarely do the revenues from transnational crime have any long-term benefit to citizens, communities, or economies of developing countries. It is time to take the fight against the criminals and these illicit networks to their wallets and bank accounts.

⁴³³ Paul Collier and Anke Hoeffler, "Greed and Grievance in Civil War," *Oxford Economic Papers* 56 (2004): 587–89.

Appendix: Methodology

This appendix is intended to provide both an explanation of methodology for calculations as well as sources that did not fit into their respective chapters. The appendix contains information for six transnational criminal markets: drug trafficking, trafficking of small arms and light weapons (SALW), the illegal organ trade, trafficking in cultural property, the illegal wildlife trade, and illegal, unreported, and unregulated fishing.

For all goods, the appropriate rates of exchange for prices not originally quoted in U.S. dollars (US\$) are calculated based on the date the source was published using the International Monetary Fund's (IMF) Exchange Rate Archives.⁴³⁴ If the currency is not provided by the IMF, then exchange rate data from the country's central bank is used.

A. Drug Trafficking

This section outlines the methodology for calculating the global market and submarket values for drug trafficking. Two methods were used to arrive at these market values, one working forward and the other backward. Both methods use simple economic techniques and do not take into account market factors such as changes in demand and supply.

1. Global Drug Market Values: Rate of Inflation

Working forward, the rate of inflation was applied to the last submarket estimates produced by the United Nations Office on Drugs and Crime (UNODC), the sum of which provided the updated global market value.

Appendix Table A. Inflation Adjusted Value of Global Drug Market, 2014 (US\$)

Submarket	Last Estimate		2014 Estimate		
	Year	Value	Inflation	Value	Rounded
Cannabis ⁴³⁵	2003	\$141.9 billion	28.66%	\$182,569,773,913	\$183 billion
Cocaine ⁴³⁶	2009	\$85 billion	10.35%	\$93,795,289,391	\$94 billion
Opiates ⁴³⁷	2009	\$68 billion	10.35%	\$75,036,289,391	\$75 billion
ATS ⁴³⁸	2006	\$63.4 billion	17.43%	\$74,449,714,286	\$74 billion
Total		.	.	.	\$426 billion

Sources: UNODC; US Inflation Calculator⁴³⁹

2. Global Drug Market Values: Global GDP

Working backward, the value of the global illicit drug market to world gross domestic product (GDP) was used. The UNODC estimated that the global drug market was worth US\$320 billion in 2003, equivalent to approximately 0.8 percent of global GDP.⁴⁴⁰ Assuming that the global market still represents the same percentage of global GDP, the illicit global drug market would be worth US\$651 billion in 2014.⁴⁴¹ The individual submarket values were determined by assuming that these markets grew at the same rate as

⁴³⁴ If the exact date is not listed in the archives, then the closest prior date is used. "Exchange Rate Archives by Month," *International Monetary Fund*, accessed February 21, 2017, https://www.imf.org/external/np/fin/data/param_rms_mth.aspx.

⁴³⁵ United Nations Office on Drugs and Crime, *World Drug Report 2005* (Vienna: United Nations Office on Drugs and Crime, 2005), 17, http://www.unodc.org/pdf/WDR_2005/volume_1_web.pdf.

⁴³⁶ United Nations Office on Drugs and Crime, *World Drug Report 2011* (Vienna: United Nations Office on Drugs and Crime, 2011), 17, http://www.unodc.org/documents/data-and-analysis/WDR2011/World_Drug_Report_2011_ebook.pdf.

⁴³⁷ *Ibid.*, 16.

⁴³⁸ United Nations Office on Drugs and Crime, *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (Vienna: United Nations Office on Drugs and Crime, 2008), 12, <https://www.unodc.org/documents/scientific/ATS/Global-ATS-Assessment-2008-Web.pdf>.

⁴³⁹ "Consumer Price Index Data from 1913 to 2016," *US Inflation Calculator*, September 16, 2016, <http://www.usinflationcalculator.com/inflation/consumer-price-index-and-annual-percent-changes-from-1913-to-2008/>.

⁴⁴⁰ The UNODC's *World Drug Report 2005* states that the global illicit drug market is worth 0.9 percent of global GDP at the retail level, however updated GDP figures from the World Bank show it to actually be 0.83 percent. United Nations Office on Drugs and Crime, *World Drug Report 2005*, 127.

⁴⁴¹ The value of the global illicit drug market in 2014 (US\$651 billion) based on the rate of growth does not match the total value shown in Table B due to rounding of the individual submarket values.

the global market.

Appendix Table B. Global Drug Market Value by Percent of GDP (current US\$)

Year	Global GDP ⁴⁴²	Drugs to GDP (%)	Global Drug Market Value ⁴⁴³
2003	\$38,733,017,865,848	0.83%	\$321,600,000,000
2014	\$78,377,098,842,809	0.83% [†]	\$650,764,551,194

[†] Assuming the global drug market represents the same percentage as in 2003.

Sources: UNODC; World DataBank

Appendix Table C. Global Drug Submarket Values by GDP Growth (US\$)

Market	2003 Value ⁴⁴⁴	GDP Growth	2014 Value	Rounded
Cannabis	\$141.9 billion	\$145,237,717,085	\$287,137,717,085	\$287 billion
Cocaine	\$70.5 billion	\$72,158,273,816	\$142,658,273,816	\$143 billion
Opiates	\$65 billion	\$66,528,904,937	\$131,528,904,937	\$132 billion
ATS	\$44.4 billion	\$45,444,359,680	\$89,844,359,680	\$90 billion
Total	\$321.8 billion	\$329,369,255,518	\$651,169,255,518	\$652 billion[†]

Source: UNODC

[†] The total value for the global drug market in 2014 shown in Table C does not match that shown in Table B due to rounding of the individual submarket values.

B. Trafficking of Small Arms and Light Weapons

This section provides an explanation of the methodology used to calculate the value of global SALW trafficking and furnishes a list of sources for AK-47 prices.

1. Global Arms Trade

The value of SALW trafficking was calculated from trade data reported to the United Nations (UN) Comtrade database. While UN Comtrade does capture a sizeable amount of global trade, reporting is voluntary, so recorded figures may not accurately depict the actual size of global trade. The data are for confirmed imports and exports in 2014, and do not include the value of export licenses (authorizations) or arms export agreements. The data correspond to harmonized system (HS) classification 07 and using HS codes for military weapons, revolvers and pistols, firearms and other similar devices (e.g. shotguns and rifles), firearm parts and accessories, and ammunition and projectiles.⁴⁴⁵

⁴⁴² "GDP (Current US\$)," *The World Bank*, accessed January 25, 2017, <http://data.worldbank.org/indicator/NY.GDP.MKTP.CD?end=2015&start=2003>.

⁴⁴³ United Nations Office on Drugs and Crime, *World Drug Report 2005*, 17.

⁴⁴⁴ Ibid.

⁴⁴⁵ Specifically, the HS codes used are: (HS 9301) military weapons - other than revolvers, pistols and arms of heading 9307; (HS 9302) revolvers and pistols - other than those of heading 9303 or 9304; (HS 9303) firearms - other similar devices (e.g. sporting shotguns and rifles, muzzle-loading firearms, very pistols, devices for firing flares or blank ammunition, captive bolt humane killers, line throwing guns); (HS 9305) firearms - parts and accessories of articles headings 9301-9304; and (HS 9306) bombs, grenades, torpedoes, mines, missiles and similar munitions of war and parts thereof, cartridges and other ammunition, projectiles and parts thereof, including shot and cartridge wads. Some of the data falling under HS 9306 are not SALW (e.g., torpedoes and missiles), however detailed data to exclude such non-SALW elements from the HS 9306 aggregate are not available. Excluded from the study are spring, rubber, air and gas mechanized firearms (HS 9304) and swords, cutlasses, bayonets and related items (HS 9307).

2. The Average Cost of an AK-47

The below table (Table D) lists the sources from which AK-47 prices were collected.

Appendix Table D. The Average Cost of an AK-47 Around the World (US\$)

Country	Price
Afghanistan ⁴⁴⁶	\$600-\$1,500
Belgium ⁴⁴⁷	\$1,135
India ⁴⁴⁸	\$1,087-\$9,058
Iraq (Kurdistan) ⁴⁴⁹	\$700
Lebanon (2011-2012) ⁴⁵⁰	\$1,606
Mexico (at the Northern border) ⁴⁵¹	\$1,200-\$1,600
Mexico (at the Southern border) ⁴⁵²	\$2,000-\$4,000
Nigeria ⁴⁵³	\$1,292-\$2,067
Online (Dark Web) ⁴⁵⁴	\$2,800-\$3,600
Pakistan (2011-2012) ⁴⁵⁵	\$1,205
Pakistan, craft (2011-2012) ⁴⁵⁶	\$148
Somalia (2011) ⁴⁵⁷	\$350
Somalia (2013) ⁴⁵⁸	\$750
Syria (2011) ⁴⁵⁹	\$1,200
Syria (2012) ⁴⁶⁰	\$2,100
Yemen ⁴⁶¹	\$1,396

C. Illegal Organ Trade

This section presents the methodology for calculating the estimated value of the global illegal organ trade as well as the prices for organ-specific transplants, sorted by country, from which price ranges were determined. Also included are the sources for all price-related data.

⁴⁴⁶ Heath Druzin, "Fearing Post-2014 Environment, Afghans Buy up Weapons," *Stars and Stripes*, December 5, 2012, <http://www.stripes.com/news/fearing-post-2014-environment-afghans-buy-up-weapons-1.199416>.

⁴⁴⁷ Colin Freeman, "Inside the 'Ant Trade' - How Europe's Terrorists Get Their Guns," *The Telegraph*, November 23, 2015, <http://www.telegraph.co.uk/news/worldnews/europe/12010458/Inside-the-Ant-Trade-how-Europes-terrorists-get-their-guns.html>.

⁴⁴⁸ Russian-made model. Manimugdha S. Sharmar, "How the Market for Illegal Weapons Is Booming in India," *The Economic Times*, November 25, 2012, <http://economictimes.indiatimes.com/news/politics-and-nation/how-the-market-for-illegal-weapons-is-booming-in-india/articleshow/17356337.cms?inttarget=no>.

⁴⁴⁹ Matt Cetti-Roberts and Kevin Knodell, "How Much Does a Gun Cost in Kurdistan?," *War Is Boring*, August 21, 2014, <https://warisboring.com/how-much-does-a-gun-cost-in-kurdistan-800ca37ebdfc>.

⁴⁵⁰ Nicolas Florquin, "Price Watch: Arms and Ammunition at Illicit Markets," in *Small Arms Survey 2013: Everyday Dangers* (Geneva: Small Arms Survey, 2013), 257, <http://www.smallarmssurvey.org/fileadmin/docs/A-Yearbook/2013/en/Small-Arms-Survey-2013-Chapter-11-EN.pdf>.

⁴⁵¹ Eric L. Olson, "A Shared Responsibility: Counternarcotics and Citizen Security in the Americas," S. Hrg. 112-57, Committee on Foreign Relations (2011), 55, <https://www.gpo.gov/fdsys/pkg/CHRG-112shrg67800/pdf/CHRG-112shrg67800.pdf>.

⁴⁵² Ibid.

⁴⁵³ Jude Isiguzo, "I Stack AK 47 Guns inside Yam Flour and Smuggle to Nigeria," *The Nation Nigeria*, April 1, 2014, <http://thenationonlineng.net/stack-ak-47-guns-inside-yam-flour-smuggle-nigeria/>.

⁴⁵⁴ Patrick Howell O'Neill, "Enter the Armory, the Dark Web's Walmart of Weaponry," *The Daily Dot*, April 4, 2014, <http://www.dailydot.com/crime/armory-deep-web-weapons/>.

⁴⁵⁵ Florquin, "Price Watch: Arms and Ammunition at Illicit Markets," 257.

⁴⁵⁶ Ibid.

⁴⁵⁷ Hamza Mohamed, "Illicit Gun Trade Barrels Ahead in Mogadishu," *Al Jazeera*, February 12, 2013, <http://www.aljazeera.com/indepth/features/2013/02/20132111214770878.html>.

⁴⁵⁸ Ibid.

⁴⁵⁹ Nicholas Blanford, "As Syria Unravels, Prices Soar for Guns, Grenades, and RPGs," *Christian Science Monitor*, January 9, 2012, <http://www.csmonitor.com/World/Middle-East/2012/0109/As-Syria-unravels-prices-soar-for-guns-grenades-and-RPGs>.

⁴⁶⁰ Ibid.

⁴⁶¹ Saeed Al Batati, "Yemenis Trade in Weapons on Facebook," *Gulf News*, April 4, 2014, <http://gulfnews.com/news/gulf/yemen/yemenis-trade-in-weapons-on-facebook-1.1312724>.

1. Estimated Value of the Illegal Organ Trade

The prices for organ transplants vary widely by type of organ, by the country in which the operation is performed, and by the nationality of the transplant recipient. For example, kidney prices showed the greatest variation. The price range for kidney transplants extended from a low of US\$14,000 in Pakistan to a high of US\$237,000 in Singapore, with a median of US\$80,000.⁴⁶² In order to narrow the price range to provide a more robust observation, the 25th and 75th percentiles were used as the lower and upper bounds for each range.

Appendix Table E. Estimated Value of the Illegal Organ Trade

Organ	No. Illegal Transplants ⁴⁶³	Price Low	Price High	Total Low	Total High
Kidney	7,995	\$50,000	\$120,000	\$399,750,000	\$959,400,000
Liver	2,615	\$99,000	\$145,000	\$258,885,000	\$379,175,000
Heart	654	\$130,000	\$290,000	\$85,020,000	\$189,660,000
Lung	469	\$150,000	\$290,000	\$70,350,000	\$136,010,000
Pancreas	233	\$110,000	\$140,000	\$25,630,000	\$32,620,000
Total	11,966	.	.	\$839,635,000	\$1,696,865,000

Appendix Table F. Prices Paid to Kidney Vendors Around the World

Vendor Country	Price High	Vendor Country	Price High
Canada ⁴⁶⁴	\$100,000	Japan ⁴⁶⁵	\$100,000
China ⁴⁶⁶	\$32,000	Lebanon ⁴⁶⁷	\$15,000
China ⁴⁶⁸	\$62,000	Mexico ⁴⁶⁹	\$125,000
China ⁴⁷⁰	\$63,000	Pakistan ⁴⁷¹	\$14,000
China ⁴⁷²	\$65,000	Pakistan ⁴⁷³	\$20,500
China ⁴⁷⁴	\$65,000	Pakistan ⁴⁷⁵	\$40,000
China ⁴⁷⁶	\$70,000	Pakistan ⁴⁷⁷	\$50,000
China ⁴⁷⁸	\$85,000	Pakistan ⁴⁷⁹	\$60,000
Colombia ⁴⁸⁰	\$50,000	Philippines ⁴⁸¹	\$60,000
Colombia ⁴⁸²	\$80,000	Philippines ⁴⁸³	\$85,000
Colombia ⁴⁸⁴	\$80,000	Singapore ⁴⁸⁵	\$237,000
India ⁴⁸⁶	\$25,700	South Africa ⁴⁸⁷	\$120,000
Indonesia ⁴⁸⁸	\$30,000	Sri Lanka ⁴⁸⁹	\$53,000
Indonesia ⁴⁹⁰	\$47,000	Sri Lanka ⁴⁹¹	\$122,000
Iraq ⁴⁹²	\$20,000	Turkey ⁴⁹³	\$100,000
Israel ⁴⁹⁴	\$120,000	Turkey ⁴⁹⁵	\$118,276
Israel ⁴⁹⁶	\$150,000	Turkey ⁴⁹⁷	\$145,000
Israel ⁴⁹⁸	\$175,000	United States ⁴⁹⁹	\$120,000
Israel ⁵⁰⁰	\$200,000	United States ⁵⁰¹	\$150,000

⁴⁶² Yosuke Shimazono, "The State of the International Organ Trade: A Provisional Picture Based on Integration of Available Information," *Bulletin of the World Health Organization* 85, no. 12 (2007): 956; University of Queensland Human Trafficking Working Group, "Wang Chin Sing v Public Prosecutor," Database, *Human Trafficking Knowledge Portal*, (n.d.), https://www.unodc.org/cld/case-law-doc/traffickingpersons/crimetype/sgp/2008/wang_chin_sing_v_public_prosecutor.html?lng=en&tmpl=htms; Luis Fábregas, "Transplant 'Tourism' Questioned at Medical Centers in Colombia," *TribLIVE.com*, February 18, 2007, http://triblive.com/x/pittsburghtrib/news/regional/s_493727.html; "Doctor, Wife Jailed for Buying Illegally Harvested Kidney," *The Japan Times Online*, January 27, 2012, <http://www.japantimes.co.jp/news/2012/01/27/national/doctor-wife-jailed-for-buying-illegally-harvested-kidney/>.

⁴⁶³ Illegal transplants are estimated to represent 10 percent of all legal transplants. Global Observatory on Donation and Transplantation, "Organ Donation and Transplantation Activities 2014" (Madrid: Organización Nacional de Trasplantes, April 2016), <http://www.transplant-observatory.org/data-reports-2014/>.

Japan ⁵⁰²	\$80,000		
		Low	\$14,000
		High	\$237,000
		Median	\$80,000
		25th Percentile	\$50,000
		75th Percentile	\$120,000

Appendix Table G. Price Range of Liver Transplants (US\$)

Country	Price
China ⁵⁰³	\$21,900
China ⁵⁰⁴	\$98,000
China ⁵⁰⁵	\$120,000
China ⁵⁰⁶	\$130,000
China ⁵⁰⁷	\$130,000
China ⁵⁰⁸	\$130,000
China ⁵⁰⁹	\$160,000

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⁴⁶⁷ Shimazono, "State of the International Organ Trade," 956.

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⁴⁷⁷ Nancy Scheper-Hughes, "Perpetual Scars," *New Internationalist*, May 2014, 21.

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⁴⁷⁹ Shimazono, "State of the International Organ Trade," 956.

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⁴⁸¹ Transplant performed in Singapore. University of Queensland Human Trafficking Working Group, "Wang Chin Sing v Public Prosecutor."

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⁴⁸⁴ Samantha Hawley, "Organ Trafficking Trade Plays on the Poor and Desperate in Indonesia Village," *ABC News*, February 17, 2016, <http://www.abc.net.au/news/2016-02-18/organ-trafficking-trade-operating-in-indonesian-villages/7178882>.

⁴⁸⁵ Transplant in Sri Lanka, foreign recipient. Chugh, "Need a Kidney?"

⁴⁸⁶ Indonesian recipient, transplant performed in Singapore. University of Queensland Human Trafficking Working Group, "Wang Chin Sing v Public Prosecutor."

⁴⁸⁷ Transplant in Sri Lanka, foreign recipient. Chugh, "Need a Kidney?"

⁴⁸⁸ "How Much Are My Organs Worth?"

⁴⁸⁹ Bienstock, *Tales from the Organ Trade*.

⁴⁹⁰ Transplant performed in South Africa. Shaun Swinger, "The Dark World of Internet Kidney Trafficking," *Health24*, April 8, 2016, <http://www.health24.com/Medical/Kidney-and-bladder/News/The-dark-world-of-internet-kidney-trafficking-20150225>.

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⁴⁹³ "How Much Are My Organs Worth?"

⁴⁹⁴ Transplant performed in Costa Rica. Sack, "Transplant Brokers in Israel Lure Desperate Kidney Patients to Costa Rica."

⁴⁹⁵ Dianne Small-Jordan, "Organ Harvesting, Human Trafficking, and the Black Market," *Decoded Science*, March 23, 2016, <http://www.decoded-science.org/organ-harvesting-human-trafficking-black-market/56966>.

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⁴⁹⁷ Scheper-Hughes, "Perpetual Scars," 19.

⁴⁹⁸ "Doctor, Wife Jailed for Buying Illegally Harvested Kidney."

Colombia ⁵¹⁰	\$100,000
Pakistan ⁵¹¹	\$25,000
South Korea ⁵¹²	\$165,600
Taiwan ⁵¹³	\$290,000
Low	\$21,900
High	\$290,000
Median	\$130,000
25th Percentile	\$99,000
75th Percentile	\$145,000

Appendix Table H. Price Range of Heart Transplants (US\$)

Country	Price
China ⁵¹⁴	\$130,000
China ⁵¹⁵	\$130,000
China ⁵¹⁶	\$190,000
Colombia ⁵¹⁷	\$90,000
India ⁵¹⁸	\$65,000
Singapore ⁵¹⁹	\$290,000
South Africa ⁵²⁰	\$290,000
South Korea ⁵²¹	\$290,000
Taiwan ⁵²²	\$290,000
Low	\$65,000
High	\$290,000
Median	\$190,000
25th Percentile	\$130,000
75th Percentile	\$290,000

⁴⁹⁹ Zuo Likun, "Human Organ Black Market Exploiting Poverty and Hope," *The China Post*, May 10, 2010, <http://www.chinapost.com.tw/china/national-news/2010/05/10/255889/Human-organ.htm>.

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⁵¹⁵ "How Much Are My Organs Worth?"

⁵¹⁶ Ibid.

⁵¹⁷ Ibid.

⁵¹⁸ Ibid.

Appendix Table I. Price Range of Lung Transplants (US\$)

Country	Price
China ⁵²³	\$110,000
China ⁵²⁴	\$150,000
China ⁵²⁵	\$150,000
China ⁵²⁶	\$170,000
Singapore ⁵²⁷	\$290,000
South Africa ⁵²⁸	\$290,000
Taiwan ⁵²⁹	\$290,000
Low	\$110,000
High	\$290,000
Median	\$170,000
25th Percentile	\$150,000
75th Percentile	\$290,000

Appendix Table J. Price Range of Pancreas Transplants (US\$)

Country	Price
China ⁵³⁰	\$88,000
China ⁵³¹	\$110,000
China ⁵³²	\$110,000
Singapore ⁵³³	\$140,000
South Africa ⁵³⁴	\$140,000
South Korea ⁵³⁵	\$140,000
Low	\$88,000
High	\$140,000
Median	\$125,000
25th Percentile	\$110,000
75th Percentile	\$140,000

2. Kidney Transplants: Vendors vs. Recipients

The below table (Table K) depicts the substantial difference between the price paid by the organ recipient and the amount received by the organ vendor for kidney transplants, sorted by the country in which the transplant was performed.

⁵¹⁹ Ibid.

⁵²⁰ Shimazono, "State of the International Organ Trade," 956.

⁵²¹ "Business of Organ Harvesting."

⁵²² Ibid.

⁵²³ "How Much Are My Organs Worth?"

⁵²⁴ Ibid.

⁵²⁵ Ibid.

⁵²⁶ "Business of Organ Harvesting."

⁵²⁷ "How Much Are My Organs Worth?"

⁵²⁸ Shimazono, "State of the International Organ Trade," 956.

⁵²⁹ "How Much Are My Organs Worth?"

⁵³⁰ Ibid.

⁵³¹ Ibid.

Appendix Table K. Kidney Transplants: Vendors vs. Recipients (US\$)

Transplant performed in	Vendor		Recipient		Markup
	From	Received	From	Paid	
China ⁵³⁶	China	\$5,000	Israel	\$100,000	1,900%
Costa Rica ⁵³⁷	Costa Rica	\$18,500	Israel	\$175,000	846%
Kosovo ⁵³⁸	Moldova	\$12,000	Canada	\$120,000	900%
Peru ⁵³⁹	Peru	\$7,000	Mexico	\$125,000	1,686%
Singapore ⁵⁴⁰	Indonesia	\$18,700	Singapore	\$237,000	1,166%
South Africa ⁵⁴¹	Israel	\$20,000	Israel	\$120,000	500%
South Africa ⁵⁴²	Brazil, Romania	\$6,000	Israel	\$120,000	1,900%
United States ⁵⁴³	Israel	\$10,000	Israel, U.S.	\$120,000	1,100%

3. Kidney Vendor Payments

The below table (Table L) presents the average payments received by vendors for selling their kidney, sorted by the vendor's country of citizenship.

Appendix Table L. Prices Paid to Kidney Vendors Around the World

Vendor Country	Price Low	Price High	Vendor Country	Price Low	Price High
Bangladesh ⁵⁴⁴	\$2,000	\$3,000	Lebanon ⁵⁴⁵	\$3,000	\$7,000
Belarus ⁵⁴⁶	\$8,000	\$10,000	Moldova ⁵⁴⁷	\$2,500	\$3,000
Brazil ⁵⁴⁸	\$3,000	\$10,000	Nepal ⁵⁴⁹	\$200	\$900
Cambodia ⁵⁵⁰		\$3,000	Nicaragua ⁵⁵¹		\$5,000
China ⁵⁵²	\$3,500	\$15,000	Pakistan ⁵⁵³	\$1,300	\$2,100
Colombia ⁵⁵⁴	\$1,000	\$3,000	Peru ⁵⁵⁵	\$5,000	\$12,000
Costa Rica ⁵⁵⁶	\$5,500	\$6,000	Philippines ⁵⁵⁷	\$1,000	\$2,500
Egypt ⁵⁵⁸		\$2,000	Romania ⁵⁵⁹	\$2,700	\$6,000
India ⁵⁶⁰	\$1,000	\$6,000	Syria ⁵⁶¹		\$3,000
Indonesia ⁵⁶²	\$5,000	\$23,000	Turkey ⁵⁶³	\$7,500	\$10,000
Iraq ⁵⁶⁴		\$1,000	United States ⁵⁶⁵	\$20,000	\$30,000
Israel ⁵⁶⁶	\$10,000	\$25,000	Viet Nam ⁵⁶⁷		\$2,400
Japan ⁵⁶⁸		\$16,000	Yemen ⁵⁶⁹	\$5,000	\$7,000
Jordan ⁵⁷⁰	\$500	\$5,000			

⁵³² Scheper-Hughes, "Perpetual Scars," 16.

⁵³³ Sack, "Transplant Brokers in Israel Lure Desperate Kidney Patients to Costa Rica."

⁵³⁴ Bienstock, *Tales from the Organ Trade*.

⁵³⁵ Smith, "Desperate Americans Buy Kidneys from Peru Poor in Fatal Trade."

⁵³⁶ University of Queensland Human Trafficking Working Group, "Wang Chin Sing v Public Prosecutor."

⁵³⁷ Swinger, "The Dark World of Internet Kidney Trafficking."

⁵³⁸ Ibid.

⁵³⁹ Small-Jordan, "Organ Harvesting, Human Trafficking, and the Black Market."

D. Trafficking in Cultural Property

This section provides a list of 15 notable art heists, sorted from most to least valuable, and also includes the year of the heist, a description of the stolen property, and where the heist took place.

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- ⁵⁴² Michael Smith, Daryna Krasnolutska, and David Glovin Subscribe, "Organ Gangs Force Poor to Sell Kidneys for Desperate Israelis," *Bloomberg.com*, accessed August 18, 2016, <http://www.bloomberg.com/news/articles/2011-11-01/organ-gangs-force-poor-to-sell-kidneys-for-desperate-israelis>.
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- ⁵⁴⁴ Swinger, "The Dark World of Internet Kidney Trafficking"; Scheper-Hughes, "Perpetual Scars," 17; Roger Lee Mendoza, "Colombia's Organ Trade: Evidence from Bogotá and Medellín," *Journal of Public Health* 18, no. 4 (2010): 378, doi:<http://dx.doi.org.proxyau.wrlc.org/10.1007/s10389-010-0320-3>; Edward Fox, "Desperation, Lack of Donors Drives Organ Trafficking in Latin America," *InSight Crime*, July 19, 2012, <http://www.insightcrime.org/news-analysis/desperation-lack-of-donors-drives-organ-trafficking-in-latin-america>.
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- ⁵⁴⁶ Preeti Jha, "Cambodia-Thai Kidney Trafficking Sparks Fears of New Organ Market," *The Nation*, October 27, 2014, <http://search.proquest.com.proxyau.wrlc.org/docview/1616660078/abstract/B3E4FF9CA96C4BF2PQ/97>.
- ⁵⁴⁷ Smith, "Desperate Americans Buy Kidneys from Peru Poor in Fatal Trade."
- ⁵⁴⁸ Mitch Moxley, "For Chinese, Kidney Donation Is a Click Away," *Al Jazeera*, May 12, 2011, <http://www.aljazeera.com/indepth/features/2011/05/201151110112848287.html>; MacLeod, "Organ Harvesting Changes in China Will Be Tough to Realize."
- ⁵⁴⁹ *The Cruellest Cut - Pakistan's Kidney Mafia*, 2007, https://www.youtube.com/watch?v=vi7A_jK64qc.
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- ⁵⁵¹ Scheper-Hughes, "Perpetual Scars," 17; Smith, "Desperate Americans Buy Kidneys from Peru Poor in Fatal Trade."
- ⁵⁵² Sack, "Transplant Brokers in Israel Lure Desperate Kidney Patients to Costa Rica"; Zach Dyer, "Doctors, Pizzeria Owner Arrested for Alleged Organ Trafficking Released in Costa Rica," *McClatchy - Tribune Business News*, October 17, 2013, <http://search.proquest.com.proxyau.wrlc.org/docview/1442508314/abstract/E228592DFC04DC5PQ/50>.
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- ⁵⁵⁴ Bienstock, *Tales from the Organ Trade*.
- ⁵⁵⁵ Swinger, "The Dark World of Internet Kidney Trafficking"; Hummel, "Kidneys on Special Offer"; Scheper-Hughes, "Perpetual Scars," 17.
- ⁵⁵⁶ Scheper-Hughes, "Perpetual Scars," 17; Bienstock, *Tales from the Organ Trade*; Hummel, "Kidneys on Special Offer"; "Top Delhi Hospital Involved in Organ Trafficking Racket," *RT International*, June 5, 2016, <https://www.rt.com/news/345498-india-kidney-trafficking-delhi/>; Maria Thomas, "Top Indian Hospitals Are Buying Kidneys from Poor Villagers to Sell to Rich Patients," *Quartz*, August 12, 2016, <http://qz.com/755854/top-indian-hospitals-are-buying-kidneys-from-poor-villagers-to-sell-to-rich-patients/>; Swinger, "The Dark World of Internet Kidney Trafficking"; Chugh, "Need a Kidney?"
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- ⁵⁶⁰ Hamdo, "The Underbelly of Syria's War."
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- ⁵⁶⁶ The Protection Project, "Case No. 2772/2009," Database, *Human Trafficking Knowledge Portal*, (n.f.), https://www.unodc.org/cld/case-law-doc/traffickingpersonscrimetype/jor/case_no_27722009.html?lng=en&tmpl=htms; The Protection Project, "Case No. 2635/2009," Database, *Human Trafficking Knowledge Portal*, (n.d.), https://www.unodc.org/cld/case-law-doc/traffickingpersonscrimetype/jor/case_no_26352009.html?lng=en&tmpl=htms; The Protection Project, "Case No. 1908/2009," Database, *Human Trafficking Knowledge Portal*, (n.d.), https://www.unodc.org/cld/case-law-doc/traffickingpersonscrimetype/jor/case_no_19082009.html?lng=en&tmpl=htms; The Protection Project, "Case No. 2060/2009," Database, *Human Trafficking Knowledge Portal*, (n.d.), https://www.unodc.org/cld/case-law-doc/traffickingpersonscrimetype/jor/case_no_20602009.html?lng=en&tmpl=htms; The Protection Project, "Case No. 2745/2009," Database, *Human Trafficking Knowledge Portal*, (n.d.), https://www.unodc.org/cld/case-law-doc/traffickingpersonscrimetype/jor/case_no_27452009.html?lng=en&tmpl=htms; The Protection Project, "Case No. 2454/2009," Database, *Human Trafficking Knowledge Portal*, (n.d.), https://www.unodc.org/cld/case-law-doc/traffickingpersonscrimetype/jor/case_no_24542009.html?lng=en&tmpl=htms; The Protection Project, "Case No. 2530/2009," Database, *Human Trafficking Knowledge Portal*, (n.d.), https://www.unodc.org/cld/case-law-doc/traffickingpersonscrimetype/jor/case_no_25302009.html?lng=en&tmpl=htms.

Appendix Table M. Notable Art Heists

Year	Artwork Stolen	Location	Estimated Value
1911	<i>Mona Lisa</i> by da Vinci	The Louvre Paris, France	\$794 million ⁵⁷¹
1990	13 pieces including <i>Storm on the Sea of Galilee</i> by Rembrandt and <i>The Concert</i> by Vermeer	Isabella Stewart Gardner Museum Boston, Massachusetts, United States	\$500 million ⁵⁷²
1991	20 paintings including <i>Sunflower</i> and <i>The Potato Eaters</i> by van Gogh	The Van Gogh Museum Amsterdam, Netherlands	\$500 million ⁵⁷³
2008	4 paintings including <i>Poppies near Vetheuil</i> by Monet and <i>Boy in a Red Waistcoat</i> by Cézanne	Foundation E.G. Bührle Zurich, Switzerland	\$163 million ⁵⁷⁴
2010	5 pieces including <i>Le Pigeon aux petis-pois</i> by Picasso and <i>La Pastorale</i> by Matisse	Musée d'Art Moderne de la Ville de Paris Paris, France	\$123 million ⁵⁷⁵
2004	<i>The Scream</i> (1910) and <i>Madonna</i> by Munch	The Munch Museum Oslo, Norway	\$121 million ⁵⁷⁶
1994	<i>The Scream</i> (1893) by Munch	National Gallery Oslo, Norway	\$100 million ⁵⁷⁷
2002	Two pieces by van Gogh including <i>View of the Sea at Scheveningen</i>	The Van Gogh Museum Amsterdam, Netherlands	\$100 million ⁵⁷⁸
2007	Three pieces including <i>Maya and Her Doll</i> and <i>Portrait of Jacqueline</i> by Picasso	Private residence Paris, France	\$68 million ⁵⁷⁹
2010	<i>Poppy Flowers</i> by van Gogh	Mohamed Mahmoud Khalil Museum Cairo, Egypt	\$55 million ⁵⁸⁰
2007	<i>Portrait of Suzanne Bloch</i> by Picasso and <i>O Lavrador de Café</i> by Portinari	São Paulo Museum of Art São Paulo, Brazil	\$55 million ⁵⁸¹
2003	<i>Madonna of the Yarnwinder</i> by da Vinci	Drumlanrig Castle Dumfriesshire, Scotland	\$47 to \$79 million ⁵⁸²
1985	140 Maya, Aztec, Zapotec, and Miztec artifacts, including jade and gold pieces	National Museum of Anthropology Mexico City, Mexico	>\$27 million ⁵⁸³
2012	7 pieces including <i>Tête d'Arlequin</i> by Picasso and <i>Femme devant une fenêtre ouverte</i> by Gauguin	Kunsthal Museum Rotterdam, Netherlands	\$24 million ⁵⁸⁴
2005	<i>Reclining Figure</i> , a 2-ton bronze sculpture by Moore	Henry Moore Foundation Much Hadham, England	\$5.3 million ⁵⁸⁵

E. The Illegal Wildlife Trade

This section on the illegal wildlife trade provides the methodology for estimating the trade's global value, retail prices for specific wildlife and wildlife products, and a comparison of source- and market-country prices for specific goods.

1. Global Illegal Wildlife Trade Value

The below table (Table N) presents a list of sources and values from which the value of the global illegal wildlife trade was calculated.

Appendix Table N. Global Illegal Wildlife Trade Values (US\$)

Source	Year	Value
UNEP, CITES, IUCN, TRAFFIC ⁵⁸⁶	2013	\$5 billion to \$20 billion
TRAFFIC ⁵⁸⁷	2014	\$5 billion to \$20 billion
Congressional Research Service ⁵⁸⁸	2013	\$7 billion to \$10 billion
Kevin Xie, <i>Harvard International Review</i> ⁵⁸⁹	2015	\$7 billion to \$10 billion
Royal United Services Institute ⁵⁹⁰	2015	\$7 billion to \$23 billion
WWF and Dalberg Global Development Advisors ⁵⁹¹	2012	\$7.8 billion to \$10 billion
Stephen F. Pires, <i>Global Crime</i> ⁵⁹²	2012	\$8 billion to \$10 billion
Melanie Wellsmith, <i>European Journal on Criminal Policy and Research</i> ⁵⁹³	2011	\$9 billion to \$11 billion
African Wildlife Foundation ⁵⁹⁴	2014	\$10 billion
U4 ⁵⁹⁵	2015	\$10 billion to \$20 billion
Sarah Morrison, <i>The Independent</i> ⁵⁹⁶	2014	\$12 billion
Natalie Southwick, <i>InSight Crime</i> ⁵⁹⁷	2013	\$15 billion to \$20 billion
UNEP and INTERPOL ⁵⁹⁸	2013	\$15 billion to \$20 billion
David Sheldrick Wildlife Trust ⁵⁹⁹	2015	\$15 billion to \$20 billion
Office of the Director for National Intelligence ⁶⁰⁰	2013	\$17 billion
IFAW ⁶⁰¹	2013	\$19 billion

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Stimson Center ⁶⁰²	2013	\$19 billion
IFAW ⁶⁰³	2014	\$19 billion
Victoria Rossi, <i>InSight Crime</i> ⁶⁰⁴	2012	\$20 billion
Hugh S. Wilkins, <i>Environmental Policy and Law</i> ⁶⁰⁵	2014	\$20 billion
C4ADS ⁶⁰⁶	2014	\$23 billion
UNEP ⁶⁰⁷	2016	\$23 billion

2. Retail Market Prices of Wildlife and Wildlife Parts

The below tables show retail market prices for various wildlife and wildlife products (Table O) as well as a comparison between payments the poacher receives and the final retail market value prices (Table P).

Appendix Table O. Sample Retail Market Prices (US\$)

	Item	Price
Live	African grey parrot ⁶⁰⁸	\$2,000
	Slow loris ⁶⁰⁹	\$5,000
	Baby elephant (Thailand) ⁶¹⁰	\$7,000
	Gorilla ⁶¹¹	\$400,000
Product	Raw bear bile extract (per gram) ⁶¹²	\$19
	Whole pangolin (restaurant in Viet Nam) ⁶¹³	\$1,750
	Tiger bone glu (per kilogram, Hanoi) ⁶¹⁴	\$10,000
	Shahtoosh shawl (each, international market) ⁶¹⁵	\$20,000

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Appendix Table P. Source vs. Market Country Prices (US\$)

Commodity		What the Poacher Receives	What the Consumer Pays	Rate of Markup (%)
Live	Macaw ⁶¹⁶	\$2 to \$20	\$600 to \$10,000	29,900% to 49,900%
	Chimpanzee ⁶¹⁷	\$50	\$20,000	39,900%
	Falcon ⁶¹⁸	\$500	\$50,000 to \$100,000	9,900% to 19,900%
Product	Pangolin meat (per kilogram) ⁶¹⁹	\$22.50	\$250 to \$350	1,011% to 1,456%
	Bear gall bladder (whole) ⁶²⁰	\$100 to \$150	\$5,000 to \$10,000	4,900% to 6,567%
	Tiger pelt ⁶²¹	\$1,500	\$16,000	967%

F. IUU Fishing

In their 2009 report “Estimating the Worldwide Extent of Illegal Fishing,” Agnew et al. were the first to conduct a worldwide analysis of the value and volume of illegal and unreported fishing in marine capture production. They estimated that illegal and unreported fishing represents approximately 13 to 31 percent of the global market (by volume) based on data from 2000-2003, and calculated the lower and upper estimates of the total value of current illegal and unreported fishing losses worldwide at between US \$10 billion and \$23.5 billion, with the volume of losses for marine capture production at between 11 and 26 million tons.⁶¹⁸

Agnew et al. analyzed illegal and unreported catches in 54 exclusive economic zones (EEZs) and 15 high sea waters subject to a Regional Fisheries Management Organization’s jurisdiction, which correspond to the marine fishing areas used by the Food and Agriculture Organization (FAO) of the United Nations.⁶¹⁹ They then used the FAO’s price data to come up with a single estimate of price per ton of fish for each year covered by the case study.

Their study is based on data that are more than a decade old, yet inferences can still be drawn and then applied to current statistics. Based on the data provided in their report in “Table 1 – Summary of regional estimates of illegal fishing, averaged over 2000-2003,” it is possible to estimate the lower and upper percentages of illegal fishing to each regional catch (Table Q).⁶²⁰

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⁶²⁰ *Ibid.*, 2.

Appendix Table Q. Summary of Regional Estimates of Illegal Fishing, Averaged Over 2000-2003

Region	Reported Catch of Case Study Species	Lower Estimate of Illegal Catch (tons)	Lower Illegal Catch Percentage	Upper Estimate of Illegal Catch (tons)	Upper Illegal Catch Percentage
Northwest Atlantic	557,147	22,325	4%	82,266	15%
Northeast Atlantic	6,677,607	364,908	5%	842,467	13%
Western Central Atlantic	390,942	21,745	6%	58,514	15%
Eastern Central Atlantic	1,154,586	294,089	25%	562,169	49%
Southwest Atlantic	1,403,601	227,865	16%	673,712	48%
Southeast Atlantic	1,351,635	52,972	4%	139,392	10%
Western Indian	2,165,792	229,285	11%	559,942	26%
Eastern Indian	2,263,158	467,865	21%	970,589	43%
Northwest Pacific	7,358,470	1,325,763	18%	3,505,600	48%
Northeast Pacific	196,587	2,326	1%	8,449	4%
Western Central Pacific	3,740,192	785,897	21%	1,729,588	46%
Eastern Central Pacific	1,374,062	129,772	9%	278,450	20%
Southwest Pacific	451,677	5,227	1%	32,848	7%
Southeast Pacific	9,799,047	1,197,547	12%	2,567,890	26%
Antarctic	136,654	9,593	7%	9,593	7%
Total⁶²⁵	39,021,155	5,140,928	13%	12,040,052	31%

Source: Agnew et al.

After estimating the lower and upper rates of illegal fishing to total regional catch, Global Financial Integrity then applied those rates to the average world capture production by marine fishing area for the most recent data period 2011-2014 (Table R), as calculated from data in the FAO Fishery and Aquaculture Statistics 2014 Yearbook.⁶²²

Two marine fishing areas monitored by the FAO were not covered by the Agnew et al. study, the Arctic Sea and the Mediterranean and Black Seas. The Mediterranean and Black Seas marine fishing area was incorporated into GFI's calculation in order to provide a more comprehensive estimation; the average lower and upper percentages of illegal fishing (13 and 31 percent, respectively) were used for this region. The Arctic Sea was not included because of the negligible volume of fishing (one to seven tons per year, 2011-2014).

⁶²¹ The totals provided by the Agnew et al. study do not match the actual sum of the volume columns. The correct totals are: reported catch of case study species as 39,021,157; total lower estimate of illegal catch as 5,137,179; and the total upper estimate of illegal catch as 12,021,469. For continuity, the totals provided by Agnew et al. were used.

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Appendix Table R. Estimated Illegal Catch Volume, 2011-2014

Region	Average Catch 2011-2014 (tons)	Lower Estimate, Percent of Catch	Lower Estimate of Illegal Catch (tons)	Upper Estimate, Percent of Catch	Upper Estimate of Illegal Catch (tons)
Northwest Atlantic	1,919,811	4%	76,927.24	15%	283,471
Northeast Atlantic	8,292,501	5%	453,156.34	13%	1,046,207
Western Central Atlantic	1,337,528	6%	74,396.06	15%	200,194
Eastern Central Atlantic	4,287,464	25%	1,092,076.29	49%	2,087,570
Southwest Atlantic	2,005,617	16%	325,598.17	48%	962,673
Southeast Atlantic	1,484,722	4%	58,187.82	10%	153,117
Western Indian	4,512,690	11%	477,743.07	26%	1,166,707
Eastern Indian	7,526,232	21%	1,555,905.75	43%	3,227,737
Northwest Pacific	21,548,300	18%	3,882,320.49	48%	10,265,683
Northeast Pacific	3,054,645	1%	36,142.29	4%	131,284
Western Central Pacific	12,206,355	21%	2,564,824.95	46%	5,644,621
Eastern Central Pacific	1,959,457	9%	185,059.08	20%	397,079
Southwest Pacific	576,899	1%	6,676.12	7%	41,955
Southeast Pacific	8,988,419	12%	1,098,479.70	26%	2,355,461
Antarctic	231,284	7%	16,235.95	7%	16,236
Mediterranean and Black Seas	1,268,443	13%	164,897.59	31%	393,217.33
Total	81,200,367	15%	12,068,627	35%	28,373,210

Source: FAO; Agnew et al.

The total estimated annual volume of illegal catch is approximately 12 to 28 million tons, equal to 15 to 35 percent of the total average marine capture catch. The average price per ton for capture fisheries (2011-2014) was US\$1,284, so the estimated annual value of illegal and unreported fishing is approximately US\$15.5 to \$36.4 billion.⁶²³

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About

Global Financial Integrity

Founded in 2006, Global Financial Integrity (GFI) is a non-profit, Washington, DC-based research and advisory organization, which produces high-caliber analyses of illicit financial flows, advises developing country governments on effective policy solutions and technical solutions to illicit flows, and promotes pragmatic transparency measures in the international financial system as a means to global development and security.

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