

The State of Knowledge of Crimes that have Serious Impacts on the Environment



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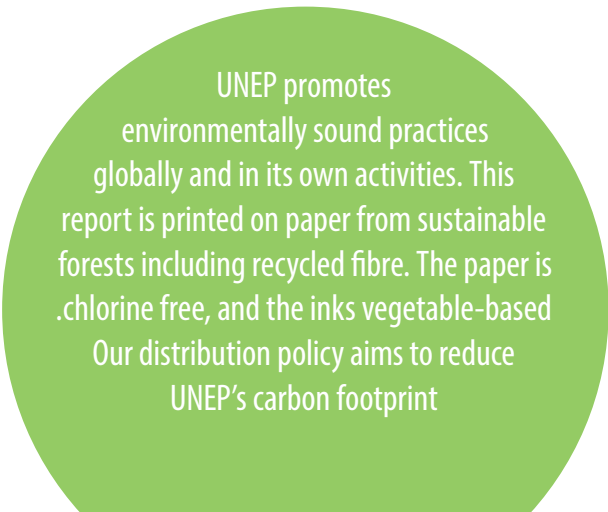
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List of acronyms

ADR	Alternative Dispute Resolution
AECEN	Asian Environmental Compliance and Enforcement Network
AELERT	Australasian Environmental Law Enforcement and Regulators neTwork.
AJNE	Judge Network on Environment Asia
ANA	Brazilian National Agency for Water Resources
ASEAN	Association of Southeast Asian Nations
ASM	Artisanal and Small-Scale Mining
CAR	Cadastro Ambiental Rural (Brazil)
CAEC	Center for Analysis of Environmental Change
CFCs	Chlorofluorocarbons
CITES	Convention on International Trade in Endangered Species
CST	Certification for Sustainable Tourism
CWIT	Countering Waste in electrical and electronic equipment illegal trade
DOTCOM	Development of Tools to Counter illegal Management Waste
EAB	Environmental Appeals Board (U.S. EPA)
EAD	Environmental Administrative Decision (U.S.)
EANECE	East African Network for Environmental Compliance and Enforcement
ECCAS	Economic Community of Central African States
ECEC	Environmental Compliance and Enforcement Committee
ECS	Environmental Crime Section (U.S.)
ECT	Environmental Courts and Tribunals
e.g.	For example
et al.	et alii (and other persons)
etc.	et cetera (and other similar things)
et seq.	et sequens (and the following)
EHSNR	Environmentally Hazardous Substances Notification and Registration Scheme (Malaysia)
EIA	Environmental Investigation Agency
EJTN	European Judicial Training Network
EMG	Environment Management Group
ENPE	European Network for the Environment
EPA	Environment/Environmental Protection Agency
EU	European Union
EUFJE	European Union Forum of Judges for the Environment
EUR	Euro
EUROPOL	European Union's law enforcement agency
FA	Forestry Administration
FAO	Food and Agriculture Organisation
FLEGT	Forest Law Enforcement, Governance and Trade
FOEN	Federal Office for the Environment
FUNAI	National Indian Foundation (Brazil)
FWS	Fish and Wildlife Service (U.S.)
GDANCP	General Department of Administration of Nature Conservation and Protection



HCFCs	Hydrochlorofluorocarbons
IBAMA	Institute of the Environment and Renewable Natural Resources (Brazil)
ICC	International Criminal Court
ICCCWC	International Consortium on Combating Wildlife Crime
ICMBio	Brazilian Chico Mendes Institute for Biodiversity Conservation
IFAW	International Fund for Animal Welfare
ILO	International Labour Organisation
IMPEL	European Union Network for the Implementation and Enforcement of Environmental Law
IMO	International Maritime Organisation
INECE	International Network for Environmental Compliance and Enforcement
INTERPOL	International Criminal Police Organisation
IPHAN	National Historic and Artistic Heritage Institute (Brazil)
IPLC	Indigenous Peoples and Local Communities
ITTO	The International Tropical Timber Organisation
IUCN	International Union for the Conservation of Nature and Natural Resources
IUU	Illegal, Unreported and Unregulated
MDG	Millennium Development Goals
MEA	Multilateral Environmental Agreement
MLAT	Mutual Legal Assistance Treaties
n.d.	no date
NEST	National Environmental Security Task Forces
NGO	Non-Governmental Organisation
OAS	Organisation of the American States
ODS	Ozone-Depleting Substance
OECD	Organisation for Economic Co-operation and Development
OCG	Organised Crime Group
PIL	Public Interest Litigations
POP	Persistent Organic Pollutant
PPCDAM	Action Plan for Prevention and Control of the Legal Amazon Deforestation (Brazil)
REDD	Reducing Emissions from Deforestation and Forest Degradation
REN	Regional Enforcement Network for Chemicals and Waste
RIIA	Royal Institute of International Affairs
RILO AP	Regional Intelligence Liaison Office for Asia and the Pacific
SAARC	South Asian Association for Regional Cooperation
SEPA	Scottish Environment Protection Agency
SDG	Sustainable Development Goals
SLCS	South Luangwa Conservation Society
SOP	Standard Operating Procedures
TAC	Technical Advisory Committee
UN	United Nations
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNICRI	United Nations Interregional Crime and Justice Research Institute



UNIDO	United Nations Industrial Development Organisation
UNODC	United Nations Office on Drugs and Crime
UK	United Kingdom
U.S.	United States
USAID	United States Agency for International Development
USD	United States Dollar
VPA	Voluntary Partnership Agreement
WCCB	Wildlife Crime Control Bureau (India)
WCEL	World Commission on Environmental Law
WCO	World Customs Organisation
WEN	Wildlife Enforcement Networks
WRRT	Wildlife Rapid Rescue Team
WWF	World Wildlife Fund



Summary and Key Findings

Magnitude of the Problem

Statistics and data

Environmental crimes are widely recognised as among some of the most profitable forms of transnational criminal activity. The monetary value of these crimes is estimated at between USD 91-259 billion annually, most likely the fourth largest criminal area in the world after drugs, counterfeits and human trafficking. The estimate corresponds to a 26% increase compared to the previous estimate in 2014, with the annual rates of such crimes expected to further increase by 5-7% (Nellemann et al., 2016).

Illegal activities that involve the environment, biodiversity, or natural resources are often lucrative and involve comparatively low risks for criminals (INTERPOL-UNEP, 2016). This may be explained, in part, by the fact that environmental crimes have previously not been regarded as a priority in some countries, which has resulted in a lack of appropriate and proportionate governmental response. In effect, many authorities lack the expertise and resources required to effectively prevent, detect, and investigate environmental crimes, or even measure their magnitude. Even when expertise and resources are available, efforts may be compromised by corruption.

Moreover, nations generally do not routinely collect, collate, and publish statistical data on environmental crime, environmental offenders, or actions taken against them. (Shover and Routhe, 2005), which in turn provides a significant challenge for both awareness and enforcement alike. Some countries and international organizations have, however, made credible attempts to collect and publish data on environmental crimes.

Drivers

There are many drivers of environmental crimes, most notably economic benefits, substantial demand, and institutional and regulatory failures that results in impunity. The influence of these drivers might slightly differ depending on the type of environmental crimes. Poverty is also deemed to be an influential element of environmental crimes by facilitating recruitment of low-level perpetrators.

Impacts

Among their many negative impacts, environmental crimes undermine sustainable development and contribute to the acceleration of climate change, mainly through accelerated tropical deforestation. No less significant, **such crimes undermine the rule of law, good governance, and fuel geopolitical conflicts.** In many cases, environmental crimes deprive governments of vast revenues that could have been used to support development and undercut legitimate businesses and markets. Added to these impacts is the fact that organised criminals often exploit impoverished communities by employing citizens to facilitate or commit environmental crimes. Given the reduced job opportunities available to these individuals, they may become dependent upon criminal networks for survival.

These impacts point to the need for the international community to recognise environmental crimes as serious threats to peace and sustainable development, to strengthen the environmental rule of law and adopt and implement coordinated measures to effectively combat environmental crimes.



Key Trends

Key Perpetrators

Environmental crimes can be perpetrated by a range of actors, from individuals, small groups, companies and corporations, corrupt government individuals, organised criminal networks, and often a combination of all these.

Individuals can commit a wide range of small and serious offences against the environment and may play different roles in the criminal chain (poacher, smuggler, broker, exporter/importer, etc.). They can also be 'forced' to commit environmental crimes, as a result of poverty and limited livelihoods or recruitment by powerful actors, such as organised criminal groups. Moreover, a range of environmental crimes are committed by individuals as part of cultural rituals or practices, including illegal hunting.

Large multinational corporations may exploit and damage the environment in order to generate more profit or reduce their costs, including through natural resource exploitation, pollution crimes and hazardous waste disposal. The actions of corporations are particularly threatening to the environment as the organisations have the legal and political resources to shield their crimes from law enforcement (White, 2013). Sole proprietors or unincorporated small and medium-sized enterprises (SMEs) can also commit environmental crimes either naively or deliberately (Environmental Audit Committee of the House of Commons, 2005).

Officials of national governments and public bodies arguably commit environmental crimes either 'directly' – by breaching environmental duties or omitting to act in conformity with them – or by facilitating offences committed by entities, such as multinational corporations. Prioritizing the interests of corporations/businesses over those of the local citizens, especially in relation to the access, use, and disposal of resources, has caused civil unrest and disruption.

The involvement of organised criminal networks in various environmental crimes is acknowledged by a wide range of authors and institutions. Multiple reports suggest that organised criminal networks are often involved in the most profitable environmental crimes, including illegal wildlife trade, forestry crimes, fishery crimes, illegal trade in minerals, and trafficking in waste (INTERPOL-UNEP, 2016; Nellemann et al. 2016; INTERPOL, 2017a; UNICRI, 2017; UNODC, 2017b; EUROPOL, 2017; May, 2017).

Hotspots

Wildlife crime is a particularly persistent problem in Africa, Asia and Latin America, where all kinds of species – mammals, birdlife, reptiles and amphibians, insects, and plants – are affected (International Union for the Conservation of Nature and Natural Resources (IUCN), 2017). Asia, North America, and the European Union (EU) are common destinations for wildlife trafficking, alongside the Gulf countries for illegal charcoal and illegal gold from African conflict zones (Nellemann et al., 2014; 2016). Countries in Asia are increasingly becoming major consumer markets of a wide range of illegal wildlife resources and products including rare highly valuable wood like rosewood (Pereira, 2015; Royal Institute of International Affairs, 2002).

Illegal logging has affected all continents of the globe and is widespread across all tropical forest regions.

The illegal conversion of forests to agricultural land is understood to be one of the key drivers of deforestation around the world. Latin America – especially Peru, Paraguay and Brazil and South – East Asia, including Myanmar, Indonesia and Papua New Guinea are reported as main hotspots for illegal logging, alongside parts of Russia. China, India, and Vietnam have become major importers of legal and illegal tropical wood products, which also remains a problem in the EU and the US, especially through imports of paper and pulp products including illegal tropical wood (International Union of Forest Research Organizations, 2016).

Illegal, unreported and unregulated (IUU) fishing and wider fisheries crimes are occurring worldwide within both the exclusive economic zones or respective



countries and international open seas (The PEW Charitable Trust, 2013). After the West African Atlantic coast, IUU fishing is most rife in the Western Pacific Ocean and the Northwest Pacific Ocean. (World Ocean Review, n.d.). The EU, US, China, and Japan have been reported as main destination countries for IUU fishing due to their vast seafood market (FAO, 2016; The Environmental Justice Foundation (EJF), Oceana, The Pew Charitable Trusts and WWF, 2017; WWF, 2017c; Pramod, 2014).

Waste trafficking originates mainly in developed countries, with the EU, North America (the US), Japan, and Australia being commonly identified as the main exporters of illegal waste shipment. The main destination continents for illegal waste trafficking are Africa (Ivory Coast, Ghana, Guinea, Nigeria, Sierra Leone, Tanzania, Togo, Benin, and Senegal), and Asia (China, Hong Kong, Indonesia, India, Malaysia, Pakistan, and Vietnam) (Rucevska et al. 2015; Nellemann et al., 2016). Routes depend on the type of waste, with e-waste usually shipped to African countries and South-east Asia, used-cars part and end-of-life vehicle to Eastern Europe and Africa, and plastic to Asia, especially China (DOTCOM Waste Project, 2017a).

Illegal trafficking of ozone-depleting substances (ODS) still occurs in East Asia and the Pacific although the implementation of the Montreal protocol has been effective in reducing the impact (UNODC, 2013; Nellemann et al., 2016).

Illegal mining is an increasing threat in Africa, Latin America, but also in Asia. In particular, Peru, Bolivia, Ecuador, Colombia, and Venezuela are the main hotspots in Latin America. In Africa, major conflict zones, such as Democratic Republic of the Congo, Sudan (Darfur) and Central African Republic, have extensive illegal mining, both in the form of larger mines and artisanal small-scale mining. In addition, there is a growing concern that illegal miners are taking over operations in closed mining facilities, as is the case in South Africa.

Also, oil resources are being exploited by criminal actors and terrorist organisations such as ISIS in Syria/Iraq, while

the illicit charcoal trade continues to provide incomes to both rebel groups, criminals and terrorist organisations like Al Shabaab.

INTERLINKAGES

There are several **principal ways in which environmental crimes are interlinked:**

1. **Through convergence or association of different environmental crimes** where each violation is needed to conduct the other, such as illegal logging to clear forest for illegal mining or palm oil and subsequent poaching to feed workers.
2. **Through convergence of smuggling routes** where criminals use established smuggling routes for different types of commodities, such as illegally exploited minerals and timber.
3. **Through convergence with other forms of serious crimes** like tax fraud, trafficking, forced labour, threat finance, money laundering and forgery all used to conduct independent environmental crimes or other forms of crimes.

There are intrinsic links between environmental crimes and organised crime. In fact, organised environmental crime is becoming increasingly common, where environmental crimes are just one component of a syndicates' portfolio of crime "investments." This means that drug-related crime, human trafficking, and environmental crime (among others) are best viewed as a continuum, whereby effective policies must deal with the overall portfolio of crimes rather than considering crimes separately.

GAPS IN TACKLING ENVIRONMENTAL CRIMES

At present, there appears to be a **lack of knowledge and data surrounding some environmental crimes**, including their extent and impacts, the perpetrators and *modus operandi* involved, the interlinkages among such crimes, and their links with other serious offences.



Another gap is represented by the **lack of legal frameworks**. Many of the experts involved in this study encouraged the use of existing national criminal laws, even if not specific to environmental crimes, to prosecute environmental crimes and those that facilitate their commission.

Lack of capacity in the enforcement chain is yet another gap identified in the study. Many law enforcement authorities in various countries lack the necessary knowledge, training, and basic equipment to effectively prevent and enforce measures against environmental crimes (Smeby et al., 2017)

National and international cooperation is essential for combating transnational environmental crimes, especially on the sharing of criminal intelligence such as through INTERPOL or bilaterally. A **lack of cooperation** may be due to several challenges, such as competition or mistrust, among agencies or authorities, language barriers, different legal frameworks, or priorities, etc. To promote international and national cooperation, states are encouraged to sign and implement environmental treaties and multilateral agreements and take all the appropriate measures to implement them.

A final gap worth noting is the **lack of engagement between public and private actors**, including citizens, local communities, non-governmental organisation (NGOs) and companies, including sharing of information and analyses on perpetrators and crimes. The active participation of these actors, NGOs in particular, can have a considerable impact on governmental responses to environmental crimes. Additionally, the engagement of private actors can increase the likelihood that individuals, companies, and corporations will comply with environmental regulations and laws.

GLOBAL, REGIONAL and NATIONAL RESPONSES

Legislative response

The legislation guiding action on environmental crime and its implementation varies significantly at the local, national, regional, and global levels.

The legal framework governing environmental matters in international law is defined by over 500 Multilateral Environmental Agreements (MEAs) and related instruments. MEAs may be regional or global, sectorial or cross-sectorial.¹

Establishing a strong legal framework on environmental crime is a key component for addressing crimes that have serious impacts on the environment. This requires laws that are clear, adequate, and properly implemented. A strong legal framework can be summarized as follows:

- Align with other relevant laws, such as fraud, money laundering, and organised crime laws.
- Define and implement different types of enforcement (criminal, civil, and administrative options, as well as their relationship).
- Define the roles and responsibilities of different authorities in charge of investigating and prosecuting environmental crime.
- Ensure adequate enforcement and sentencing powers across the different types of enforcement (criminal, civil, and administrative).

Once the environmental legal framework has been developed in a country, it is also crucial to measure the effectiveness of its implementation. In particular, several options exist at the national and international levels to monitor and evaluate the implementation of environmental laws, including:

- Development of enforcement guidance to help national authorities comply with environmental laws.

¹ The main international regulations selected in this study include: the Stockholm Declaration (1972); the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES 1963); the International Convention on the Prevention of Pollution from Ships (MARPOL, 1973); the Vienna Convention for the Protection of the Ozone Layer (Vienna Convention, 1985); the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol, 1987); the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention, 1989); the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention, 1998); the Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention, 2001); the International Plan Of Action To Prevent, Deter And Eliminate Illegal, Unreported And Unregulated Fishing (FAO, 2001); the Minamata Convention on Mercury (Minamata Convention, 2013).



- Compliance audits by an external agency to ensure that national policies are properly implemented.

Institutional response

Very little information was collected in this study on the issue of institutional response to environmental crimes. Of particular importance is the provision of adequate financial resources or funding mechanisms by governments. However, many governments have developed large dedicated programmes to bolster enforcement and prosecution, with the programmes in Brazil to combat deforestation being one of the most significant and effective efforts worldwide to date.

Collective will can also be expressed at the regional and international levels, with some agencies or institutions promoting the implementation of environmental laws.

Despite some efforts in several countries, the fight against environmental crime still lacks sufficient resources and especially a stronger more coordinated response targeting especially high-ranking individuals and companies and corporations involved in environmental crimes, or in directly or indirectly supporting threat finance to non-state armed groups or even terrorist organisations.

Capacity-building in the enforcement chain

Capacity-building activities are provided in many regions of the world. They include training and guidance on a wide range of topics for all actors of the enforcement chain, as well as practical tools and forensics for detecting and investigating environmental crimes.

Training of all actors involved in the environmental enforcement chain, including inspectorate and environmental agencies, police, customs, prosecutor, and judiciary, must be delivered on the legal and technical aspects of environmental crimes. Training programmes covering different forms of environmental crimes have been implemented in many regions worldwide, including at the national, regional, and international levels. Given the

evolving nature of organised environmental crime, training materials and content should be regularly updated to reflect the new trends related to the issue.

Forensic equipment and specialised technologies, such as satellites or vessel monitoring systems (VSM), can be highly useful in detecting environmental crimes, collecting and conserving evidence and demonstrating the impacts of environmental offences. In several countries, personnel have been trained to use these tools.

Some countries have implemented specialised units of enforcement actors to provide authorities with the appropriate expertise and equipment to tackle environmental crime most efficiently. This includes specialised units for investigators, prosecutors, and the judiciary working on environmental crimes.

National and international cooperation

National cooperation can take numerous forms (such as joint agency, inter-agency meeting, plan for cooperation, seminar, etc.) and be formal, either defined by law or policy or established directly between agents.

Recognising the increasing number of agencies at the national level, it is important to establish a high-level of coordination to ensure unity of command and efforts across different ministries and enforcement agencies.

Establishing international cooperation may be difficult in some regions due to lack of will and resources, both in terms of technical capacities and human resources. However, **in most countries and regions efforts have recently been taken to advance international cooperation in the context of environmental crimes**, including by:

- Establishing bilateral, regional, or multilateral agreements to set the rules of the cooperation in environmental matters (including mutual legal assistance and extradition agreement - MLAT).
- Creating regional and international networks, such as the European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) in Europe, or the International Consortium on Combating Wildlife



Crime (ICCWC) at international level.

- Participating in regional and international projects.

Information-sharing is also one of the key elements of national and international cooperation, which requires strong and secure channels. Some countries, as well as regional and international institutions or networks, have created shared databases and platforms to better collect, analyse, and share information, such as the Trade in Wildlife Information eXchange (EU-TWIX) in Europe, or through INTERPOL's I-24/7 global police communications system.

Finally, cooperation can also mean public-private relationship. Indeed, a way of preventing environmental crime may involve **governments engaging with civil societies, communities, NGOs, and companies and raising their awareness of particular offences**. This can be done through several means, including:

- Awareness raising and education activities for citizen and companies that have been implemented in numerous countries, either by NGOs, networks, or the government itself.
- Involvement of industry, NGOs and local communities in the prevention, detection, and monitoring of environmental offences.

In conclusion, the key opportunity for stepping up efforts against environmental crimes is through the application of existing laws, legislation, enforcement and prosecution systems on other forms of serious crimes and raising the awareness of this opportunity to the legal and enforcement entities across the world.

Where environmental crimes are extensive in nature, unity of command and unity of efforts through national taskforces with sufficient mandates and resources to investigate, enforce, halt or prosecute perpetrators and environmental crimes is the best option.

A significant example globally are the joint coordinated cross-agency efforts led by the Federal Police in Brazil to curb and reduce illegal logging in the Amazon. This stands as a prime successful example for other countries to follow where the entire enforcement chain, awareness

raising, and consumers were addressed jointly for full effect. Environmental crimes are raising as a global threat, but they can be stopped.

RECOMMENDATIONS

Recognizing that environmental crimes are widespread and serious crimes interlinked with other forms of transnational organized crimes undermining peace, development and security and acknowledging the particularly serious effects that environmental crimes have on the ecosystems, livelihoods and legitimate sustainable business development - there is need to:

1. Strengthen the role of the United Nations Environment Programme in facilitating awareness, communication and outreach with civil society and the private sector on the role and implications of environmental crimes in sustainable development.
2. Strengthen reporting on environmental crimes in peace, conflict and development countries.
3. Support further capacity building in enforcement, investigation and prosecution of environmental crimes and interlinked and associated serious crimes.
4. Strengthen awareness in conventions and protocols on the risks posed by environmental crimes to the success and outcomes of the Sustainable Development Goals and environmental agreements. Raise awareness of the availability of legal tools in protocols and conventions to help combat and reduce environmental crimes.
5. Identify, review and report for all international environmental protocols, conventions and agreements opportunities for action, including legal, against environmental crimes under their authority and mandate.
6. Aggregate and disseminate success stories, including developing a publicly available multi-lingual court case database, on enforcement, investigation, and successful prosecution of environmental crimes.
7. Support with information the investigation, prosecution or sanctioning of companies, entities and individuals involved in serious transnational organized environmental crimes, as provided for by the sanctions committees under the Security Council.



INTRODUCTION

Purpose of the study

This report has been prepared pursuant to Resolution 2/14 paragraph 7 of the United Nations Environment Assembly which requested the United Nations Environment Programme Executive Director, within the mandate of the United Nations Environment Programme to work with other relevant intergovernmental and non-governmental international organizations to “ascertain and document the current status of knowledge of crimes that have serious impacts on the environment and identify interlinkages between these crimes”. In response to this request, the United Nations Environment Programme and the United Nations Interregional Crime and Justice Research Institute (UNICRI) developed a methodology which fosters a global approach and rests upon an expert process, which is detailed below.

The expert process was based on the notion that environmental crime is a complex type of crime that requires thorough in-depth analysis and better coordination of preventive actions and responses at the national, regional, and international levels. A global multi-country study was therefore proposed to identify current knowledge on environmental crime and analyse approaches and practices to combat such crime. The outcomes of the process are intended to contribute to the efforts aimed at developing a deeper knowledge and understanding of crimes that have serious impacts on the environment, as well as to the development and better implementation of responses to these crimes at the international, regional, and national levels.

The study is also intended to provide member states and relevant international organisations with additional knowledge on the options implemented at the national, regional, and international levels to tackle these crimes. It is expected that the outcomes of the study will increase the capacity of governments in preventing, combating, and ultimately reducing crimes that have a significant impact on the environment. The main targets of the study are policy-makers and national authorities, including law enforcement agencies, prosecutors, and the judiciary.

Scope of the study

For the purposes of this report, crimes that have serious impacts on the environment will be referred to as environmental crimes.

Environmental crime is a universal issue that poses serious negative environmental, social, and economic impacts, all of which in turn affect the protection of human rights and public health. Environmental crime is vastly expanding in pervasiveness and sophistication. It is reported as the fourth largest form of transnational organised crime, valued at an estimated 90 to 258 billion USD annually, and growing at 2-3 times the rate of the global economy (Nellemann et al., 2016). The plight of iconic wildlife has brought significant attention to criminal activity relating to wild animals, but environmental crime extends far beyond wildlife crimes and has much broader implications.

At the international level, several attempts to define the term “environmental crime” have been made, although a consensus is yet to be reached. Indeed, the definition of environmental crime is contextually dependent and varies based on the harm inflicted, the actors involved, and the criteria used in assessing the nature of the activities of such crimes (White, 2011, p.3).

For the purposes of this study, environmental crime will be defined using the approach proposed by the United Nations Environment Programme (UNEP) and INTERPOL (Nellemann et al., 2016):

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



UNEP and INTERPOL further stated:

“The type of definition and designation of the offence may lead to the wrong laws or regulations being applied in prosecution. Many emerging definitions for environmental crime have constrained the term by limiting it to crimes associated with breaches of environmental legislation only or endangered species only. The necessity of a wider approach is intrinsically recognized by the UN Convention on Transnational Organized Crime (UNTOC), that intentionally does not define transnational organized crime or list the kinds of crimes that might constitute it, simply to enable a broader applicability of the convention on new and emerging forms of crime. It does, however, define organized criminal groups.”

Environmental crime covers a wide range of rather different offences. For ease of understanding, academics and institutions frequently distinguish them by topics, depending on specific priorities. (Council of the European Union, 2014; White 2011, 2015)². While there are several possible ways to categorize these crimes, it is important to acknowledge the existence of potential overlaps among them. For instance, illegal dumping of waste will usually put soil and ground water at risk and create emissions of landfill gas; the use of fuel oil mixed with waste oil will cause air pollution, etc. (Council of the European Union, 2014).

While other typologies might be recognized at the national or international levels, this study will focus mainly on the

following selected environmental crimes:

Illegal trade and poaching of wildlife and plants

(endangered species), is defined by the network TRAFFIC as any illegal “sale or exchange of wild animal and plant resources by people. This can involve live animals and plants or a diverse range of products needed or prized by humans - including skins, medicinal ingredients, tourist curios, timber, fish and other food products. Most wildlife trade is probably within national borders, but there is a large volume of wildlife in trade internationally” (TRAFFIC, 2017a).

Illegal logging/deforestation and its associated timber trade

covers a “wide range of activities, from the various practices of illegal logging to acts of smuggling, illegal trading, illegal timber pricing and classification, undocumented trade and illegal trade in species listed in the appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)” (International Tropical Timber Organisation (ITTO), 2017).^{3 4}

Illegal, unreported, and unregulated (IUU) fishing

is defined in Article 3 of the Food and Agriculture Organisation of the United Nations (FAO)’s International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing⁵ (FAO, 2001).

Illegal dumping, disposal, and trade in waste and chemicals

refers to a range of different activities, such as depositing (dumping, tipping, disposal) of waste

2 It is important to note that new trends in criminal activities have emerged over the years, and the scope of crimes that have serious impacts on the environment varies constantly. These emerging types of environmental crimes are taken into consideration by national and international actors, such as illegal trade of pesticides (UNICRI, 2016b), illegal carbon trade (Nellemann et al., 2012; INTERPOL, 2013), illegal charcoal production (Nellemann et al., 2016), illegal water management and water theft (INTERPOL, 2017a; Bricknell, 2010, p.4), illegal native vegetation clearance (Bricknell, 2010, p.4), biopiracy and transport of controlled biological or genetically modified material (RIIA, 2002).
3 Additional information on the definition, estimates, drivers, and impacts of illegal logging and related timber trade is available in (Kleinschmit, et al., 2016)
4 In 2014, UNEP and INTERPOL listed about 30 different ways of conducting illegal logging and laundering illegal wood, including: 1) logging in protected areas; 2) logging without permits in unprotected areas; 3) illegal logging in conflict zones; 4) logging in excess of permit or concession quotas; 5) logging with forged or re-used permits; 6) obtaining logging permits illegally through bribery; 7) establishing or expanding palm oil, bio-fuel or other plantations; 8) cattle ranching and soy production; and 9) widening road corridors, mining or other felling without a permit. (Nellemann et al., 2014).
5 Article 3 of the International Plan Of Action To Prevent, Deter And Eliminate Illegal, Unreported And Unregulated Fishing:
• Illegal fishing refers to activities:
“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; 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 in violation of national laws or international obligations, including those undertaken by cooperating States to a relevant regional fisheries management organization.
Unreported fishing refers to fishing activities:
which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations; or 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 refers to fishing activities:
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 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.
Notwithstanding paragraph 3.3, certain unregulated fishing may take place in a manner which is not in violation of applicable international law, and may not require the application of measures envisaged under the International Plan of Action` (IPOA)`.



and chemicals on public or private land or into water without a licence, permit or approval from the relevant authority, illegal burning of waste, and importing and exporting of waste and chemicals from/to third-country in contravention of national or international regulations.⁶

Pollution crime, described by Holdgate as the illegal “introduction by man into the environment of substances or energy liable to cause hazards to human health, harm to living resources and ecological systems, damage to structures or amenity, or interference with legitimate uses of the environment.” (Holdgate, 1980) More specifically, pollution crime can be distinguished between air, land, and water pollution.⁷ Pollution crime is therefore a cross-cutting issue, potentially caused by other illegal activities mentioned in the report, including illegal waste and chemicals management, illegal trade in ODS, and tailings from illegal mining, among others.

Illegal trade in ODS involves substances – in particular chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) - which deplete the ozone layer and are widely used in refrigerators, air conditioners, fire extinguishers, dry cleaning equipment, and in electronic equipment. They are also used as solvents for cleaning, and as agricultural fumigants (Australian Department of the Environment and Energy, 2017) The Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol, 1987) and its Annexes lists the controlled substances by group and ozone-depleting potential.

Illegal mining and trade in precious metals and minerals covers activities such as extracting metals, minerals and gemstones, conducted without a licence or permit, from informal to criminal mining (May, 2017), importing and exporting such commodities in contravention of national or international regulations.

The variety of illegal activities that are considered to fall within the category of environmental crime makes it a very complex challenge that countries and international organisations face. In addition, some types of environmental crime are transnational in nature, and may involve trading or smuggling of plants, animals, resources and pollutants across borders through complex criminal groups or networks who view environmental crime as a lucrative opportunity with minimal risks if compared to other forms of transnational crime. The acts not only violate domestic laws, but also prohibition regimes established by the numerous Multilateral Environmental Agreements (MEAs). Evidence indicates that the increasing involvement of international criminal syndicates in transnational environmental crime has been facilitated by, or made in conjunction with, other criminal activities, such as fraud, corruption, money laundering, or even human trafficking and terrorism financing (UNEP GEAS, 2012; INTERPOL, 2014a; UNICRI, 2017).

Environmental offences may be committed by a variety of different types of offenders, including individuals, companies, government, and informal criminal networks. But those crimes can also be perpetrated by organised crime groups who invest in national and transnational environmental crimes to generate money for a perceived lower risk of being caught. (INTERPOL-UNEP, 2016; Gibbs and Boratto, 2017). Research also reveals a growing involvement of terrorist groups exploiting natural resources for financing purposes, such as illegal charcoal trade by al Shabaab and illegal oil trade by ISIS (INTERPOL-UNEP, 2016; Lambin, 2015).

Environmental crimes cause a wide range of serious harms for the environment and human health, including but not limited to biodiversity loss; pollution of water and consequent public health problems; air pollution and the resulting increase in respiratory diseases, deterioration of buildings, and monuments; loss of soil fertility,

6 Under the Basel Convention: “For the purpose of this Convention, any transboundary movement of hazardous wastes or other wastes: (a) without notification pursuant to the provisions of this Convention to all States concerned; or (b) without the consent pursuant to the provisions of this Convention of a State concerned; or (c) with consent obtained from States concerned through falsification, misrepresentation or fraud; or (d) that does not conform in a material way with the documents; or (e) that results in deliberate disposal (e.g. dumping) of hazardous wastes or other wastes in contravention of this Convention and of general principles of international law, *shall be deemed to be illegal traffic*.” (Basel Convention, 2011).

7 According to White, “Air pollution stems from the release of chemicals and particulates into the atmosphere, includes such substances as carbon monoxide and sulfur dioxide, and is clearly evident in the form of city smog [...]. Land (or soil) pollution occurs when chemicals are released into the soil, including heavy metals such as lead and cadmium and pesticides, which can kill living bacteria in the earth or contaminate all life within the soil (including plants and non-plant creatures) [...]. Water pollution occurs when contaminants, such as untreated sewerage waste and agricultural runoff containing chemical fertilizers, poison and alter existing surface and ground waters. (White, 2015).



desertification, and famine; depletion of fishing resources; increase in skin cancers and eye diseases in certain areas due to ozone depletion; and new diseases and more widespread disease vectors (UNEP GEAS, 2012).

Environmental crime affects all sectors of society and is often linked to the exploitation of disadvantaged communities, human rights abuses, violence, conflict, money laundering, corruption, and the expansion of international criminal syndicates (UNEP, 2013). Some of the consequences of environmental crime are irreversible. The economic, environmental, and health impacts of illegal trade in natural resources can disrupt whole economies and ecosystems, thereby undermining legal and environmentally sustainable activities and reducing future options for the use of resources. In addition, there can be spill-over effects, with indirect consequences that may impact some states more severely than others. For instance, in fragile countries, illegal trade can undermine the rule of law and can fuel armed conflict (Organisation for Economic Co-operation and Development (OECD), 2012a; UNEP GEAS, 2012). Therefore, preventing and combating environmental crime is a key area that needs advancements to deliver on the 2030 Agenda for Sustainable Development Goals (SDGs). Indeed, the indicators of environmental crime are evident in many areas of international development activities. The challenges addressed through the SDGs are connected to, and exacerbated by environmental crimes, affecting development, peace, security and human rights, as was the case for the Millennium Development Goals (Environmental Investigation Agency, 2008).

Despite the wide range of risks and harms pertaining to environmental crimes, they often fail to prompt the required response from governments and law enforcement agencies, which may be explained in part by the fact that they are often misperceived as 'victimless' crimes. In most countries, combating environmental crime is not currently a priority (UNICRI, 2017). As a result, the issue is regularly overlooked and is poorly understood, despite the scale of the problem and significant consequences.

There is neither a clear and homogeneous legal framework among countries for tackling environmental crimes nor sufficient guidance at the international level

regarding what constitutes an environmental crime.

Considering the complexity of environmental crime – due to its partly transboundary nature, its diversity of activities and impacts, the various type of actors involved, and its linkages with other serious crimes – it is also strongly recommended to adopt a global response to combating environmental crime (INTERPOL, 2014a; UNEP, 2014).

Methodology

The United Nations Environment Programme and the United Nations Interregional Crime and Justice Research Institute (UNICRI) developed this report on “Combating crimes that have serious impacts on the environment: state of knowledge on approaches”, based on an “experts process” involving a Technical Advisory Committee (TAC), an Expert Group, and the United Nations Environment Programme focal points on the progressive development of environmental law (“Montevideo focal points”). The report was developed in accordance with the following process;

1. Preliminary Research

UNICRI conducted an extensive desk research into the current status of knowledge on crimes that have a serious impact on the environment. The research involved reviewing literature made publicly available by international organisations and national governments. Reports, articles, cases, national and international laws and regulations were analysed to develop a preliminary draft study which was subsequently submitted to an expert process involving a technical advisory committee, an Expert Group and the Montevideo focal points for review and input.

2. Expert Process

a) Technical Advisory Committee (TAC)
The Technical Advisory Committee was composed of 8 independent international experts selected by the United Nations Environment Programme in their individual capacity and taking into account as much as possible geographical and gender balance (see Annex 1 for further



details). The role of the TAC was to provide guidance during the drafting phase and provide inputs and advice during the expert consultations.

In addition to the extensive virtual/online support provided by the Technical Advisory Committee, the Committee also held a face to face meeting in Turin (Italy), on 15-16 June 2017, to discuss the structure and contents of the first draft report, provide new data, and support the early development of recommendations.

b) Expert Group

The Expert Group was composed of 25 policy and legal experts nominated by governments, as well as representatives from other UN bodies, intergovernmental and non-governmental organisations, academics and representatives from civil society/stakeholders, representing as much as possible geographical and gender balance (see Annex 2 for further details). The key role of the Expert Group was to ensure the report is of high quality, and is relevant to providing greater knowledge on crimes that have serious impacts on the environment to the target audience. The Expert Group further provided additional information (including data, global, regional and country perspectives, emerging issues, strategies and frameworks, best practices) and proposed recommendations and responses on identified

gaps to enhance knowledge of these crimes at all levels.

A joint meeting of the Technical Advisory Committee and the Experts Group was held in Rome (Italy), on 13-15 September 2017, to validate the structure and content of the study, collect further inputs and finalize the development of the recommendations. A revised draft was thereafter compiled for a final review and editing.

c) Montevideo focal points

Focal Point members of the Montevideo programme who had expressed a desire to contribute and provide input to the report, provided the same before and after the joint meeting of the TAC and Expert Group members held in September 2017 in Rome. The inputs have been incorporated in the report.

3. Finalization

The report has been reviewed and edited by a team from the United Nations Environment Programme and the United Nations Interregional Crime and Justice Research Institute.



CHAPTER 1 - MAGNITUDE OF THE PROBLEM

This chapter examines the magnitude of crimes that have serious impacts on the environment. The chapter reviews the financial scale of these crimes, including the profitability for perpetrators and related costs and losses for the State. It also describes the main incentives for committing those crimes, and concludes with impacts on the environment, health, socio-economic development and the State's governance and sustainable development.

1.1 Statistics and data on environmental crime costs

Environmental crime is considered to be one of the most profitable and fastest growing areas of international criminal activity. As much as 25 per cent of the international trade in wildlife and plants is thought to be illegal (Elliott, 2016, p.5). Environmental crime is evaluated to rise by 5-7% annually representing 2–3 times the growth rate of the global economy. A 2016 UNEP report estimated the total monetary value of environmental crime (which includes the illegal revenue derived from environmental crime, the loss for legal commerce and the loss of tax revenue) to be worth between USD 91-259 billion annually, a 26% increase compared to the previous estimate released in 2014. Individual breakdowns of crime groups are as follows (Nellemann et al., 2016, p.20-21):⁸

It is important to note the challenges inherent in obtaining accurate evaluations of the extent or profit of the black market related to environmental crimes. Indeed, as with all other forms of illegal trade, figures and estimates are

based on statistics and intelligence, and sometimes rely also partly on extrapolation from actual seizures (Elliott, 2016, p.4).

Illegal appropriation of natural resources, such as timber, gold, diamonds, fisheries, oil, and charcoal, among others, undermines legal and sustainable businesses and governance. These types of illegal activities create unfair competition, diminish resources and opportunities for communities, companies and countries to make legitimate incomes, and through linkages with other crimes, may result in the non-payment of legitimate taxes. To get a sense of the lost government revenues, Nellemann et al. (2016) found that approximately USD 8-23 billion of annual tax income are circumvented due to environmental crimes. This affects the ability of states to provide necessary services to their citizens, such as healthcare, infrastructure, education and sound and sustainable economic opportunities, which generates and exacerbates social and environmental inequality.

1.2 Drivers of crimes having serious impacts on the environment

The three main enticements to environmental crime are the economic benefits, the ever-increasing demand, and the institutional and regulatory failure resulting in a sense of impunity (Pereira, 2015; RIIA, 2002).⁹ The economic benefit that may result from such activities is one of the key elements of environmental crime. Regulatory gaps and deficiencies at the national and international levels

Table 1: Estimated costs (revenue and loss) per category of environmental crimes

Category of environmental crime	Estimated costs (USD)
Wildlife crime	7-23 billion
Forestry crimes (incl. corporate crimes & illegal logging)	50.7-152 billion
Illegal fishing	11-23.5 billion
Waste crime	10-12 billion
Illegal mining	12-48 billion

⁸ For further information on the figures, please refer to this report.

⁹ This study highlights the importance of market demand and benefits, but it should be mentioned that environmental crimes might happen out of market settings. For instance, experts mentioned that poisoned baits may lead to illegal wildlife killing. (Expert Group meeting, Rome, September 2017).



mean that law enforcement, prosecution, and sentencing risks are lower compared to other criminal activities (Pereira, 2015, p.3).

Consumers who are willing to pay high prices for the prohibited commodity, regardless of its origin or legality, drive and sustain environmental crime (UNEP, CITES, IUCN, & TRAFFIC, 2013, p.40). Moreover, price and cost differentials are also key drivers of markets for environmental products and services. Examples of these differentials include when prices on the black market are higher than in the legal market, when "demand exceeds the supply of legal products" (OECD 2011, p.7), or when the costs related to compliance with regulations can be avoided through illegal practices as is the case in the black market in ozone-depleting substances (ODS) and hazardous waste (Elliott, 2016, p.5-6; RIIA, 2002).

Consumer spending power especially in developed countries also contributes to the growth of environmental crimes. Developed countries for instance, are major consumers of the wide variety of products of environmental crime, including exotic pets, luxury goods, foodstuffs, timber, construction materials, products used in the creation of traditional medicines, religious and cultural materials (RIIA, 2002, p.10-11), and even working animals and subjects for biomedical experimentation (Elliott, 2016, p.5). The illegal timber trade is a classic example of a market that flows predominantly from less developed countries to more developed countries. One study suggests that between 60% and 70% of tropical timber imported into the EU come from illegal sources (Pereira, 2015, p.3-4; RIIA, 2002). It also reflects demand for high value status goods, such as agarwood and rosewood. In addition to persistent demand for some types of wood, this transnational environmental crime is upheld by commodity substitution. As the process of protecting timber species under national and international law is implemented rather unevenly, timber loggers and traffickers exploit loopholes and deficiencies by turning to new, less risky and more profitable timber species or manufactured products (Elliott, 2016, p.5-6).

Speculative stockpiling presents yet another illustration of price differential. For instance speculative stockpiling of rhino horn in Taiwan in the late 1980s progressively led to an increase in the price of rhino horn worldwide from USD 1400/kg to USD 6000/kg wholesale, which, in turn, encouraged a wave of poaching in Africa (RIIA, 2002, p.11).

Along commodity chains, values of products routinely increase with a varying order of magnitude depending on the product and the market. For example, an African grey parrot illegally exported from the Ivory Coast may be worth USD 20 at the time of capture, USD 100 at the point of export, USD 600 to an importer in the US or Europe, and over USD 1100 to a specialist retailer (RIIA, 2002, p.10-11¹⁰; May, 2017). Investigations in the wood market in Peru show that the same piece of timber can be sold USD 70 per cubic meter by the loggers or the indigenous community, then resold USD 155 by a merchant to a local headman who sees the greatest return, earning USD 626, which represent an increase of more than 300%. By the time the wood reaches the importer, the price has increased by 5,200% (USD 3,710) compared to what was paid to the loggers and/or indigenous community (May, 2017). Thus, the structure of the illicit supply chain of environmental resources has the intermediaries and retailers in market countries receiving the greatest compensation, while little profit remains in the source countries (May, 2017). Interestingly, those source countries and in particular China and other Asian emerging economies, are increasingly becoming major consumer markets in the trade for illegal environmental goods. Wildlife parts, such as rhino horns and elephant's tusks, are popular in some regions of Asia due to the belief in their medicinal benefits, as well as for ornamental reasons (Pereira, 2015, p.4; RIIA, 2002, p.10-11).

In the context of the black market for ODS, prices are not determined by consumers' preferences for particular goods, but instead are driven by price and cost differentials. End-users of ODS, or equipment that contains or requires ODS, seek to minimize costs by circumventing the need to use legal chemicals and

10 Price estimates have been compared and corroborated with current prices on online websites.



processes that are more expensive. For instance, in the Philippines, the market price for one kilogram of chlorofluorocarbon-12 (CFC-12) was around USD 6 in 2006 while hydrochlorofluorocarbon-134a (HFC-134a), an alternative for CFC-12, costs around USD 9 per kg (UNEP, 2007). Criminals who illegally import or export ODS often do so to evade taxes and/or to find ways to work around regulations, such as limited licences and quotas (Elliott, 2016, p.6; UNEP 2007, p.4-5, RIIA, p.12; United Nations Office on Drugs and Crime - UNODC - , 2013 p.115-116).

The drivers and incentives of engaging in illegal trade and disposal of hazardous waste and chemicals are slightly different and include profit, weak enforcement systems, the complexity of rules and range of actors involved in the global chemicals, and waste trade chain (Secretariat of the Basel, Rotterdam and Stockholm Conventions, 2017, p.10-11). The incentives are largely supply-driven, firstly by the desire of waste producers to avoid high disposal costs and secondly by the profit motive on the part of the waste broker, who receives money from the waste producer and the buyer seeking to recycle or recover waste (Elliott, 2016, p.6; Rucevska et al., 2015; Farmer et al., 2015). The increased cost of safe waste disposal has contributed to the development of an export trade to many of the world's least developed countries, where there are exploitable gaps or weaknesses in waste disposal regulatory frameworks. It is widely believed that illegal waste imports cross national borders easily, particularly to countries that have weak or non-existent inspection systems and technologies available (Pereira, 2015, p.3-4).

As with other forms of crime, poverty is an influential element of criminal behaviour. This is particularly relevant in places where the criminalized economy has become a key source of both income and employment for citizens. In some mining regions, illegal mining is the best or even the only employment opportunity for individuals, often offering higher revenues than formal work. In Peru, for example, agrarian labourers are able to earn five times more from illegal mining compared to local employment wages (May, 2017; Gogan, 2016). These countries are faced with the risk of increased financial vulnerability and dependence upon organised criminal groups (Andreas 2002, 99.37-8 cited in Elliott, 2016, p.5; Nellemann et al.,

2016, p.41). Criminal networks often exploit the needs of vulnerable communities by using them to facilitate the poaching or harvesting. Often, the criminal groups will provide the equipment necessary to commit the crimes, which allows the groups to remain detached from the crime and evade authorities. A recent INTERPOL-UNEP study underlines that “the monopoly over the water supply underpins the power and influence that organised crime groups have over vulnerable communities living in poor and/or marginalized areas (e.g. informal settlements), particularly in Bangladesh, Brazil, and India.” (INTERPOL-UNEP, 2016, p.42).

A final driver of environmental crimes results from the institutional and regulatory failures which translate into a low risk of being prosecuted, convicted and sentenced. Overall, illegal activities targeting the environment, biodiversity, or natural resources are often lucrative, and carry comparatively low risks for criminals (INTERPOL-UNEP, 2016, p.61). Despite their highly negative impacts, historically environmental crimes have not been regarded as a priority in some countries, thereby failing to prompt the appropriate governmental response. Often misperceived as ‘victimless’ and accidental crimes, they frequently rank low on the law enforcement priority list and are commonly punished with minor and ineffective sanctions. However, given the alarming pace at which environmental crimes are growing, compounded by their increasing level of sophistication and globalised nature, there is a growing recognition of the need to address these crimes at all levels. The international community of states and organisations, as well as national governments and agencies, are reinforcing their legal framework and enforcement methods (INTERPOL-UNEP, 2016; Nellemann et al., 2014; Pink and White, 2016). These developments are examined in the next chapters of this study. To a lesser extent, regulatory failure may lead ‘non-criminal’ actors to break environmental laws if they are considered ‘unfair’ or too cumbersome. For instance, experts mentioned that traders in one country were acting against national environmental legislation since it was nearly impossible to obtain a permit. This situation improved when the country changed the law from permit requirement to peer regulation and voluntary compliance (Expert Group meeting, Rome, September 2017).



1.3 Impacts of environmental crimes Environmental crimes have dire consequences on the environment and human health. They also undermine the economy and result in a loss of benefits and taxes for companies and the state. Consequently, they can affect human rights, limit the development of fragile communities, and alter states' governance, all of which results in serious risks to the safety and security of populations (UNICRI, 2017).

1.3.1 Impacts on the environment

Resolution 2/14 paragraph 7 of the United Nations Environment Assembly requested the United Nations Environment Programme Executive Director "within the mandate of the United Nations Environment Programme, to work with other relevant intergovernmental and non-governmental international organizations to ascertain and document the current status of knowledge of crimes that have serious impacts on the environment including illegal trade and trafficking in wildlife and its products, in particular in terms of their environmental impacts, and identify interlinkages between these crimes".

The environmental consequences of various forms of environmental crimes have been well documented in a series of studies. In fact, it is widely recognized that such crimes result in environmental degradation, habitat loss, continued pollution (Elliott, 2016, p.6; WWF, 2016;¹¹ UNEP 2012;¹² UNEP 2010; ILO, 2012; White, 2015; Environmental Investigation Agency, 2008; WHO,¹³ EUROPOL-OHIM, 2015, Pure Earth Blacksmith Institute).¹⁴

In particular, illegal trade in wildlife is a major threat to biodiversity by contributing to species endangerment and extinction. It can also cause the introduction of invasive species. (Elliott, 2016).

The trade in illegally logged timber, described as being of "industrial scale" (Lawson, 2004, p.1), is a significant component of an otherwise legal, although

often unsustainable, global industry. Illegal logging is a major contributor to deforestation, habitat destruction, and declining biodiversity since it is unregulated and fails to respect environmental norms. Its ecological consequences include the loss of important environmental services, such as soil quality, water retention, and the stability of local climate systems (Elliott, 2016, p.6). Added to this is the fact that illegal logging increases the risk of floods and landslides, as well as erosion of coastal zones (Environmental Investigation Agency, 2008). Despite some progress in regulatory schemes and net gains in forest areas have been made, especially in Europe and Asia, the total loss of forest coverage during the last decade still averaged around 13 million hectares per year, with significant reductions in tropical forests in Latin America, Asia and in Africa (UNEP, 2011, p.47-48).

Illegal fishing, part of the suite of activities that constitute fisheries crime, contributes to over-harvesting of fish stocks, threatens marine biodiversity, and undermines food security (Elliott, 2016, p.6; White, 2015; Nellemann et al., 2016, p.57).

Pollution crimes, including the illegal dumping and trade of wastes, result in a global contamination of air, land, water systems (including water tables and river systems)¹⁵ and threaten local ecosystems, affecting animal and plants in addition to human health. The illegal production and consumption of chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and other ozone-depleting substances contributes to ozone depletion, which affects animal immune systems, creating vulnerability to infectious diseases, and reduced productivity in plants and phytoplankton (Elliott, 2016, p.6; Environmental Investigation Agency, 2008).

Illegal mining is increasingly becoming an issue of major public concern (White, 2015, p.17), as it has severe environmental impacts, most notably mercury pollution

11 WWF's Living Planet Report of 2016 warns on the huge decline of the population of vertebrate animals. According to this report, the top threats to species are: habitat loss and degradation; food systems; climate change; and species overexploitation, all of these being partly due to or exacerbated by environmental crimes.

12 UNEP's Global Environmental Outlook reports provide an integrated analysis (e.g. social, economic, and environmental) of major trends that have shaped the environment.

13 See reports and publications at: <http://www.who.int/publications/en/>

14 See reports and publications at: <http://www.pureearth.org/learn-more/publications/>

15 For further information on the issue of water contamination, please refer to World Health Organisation (2017).



from artisanal gold mining, destruction of natural flora and fauna, pollution, landscape degradation, and radiation hazards. In all of these respects, arable land, economic crops, and trees are negatively impacted (Nellemann et al., 2016, p.17; May, 2017).

1.3.2 Impacts on human health

Environmental crimes harm the health and well-being of humans in numerous ways. For instance, deforestation and land use change allow previously unknown diseases to spread from animals to humans. This is evident, for instance, through the unnatural transmission of Ebola and Lyme disease (UNEP, 2014).

Pollution crimes sometimes lead to death or extreme disability, often in the world's poorest countries (Elliott, 2016, p.6; White, 2015). The International Labour Organisation (ILO) has carried out an in-depth research report (ILO, 2012) on electronic wastes (e-waste), which is one of the fastest growing black markets. The report highlights a wide range of risks posed by e-waste to human health, including, but not limited to, breathing difficulties, respiratory irritation, coughing, choking, pneumonia, tremors, neuropsychiatric problems, convulsions, coma, and even death. The report adds that e-waste workers are also exposed to other hazards that can lead to physical injuries and chronic ailments, such as asthma, skin diseases, eye irritations, and stomach disease. In addition, it appears that particulate matter collected from e-waste recycling areas can lead to inflammatory response, oxidative stress, and DNA damage (ILO, 2012, p.18-19; Song, 2014; Srigboh et al., 2016). The illegal production and consumption of CFCs, HCFCs and other ozone-depleting substances contributes to ozone depletion and increases the risk of skin cancers, photo-aging of the skin and cataracts, and weakening of the human immune system (Elliott, 2016, p.6; Environmental Investigation Agency, 2008).

1.3.3 Impacts on socio-economic development

The illegal exploitation of natural resources also has negative socio-economic consequences for individuals, communities, companies, and states. Environmental

criminals erode legal markets by depriving legitimate actors of their resources and revenue and/or undermining industries, thus threatening the livelihoods of people across multiple sectors. For example, a study by the American Forest & Paper Association estimates that illegal logging depresses world timber prices by between 7% and 16%, depending on the product. This causes US firms to lose at least USD 460 million each year (World Wildlife Fund (WWF), 2017a). In the fishing sector, illegal fishing threatens the subsistence of coastal communities worldwide, but particularly in developing countries with weak governance structures (Nellemann et al., 2016). More than 500 million people in the developing world directly or indirectly rely on the fishing industry for employment (OECD, 2013) and reductions in fishing stocks due to illegal, unreported and unregulated (IUU) fishing have a strong impact on the livelihoods of those employed by the legal fishing sector. The economic loss caused by illegal fishing is estimated at USD 9 to USD 15 billion annually for developing countries, USD 1 billion of which is from African countries alone (Stimson, 2015).

In less developed countries, work opportunities in the legitimate economy can be limited, which can be a trigger for the engagement of individuals and communities in illegal activities (UNICRI, 2016a; Nellemann et al., 2016; Global Initiative and Black Market Watch, 2015). A poignant example of this is the extensiveness of unregulated artisanal and small-scale mining (ASM) activities that occur alongside larger mining activities in countries across Africa, Asia, and Central America (World Bank, 2013). It is estimated that ASM occurs in over 80 countries (World Bank, 2013) and around 150 to 170 million people around the world are largely dependent upon ASM as a form of income (Fraser Institute, 2012). ASM is widely considered to be driven by "desperate poverty" (CEGEMI, 2017), and in the resource-rich countries in Africa, the "decline in the viability of agriculture" (Fraser Institute, 2012) has significantly contributed to the emergence of ASM activities. Despite the lack of regulations and safety measures, as well as the tendency for ASM activities to be a form of environmental crime, ASM is an important source of income for many people. In addition, as highlighted by UNICRI, those working in the ASM sector may organise themselves into



gangs, be armed, and protect their areas from infiltrations by other gangs, which may result in violent confrontations and even loss of life (UNICRI, 2016a).

Environmental crimes result in a loss of tax revenue for the state, which, coupled with the necessity to invest in fighting those crimes, restoring the environment, supporting medical treatments, or building safe infrastructures, can place great financial and political stress upon a state (Vermeersch, n.d.). For instance, it is estimated that illegal logging robs the governments of developing countries collectively of at least USD 10 billions in revenues and taxes annually (Nellemann et al., 2012, p.13). Similarly, the Afghan government loses approximately USD 5.4 millions in revenues annually from the illegal mining of chromite in the Khost province alone (May, 2017). According to the Environment Agency (England), illegal waste activity is estimated to cost taxpayers in England £1 billion a year (Carrington, 2017). In addition to tax evasion, environmental crimes are connected to other financial crimes (or white-collar crimes), including fraud and money laundering, which magnify the economic losses for the state. For example, illicit actors can easily over- or under-invoice precious metals and stones in order to evade taxes and duties or send capital in or out of countries unseen (May, 2017).

In addition to affecting economic actors who are directly involved in environmental sectors (such as fisheries, or wood and recycling industries), environmental crimes also indirectly perturb dependent industries, such as subcontractors, transporters, and the tourism industry. For example, wildlife crimes impact communities living near endangered species as they are robbed of potential sources of income through wildlife tourism. As a result, environmental crimes have the capacity to directly undermine global efforts to alleviate poverty and achieve the Sustainable Development Goals (SDGs).

1.3.4 Impacts on state governance and sustainable development

Put broadly, environmental crimes undermine the

effectiveness of MEAs, the institutions, and rule-systems of global environmental governance (Elliott, 2016, p.6) and impede human rights and sustainable development.

The United Nations 2030 Agenda for Sustainable Development, officially adopted by Resolution A/RES/70/1 of 25 September 2015, set 17 'Global Goals' and 169 targets to be pursued to address the root causes of poverty and the universal need for development (United Nations Web Services Section, 2017). Although environmental crimes are not explicitly referred to in the United Nations 2030 Agenda, they are inherently connected to the challenges addressed through the SDGs and represent a major obstacle to achieving these goals (United Nations General Assembly, 2015). In this sense, the Agenda refers to issues connected to environmental crimes, including "natural resource depletion and adverse impacts of environmental degradation" and "climate change."

At a regional level, the Organisation of the American States (OAS) adopted in 2017 Resolution 2907 entitled 'Advancing hemispheric security: a multidimensional approach' (Organisation of the American States General Assembly, 2017a). In this Resolution, the Assembly invites Member States "To prevent, prosecute, and condemn crimes that affect the environment which have environmental, economic, and social effects for national security and for public health in the countries."¹⁶

Environmental crimes often facilitate the commission of additional forms of crime, including but not limited to corruption, money laundering, and obstruction of justice, thereby undermining the rule of law. The rule of law is a seminal legal principle that lies at the heart of the United Nations. It has been defined as a "principle of governance in which all persons, institutions and entities, public and private, including the State itself, are accountable to laws that are publicly promulgated, equally enforced and independently adjudicated, and which are consistent with international human rights norms and standards" (United Nations Security Council, 2004).

¹⁶ The general Assembly also states that "In preventing and tackling this phenomenon, national laws, international cooperation, capacity-building, responses must be strengthened in order to, among other things, combat transnational organized crime, corruption, and money-laundering linked to these crimes."



To strengthen the rule of law and achieve environmental stability, the international community has coined the term “environmental rule of law.” As the legal foundation for environmental justice, the notion of the environmental rule of law is broadly understood as “the application of the rule of law at local, national, regional and international levels in the environmental context” (IUCN, 2016a). In 2013, United Nations Environment Programme’s Governing Body adopted Decision 27/9 on “Advancing Justice, Governance and Law for Environmental Sustainability,” which identifies how environmental sustainability is connected with fundamental rights and obligations. In the decision, Member States agreed that “the violation of environmental law has the potential to undermine sustainable development and the implementation of agreed environmental goals and objectives at all levels and that the rule of law and good governance play an essential role in reducing such violations” (UNEP Governing Council, 2013). The environmental rule of law represents a touchstone for environmental rights and obligations. Without the environmental rule of law, the protection of the environment may be subjected to arbitrary, unpredictable, and subjective regulations.

The environment may be subject to and a source of conflict among populations and nations as they seek

to control key resources (water sources, arable lands, forest, mines, etc.). As a result, the security and stability of a region or a country may be at risk. In addition, the potential economic value arising from environmental crimes affects a growing number of more organised and dangerous actors, such as organised crime groups and terrorist groups (Vermeersch, n.d., p.10). A growing body of research suggests that terrorist groups are engaged in and profiting from environmental crime, including the Islamic State of Iraq and the Levant (ISIS), al Shabaab, and the Lord’s Resistance Army, among others (Stimson, 2015; INTERPOL, 2015a; UNEP-MONUSCO-OESG, 2015; Perelygin et al. 2008).

The high profits generated from illicit resource extraction has fuelled numerous conflicts, causing humanitarian and human rights violations, including the use of child soldiers in violent conflict, forced labour, and sexual and gender-based violence (Stimson, 2015). For instance, intimidation, human rights abuses, violence, and even murder have all occurred as a result of the illegal trade in timber (Environmental Investigation Agency, 2008, p.6).



CHAPTER 2 - KEY TRENDS

This chapter will examine key trends on environmental crime in so far as perpetrators and hotspots are concerned. It will explore perpetrators in terms of their backgrounds, identities, the types of environmental offences they commit, and their motivations for the commission of environmental crime. It also identifies and describes the areas or 'hotspots' in which environmental crime is most rife. The different typologies of environmental offenders, including individuals, groups, commercial enterprises, states, and organised criminal groups is also discussed.

2.1 Key perpetrators

Environmental crime encompasses a wide range of illegal activities – from wildlife trafficking, illegal deforestation, IUU fishing, illegal dumping of waste/chemical, pollution crime, illegal trade in ODS substances, to illegal mining - which may attract different types of perpetrators. The identities of offenders of such environmental crimes can include individual perpetrators, companies, or criminal networks.

2.1.1 Independent individuals

White (2013) highlights that individuals, who are independent of political, corporate, or criminal organisations, can commit environmental crimes. Individual perpetrators can commit a wide range of small to more serious offences against the environment. Wildlife trafficking is frequently perpetrated by individuals acting as poachers, smugglers, resellers, or even buyers (Wyatt, 2013). White and Heckenberg (2014) observe two prominent types of actors involved in the illegal poaching of abalone in Australia, including individuals and groups of family members. Within the illegal waste sector, individuals can act, among others, as brokers, internet traders, or exporters/importers of waste. For example, the Countering Waste in electrical and electronic equipment illegal trade (CWIT) project reported the case of "waste

tourists," meaning African nationals coming to Europe with a tourist visa to collect e-waste in management sites or recycling facilities (either for free or low amount of money) and illegally send it to Africa (usually Ghana or Nigeria) where e-waste parts or equipment can be sold (CWIT project, 2014).

Individual perpetrators might be 'forced' to commit environmental crimes because of poverty and limited livelihoods. Offences such as illegal farming or water theft, for example, are understood to be basic survival. Some people are forced to commit environmental offences due to loss of land, lack of rain, or change in temperatures and famine (White and Heckenberg, 2014). Also, individuals or small groups can be used by powerful actors to commit environmental offences or even to assume the blame for such offences. For instance, in some countries, the exploitation of illegal mines can be facilitated by business men who use artisanal miners to conceal their involvement in the illegal activity and avoid restoring the impacted area. This contributes to the impunity of those who profit from illicit activities (Expert information).¹⁷

Moreover, some environmental crimes are committed by individuals as part of cultural rituals or practices, such as illegal hunting. These individuals rarely have criminal backgrounds, and in many cases, do not believe that they are committing a crime, especially when there is little social stigma attached to their actions (Gibbs and Boratto, 2017). Such crimes may be culturally accepted in certain countries and are therefore more readily committed by individual perpetrators. In Sweden, for instance, individual perpetrators of illegal predator hunting can be divided in four main categories: hunters, who see predators as competing with their hunting lifestyle; animal owners or reindeer herders, who feel economically or emotionally threatened by the predators; status-seeking hunters, who take the killing of predators as trophies; and businessmen, who trade in endangered species (Ellefsen, 2012).

¹⁷ 'Expert information' refers to information collected directly from experts through the Expert Process (including meetings and questionnaires). Please refer to the methodology section for further information.



2.1.2 Companies and corporations

Corporations are recognized as chief environmental offenders, in which legal and political resources shield their transgressions from law enforcement. (White, 2013). Benma Beer Factory in Tainshui city of Gansu Province in China, did not comply with the 'three-at-the-same time' system. The corporation therefore wittingly avoided constructing the waste-water treatment facility, while it nonetheless discharged the industrial waste water directly for more than 10 years across the Grade 1 protected water source area of the eastern Tianshui city. This offence of waste disposal by the Benma Beer factory posed a dangerous threat to the water consumption safety of the local residents. Noell Crane Systems Limited (China) also went into production without building a waste treatment facility in Zhangzhou Development Zone in Fujian Province in China. This failure of the corporation to treat the waste properly caused serious pollution, and thereby threatened the safety of water consumption (Shuqin, 2010). Moreover, Cass (2010) found that between 60 and 247 metric tonnes of hazardous wastes were produced by US corporations in 1990. Some studies claim that almost 90% of these hazardous wastes were disposed of illegally, with much of the waste being dumped in Mexico (Cass, 2010).

While corporations are often reported amongst major actors engaging in environmental crime, sole proprietors or unincorporated small and medium-sized enterprises (SMEs) can also commit such crimes (Expert information). As for individual, SMEs can commit environmental offences as a result of ignorance or deliberately, in direct contravention of their known legal obligations (Environmental Audit Committee of the House of Commons, 2005). This is particularly visible in the waste sector, where small businesses involve in waste crime to save cost, on one hand by reducing the relatively high costs of treatment and disposal of waste and, on the other hand by avoiding national taxation (Taylor et al., 2014).

2.1.3 State and public officials

In some cases, national government and public bodies

officials are direct perpetrators of environmental crimes (either by way of commission or omission) or through corruption, especially in collusion with powerful corporations.

For instance, government officials can commit environmental offences through the facilitation of illegal dumping of toxic or radioactive waste on waters and lands (White and Heckenberg, 2014) or in case of municipal waste treatment plants illegally dumping untreated sewage into lakes and rivers (Gibbs and Boratto, 2017). Similar cases have also happened at the international level. For example, in 2016, the Government of Lebanon approved a plan aimed at exporting tons of household trash from Beirut and Mount Lebanon to Africa and the Middle-East, which has been denounced as illegal by local and international experts. As a result, Sierra Leone issued a statement denying the existence of any agreement with Lebanon to accept its waste (IPEN, BAN and indyACT, 2016).

In addition, no country is immune from government officials-corporate collusion and corruption in the commission of environmental crimes. Prioritizing the interests of corporations/businesses over those of the local citizens, especially in relation to the access, use, and disposal of resources, can cause civil unrest and disruption. For example, in Jinxi county, Ren (2013) explains that in 2010 over a thousand citizens protested against the increasing environmental damages, which were perceived to be largely caused by the Xinfra aluminum plant for its unlawful disposal methods. In view of such illegal disposal methods, the air pollution and contamination of both the local river and soil had intensified, affecting the health of citizens and animals (REN, 2013, p. 164). On closer examination, Ren found that the chief executive officer of the Xinfra aluminum plant also served as the deputy party secretary in charge of industries for Jinxi country, signalling a potential conflict of interest in the local government (REN, 2013, p. 171). In another more recent case, several senior farm department bureaucrats in India were arrested in relation to charges of criminal breach of trust, corruption, and criminal conspiracy for allegedly aiding in the sale of fake pesticides to cotton growers (Haq, 2015).



Similarly, government officials have been found to grant logging concessions to large corporations, regardless of indigenous land ownership and the laws surrounding it. These examples underscore the different ways in which government officials can be complicit and collude in the commission of environmental offences committed by corporations/businesses, including the potential responses by citizens (Ellefsen, 2012).

2.1.4 Organised criminal groups and networks

The involvement of organised criminal groups and networks in various environmental crimes is acknowledged by a wide range of authors and institutions, including the UN Security Council, UN Environment, UNICRI, UNODC, CITES, EUROPOL and INTERPOL (See for example INTERPOL, 2017a; UNICRI, 2017; UNODC, 2017b; EUROPOL, 2017; INTERPOL-UNEP, 2016; Nellemann et al. 2016). According to a recent study, three out of the twelve most financially rewarding transnational criminal activities are linked to environmental crime: illicit wildlife trafficking, illicit timber trade and illicit fish trade (May, 2017; EnviCrimeNet, 2016).

The UN Convention Against Transnational Organised Crime (UNTOC) focuses on transnational organized crime and gives more broadly, in its article 2, a useful definition of the term “organized criminal group”. It is described 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 established in accordance with this Convention, in order to obtain, directly or indirectly, a financial or other material benefit”. Therefore, three people acting together can be considered an organised group if the required conditions are met. In addition, UNTOC specifies that the structure of the group does not have to be sophisticated, since a “structured group” is “a group that is not randomly formed for the immediate commission of an offence and that it need not have formally defined roles for its members, continuity of its membership or a developed structure.” In this context, environmental crimes can be committed by very different types of criminal groups, from small groups to very sophisticated transnational syndicates.

As previously mentioned, environmental crime can be committed by loosely organised groups of individuals, but there are also much more sophisticated forms of organised criminal networks with clear division of roles. For instance, illegal abalone harvesting in South Africa is highly-organized, and often controlled by organized crime groups who also control drug trafficking (Expert information). In the illegal trafficking of waste, EUROPOL reported that such networks are involved in the collection, transportation, and recovery of waste, and also have legal experts assisting them. Many of the brokers coordinating illegal waste management activities are embedded in the legal waste management and use their positions to corrupt key government authorities (EUROPOL, 2011).

The involvement of organised criminal networks in the commission of environmental crimes will be discussed further in Chapter 3, particularly in view of the linkages between environmental crime and other serious crime.

2.2 Hotspot regions and countries

Origin and destination countries/regions vary according to the type of environmental crime and the related market offer and demand. Hotspots for environmental crimes have also evolved in response to new regulations and efforts in enforcement strategies.

2.2.1 Hotspots for wildlife crime

According to the UNODC, between 1,000 to 62,000 seizures of trafficked wildlife by law enforcement authorities were recorded between 2004 and 2015 in Mexico, Canada, the US, the United Kingdom (UK), India, China, Peru, Nigeria, Russia, France, and South Africa (UNODC, 2016b).

Wildlife trafficking is widespread in various areas of Africa and Asia and causes irreparable damage to natural ecosystems. Elephants, rhinos, and tigers represent three of the largest endangered species killed for their skins and/or bones. Ivory, rhino horn, and tiger parts are among the most popular large animal ‘commodities’ being trafficked from various parts of South-East Asia and Africa into Asia (UNODC, n.d.). However, countless



other species are similarly overexploited, from large cats, turtles, pangolins, to tropical plants and timber, to name but a few examples (IUCN, 2017a). TRAFFIC highlighted “wildlife trade hotspots” as China’s international borders, trade hubs in East/Southern Africa and South-east Asia, the eastern borders of the European Union, some markets in Mexico, parts of the Caribbean, parts of Indonesia and New Guinea, and the Solomon Islands (TRAFFIC, 2008). In addition, Jiao (2016) found illicit trade in animal parts to be widespread along the Sino-Russia borders. On a daily basis, bear paws, gall bladders, tiger bones, among others, are smuggled into China. These animal parts are particularly valuable for their medicinal, aphrodisiac, and ritual dish qualities (Jiao, 2016). In the Americas, geopolitical borders, especially in Central America and South America, are considered hotspots for wildlife crimes and trafficking (Expert information).

A recent UNEP report identified the Danube-Carpathian region as a hotspot for several wildlife crimes, including illegal fishing and trade of caviar, illegal killing, taking and trading of wild birds, poaching of large carnivores, and illegal logging (Schlingemann et al., 2017). In addition, the EU is an end point for traded wildlife and illegal timber, especially in the form of pulp and paper (Nellemann et al., 2016; IUCN, 2017a). North America is also a well-known destination for wildlife trafficking, with the US reported to be one of the world’s major markets for both legal and illegal wildlife and wildlife products (United States Department of States, n.d.). In 2015, Defenders of Wildlife reported a growth of wildlife trafficking from Latin America to the United States (Defenders of Wildlife, 2015).

2.2.2 Hotspots for illegal logging

Like wildlife trafficking, illegal logging is a global issue affecting all continents. Illegal conversion of forests to agricultural land is one of the key drivers of deforestation around the world, with over 20 million hectares of forest illegally converted from 2000 to 2012 (Global Forest Atlas, 2017). Furthermore, according to the University of Maryland, the global tree cover loss reached 29.7 million hectares in 2016, with forest fires and deforestation due to agriculture, logging and mining being the main cause of this loss (Mikaela Weisse and Elizabeth Dow Goldman,

2017; University of Maryland, 2017).

More specific to illegal logging and related timber trade, the International Union of Forest Research Organizations provided an overview of the existing estimates among various countries and globally (Kleinschmit et al., 2016, p.43 et seq.) In particular, illegal logging is widespread across all tropical forest regions. INTERPOL reported that illegal logging accounts for an estimated 50-90 per cent of all forestry activities in key producer tropical forests, such as those of the Amazon Basin, Central Africa and Southeast Asia, and 15-30 per cent of all wood traded globally (INTERPOL, 2017).

Several countries in the region have been reported as main hotspots for illegal logging. They include but are not limited to: Brazil, Paraguay, and Peru in Latin America; Indonesia, Myanmar, Malaysia, and Papua New Guinea in South East Asia (Expert information; International Union of Forest Research Organizations, 2016). By way of example, it is estimated that Indonesia, Brazil, and Malaysia respectively supplied 50, 25 and 10 percent of total estimated illegal tropical timber in 2013 (International Union of Forest Research Organizations, 2016).

Traditionally, the EU, the US, and Japan were the major importers of legal and illegal tropical wood products. But recent years have seen China, India, and Vietnam as main global importers of such products. Indeed, from 2006 to 2013, the import volume of illegal wood products by those three countries increased by more than 50 percent, whereas it decreased by one-third for the US and one half for the EU, respectively (International Union of Forest Research Organizations, 2016).

2.2.3 Hotspots for illegal, unreported, unregulated (IUU) finishing

IUU fishing is acknowledged as a global problem, occurring both within countries’ exclusive economic zones and on the high seas. Often, when coastal areas become over-fished, vessels move to the high seas and into the waters of third countries, most of which are developing countries (The PEW Charitable Trust, 2013). According to



World Ocean Review, the situation off the coast of West Africa is particularly critical, with IUU fishing accounting for an estimated 40% of fish caught, which represents the highest level worldwide, including by fishing vessels from Europe and Asia. After West Africa coast of the Atlantic, the Western Pacific Ocean is reported as the second region with highest rate of IUU fishing (34%). A similar situation exists in the Northwest Pacific Ocean, especially in the West Bering Sea. Here, IUU fishing is mainly practised by China and Russia and amounts to 33% of the catch. Finally, while data is unreliable in the Southwest Atlantic, experts estimate that IUU fishing amounts to 32% (World Ocean Review, n.d.).

The EU, the US, China, and Japan are the world's largest markets for fisheries products in terms of value and consumption and are also reported as main destination countries for IUU fishing (FAO, 2016; The Environmental Justice Foundation (EJF), Oceana, The Pew Charitable Trusts and WWF, 2017; WWF, 2017c; Pramod, 2014).

2.2.4 Hotspots for illegal waste disposal and pollution

The following section concentrates mainly on hotspots for illegal waste disposal, recognizing the challenges associated with tracking pollution crimes and by extension the paucity of literature.

Concerning illegal waste disposal, White (2017) explains that although it was previously linked to immediate production sites, for instance in areas surrounding a factory, the new trend shows that it is more recently transported off-site to designated places for waste disposal or simply dumped at sea (White, 2017).

For several years, the European Union, North America (the US), Japan, and Australia have been reported as the main exporters of illegal waste shipment, with the main destination countries being Africa (Ivory Coast, Ghana, Guinea, Nigeria, Sierra Leone, Tanzania, Togo, Benin and Senegal), and Asia (China, including Hong Kong, Indonesia, India, Malaysia, Pakistan, Vietnam) (Rucevska

et al. 2015; Nellemann et al., 2016). To a lesser extent, Eastern Europe is also mentioned as a destination region (Rucevska et al. 2015). Notably, the trafficking routes for illegal waste largely depend on the type of waste that must be disposed. For instance, electronic and electrical waste (e-waste) is usually shipped to African countries and South-east Asia; used-car part and end-of-life vehicle to Eastern Europe and Africa; plastic to Asia, especially China (DOTCOM Waste Project, 2017a).

The efforts made by China in recent years to better control illegal waste imports have impacted the traditional routes, with Vietnam and Northeast Asian countries becoming transit countries for movement of wastes, having China as the final destination.

In relation to e-waste, the United Nations University (2015) found that countries in Western Africa, particularly Ghana and Nigeria, have become the dumping destination for e-waste from various regions of the world. Despite considerable improvement in the formal e-waste recycling industry in China, the informal sector continues to play a major role in the collection and recycling of e-waste. Also, according to the report, just two countries – the U.S. and China – discarded nearly one-third of the world's total e-waste in 2014.

An operation led by INTERPOL in August 2016 resulted in the identification of new transnational trafficking routes used by criminal networks. 300 tonnes of hazardous waste from Cyprus were intended to be illegally shipped to Central America, with fraudulent documents and a transit route passing through multiple countries including Egypt, Malta, Morocco, Portugal, Spain and the United States.

2.2.5 Hotspots for illegal traffic of ozone-depleting substances (ODS)

Trends in origin and destination countries in the illegal traffic of ODS have been shifting, which can be partly explained by the implementation of the Montreal protocol and countries' crime prevention and response efforts. In spite of the displacement, UNODC reported in 2013 that



illegal trade in ODS continues to be a threat,¹⁸ especially in East Asia and the Pacific, where both production and consumption of ODS occur. China was mentioned as the largest source of ODS contraband, while Indonesia, the Philippines, and Thailand were the main destinations countries (UNODC, 2013). In addition, the US and the EU also remained hotspots for the use of legal and illegal ODS, due to the high demand for CFCs that are used in cooling equipment (UNODC, 2013).

2.2.6 Hotspots for illegal mining

The mining sector represents an important part of the economy in several countries worldwide and it can be presumed that illegal mining is a threat for all of them.¹⁹ UNICRI reported a number of illegal mining activities in various geographical areas, including South Africa, Tanzania, Peru and Vietnam (UNICRI, 2016a).

Latin America is one of the main hotspots for illegal mining, with continuous expansion of illegal gold mining. According to Global Initiative, the region is now unique in the high percentage of gold that is mined illegally: about 28% in Peru, 30% in Bolivia, 77% in Ecuador, 80% in Colombia and 80-90% in Venezuela (Global Initiative, 2016). As a result, it is now estimated that illegal gold mining has become a profitable alternative to drugs in Latin America (Nellemann et al., 2016). Illegal mining

also remains a serious environmental issue in Brazil, with cases frequently reported in the Amazon forest (Expert information).

In Africa, major conflict zones, such as in Democratic Republic of the Congo, Sudan (Darfur), and Central African Republic, have extensive illegal mining, both in the form of larger mines and artisanal mining (UNEP-MONUSCO-OSESG, 2015).

In addition, with many mines and mining facilities closing in Africa, there is a growing concern that illegal miners may assume operations (Mining Africa, 2017). For example, in South Africa, a hotspot for illegal gold and precious stones mining, (UNICRI, 2016a) illegal mining activities take place on the surface and underground, at closed-off, abandoned, and operating mines (Chamber of Mines, 2017). One author explains that the existence of more than 6000 disused gold, chrome, diamond, and platinum mines across South Africa has allowed for the creation of a thriving underground economy (The Times South Africa, 2017).

18 According to UNODC, "The scale of illicit trade in CFCs has fallen in recent years, principally as a result of China [...] ceasing almost all production in 2008. By 2010 the final phase-out of CFCs occurred worldwide, although cases of illegal trade have persisted." But "a new enforcement challenge has arisen. There is now a growing illegal trade in HCFCs. In 2007 parties to the Montreal Protocol agreed to accelerate the phase-out of HCFCs due to the negative impacts of this class of ODS on both the ozone layer and the climate. Cases of illegal imports of HCFCs into the United States have been raising since 2009. There are concerns of a substantial risk of illegal trade in HCFCs and technology dumping occurring in developing countries once relevant phase-out deadlines begin in 2013 and end in either 2020 or 2030." (UNODC, 2013).

19 The International Council on Mining and Metals (ICMM) report issued in 2016 lists the mine production value as a percentage of gross domestic products for a number of countries, with Mauritania at 28.11%, the Democratic Republic of Congo at 20.07%, Chile at 14.47%, and Zambia at 13.21%. (International Council on Mining and Metals, 2016).



CHAPTER 3 – INTERLINKAGES

In this chapter, the interlinkages among what environmental crimes, the linkages between environmental and non-environmental, and the involvement of organised criminals will be explored.

3.1 Interlinkages among crimes that have serious impacts on the environment

There are several principal ways in which environmental crimes are interlinked:

1. **Through convergence and association of environmental crimes** where each violation is needed to execute the other.

Example: illegal logging to clear forest for illegal mining or palm oil and subsequent poaching to feed workers in both. This is common in Latin America, Great lakes region of Africa and in Southeast Asia. For example, great apes and other wildlife are extensively killed illegally to feed miners and loggers in DRC and many other countries (Nellemann et al., 2009; 2010; 2012; 2013).

2. **Through convergence of smuggling routes** where criminals use established smuggling routes for all commodities.

Example: the same smuggling routes are used for a variety of illegally exploited minerals and timber, such as in DRC by rebel groups (UNEP-MONUSCO-OSESG, 2015). Other examples include the use of smugglers of the same ports and containers for various forms of contraband, or land transport. Often smuggling routes are established based upon probability of not getting caught, networks of mediators and contacts and established bribery of officials. The type of commodity therefore often becomes less important once a trusted criminal network is in place. The value and volume of the commodity smuggled and risk of losing it or being caught determines the choice of

routes and transport, not necessarily the nature of the commodity.

3. **Through convergence with other forms of serious crimes** like tax fraud, trafficking, forced labour, threat finance, money laundering and forgery all used to commit independent environmental crimes or other forms of crimes including organized crime.

Example: illegal fisheries and mining operations alike are often conducted using forced labour. Forgery of permits and use of front companies in tax havens are also frequent for illegal logging and mining Other examples include fishing vessels involved in both forced labour, illegal fisheries, tax fraud and drug smuggling (Nellemann et al., 2016; INTERPOL-UNEP, 2016). Illegal logging can also be associated with homicide, or illegal exploitation of natural resources can be associated with threat finance to conflicts or even terrorism such as the charcoal trade funding Al-Shabaab or the sale of oil by ISIS, or rebels funded by gold and minerals in DRC.

INTERPOL (2015a) found connections between ivory smuggling and illegal logging, particularly across Eastern and Southern Africa. In this case, smugglers concealed elephant ivory within charcoal containers that are typically used to transport timber across borders. In total, this case resulted in the seizure of 240 kg of elephant ivory, 856 timber logs, 637 firearms, 44 vehicles, and the arrest of 660 people (INTERPOL, 2015a).

To a greater or lesser extent, all environmental crimes negatively impact the environment. For instance, illegal mining and logging, unregulated burning of charcoal, and illegal dumping of hazardous waste all cause collateral damage to the environment, which accelerates deforestation, desertification, and other forms of degradation (EUROPOL, 2013). In other words, each of these crimes may contribute to the clearing of woodlands, including areas with a high concentration of endemic species and biodiversity hotspots, in order to construct



illegal roads or other infrastructure necessary for transportation (UNODC, 2012).

Environmental criminals also exploit similar established trade and trafficking routes. For instance, wildlife and illegal wood trafficking can be transported from Africa to Asia and Europe, as well as from Asia to Europe. In addition, the smuggling patterns of ODS and pangolin identified by Nellemann et al. (2016), bear close resemblance across Southeast Asia. Moreover, illegal wildlife resources may be concealed within legitimate cargo and shipped from Asia and Africa to Europe and the United States. Similarly, traffickers can load the return containers – which would otherwise go back empty – with illegal hazardous waste, leading to lower costs of transportation (Nellemann, et al. 2016; UNODC, 2013).

The interlinkages among environmental crimes may also present themselves through the various ways in which environmental offenders use technology to aid in the commission of such crimes. Like other forms of illicit commodities, illegally obtained wildlife and natural resources are sold and purchased on various websites and social media platforms, which enable buyers to negotiate prices and place orders (EUROPOL, 2013). As Hinsley et al. (2016) explain, research on online wildlife trade has concentrated on auction websites, which resulted in eBay prohibiting the sale of ivory in 2009 (Coghlan, 2008).

Reports by Yu and Jia (2015) suggest that increased regulation of e-commerce websites may be driving wildlife traders to sell over social media. Krishnasamy and Stoner (2016) monitored wildlife trade on 14 Facebook groups in Peninsular Malaysia. With a total of 67,532 members and 106 sellers on the Facebook groups, each group was active with an average of 46 posts per month. In total, 86% of the 80 different species post for sale were internationally regulated by CITES. Hinsley et al. (2016) examined the social media orchid trade. Using social network analysis, these authors found a highly connected and structured group of individuals involved in wildlife trade, with one quarter of the trade groups based in Indonesia.

Finally, there seems to be some evidence indicating that the same offenders, and some organized crime groups and networks, engage in multiple forms of environmental crime (Expert information). For example, a mission by CITES and the Great Apes Survival Project (GRASP) reported that persons smuggling orangutans cooperated with individuals engaged in illegal logging and IUU fishing (CITES and GRASP, 2006).

3.2 Link with other serious crimes including organized crime

There are multiple links between environmental crimes and other serious offences, which often further complicate prevention efforts, law enforcement investigations, and judicial responses. According to INTERPOL (2017a), environmental crime is often committed concurrently with other offences, such as passport fraud, corruption, money laundering and murder.

There are a range of serious crimes that can facilitate environmental offences. Of such facilitating crimes, few have been systematically explored, but most have been repeatedly observed in various contexts, including but not limited to corruption, money laundering and tax fraud, embezzlement, bribery, fraud, forgery, collusion, transfer mispricing, cybercrimes, and identity theft (Nellemann, 2016). INTERPOL, based on surveys of member state police forces, highlighted in 2016 that environmental crimes were reported by 84% of surveyed countries to be linked with other forms of serious crimes, including corruption (42%), counterfeiting (39%), drug trafficking (36%), cybercrimes (23%), and financial crimes (17%) (INTERPOL-UNEP, 2016). Most of them meet the definition of 'white collar crime.'

When examined together, it can be expected that criminals who are mainly involved in other criminal sectors are attracted by environmental crimes based on the potential for high profits and a low propensity of detection, prosecution, and conviction (Nellemann, et al., 2014). To inform new ways forward, the links between environmental and other serious offences will be explored, with a special focus on corruption and other facilitating crimes, money laundering and tax fraud, conspiracy, obstruction of justice, and organised crime involvement.



3.2.1 Corruption

Corruption is deeply embedded in the facilitation of environmental crimes, including across all levels of the supply chains. In fact, UNODC (n.d.) has identified corruption as the most important enabling factor for illegal wildlife and timber trade. Indeed, there have been notable cases of corruption in relation to environmental crimes. A case in point is the arrest of the former Head of the CITES Management Authority in Guinea in 2015 in relation to charges of corruption for the issuance of CITES export permits (INTERPOL, 2015a). In other cases, corruption can be used in the following ways:

- Corruption by entrusted border control and law enforcement officials who abuse their position of authority in exchange for money or other goods of value. Common examples of how corruption facilitates environmental crime can be found in the procurement of licences and the ability to avoid specific control measures (such as quarantine or customs controls and checks) (INTERPOL-UNEP, 2016, p.40);
- Systematic corruption in government agencies, including participation in environmental crime conspiracies, manipulation of bidding processes to criminal contractors, and official decisions that favour friends or relatives who are criminally involved (UNODC, 2012); and
- Corruption of private sector employees to circumvent the regulations for the commission of environmental crimes (UNODC, 2012).

Few would dispute that the use of corruption to commit environmental crimes has a deleterious impact on enforcement efforts, the rule of law, stability, and development. In particular, the illegal trade of natural resources has an enormous impact on development, not only because traditionally vulnerable groups are deprived of resources, but also because the profits from illicit trade are injected into local economies to finance violence, instability, other illicit traffics and more corruption (May, 2017). For example, the illegal charcoal trade in Somalia

hampers local and national economies and development. Due to an eroded central governance structure and a weak rule of law, the enforcement of the 2012 UNSC ban on the import of charcoal from Somalia has proven to be difficult. The illegal trade has been reduced somewhat in the last few years from Somalia, but is still active, with an estimated export between USD 360 to 384 million per year (INTERPOL, 2015a).

At the international level, the United Nations Convention Against Corruption (UNCAC) contains a comprehensive set of measures that all countries may apply to strengthen anti-corruption legal and institutional frameworks. Although the UNCAC does not explicitly refer to environmental crimes,²⁰ it nevertheless directly applies. The UNCAC emphasizes the need for capacity-building of law enforcement officials to ensure that corrupt authorities are held accountable, encourages the development of an oversight body that may create guidelines to advance transparency, and recognizes the crucial role of international cooperation in fighting transnational crimes, all of which immediately relate to preventing and combating corruption in the environmental sector.

In addition, several Resolutions have been adopted attesting to the importance of anti-corruption measures for environmental crimes, including General Assembly Resolution 68/193, which reaffirms that “coordinated action is critical to eliminate corruption and disrupt the illicit networks that drive and enable trafficking in wildlife and timber products harvested in contravention of national laws” (United Nations General Assembly, 2013). More recently, Parties to the CITES have adopted Resolution Conf. 17.6. to “prohibit, prevent, detect, and counter corruption” related to international trade in endangered species of wild flora and fauna.²¹ The Resolutions are particularly noteworthy as they directly recognize the links between corruption and other crimes that facilitate the commission of environmental offences.

²⁰ However, the UNCAC preamble and Article 62 refers to the connection between sustainable development and the fight against corruption.

²¹ To view the Prohibiting, Prevention, Detecting and Countering Corruption, which Facilitates Activities Conducted in Violation of the Convention Resolution, see <https://www.cites.org/sites/default/files/document/E-Res-17-06.pdf>



3.2.2 Money laundering and tax fraud

Money laundering and tax fraud can similarly be used to facilitate environmental crimes since they disguise and/or conceal the sources of illegally generated proceeds. In combination with environmental crimes, money laundering and tax fraud can deprive governments of money, which negatively impacts economic development and good governance (UNODC, 2012). For instance, an organised crime enterprise may enter the fishing industry to launder the profits of other activities and/or to provide a legitimate reason for being at sea in order to receive illicit goods from other vessels (Park, 2014). Money laundering and tax fraud can be used in various other ways to support the commission of environmental crimes, including by facilitating:

The transfer of environmental crime proceeds with the view to disguise the illegal origin of such money or aiding the person(s) involved in the crime to circumvent legal consequences;

- The concealment of the source of the criminal money through dishonest tax reporting and deliberately misrepresenting the true state of affairs;
- The use of transfer pricing to sell large amounts of illegally harvested goods at artificially low prices to affiliates, who then sell the materials to actual buyers at market value. In this way, higher taxes are evaded;
- The delivering of fake invoices and hedging contracts; and
- The association with or conspiracy to commit money laundering and tax fraud for the commission of environmental crimes (UNODC, 2012).

One recent study (Sesnie et al., 2017) has suggested drug trafficking and money laundering as drivers for deforestation in Central America, where researchers found a pattern between the increase of the cocaine flow through the area and a peak in forest loss. According to the authors of the study, drug cartels are clearing land for cattle ranching, agro-industrial plantation and timber

extraction to launder the profits of cocaine trafficking (roughly \$6 billions US dollars annually). The estimated forest loss accounts for between 15% and 30% per year, with 30% to 60% clearance of protected areas.

Among the international community, the use of anti-money laundering and confiscation of proceeds techniques and financial legislation to strengthen efforts to combat environmental crimes has garnered increasing attention. Indeed, such techniques appear to offer great promise to law enforcement officials seeking to block and punish the beneficiaries of organised environmental crimes (Aglionby, 2016; Rose, 2014). At the international level, both the UNCAC and United Nations Convention Against Transnational Organised Crime (UNTOC) recognize that preventing and combating money laundering is a necessary component of the fight against transnational organised crime, which includes environment-related offences.

3.2.3 Conspiracy

Like facilitating crimes, conspiracy to commit environmental offences has eluded systematic exploration. However, national legislation that proscribes conspiracy is essential to the successful prosecution of criminal parties, especially those involved in organised crime networks that often rely on an organisational hierarchy, which acts as a defence to those at the top. In a seminal case involving charges of conspiracy, a citizen of the US, who was the ringleader of an illegal wildlife smuggling operation, was found guilty of conspiring to sell 30 rhinoceros horns and several other materials produced from elephant ivory. In total, the goods were valued at more than 4.5 million USD (Office of the United States Attorneys, 2017). Indeed, this case demonstrates the crucial importance of establishing laws against conspiracy that are broad enough to cover all parties involved in the commission of environmental offences. In the US, conspiracy and false statement counts are frequently charged with environmental crimes (Expert information).



3.2.4 Obstruction of justice

It is widely acknowledged that obstruction of justice can fundamentally undermine prosecutorial efforts of all crimes, including environmental offences. In fact, the integrity and accountability of criminal evidence, procedures, and all those involved in the proceeding lie at the heart of public confidence in justice dispensing institutions. However, attempts to interfere with the court may be expected in cases involving any form of conspiracy or corruption between officials and criminal organisations. Obstruction of justice can manifest in various forms, such as by intimidating witnesses, wilfully destroying evidence, and colluding with jury members and/or judges. In this way, successful prosecutions of environmental crimes rely on practical and legislative measures that take seriously the need for witness protection, including but not limited to provisions that criminalize the intimidation or retaliation against witnesses or others tendering evidence to a court of law, the option of alternative forms of providing evidence, and physical protection. No less significant, such measures should also be taken to avoid collusion with jury members and/or judges during prosecution.

The importance of these measures is echoed in both the UNCAC and UNTOC. Among their various provisions, Article 25 of UNCAC and Article 23 of UNTOC encourage the implementation of laws that criminalize obstruction of justice.²²

It is noteworthy that many forms of obstruction of justice are likely to transpire in advance of the criminal proceeding, which may further point to the importance of strong whistle-blower protection policies and technical assistance to train judges in identifying indicators of obstruction of justice as they relate to cases of environmental crimes.

3.2.5 Organised crime involvement

Organised criminal groups have always managed to identify new ways of exploiting people and goods, including resources in the environment. At some point, almost all crimes that have serious impacts on the environment transcend national borders, either by their nature and/or impacts. (Gosling, 2014) To place in context the economic impacts of transnational organised environmental crime, Nellemann et al. (2016) estimate that the monetary costs range from USD 91-259 billion annually (please refer to Chapter 1 for further details). Historically, transnational organised environmental crimes went largely undetected and unpunished, which most commonly resulted in continued crime commission.

Researchers and cases have demonstrated the existence of a link with transnational organised crime. In fact, some forms of environmental crimes are considered synonymous with transnational organised criminal activity, as they require significant resources to conceal and traffic the goods, suggesting a highly organised nature of the activities (INTERPOL-UNEP, 2016, p.40). As Nellemann et al. (2016) identified, transnational organised environmental crimes involve five main areas, including (1) illegal logging and deforestation; (2) illegal mining and trade in minerals, including conflict diamonds; (3) illegal dumping and trade in hazardous and toxic waste; (4) illegal trade and poaching of wildlife, including plants; and (5) illegal fisheries. In relation to illegal, unreported, and unregulated fishing, Haenlein (2017) notes “much of today’s IUU fishing involves sophisticated techniques employed purposely to exploit weaknesses in fisheries laws and regulations. These techniques require planning and investment, which only globally operating organised crime groups (OCGs) can provide.” (p. 13). In effect, there are intrinsic links between environmental crimes and organised crimes, and these sophisticated techniques, including the required planning and investment, may be viewed as indicators of organised crime involvement in the commission of environmental crimes.

The application of indicators to better identify organised

²² Article 23 of UNCAC instructs the prohibition of the “use of physical force, threats or intimidation or the promise, offering or giving of an undue advantage either to induce false testimony or to interfere in the giving of testimony or the production of evidence in proceedings in relation to offences covered by each convention.” In much the same way, Article 25 of UNTOC proscribes the “use of physical force, threats or intimidation to interfere with the exercise of official duties by a justice or law enforcement official in relation to offences covered by each convention, and, with regard to the UNTOC, its protocols.”



crime syndicates who are involved in environmental crimes can be considerably helpful. Recognizing this, Sellar (2010) prepared a set of components that are closely linked to organised wildlife crime, including sophisticated forgeries and altering of documents, use of monetary or other bribes to corrupt officials, threat or actual use of violence, use of mules and couriers, fraudulent advertising of wildlife, considerable financial support, armed participants with modern firearms, and the opportunity for significant profit (Gosling, 2014). This author further explains that the indicator of considerable profits is likely to be the most relevant since the modus operandi of most organised criminals is the quick generation of money. In this context, organised environmental crime poses a major threat to the licit economy, depriving governments of revenues and undermining legal businesses (INTERPOL–UN Environment, 2016).

Illegal waste management has been attributed to major Italian Mafia groups, such as the Cosa Nostra (Sicily), the 'Ndrangheta (Calabria), and the Camorra (Campania). Companies owned by these groups were involved in “the waste collection and transportation and the unauthorized or irregular management of waste dumping grounds” as well as the “redevelopment of contaminated sites” (European Commission, 2002, p.24). At the time of the investigations, over 30% of waste produced every year in Italy was disposed of either illegally or incorrectly, which led to tax losses of approximately 1 billion euros (EUR), while criminal actors were experiencing an “estimated turnover of about 7 billion euros” (European Commission, 2002, p.24). This lucrative opportunity for criminal enterprise was also considered to have been driven by the “weakness of the environmental criminal legislation and the mildness of the criminal sanctions” (European Commission, 2002, p.24; May, 2017).

Illegal mining is also a lucrative source of financing for organised crime groups, such as Mexican drug trafficking organisations, including Los Zetas, the Sinaloa Cartel, and the Knights Templar. For instance, it was assessed that the Knights Templar would earn in one month alone an estimated USD 7.2 million from iron exports from one single port (Cuvillier, 2014; May, 2017). OCGs expanded their interests into illegal gold mining in the 2010s, by extorting both illegal miners and legal mine operators or

even controlling mining operations from production to export (Corcoran, 2016). They take full control over a mining operation, using it both as a source of revenue and as a mechanism for laundering money.

Organised crime may also be responsible for other threats to environmental sustainability. UNODC has analysed how forest loss may be a consequence of drug trafficking, especially in Central America. Clearance of land for airstrips, violent control over protected areas and forest loss for cattle ranching are some of the illicit activities resulting from drug trafficking that might lead to deforestation (UNODC, 2016a). Compulsory land grabs for the creation of “narco estates” pose great pressure on local smallholders, especially indigenous communities, who, forcefully displaced, move to remote areas generating more deforestation. In addition, the disposal of the chemical products used during the manufacturing of synthetic and plant-based drugs poses a hazard to human health and the environment. For instance, in the US, several cases of soil and ground water contamination resulted from clandestine methamphetamine laboratories. The US Department of Justice reported that “drug manufacturers commonly dump the hazardous waste chemicals into bathtubs, sinks, and toilets, as well as on the ground, roads, and creeks surrounding the clandestine drug laboratories” (United States Department of Justice Office of the Inspector General Audit Division, 2010).

At the international level, the UN Convention Against Transnational Organised Crime (UNTOC) defines transnational organised crime as “any serious transnational offence undertaken by three or more people with the aim of material gain,” in which “serious crime” refers to “conduct constituting an offence punishable by a maximum deprivation of liberty of at least four years or a more serious penalty.” When environmental offences meet the criteria listed in the UNTOC, the instrument can apply and the respective country may make use of it (UNODC, 2012). In some cases, the threshold of a punishment that exceeds four years may present an issue in countries where sentencing guidelines prescribe more lenient punishments. However, when environmental crimes are prosecuted in combination with other serious offences, including those noted above, the length of sentence is likely to be longer than four years, thereby constituting a “serious crime.”



CHAPTER 4 – GAPS IN TACKLING ENVIRONMENTAL CRIMES

Environmental crime is complex, in terms of definition, scope, legal framework, impacts, drivers and linkages with other serious crimes. This complexity inherently impacts the capacity and ability of law enforcement authorities and the judiciary to effectively address these crimes. Additionally, there are several other obstacles that countries and agencies may face in combating environmental crime. Identifying and understanding the current hindrances is a key component of addressing such crimes in the future. Countries differ not only in the number and type of obstacles they face, but also in the severity of those obstacles. With this caveat in mind, the following section describes the major gaps in responding to environmental crime that have been identified through the expert process.

4.1 Lack of data, knowledge and awareness

There is currently a paucity of publicly available data on environmental crimes and related issues, thus causing difficulties for governments or public organisations that attempt to develop effective policies to combat such crimes. The accurate measurement of many crimes often proves troublesome due to the hidden nature of certain illicit practices and the resulting low detection rate. Environmental crimes are committed either through the black or legitimate markets, but is at times conducted openly, such as in the case of fisheries and timber or minerals. Nonetheless, obtaining accurate public research data on the extent of or profit from environmental crimes conducted via the black market is difficult, because no such data is officially compiled by the countries. For example, despite a charcoal trade in Africa exceeding 30 million tons annually (Nellemann et al. 2014) – the official trade across borders typically amount to 1-2 truckloads per country, a gross underestimate of the both informal as well as the lively illicit trade across borders. Furthermore, accurately measuring environmental crimes, such as hazardous waste disposal into the sea (i.e. ascertaining the exact amount of hazardous waste has been disposed), can be challenging.

4.2 Lack and limited use of legislation

The lack of a universal definition of environmental crime is arguably a result of the diversity of environmental crimes, the interlinkages with other forms of crime, as well as a dearth of knowledge and low priority accorded to crimes against the environment. However, recent years have seen a huge improvement in the recognition of environmental crimes in national laws and in the legal responses.

The experts involved in this study underscored the importance of using existing criminal legislation, including non-environmental laws, particularly related to tax fraud, forgery, money laundering, involvement in organized crime and corruption. One of the reasons for the limited use of existing legislation is the lack of legal knowledge and guidance among law enforcement actors, which may be due to a lack of or inadequate training on environmental laws that often require technical knowledge. As such, law enforcement personnel might not be aware of the extent of their enforcement power, including their legal responsibilities for the collection of evidence, the potential application of complementary laws, and how and to what extent information sharing may be performed at the international level. Considering the diversity of national environmental laws, there is also a need to address the lack of knowledge of other countries' legal frameworks as it facilitates cooperation and coordination.

4.3 Lack of institutional will and governance

International efforts to tackle environmental crimes are weakened by corruption and lack of commitment by many national governments.

While environmental crimes pose a myriad of risks and harms, many governments and law enforcement authorities fail to adopt proactive measures in fighting these offences. This may be explained, in part, by the fact that environmental crimes are largely mis-perceived as 'victimless' or having little impact on the population.



Other explanations include the perception that other crimes, such as terrorism and human trafficking, are comparatively more pressing and that environmental crimes are a natural by-product of economic development. To effectively implement improved measures to prevent and enforce environmental crimes, political will and commitment must be demonstrated by relevant stakeholders at all levels, including but not limited to government leaders, policy-makers, and law enforcement authorities. One of the best examples include the lack of understanding that the illegal exploitation or trade in natural resources may be the primary threat finance to armed groups or even terrorism, thus having severe impacts on security and development.

The lack of commitment often translates into a lack of prioritisation by governments to strengthen information and analysis, enforcement, and prosecution of environmental crimes, all of which impact the provision of adequate and specialised resources, especially financial, human, and material resources. Each type of resource is of equal importance and crucial to targeting environmental crime. For example, without adequate financial resources dedicated to environmental crime, existing agencies tasked with investigating or prosecuting environmental crimes may not be able to carry out their mission. Without adequate human resources, agencies may find themselves understaffed or under trained, which may adversely affect their effectiveness, efficiency, and overall performance. Similarly, inadequate material resources may result in agencies not acquiring the tools or techniques necessary for travelling to sites or gathering and analysing evidence.

The perceived tension between economic development and environmental protection represents a zero-sum game, whereby environmental protection comes at the expense of profit and jobs. For example, environmental laws are perceived as unfair for communities that depend on natural resources for revenue. In a similar sense, the provisions of the CITES may be seen as limiting international trade. This misguided perspective may lead some to justify environmental crimes as an unavoidable

outcome of expansion and attempts to increase profits. However, many studies conclude that environmental protection bolsters economic development, rather than the opposite.²³

The existence of these crimes severely undermines efforts to advance good governance. In particular, corruption has a pervasive effect on combating environmental crime at every stage of enforcement, from detection to prosecution and sentencing.

The lack of institutional will is not limited to the national level. In fact, on an international level, additional efforts are needed from organisations and institutions to encourage countries to engage in international environmental treaties and multilateral agreements, including the provision of assistance for countries to better comply with international standards and norms.

4.4 Lack of capacity in the enforcement chain

There is currently a significant need for more sophisticated and effective law enforcement capacity in relation to environmental crime. As noted above, many law enforcement authorities lack the necessary knowledge, training, and equipment to adequately prevent and enforce environmental crime. This gap impacts all actors of the 'enforcement chain,' including investigators, prosecutors, and judges. As a result, frontline forces responsible for combating environmental crime are severely inhibited.

Concerning training, civil servants commonly do not possess the required skills for the detection and identification of environmental crimes, intelligence gathering in accordance with local laws, prosecution and sentencing options, and initiatives to promote national and international cooperation. Without dedicated training and a pool of expertise to draw from, an agency's capacity to address environmental crimes may be diminished.

In addition, many law enforcement officers require

²³ For further information, please refer to: Semuels, 2017; Li, 2016; The Economist, 2014; Goodstein, 1999; and Arnold et al., 1999).



guidance and basic equipment for intelligence gathering, planning, coordination, and the overall execution of law enforcement. Officers sometimes lack radios, GPS, cameras, maps, compasses, vehicles, arms, fuel or proper housing, kitchens, toilet facilities and sleeping quarters, and other equipment needed for the prevention and investigation of environmental crimes in the field. Despite this, there is a growing focus on expensive and mostly unavailable equipment such as drones and helicopters, while in fact it is the basic essentials and training that is needed rather than the highly resource-consuming technology that cannot be properly maintained (Smeby et al., 2017). Such equipment is useless if there are no enforcement personnel available on the ground to conduct any follow-up and subsequently make arrests and secure evidence.

4.5 Lack of national and international cooperation and information-sharing among authorities

Attempts to address environmental crime are hindered in many countries by a lack of cooperation and collaboration between relevant agencies. Reasons for this can be numerous. For example, it may be due to competition, mistrust, or strong institutional loyalties, whereby agencies claim sole ownership over data, cases, or jurisdictions and refuse to work with outside agencies. A lack of cooperation or collaboration among agencies may also be attributed to a lack of precedent or institutional framework governing how and when such cooperation and collaboration should occur. Regardless of the reason, failure to cooperate and collaborate, when appropriate, limits the resources at hand to address environmental crime at any stage of enforcement.

These reasons also apply at the international level, and are even exacerbated due to additional constraints, such as language barriers, or different legal frameworks. Inconsistencies in legislation and approaches used to combat environmental crimes can undermine the efforts made at the national level as it may result in a transfer of criminal activities to countries with less stringent control.

As previously mentioned, countries should be encouraged to sign and implement environmental treaties and multilateral agreements.

In the context of external and internal information sharing, there remains some confusion on the collection and management of related processes. Many tools have been developed at the national, regional, and international levels to enhance and facilitate information sharing;²⁴ however, they are not available in all countries. In addition, where such tools exist, authorities may lack training to properly use them.

4.6 Lack of engagement with private actors and local communities

Despite the growing importance and visibility given to environmental issues at global level, the lack of awareness and education is still an important issue among the general public. Information, awareness, and education about the impact of environmental crime and potential related sanctions would reduce the demand and consequently limit deliberate offences. On the other side of the illegal trade chain, especially in the context of illegal trade in wildlife (ITW), efforts to stop poaching must engage local communities in conservation strategies and enhance eco-tourism and other opportunities for local communities to benefit from and become active champion of wildlife conservation. This is particularly important as a new study by UN Environment shows that “effective enforcement against ITW and community engagement can – and should – be mutually reinforcing” (UN Environment, Wild life, Wild Livelihoods: Involving Communities in Sustainable Wildlife Management and Combatting the Illegal Wildlife Trade, February 2018).²⁵

Furthermore, the engagement of private actors - including companies, corporation, local communities as well as individuals - can increase the likelihood that they will comply with environmental regulations and laws. This is important for companies and corporations which can often be perpetrators of environmental offences.

²⁴ Please refer to Annex 1 for further information on the existing tools.

²⁵ Report available at: http://wedocs.unep.org/bitstream/handle/20.500.11822/22864/WLWL_Report_web.pdf



CHAPTER 5 - RESPONSES TO ENVIRONMENTAL CRIMES

A wide range of responses to environmental crimes across many countries are given in annex 1. They can generally be summarized into the following categories:

1. Awareness raising including consumer awareness
2. Legislative responses
3. Frontline enforcement
4. Strengthening customs programmes
5. Enhancing investigation including corporate crimes
6. Prosecution

5.1 Awareness raising including consumer awareness

Awareness raising programmes and attempts include a very wide variety of programmes, but very rarely these are sufficient in isolation, especially where organised crime is involved.

For example, over 99% of the billion-dollar REDD programmes and EU FLEGT have largely focused on voluntary agreements and NGO support for awareness raising. The same applies to many so-called non-enforcement antipoaching programmes.

Such programmes (see annex 1) range from reports, films, and media campaigns that directly target human behaviour or consumption patterns. Such campaigns can indeed affect consumer behaviour but require very broad and targeted programmes, which are more easily made effective on specific wildlife species than on issues like illegal logging or fisheries.

5.2 Legislative responses

There is a wide variety of legislative responses including the relevance of a very high number of MEAs. The ozone layer is one concrete example where a concerted response from the international community has turned the tide from reduction to recovery.

Hailed as the most successful international environmental

agreement ever, the Montreal Protocol on Substances that Deplete the Ozone Layer plays an important role in reducing the illegal trade in ozone depleting substances (ODS) such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) through the adoption of many initiatives. Some of the interventions under this protocol include:

- Customs training on a national and regional basis provided by the Protocol's Multilateral Fund for the past 23 years and primarily delivered by UNEP's OzonAction Compliance Assistance Programme,
- The informal Prior Informed Consent (iPIC) mechanism launched by UNEP OzonAction in 2006, and
- Focused enforcement operations organised jointly between the Regional Intelligence Liaison Office of the World Customs Organization and UNEP OzonAction (Sky Hole Patching I and II). Thanks to the Project Sky Hole Patching I and II, about 800 tons of ozone depleting substances were reported to have been seized as of 2010.

Regarding the iPIC, out of 211 consultations between government focal points in 2014 and 2015, more than 551 tonnes of illegal or unwanted ODS trade were prevented. Thanks to the increased vigilance of customs authorities and the transition to alternative technologies catalysed by the Protocol, the scale of illicit CFC trade was reduced, and criminal markets have almost been eliminated. However, the emergence of illegal trade in HCFCs illustrates that the situation is dynamic and requires continued vigilance. HCFCs are still widely used and will be phased out only in 2030. The CFC case demonstrates how implementing environmental rule of law through global agreements can effectively both obtain environmental goals and also shut down a global illegal trade of commodities by providing no safe havens.

5.3 Frontline enforcement

Currently, the resources available on environmental crimes to CITES, INTERPOL, WCO and UNODC, primary



institutions in reducing the global illegal trade, probably amount to around 20 million USD (2016). This compares to a global trade worth 91–258 billion USD and representing losses in revenues to governments of at least 9–26 billion USD annually. By comparison the United States Drug Enforcement Administration (DEA) alone in 2015 spent USD 442.6 million on international enforcement, compared with USD 1.59 billion on domestic enforcement.

Interestingly, the largest success achieved on environmental crime was the Brazilian sector wide Plan for Protection and Combating Deforestation in the Amazon (PPCDAM) unparalleled by any in its enforcement lead and success. It has not been replicated to date anywhere. While many have attempted to take credit for this success, it was primarily a Brazilian led initiative with national funding, initiated in July 2003. Phase one 2004–2008 involved command and control through a focused and sustained effort by enforcement agencies. Over 41,000 fines worth USD 3.9 billion were issued, 700 people were arrested and many prosecuted, one million cubic meters of tropical timber seized; 11,000 properties, equipment and assets were confiscated or destroyed, and nearly one million hectares of productive land (pastures and soybean) were embargoed.

Perhaps the most important key to the Brazilian success was that a single office was given full responsibility for coordination: the Executive Office of the Presidency in close collaboration with the Federal Police, with coordination and implementation with 13 ministries and more partners. The plan involved four primary components:

1. Command and Control (Executive office with the Federal police) including enforcement and satellite monitoring;
2. Regularization of land use and tenure;
3. Incentives for sustainable economic activities including interventions in soy and beef supply chains;
4. Expansion of protected areas and their enforcement.

Other prominent plans to combat for example wildlife crime are the efforts through the International Consortium on Combating Wildlife Crime (ICWC) and CITES. From CITES: "CITES national ivory action plans (NIAPs) are a practical tool being used by the Convention in a number of its member States (but not implemented in all of the

following), identified as Parties of 'primary concern' (China and Hong Kong SAR, Kenya, Malawi, Malaysia, Singapore, Togo, Uganda, United Republic of Tanzania and Viet Nam). Parties of 'secondary concern' (Cambodia, Cameroon, Congo, Ethiopia, Gabon, Nigeria, South Africa, Sri Lanka and Thailand), and Parties of 'importance to watch' (Angola, Democratic Republic of the Congo, Egypt, Japan, Lao People's Democratic Republic, Mozambique, Philippines, Qatar, and United Arab Emirates, to strengthen their controls of the trade in ivory and ivory markets and help combat the illegal trade in ivory. These NIAPs are developed in compliance with recommendations made by the CITES Standing Committee.

Each plan outlines the urgent measures that a CITES Party commits to deliver –including legislative, enforcement and public awareness actions as required – along with specified time frames and milestones for implementation. While the plans follow a common formula of actions, timeframes and milestones, each national ivory action plan is unique. A plan should identify the actions that are of highest priority for a particular Party to help combat the illegal ivory trade, depending upon the Party's own circumstances including its capacity-building needs, the extent of available resources, and the scale and nature of illegal trade and whether the Party is a source, transit or destination State for illegal ivory." The plans involve detailed activities in the development of broad anti-poaching strategies through the entire enforcement chain. In Tanzania alone, over 2,000 rangers and game scouts received training in tracking, crime scene management and securing of evidence.

5.4 Strengthening customs programmes

There are many national initiatives to strengthen customs control, but one of the most significant programme addressing the transnational nature is the Container Control Programme. On customs, the 2004 established UNODC-WCO Container Control Programme (CCP) has been successful in targeting sea and dry port container shipments in an increasing number of countries.

The cornerstone of the Programme is the creation of inter-agency Port Control Units (PCUs) in which capability is



developed and maintained to carry out risk assessments and targeted control and examinations of containers. The CCP is essentially a long-term capacity building programme that develops effective and sustainable port controls through the establishment of Port Control Units. These provide a coordinated approach to container and air freight profiling, targeting and examination. The units are located in secure environments (usually inside ports and airports) and are staffed by front line officers who are provided with structured training to ensure effective targeting and examination of containers.

Countries are also taking part in regional and international operations or projects. In the Asia-Pacific, the 'Project Sky-Hole Patching' was launched in 2006 on the China Customs initiative and under coordination of World Customs Organisation's Regional Intelligence Liaison Office for Asia and the Pacific (RILO AP) with the aim to harness the intelligence gathering capacity and information sharing networks of RILO to intercept shipments of illicit ODS and waste, using real-time intelligence. Customs authorities in twenty Asia-Pacific countries joined the project (Environmental Investigation Agency, 2008, p.22; Nellemann et al., 2016, p.28-29).²⁶ In the European Union, the LIFE SMART Waste (LIFE13 ENV-UK-000549) is a five-year project (2014-2019) initiated by the Scottish Environment Protection Agency (SEPA) with the aim of demonstrating innovative ways of understanding, tackling and reducing waste-related crime. The project revolves around 3 thematic areas: intelligence and investigation, intervention design and tools, techniques and approaches.²⁷ (Expert information; SEPA, 2017). At the international level, operation 'Thunderbird' involved police, customs, border agencies, environment, wildlife and forestry officials from 49 countries and territories. The operation was led by INTERPOL in close cooperation with ICCWC partners, the US Fish and Wildlife Service, the UK Border Force, and Environment Canada. Intelligence was gathered and shared ahead of the operation to assist in identifying specific targets and areas for action, including the type of products, the place

of actions, the means of transportation and the actors (INTERPOL, 2017c). More recently, INTERPOL carried out operation '30 Days of Action', the largest global operation against waste crime, with 43 participating countries that discovered more than 1.5 million tons of illegal waste, largely metal and e-waste (INTERPOL, 2017i).

5.5 Enhancing investigation including corporate crimes

UNODC has some of the most advanced set-ups for supporting countries with enhanced investigator and prosecutor training. INTERPOL also provides courses. However, while numerous examples are given in the Annex 1, expertise is very often present in-country or most certainly in the regions through Financial Investigative Units (FIU) on financial and corporate crimes in general, but most often are not applied to environmental crime due to lack of awareness of the sheer scale of this criminal sector. Subsequently, rather than lack of tools, it is more often a lack of awareness of the *modus operandi* on environmental crimes and the necessary steps of how, where and when to investigate, ensure financial disruption of illicit flows and also asset recovery.

5.6 Prosecution

Prosecution is usually the end-goal and foundation of any criminal investigation. However, it is imperative that prosecutors have experience in and knowledge of the *modus operandi* and scale of environmental crimes, including the identification of what elements of the law and legislation can offer the best and strongest venue for prosecution, such as on participation in organised crime, tax fraud, forgery etc. rather than breaches of environmental regulations alone.

Another challenge is the fact that environmental crimes often are transnational in nature, therefore communication, law and exchange of evidence cross-

26 The project successfully raised awareness of ODS and waste smuggling amongst customs agencies across the region, and has led to greater cooperation beyond the target region, with RILO AP now collaborating with the European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) on tackling shipments of illicit waste.

27 The project's outcomes include: the use of remote sensing and earth observation; predictive analysis and horizon scanning techniques; financial assessment methodologies; competitive and intelligence analytics; partnership working; and the use of collaborative platforms to facilitate awareness and best practices across authorities, agencies and member states. The project complements the other EU-funding projects that focus on enforcement and training (BLOCKWASTE project, DOTCOM Waste Project) by exploring prevention based approaches to tackling waste crime. Current progress of the project is detailed at: https://www.sepa.org.uk/media/306539/20170724_digi-brochure_v1.pdf.



border is usually quite restricted. Here, UNODC offers prosecutor trainings directly to help enhance informal and formal networks and legal procedures for exchange of evidence or suspects, after national and international agreements are in place. INTERPOL also provides a venue for sharing of criminal intelligence, as do several agreements amongst individual countries.

In the annex, several examples from individual countries are given.

CONCLUSION

Crimes that have serious impacts on the environment - in this report referred to as “environmental crimes” - are a complex issue. They encompass a wide range of illegal activities, including from minor, unintentional offences to organised, criminal offences, that are sometimes connected to other types of serious crimes, such as corruption, tax fraud, forgery, trafficking and forced labour or money laundering. They also involve various types of actors, either individuals, corporations, organised crime groups and networks or even officials of national governments. Environmental crimes are often cross-border, either by their nature (e.g. illegal wastes are usually shipped from Northern Europe or North America to countries in Africa or Asia) or their impacts (e.g. chemical pollution that can discharge into water and contaminate several watercourse or land in a region). Hotspots for environmental crimes are varied and evolve depending on the type of crimes, the supply and demand, and the introduction of stronger regulations and enforcement strategies. Environmental crimes have serious impacts on the environment and human health, on the economy, government revenues and the safety and security of a country, including through the financing of non-state armed groups or even terrorism. These impacts alter the well-being of individuals or communities, companies or even of an entire nation, including by compromising sustainable development and undermining legitimate businesses through unfair competition. These factors influence the types of response by respective enforcement authorities and the aims thereof.

A number of legal, institutional, human, technical, financial, and knowledge gaps restrict the proper enforcement of

environmental laws. Environmental crime is a rapidly evolving issue that needs more global recognition in terms of its scope and impacts. Indeed, such recognition strongly depends on national context and priorities. Environmental offences are addressed by different laws and policies, both at the national level in certain countries and at the international level. The intricacy of detecting, enforcing, prosecuting, and sanctioning environmental crimes requires specialised legal and technical expertise and constant capacity-building. Furthermore, the implementation of environmental law falls within the competence of various authorities, and often entails the involvement of private actors. Environmental law and its implementation therefore require constant adaptation and strong cooperation at national and international levels.

The experts involved in this study underscored the importance of using existing criminal legislation, including non-environmental laws, particularly related to tax fraud, forgery, money laundering, involvement in organised crime and corruption.

Successful responses toward environmental crimes require a comprehensive targeted approach, in which every link in the ‘law enforcement chain’ is strengthened. Indeed, efforts made in one link of the chain are undermined and rendered useless by failure in any other link. In the light of this, international bodies, governments, and private actors are adopting efforts to enhance legal frameworks and institutional responses. They are also striving to build strong capacities within the entire enforcement chain and to strengthen national and international cooperation. These efforts have already yielded positive results in some countries and regions, and therefore require continuity and expansion.

In essence, the key requirement for enhancing the efforts against environmental crimes is through the application of existing laws, legislation, enforcement and prosecution systems on other forms of serious crimes and raise the awareness of this requirement to the legal and enforcement entities across the world.

Where environmental crimes are extensive in nature but not transnational, unity of command and unity of efforts



through national taskforces with sufficient mandates and resources to investigate, enforce, halt or prosecute perpetrators of environmental crimes is the best option.

Most likely the most significant example globally was the joint coordinated cross-agency efforts led by the Federal Police in Brazil to curb and reduce illegal logging in the Amazon. This stands as a prime successful example for other countries to follow where the entire enforcement chain and consumers community were addressed (also through awareness raising actions) jointly for full effect. Environmental crimes are rising as a global threat, but they can be stopped.

RECOMMENDATIONS

Recognizing that environmental crimes are widespread serious crimes interlinked with other forms of transnational organised crimes undermining peace, development and security.

Acknowledging the particularly serious effects that environmental crimes have on the environment, livelihoods and legitimate sustainable business development.

Recommend to:

1. Strengthen the role of UN Environment in facilitating awareness, communication and outreach with civil society and the private sector on the role and implications of environmental crimes for sustainable development.
2. Strengthen reporting on environmental crimes in peace, conflict and development.
3. Support further capacity building in enforcement, investigation and prosecution of environmental crimes and interlinked and associated serious crimes.
4. Strengthen awareness in conventions and protocols on the risks posed by environmental crimes to the success and outcomes of the Sustainable Development Goals and environmental agreements. Raise awareness of the availability of legal tools in protocols and conventions to help combat and reduce environmental crimes.
5. Identify, review and report for all international environmental protocols, conventions and agreements opportunities for action, including legal, against environmental crimes under their authority and mandate.
6. Aggregate and disseminate success stories, including developing a publicly available multi-lingual court case database, on enforcement, investigation, and successful prosecution of environmental crimes.
7. Support with information the investigation, prosecution or sanctioning of companies, entities and individuals engaged in serious transnational organised environmental crimes, as provided for by the sanctions committees under the Security Council.



ANNEXES

Annex 1: Examples of global, regional and national responses based on expert views

The sections below present a number of initiatives implemented at the national, regional, or international levels; however, they do not purport to exhaust all possible options. The identified responses in the following five main areas – legislative, institutional, capacity-building in the enforcement chain, national and international cooperation, and engaging with private actors – are based on the opinion of the experts who were engaged in the process.

1.1 Legislative response

This section gives an overview of the legislative responses implemented at all levels to better prevent and counter crimes that have serious impacts on the environment. The section reviews selected international legal frameworks that relate to environmental protection, as well as the main instruments pertaining to the types of environmental crimes examined in this study, listed in chronological order. Additional international regulations are available in Annex 3.

1.1.1 International legal framework

The space that “environmental crimes” occupy within the international criminal law system is extremely limited.²⁸ The paucity of international criminal environmental legislation perhaps reflects the relatively recent and secondary status of environmental crimes in domestic legal systems.²⁹ Strictly speaking, there is no international treaty law that specifically defines environmental crime as an international crime, that prohibits or criminalizes specific international actions or practices, or that

establishes criminal sanctions against individuals who break those prohibitions.³⁰ The illustrations in this section are therefore largely based on the various multilateral environmental agreements.

The legal framework governing environmental matters in international law is defined by over 500 MEAs and related instruments. MEAs may be regional or global, sectorial or cross-sectorial. The laws and rules guiding action on environmental crime, and their implementation and application, vary greatly at the local, regional, and international levels. Overarching conventions and laws have different legal functions depending on how they are translated into action in each jurisdiction. In part, differences in law-in-practice and conceptions of environmental crimes are rooted in the evolving nature of harm assessments (White, 2011, p.5-6; UNEP 2016, p.4).

The **1972 Stockholm Declaration**, while non-binding, laid the foundation for modern international environmental law. Although the Stockholm Declaration does not specifically refer to environmental crime, it affirms the importance of environmental protection and, thus, created a window of opportunity for future legislation. More recently, the Paris Agreement was adopted at the 21st Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC) in 2015, with the aim of strengthening global response to climate change.³¹

The **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)** is a legally binding international agreement between governments that imposes obligations on source, transit, and destination states. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. CITES was drafted as a result of

28 Alessandra Mistura, *Is There Space for Environmental Crimes under International Criminal Law: The Impact of the Office of the Prosecutor Policy Paper on Case Selection and Prioritization on the Current Legal Framework*, 43 Colum. J. Envtl. L. 181 (2018).

29 Frederic Megret, *The Problem of an International Criminal Law of the Environment*, 36 Colum. J. Envtl. L. 195 (2011).

30 Office of the Prosecutor, *Policy Paper on Case Selection and Prioritization* (International Criminal Court, 15 September 2016).

31 To strengthen the ability of countries to deal with the impacts of climate change, the Paris Agreement intends to put in place appropriate financial flows, new technology framework and an enhanced capacity building framework in developing countries and vulnerable countries.



a resolution adopted in 1963 at a meeting of members of the International Union for the Conservation of Nature and Natural Resources (CITES, 2017a).³² CITES is the governing instrument with respect to illegal trade in wildlife. Its stated aim is to protect species of wild fauna and flora whose conservation is endangered by international trade. Article VIII of CITES for instance provides for the obligation of the State parties to “take appropriate measures to enforce [the provisions of the Convention] and to prohibit trade in specimens in violation thereof”. The said Article VIII further specifies that such measures can include also the penalization of “trade in, or possession of, such specimens, or both” and “the confiscation or return to the State of export of such specimens.” These provisions of CITES may also serve as a basis for the criminalization of illegal logging of timber, in the event that the relevant species of flora is listed in one of the Appendices of the Convention.

The **International Convention on the Prevention of Pollution from Ships (MARPOL, 1973)** is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. It was adopted at the International Maritime Organisation (IMO) in 1973. The Convention and its 1978 Protocol entered into force in 1983 and have been updated by amendments through the years. The Convention includes regulations aimed at preventing and minimizing pollution from ships – both accidental pollution and that from routine operations – and currently includes six technical Annexes. Special Areas with strict controls on operational discharges are included in most Annexes (International Maritime Organisation, 2017).

The **Vienna Convention for the Protection of the Ozone Layer (Vienna Convention, 1985)** serves as a framework for efforts to protect the globe’s ozone layer. It was adopted in 1985 and became the first Convention of any kind to achieve universal ratification. The objectives of the Convention are to promote cooperation by means of systematic observations, research, and information exchange on the effects of human activities on the ozone layer and to adopt legislative or administrative

measures against activities likely to have adverse effects on the ozone layer. In addition, the **Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol, 1987)** requires parties to take concrete action to control ozone-depleting substances. It is designed to decrease the production and consumption of ODS in order to reduce their abundance in the atmosphere, and thereby protect the earth ozone layer. UN Environment, United Nations Industrial Development Organisation (UNIDO), United Nations Development Programme (UNDP), and the World Bank are the implementing agencies of the protocol (UNEP Ozone Secretariat, 2017; Multilateral Fund, 2016; UNEP Montreal Protocol Ozone Action Programme, 2016). The smuggling of ozone-depleting substances is indirectly tackled by the Montreal Protocol on Substances that Deplete the Ozone Layer (the “Montreal Protocol”). Article 4 effectively prohibits the trade of ozone-depleting substances between a State that is a party to the Montreal Protocol and, a non-party.³ However, no provision of the Montreal Protocol obligates the State parties to prosecute and criminalize trade of ozone depleting substances occurring in breach of its provision. Rather, the only recourse against the illegal trade is through the compliance and implementation mechanisms provided in the same Montreal Protocol.

The **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention, 1989)** is a global treaty with 186 Parties as of October 2017. It aims to protect human health and the environment from a wide range of wastes, including those defined as “hazardous” based on their stream, constituent, and characteristics, and two types of “other wastes” – household waste and residues arising from the incineration of household wastes (see article 1 and 2) (Basel Convention, 2011). The Convention aims to reduce the generation of hazardous waste and promote environmentally sound waste management wherever it is disposed. It also seeks to restrict the transboundary movements of hazardous wastes, except where it is perceived to be in accordance with the principles of environmentally sound management. The Convention sets out the rules and obligations for the State parties

³² In September 2017, the United Nations General Assembly reaffirmed the importance of tackling illicit trafficking in protected species of wild fauna and flora and recommend a number of actions by Member States through a new [Resolution on tackling illicit wildlife trafficking \(A/71/L.88\)](#) (United Nations General Assembly, 2017; CITES, 2017c).



with respect to the international trade of hazardous wastes. The convention further imposes on State parties the duty to “take appropriate legal, administrative and other measures to implement and enforce the provisions of the Basel Convention, including measures to prevent and punish conduct in contravention of its provisions”. In particular, the Basel Convention expressly states that the illegal trafficking of hazardous wastes-meaning, the trade of waste not in compliance with the provisions of the Basel Convention shall be considered criminal³³.

The **Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention, 1998)** is a global treaty with 160 Parties as of February 2018. It aims to protect human health and the environment by promoting information exchange on pesticides and industrial chemicals that have been banned or severely restricted by Parties and by creating legally binding obligations for the implementation of the Prior Informed Consent procedure that applies to chemicals listed in its Annex III (Rotterdam Convention, 2010).

The **Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention, 2001)** is also a global treaty, with 182 Parties as of February 2018. It aims to protect human health and the environment from persistent organic pollutants (POPs). Persistent organic pollutants are chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of humans and wildlife, and have harmful impacts on human health or on the environment. The Stockholm Convention requires its parties to take measures to eliminate or reduce the release of POPs into the environment (Stockholm Convention, 2008).

In 2001, the FAO adopted the **International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (FAO, 2001)**. The aim of this voluntary instrument is to prevent, deter, and eliminate

Illegal, Unreported and Unregulated (IUU) fishing by providing all states with comprehensive, effective, and transparent guidelines. These include developing appropriate regional fisheries management organisations established in accordance with international law (FAO, 2001). Although there is no international environmental convention explicitly providing for the obligation of member States to impose criminal sanctions for IUU fishing, a potential basis for criminal prosecution could be identified in Article 117 of UNCLOS, which provides for the duty of the States to “take, or to cooperate with other States in taking, such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas.” It would then be entirely plausible to also include in such measures national criminal laws concerning the prosecution of IUU fishing, as it prejudices the conservation of living resources of the high seas.

The **Minamata Convention on Mercury** (Minamata Convention, 2013) is a global treaty to protect human health and the environment from the adverse effects of mercury. Major highlights of the Minamata Convention include a ban on new mercury mines, the phase-out of existing ones, the phase out and phase down of mercury use in a number of products and processes, control measures on emissions to air and on releases to land and water, and the regulation of the informal sector of artisanal and small-scale gold mining. The Convention also addresses interim storage of mercury and its disposal once it becomes waste, sites contaminated by mercury, as well as health issues (UN Environment, 2017a).

There are also some regional instruments that seek to protect the environment using criminal law. In Europe for instance, the Council of Europe adopted a convention on the protection of the environment through criminal law.³⁴ The EU has also adopted a similarly worded directive based on substantial domestic convergence.³⁵ The Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and

33 Article 4.3 of the Basel Convention

34 The Convention was opened for signature on November 4, 1998.

35 Directive 2008/99/EC, of the European Parliament and of the Council of 19 November 2008 on Protection of the Environment Through Criminal Law.



Management of Hazardous Wastes within Africa is yet another regional treaty that entered into force in 1998 and bans the import of hazardous wastes into Africa and their dumping at sea or in internal waters. In the South Pacific, the Waigani Convention bans the exporting of hazardous or radioactive waste to Pacific Island Forum developing countries (Further information: OECD, 2011, p.19).

It therefore seems like the space for the criminalization of conducts resulting in the destruction of the environment under international criminal law is extremely restricted.

For the most part, international environmental law delegates the criminal protection of the environment to the State parties to multilateral environmental treaties. The crimes thus prosecuted are, in fact, national crimes, although they require international cooperation for their prevention and punishment

1.1.2 National legal framework

At the national level, instituting a strong legal framework on environmental crime is a key component for addressing crimes that have serious impacts on the environment. Inadequate or unclear laws could noticeably limit the effort of the authorities in combating these offences.³⁶ Also, national environmental legal frameworks are frequently complex with environmental provisions scattered among several texts, which might impede the proper knowledge and implementation by law enforcement agencies. Some countries place the protection of the environment at the highest level by including it in the Constitution. Others have developed specific laws or codes or included specific provisions in existing civil, administrative, or criminal laws and codes.

Considering the diversity of legal systems and environmental provisions, this section does not intend to review all practices available in terms of legislation; instead, the section first highlights a number of issues and provisions that should be included in the national legal

framework of a country, exemplified by some examples of recent solutions in several countries.

Key environmental law principles

A fundamental element in the elaboration of strong environmental laws is the implementation of key principles, such as principles of generality, equality, public accessibility, clarity, stability, proportionality, precautionary principle, etc. These desiderata of good laws are an essential aspect of the rule of law (Preston, 2012a). In **Brazil**, numerous general principles are either implicitly or explicitly included in the statutory environmental law. By the Constitution “everybody has the right to an ecologically balanced environment, to a healthy life quality, imposing on governments and society the obligation to defend and preserve it for present and future generations.” Combined with other constitutional provisions, there are long lists of principles that regulate environmental law.³⁷ These principles allow the interpretation of statutory rules in a way that maximises the effectiveness of environmental protection (TAC information). Similarly, in the Philippines, the Constitution commits to “protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature” (Sec. 16, Art. II, 1987 Constitution) and some key general principles have been integrated therein³⁸ (Expert information). In **Palestine**, the ‘Law No. (7) For the Year 1999 Concerning the Environment’, Article 5, guarantees the right to a sound and clean environment. Article 3 also provides for an individual right to protect the Environment’ (Montevideo focal point information). In **Sierra Leone**, the 2008 Environment Protection Agency (EPA) Act, section 27, gives the opportunity to the public to take part in the environmental impact assessment process and makes it mandatory for the Agency to make this assessment accessible to the public for their inspection and comments. The 2010 Environmental Impact Assessment Fees Regulations creates, to some extent, the principle of proportionality through the administration of fee to individuals and businesses. The fee is determined by the environmental footprint of a project on the environment

36 For additional guidance on regulatory policy and governance, please refer to the Recommendation of the Council of the OECD on Regulatory Policy and Governance (OECD, 2012b).

37 These include: human dignity in its ecological dimension; ecological function of private property; sustainable development; environmental equity; public participation principle; polluter’s pays principle; prevention and precautionary principles; and many others.

38 These include: the “precautionary principle”; the ecological aspect of “social justice”; the “strategic lawsuit against public participation”, aimed at protecting environmental enforcers against legal harassments in the enforcement of environmental laws, protection of the environment or assertion of environmental rights; and many others.



(Montevideo focal point information). In **Sweden**, the Environmental Code contains general rules – such as the precautionary principle, the polluter pays principle, and the product choice principle – which can be used by supervisory and licensing authorities to base their decisions concerning injunctions, bans, or permit conditions (Philipsen and Faure, 2015). In **Switzerland**, the general principles of effective legislation (including principles of generality, equality, public accessibility, clarity, stability, proportionality, etc.) derive directly from the Swiss Constitution, and are also partially reflected in some of the environmental acts (Montevideo focal point information).

On the topic of the precautionary principle, it aims to ensure a higher level of environmental protection through preventative decision-taking in the case of risk (European Commission, 2016b). In some countries where the law is silent, national courts (re-)established or requested policy-makers to establish such principles. For example, in **Australia**, the Land and Environment Court of New South Wales has held that decision-makers, who are required to have regard to the public interest in development decision-making, are obliged to have regard to the principles of ecologically sustainable development, including the precautionary principle. Similarly, the State Administrative Tribunal of Western Australia and Supreme Court of Western Australia have held that “the precautionary principle is a consideration of relevance to the assessment of sustainable use and development of land” (Preston, 2017). In **India**, public interest litigations on environmental matters have resulted in courts developing certain principles (including the precautionary principle, but also the principle of sustainable development, absolute liability for hazardous and dangerous industries to pay compensation where environmental damage occurs, or polluter pays principle)³⁹ (Gill, 2017; Scotford, 2017; Costa & Sampath, 2011). In **Norway**, the precautionary principle has been introduced in the Penal Code which requires a damage or a threat to damage to the

environment (Expert information). In the **Philippines**, the Rules of Procedure for Environmental Cases promulgated by the Supreme Court in 2010 (A.M. No. 09-6-8-SC) introduced the precautionary principle.⁴⁰ In **Sweden**, namely in the case *T-229/04 ‘Sweden v Commission’*, the European Court of Justice recognized the breach of the precautionary principle and annulled the decision of the European Commission to include paraquat as an active substance under Directive 91/414, inter alia because of procedural irregularities in the assessment of this substance (Milieu Ltd, *et al.* 2011).

Alignment with existing environmental laws

To ensure that new measures comply with existing domestic law and do not regress environmental laws and protection (principle of stability), national and international measures have been put in place. In **Belgium**, the Flemish legislation on environmental quality standards states that, in regions where the actual quality of the environment (air, water, soil) is better than the environmental quality standards requirement, all measures need to be taken to maintain this standard of quality. The environmental quality standards cannot be used as an excuse to accept a lesser environmental quality than the existing one (TAC information). In **Brazil**, the Constitution prevents any amendment aimed at abolishing fundamental rights (article 60, §4), including the right to an ecologically balanced environment, which is deeply connected to the human dignity principle (article 1 III). In addition, Brazil applies the principle of ‘Regress Prohibition’ which prevents any retrogression of fundamental rights (TAC information).⁴¹ In the **Philippines**, all measures related to the protection and enforcement of environmental laws are always made in accordance with existing state policies on conservation and protection of the environment which are themselves in accordance with constitutional principles and policies. Any transgression of this doctrine is prevented or cured through a judicial review by the courts of the Philippines, including the Supreme Court⁴² (Expert information). In **Norway**, such

39 For instance, in the case *Vellore Citizens Welfare Forum v. Union of India AIR 1996 SC 2715*, the Supreme Court referred to several national and international laws to support the application of precautionary principle. The Court has also reversed the burden of proof by requiring the proponents of the activity to demonstrate that the activity is environmentally benign (Sahu, M., 2013).

40 According to Rule 20, “when there is a lack of full scientific certainty in establishing a causal link between human activity and environmental effect, the court shall apply the precautionary principle in resolving the case before it. The constitutional right of the people to a balanced and healthful ecology shall be given the benefit of the doubt.” and “In applying the precautionary principle, the following factors, among others, may be considered: (1) threats to human life or health; (2) inequity to present or future generations; or (3) prejudice to the environment without legal consideration of the environmental rights of those affected.”

41 Since recently, the Supreme Federal Court of Brazil is inclined to recognize that International Fundamental Rights Treaties are incorporated in the national Hierarchy of norms under Constitutional provisions but above regular Statutory Laws, which allows judicial review of new national legislation in accordance with fundamental rights established by international treaties adhered by Brazil (TAC information).

42 For further information, please refer to: *Oposa v Factoran GR No 101083*, 30 July 1993; and *Metropolitan Manila Development Authority v Concerned Residents of Manila Bay GR No 171947-48*, 18 December 2008.



compliance is ensured by the assessment instructions and by statutory review (Expert information). At the **international** level, the International Union for the Conservation of Nature and Natural Resources (IUCN) Rule of Environmental Law Principle 12 on “Non-regression” states that: “States, sub-national entities, and regional integration organisations shall not allow or pursue actions that have the net effect of diminishing the legal protection of the environment or of access to environmental justice” (International Union for Conservation of Nature, 2016b).

Alignment with other relevant laws

Similarly, environmental laws have been aligned with other relevant laws, such as fraud, money laundering, and organised crime laws. Under the wildlife laws in **Botswana**, wildlife offences are considered to be predicate offences to trigger the applicability of money laundering, fraud, and corruption laws leading to freezing, forfeiting, and ultimately confiscating the proceeds of wildlife offences and any items involved in wildlife offences⁴³ (TAC information). In **Brazil**, the law allows environmental crimes to be punished in connection with or in the context of organised crime, fraud, or even money laundering. The Money Laundering Act allows for the punishment of money laundering offences committed in relation with other criminal offences, despite the nature of the previous crime (TAC information). In **Norway**, following Article 79 of the Penal Code, the sentencing can be doubled when environmental crime is carried out as part of the activities of an organised criminal group (Expert information). In **Switzerland**, environmental laws are aligned with other relevant laws, such as money laundering, organised crime, and fraud. Depending on the individual case, a criminal investigation will be opened for all possible criminal violations, if there are reasonable grounds for suspicion (Montevideo focal point information).

In the **Philippines**, violations of relevant provisions of environmental laws have been included by amendment as “predicate crimes” or “unlawful activities” under the Philippine’s Anti-Money Laundering Act (RA 9160). Thus, any monetary or property transactions having direct relation to the above-mentioned violations may be investigated and prosecuted as money laundering (Expert information). In the **United States**, criminal offences, such as conspiracy, smuggling, money laundering, false statements, obstruction of justice (also called white-collar crimes), appear routinely together with specific environmental offences when defendants are charged. Some wildlife statutes are now specifically aligned with money laundering statute to allow filing of money laundering charges in domestic and transnational cases⁴⁴ (TAC information).

Use of several enforcement techniques

The diversity of environmental offences and the wide magnitude of their consequences led numerous countries to define and implement different types of enforcement. Criminal, civil, and administrative options, as well as their relationship, have frequently been included in environmental laws. In many countries, such as **Brazil**,⁴⁵ **Palestine**,⁴⁶ **Sierra Leone**,⁴⁷ **Switzerland**,⁴⁸ and the **US**,⁴⁹ criminal, civil, and administrative sanctions can be issued simultaneously according to the law, but their effective implementation depends on different requirements. Besides those general rules, some countries have introduced specific provisions for enforcement options in environmental cases. For instance, in Flanders (**Belgium**), the new Title XVI of the Flemish Decree of 5 April 1995 concerning general provisions relating to environmental policy also organised the relationship between the criminal sanctioning track and the administrative fining system, giving priority to the criminal track. A small fraction of minor paperwork offences

43 These laws are the Proceeds of Serious Crimes Act (Chapter 08:03), Section 14(2) on Money Laundering; the Corruption and Economic Crime Act (Chapter 08:05), Section 18; and the Penal Code of Botswana (Chapter 08:01), Sections 99-100 on fraud etc.

44 For instance, the Eliminate, Neutralize, and Disrupt Wildlife Trafficking Act of 2016 (Public Law 114-231), identifies specific offences under three specific wildlife crime enforcement statutes supporting money laundering charges, known as predicate offences, when the value of the total value of the wildlife involved in the offence exceeds USD 10,000.

45 Specifically, criminal punishment requires strict law provision, with precise description of the criminalized conduct, necessary presence of mens rea (with exception of crime by negligence), and respect of principles such as presumption of innocence and burden of proof beyond reasonable doubt. Civil liability allows holding responsible not only direct but also indirect pollutant, regardless of intention or guilt. It is also possible to invert the burden of proof, by applying the prevention and precautionary principle. Not every civil environmental violation results in criminal or administrative transgression, but every environmental crime or administrative environmental transgression has the potential for civil litigation, either through individual interest’s litigation or class action (TAC information).

46 In Palestine, Articles 55, 56, 57, 74 and 76 of the “ Law No. (7) For The Year 1999 Concerning The Environment’ regulate the simultaneous application of different sanctions (Montevideo focal point information).

47 In Sierra Leone, the laws create criminal, civil and administrative sanctions for environmental violations and most of them are strict liability offences (Montevideo Focal point information).

48 In Switzerland, the implementation of simultaneous sanction depends on different requirements or on the individual case (Montevideo Focal point information).

49 In the US, multiple remedies and sanctions may be sought simultaneously. The only limitation is a constitutional bar on double jeopardy under the Fifth Amendment of the United States Constitution. But different sovereigns can simultaneously prosecute, allowing the filing of criminal charges by both state and federal governments against environmental criminals. Similarly, at the federal level, simultaneous criminal and civil actions may commence (TAC information).



was de-criminalized (Technical Advisory Committee information). In the **Philippines**, environmental laws allow for the simultaneous filing of criminal, civil, and administrative cases for environmental crimes. These cases are considered as separate and distinct from each other and are governed by different rules where liability is proven by a different standard. Their relationships are defined by several doctrines⁵⁰ (Expert information).

Range of sanctions

In addition to the different types of enforcement techniques, many countries also provide a range of options for sanctioning strategies and penalties.⁵¹ In Australia, for instance, legislation in New South Wales provides several non-custodial sentencing alternatives, considered more appropriated where the primary sentencing purpose is rehabilitation.⁵² In addition, the legislature may also increase the range of sentencing options, allowing for tailor-made sentencing to fit the crime and the offender. These options vary between statutes, and are not all available to all courts⁵³ (Preston, 2007). In Belgium, the Title XVI of the Flemish Decree of 5 April 1995 concerning general provisions relating to environmental policy extended and strengthened the sanction options. Criminal penalty levels (imprisonment and fines) were heightened and completed by remedial sanctioning possibilities while administrative penalties were remodelled by the creation of a general administrative fining system and the introduction of efficient and proportional remedial sanctions⁵⁴ (TAC information). In Botswana, wildlife legislations provide for penalties ranging from imprisonment, fine to forfeiture or confiscation of proceeds of wildlife offences and any items involved (Technical Advisory

Committee information). In Brazil, among a series of penalties, the National Environmental Policy Act and the Environmental Crimes Act have established that a breach of environmental compliance subjects the transgressors to the loss of or to restrictions over tax benefits granted by the government, as well as the loss of or suspension over the participation in public credit incentives/subsides granted by official financial institutions. This civil/administrative sanction is considered an important instrument to prevent the financing of illegal environmental activities (Banco Central do Brazil, 2008). In Kenya, the Environmental Management and Coordination Act provides for environment restoration orders, environment conservation orders, environment easements, as well as payment to third parties of the cost of restoration, restitution or compensation (Expert information). In Nigeria, the Harmful Waste Act 1988⁵⁵ provides for life imprisonment and forfeiture of any carrier or land utilized for facilitating the offence. It is worth mentioning that the concept of diplomatic immunity or any other immunity is excluded for the purpose of prosecution of offences committed under this Act (Technical Advisory Committee information). In the Philippines, besides fines and imprisonment, most environmental laws also outline an administrative procedure where adjudication of the liability of an offender does not require jurisdiction of regular courts but only of the mandated implementing agency⁵⁶ (Expert information). In Sri Lanka, national laws provide non-criminal sanctions, including: licensing system; approval system; directives (e.g., Section 24 B/Sec.12 of the National Environment Act); expropriation orders (e.g., Sections 53 and 57 of the Forest Ordinance); banning of all activities pertaining to sea coral mining (Montevideo

50 These includes: Doctrine of Exhaustion of Administrative Remedies; Doctrine of Prior Resort (Doctrine of Primary Administrative Jurisdiction); and Doctrine of Finality of Administrative Action which all give priority to administrative procedure.

51 Of the various sentencing guidelines, the proportionality principle – that is, the notion that sentences should be proportionate to the gravity of the offence and the degree of responsibility of the offender – is relevant to cases involving environmental crimes. In seeking to impose a just and fair sanction for environmental offenders, the many negative economic, social, and environmental impacts should be considered when crafting a proportional punishment, which can be achieved through several custodial and non-custodial sanctions.

52 These include: community service orders; good behavior bonds; dismissal of charges and conditional discharge of offender; deferral of sentencing for rehabilitation, participation in an intervention program or other purposes; and suspended sentence of imprisonment.

53 These include: orders for restoration and prevention; orders for payment of costs, expenses and compensation; orders to pay investigation costs; monetary benefits penalty orders; publication orders; environmental service and audit orders; payment into environmental trust or for other purposes; order to attend training; order to establish training course; or order to provide financial assurance.

54 Very similar improvements were made to the environmental enforcement toolkit in the Brussels-Capital and Walloon Regions of the country (TAC information).

55 The Harmful Waste (Special Criminal Provisions) Act 1988 (Cap.H.I LFN 2004) prohibits depositing and dumping of harmful waste on any land and territorial waters. All activities related to the purchase, sale, importation, transit, transportation, deposit, storage of harmful wastes, are prohibited and outlawed.

56 The administrative penalties include fine or revocation of permits, forfeiture of effects, implements, or tools, etc. Where the offender is subject to criminal prosecution, the courts still have the options to allow the offender to enter into a court-sanctioned compromise with the government, plea-bargain for a lesser offence or allow approved intervention in some cases. Even when the full letters of the law are enforced, the court still has the choice, depending on the circumstances of each case, to impose either fine or imprisonment (with minimum and maximum range foreseen by law). Whenever qualified, a convicted environmental offender can still apply for the benefits provided for under the probation law (Expert information).



focal point information). In Scotland (the UK), courts can issue public orders, restriction of liberty orders and community pay back for environmental offences (Expert information).

Some national legislations provide for sanctions beyond incarceration. For example, in **Brazil**, the Environmental Crimes Act prescribes penalties that go far beyond simple imprisonment. The punishment for environmental crimes can be categorized as a penalty of restriction of liberty (“*penas privativas de liberdade*”) and of restriction of rights (“*penas restritivas de direito*”)⁵⁷ (Technical Advisory Committee information). In **Nigeria**, under the 1995 Nuclear Safety and Radiation Protection Act, the operator of a facility responsible for an incident resulting in radioactive contamination of the environment shall be liable on conviction to a fine up to three million Naira for the cost of such activities as are necessary for the restoration of the environment to its original state, or up to ten year prison sentence, in addition to the cancellation or revocation of any registration granted to that person under the Act (Technical Advisory Committee information). In **Tajikistan**, the funds collected from fines for environmental damage are put into a Special Environmental Fund on Nature Protection and used only for environmental remediation activities (Technical Advisory Committee information). In **Palestine**, chapter three on ‘Environmental Impact Assessment, Licensing, Inspection, and Administrative Measures’ and chapter four on ‘Penalties’ of the ‘Law No. (7) For the Year 1999 Concerning The Environment’ addresses the role of punitive and remedial sanctions (Montevideo focal point information). In the **Philippines**, punitive sanctions are usually prescribed by environmental laws enacted by the legislative branch of the Philippine government, while remedial sanctions are usually imposed by the implementing administrative agencies⁵⁸ (Expert information). In the **US**, numerous environmental crimes attract non-criminal sanctions or remedies.⁵⁹ In addition,

the US Department of Justice, through the Environmental Crime Section (ECS), provides internal guidance to justice prosecutors who want to use financial resources as remedial sanctions. Another remediation source is restitution awarded to state or foreign governments as crime victims for the value of the resources they lost through the commission of the defendant’s environmental crimes. Finally, in environmental crimes, prosecutors are authorized to seek financial community service, directing funds to non-victims for the benefit of the resources harmed and remediation (Technical Advisory Committee information).

Clear definition of roles and responsibilities of relevant authorities

To ensure strong enforcement of environmental law and avoid overlapping of competences, countries have defined the roles and responsibilities of the authorities involved. Such division of responsibilities may vary greatly among countries as it depends upon the form of the state (federal or unitary state, centralized or decentralized), the type and number of authorities or agencies dealing with the issues (environmental inspectorate, police, etc.). In Flanders (**Belgium**), where environmental policy is to a large extent a regional competence, the Flemish Parliament codified environmental enforcement law in one coherent legislative text,⁶⁰ which defined clearly and coherently the roles and responsibilities of all enforcement actors at the level of the communes, provinces and region, regarding monitoring and inspection as well as (administrative) sanctioning (Technical Advisory Committee information). In **Denmark**, cases of environmental crime are investigated by the police in one of the twelve Danish police districts in the same manner as criminal cases in general. Each police district has a special unit of prosecutors which deals with crimes not related to the Danish Criminal Code, including environmental crime (Network of Prosecutors on Environmental Crimes, 2016). In the **Philippines**, the National Police has general authority to enforce all

57 Restriction of rights penalty include community service, temporary interdiction of rights (for example, prohibition to contract with governments or the prohibition to obtain taxes incentives, during a period of five years), partial or total suspension of activities, to pay pecuniary benefit to environmental entities, fees and house arrest.

58 Punitive sanctions include: fines; forfeiture; and imprisonment. Remedial sanctions include: cancellation, revocation or suspension of permits issued for exploitation of natural resources; payment of environmental damages; high fees for discouraged activities that have impacts on the environment; rehabilitation of affected areas; etc.

59 These include: administrative or judicial forfeiture of contraband wildlife or forest products and instrumentalities of the crime; civil monetary penalty assessment, injunctive relief against violators; and citizen suits to promote government compliance with the law, sometimes under the general authority of the Administrative Procedure Act, Title 5, United States Code, Section 706. Environmental crimes with such additional remedies include the Endangered Species Act of 1973, 16 USC 1531-1543, Lacey Act, 16 USC. 3371-3378 (TAC information).

60 Title XVI of the Decree of 5 April 1995 concerning general provisions relating to environmental policy entered into force in 2009.



environmental laws in the country. In addition, different civilian government agencies have specific mandate to implement both the regulatory and enforcement provisions of specific legislations⁶¹ (Expert information). Due to the extensive territory of **South Africa**, the federal government has delegated some responsibility down to regional governments, which have their own laws relating to the environment but work together to complement the national environmental legislation (Rosencrans, 2010, pp 1-2). The National Environmental Management Act 1998 establishes principles for decision-making on all matters that affect the environment, institutions that promote cooperative governance and all procedures for the coordination of environmental functions as exercised by any organ of the state.

Defining the roles and responsibilities of actors has also led countries to ensure adequate investigation and sentencing powers across the different types of enforcement (criminal, civil, and administrative). This involves adequate investigation powers, including intelligence. The Federal Police in **Brazil** uses the same legal structure and powers to combat environmental crimes as those used in traditional crimes such as drug dealing or corruption. The Federal and State Prosecution Offices can also investigate environmental crimes in cooperation with many agencies,⁶² particularly for the collection of evidence (Technical Advisory Committee information; Brazilian Government, 1996). In **Cambodia**, environmental laws provide a number of measures and sanctions that support the investigation⁶³ (UNODC, 2015). In **India**, the 1986 Environment (Protection) Act empowers the authorities to enter and inspect premises

for the purpose of examining and testing any equipment and industrial plant⁶⁴ (TAC information). In **Kenya**, the Constitution establishes the power of the courts to: make any order or give any direction it considers appropriate to prevent, stop or discontinue any act or omission that is harmful to the environment; compel any public officer to take measures to prevent or discontinue any act or omission that is harmful to the environment; and provide compensation for any victim of a violation of the right to a clean and healthy environment (Kenyan Government, 2010). In the **Philippines**, the National Bureau of Investigation has recently created its own division dealing with environmental crimes. The National Police investigation units have also been tasked to investigate environmental crimes in the same manner as common crimes. Also, each of the several environmental agencies has its own intelligence and investigation section focusing on the enforcement of their respective legal mandate⁶⁵ (Expert information). In **Sierra Leone**, the Environment Protection Agency Act, the National Protected Area Authority and Conservation Trust Fund Act, and the Mines and Minerals Act give powers of investigation to the authorities concerned including the gathering of evidence⁶⁶ (Montevideo focal point information). In **Switzerland**, enforcement powers are provided by relevant laws.⁶⁷ In particular, investigation powers, including intelligence gathering is provided by the Swiss Criminal Procedure Code and the Federal Act on Administrative Criminal Law (Montevideo focal point information). In the **US**, the national police powers delegated to environmental enforcement officers ensure they have authority to conduct exhaustive investigations using the full range of investigative tools and undertake enforcement steps,

61 These include: the Department of Environment and Natural Resources for terrestrial resources including forestry; the Department of Agriculture – Bureau of Fisheries and Aquatic Resources for aquatic resources; the Palawan Council for Sustainable Development for resources found in the province of Palawan; Management Boards for protected areas; Bureau of Mines and Provincial Mining and Regulatory Board for mining activities; and many others. In each of these police and mandated agencies, several authorities are specifically trained and authorized for specific purpose, such as: wildlife enforcement officers, forest rangers, fish wardens, officers deputized by the Bureau of Mines, and police units including the Criminal Investigation and Detection Group and PNP Maritime Group.

62 These include: the Federal Police, the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA), the National Historic and Artistic Heritage Institute (IPHAN), the Chico Mendes Institute for Biodiversity Conservation (ICMbio), the National Indian Foundation (FUNAI), the National Agency for Water Resources (ANA), etc.

63 Article 80 of the Law on Forestry, (2002) stipulates that Forestry Administration (FA) officials qualified as judicial police officials have the right to: temporarily seize forest products and by-products that are in violation of the provisions of the law; seize animals, machinery, vehicles, equipment being used as means to conduct forest and wildlife offences; detain, for up to 48 hours, a forestry offender in order to file documents in the case and send it to courts. The Protected Areas Law, (2008) addresses additional punishment to offenders which includes confiscation of assets, vehicles and equipment related to the offences, suspension or revocation of permits or revoked rights to use the forest, forestland and forest resources.

64 The Act also empowers the agencies to formulate their own rules and regulations for compliance of environmental laws. Such protocols include various models to collect data by way of sampling or use of markings or symbols, using of collars with GPS tracking for the endangered animals.

65 Such investigative functions are exercised in coordination with city, provincial and state prosecutors for the eventual filing of criminal complaints before the courts of law in cases where probable cause for finding of liability exists.

66 For instance, the EPA Act in section 37 makes it mandatory for the Agency to monitor all licenced companies, which can carry out site visitations and entering of premises/facilities to gather information to determine compliance with environmental laws.

67 The enforcement of criminal sanctions is regulated by the Swiss Criminal Code of 21 December 1937 (CC 311.0), the Swiss Criminal Procedure Code of 5 October 2007 (CrimPC; CC 312.0) and the Federal Act of 22 March 1974 on Administrative Criminal Law (ACLA; CC 313.0). The enforcement of civil sanction is ensured by the Swiss Civil Procedure Code of 19 December 2008 (CPC; CC 272) and the Federal Act of 11 April 1889 on Debt Enforcement and Bankruptcy (DEBA; 281.1). The enforcement of administrative sanctions are regulated in various environmental acts.



including arrest and referral for prosecution, without the need to coordinate with another body of enforcement officers⁶⁸ (Technical Advisory Committee information). In addition, the US provides prosecutors with extraterritorial jurisdiction enforcement power. Perpetrators who direct smuggling activities into the US from overseas can be prosecuted in US courts even if they or their contraband never reach the country's shores. And US citizens who violate statutory prohibitions with extraterritorial reach can be prosecuted merely based upon their citizenship (Technical Advisory Committee information).

Establishment of specialized units or agencies

Considering the complexity of dealing with environmental offences, countries have instituted in their national frameworks specialised units or agencies with a specific mandate and powers. In **Brazil**, besides the Federal Police and the States' Police having competence for environmental crime investigation, the law has established several agencies under different Ministries with shared responsibilities⁶⁹(Brazilian Government, 2014a, 2014b, 2014c, and 2014d). **Cambodia** has several specialist law enforcement bodies responsible for the enforcement of wildlife and forestry laws⁷⁰ (UNODC, 2015). In Norway, legislation created the National Authority for Investigation and Prosecution of Economic and Environmental Crime in Norway (Expert information). In the **Seychelles**, a Legal Unit inside the Department of Environment is responsible to prepare and implement environmental legislation and the processing of environmental related criminal cases

(Akech and Mwebaza, 2010). In **Switzerland**, federal statutes provide that environmental crimes are handled by the Federal Office for the Environment (FOEN) or the cantonal environmental agencies in collaboration with the law enforcement authorities (Montevideo focal point information). Finally, in **Uganda**, the creation of a special environmental police unit under the Ministry of Water and Environment has brought relevant improvements in the enforcement of environmental regulations, in the response to criminal acts and in the prosecution process (UNEP-CAEC, 2014).

Special procedural rules

Some countries have also implemented specific provisions for the collection of evidence in environmental crime cases.⁷¹ In **Belgium**, environmental enforcement legislations give a special probative value to everything an environmental inspector has himself/herself registered with his/her senses (seen, heard, smelled) when detecting the offence and has written down as such in the notice of violation. Such personal observations are by law deemed to be true until proof of the contrary (Technical Advisory Committee information). In the **Philippines**, the Rules of Procedure for Environmental Cases promulgated by the Supreme Court in 2010 (A.M. No. 09-6-8-SC), makes additional evidence admissible when authenticated by specific persons⁷² (Expert information).

68 The scope of the enforcing powers of environmental officers includes significant coverage over a range of environmental offences, including domestic and transnational wildlife and timber trafficking, to investigate not only those environmental offences they detect, but other non-environmental crimes uncovered during their investigation. Non-criminal remedies, forfeiture actions, civil penalty assessments and other non-criminal adjudications remain within their investigative powers too. In addition, intelligence units collect data from open and other sources for use in collecting trafficking trends. In 2013, a Task Force co-chaired by the Department of Justice, State and Interior enlisted national intelligence gathering groups among federal agencies.

69 Five types of protected rights fall under the Environmental Law System in Brazil: natural environment, artificial environment, cultural environment, labor environment and the genetic heritage. The special agency IBAMA (Environment Ministry) is largely responsible for the environment federal police power in the country, including control, detection and sanctioning administrative environmental illicit. The agency is assigned to register and receive information of transgression from civilians and other agencies/authorities, and can investigate and gather intelligence. The special agency IPHAN (Cultural Ministry) is responsible for the preservation of historic and cultural value, and has police power to control, detect and sanction administrative illicit acts/omissions. The agency is assigned to register damage to archaeological sites, and can issue fines and administrative sanctions such as suspension of activities. The special agency ICMBio (Environment Ministry) is responsible for the law enforcement of the National Conservation Units Policy, concerning the management of the protected areas that have been created from the Federal Government. Within its administrative environmental police power, the agency is assigned to register crimes committed in its protected areas and can issue administrative sanctions. When IPHAN and ICMBio detect or receive crime communication it is mandatory to send to the Federal Police or to the Federal Prosecution's Office all evidence that could lead to formal accusation and prosecution. The foundation FUNAI (Justice Ministry) is responsible for the Indian policy in the country. If any violation to Indian rights in connection to environmental crimes is detected by the foundation, it has the duty to communicate it to police and Prosecutions Office (this last in the specific Indian unit). The Federal Police and the States Police can also investigate environmental crimes, within their jurisdiction.

70 The Forestry Administration (Ministry of Agriculture, Forestry and Fisheries) is the principal agency responsible for the enforcement of forestry legislation in Cambodia. The FA is responsible for the investigation, prevention and suppression of forest destruction, forest fires and forest clearing. The General Department of Administration of Nature Conservation and Protection (GDANCP) (Ministry of Environment) counts approximately 960 contracted rangers operating in 23 protected areas. Some of these GDANCP rangers have a role as judicial police to detect, investigate and report violations against the Protected Areas Law, 2008. The Wildlife Rapid Rescue Team (WRRRT) represents one of the most effective wildlife investigation units within Greater Mekong Sub-region. Up to 90% of all wildlife investigations in Cambodia are undertaken by the WRRRT.

71 Collecting environmental evidence also requires specialisation and expertise from responsible agencies and personnel, which is discussed under Chapter 5.3.

72 The rule states that "photographs, videos and similar evidence of events, acts, transactions of wildlife, wildlife by-products or derivatives, forest products or mineral resources subject of a case shall be admissible when authenticated by the person who took the same, by some other person present when said evidence was taken, or by any other person competent to testify on the accuracy thereof." Also, "entries in official records made in the performance of his duty by a public officer of the Philippines, or by a person in performance of a duty specially enjoined by law, are prima facie evidence of the facts therein stated." These new provisions have strengthened the grounds upon which environmental offenders may be prosecuted.



Liability extended to corporate or legal persons

As previously explained in the report, environmental offences may be perpetrated by different types of actors, including legal entities. It is therefore of importance for national laws to define liability for individuals and legal persons. In particular, the ability to prosecute both legal entities and natural persons might be an advantage when dealing with environmental crimes. In **Brazil**, the Constitution (article 225-3) foresees criminal and administrative liability of legal entities for activities considered as harmful to the environment. This constitutional provision is regulated by the Environmental Crimes Act (TAC information). In **Kenya**, section 145 of the Environmental Management and Coordination Act provides for the liability of bodies corporate, partnerships, principals and employers (Montevideo focal point information). In **Palestine**, Article 76 of the 'Law No. (7) For The Year 1999 Concerning The Environment' provides for liability of natural or corporate persons who caused any environmental damage as a result of an act or negligence in violation to the provisions of this law or any international agreement in which Palestine is a party (Montevideo focal point information). Under **Philippines** laws, individuals are distinct from their company/corporation and so is their liability. Some environmental laws specifically provide for the liability of an individual or of a corporation, its corporate directors, officials and employees⁷³ (Expert information). In **Sierra Leone**, companies or members of partnerships, and their officials are liable and can be prosecuted for environmental violations under the EPA Act (sections 23 and 60) (Montevideo focal point information). **Sweden** does not recognise the criminal liability of legal entities but the Penal code provides that a company can be subjected to criminal sanctions, in particular corporate fines. Moreover, corporate fines can also apply to public authorities, such as the State, municipals, or State controlled enterprises (Philipsen and Faure, 2015). In **Switzerland**, criminal law allows prosecution and sanction of both natural persons and legal entities (Montevideo focal point information). In **Turkey**, the Environmental law (no:2872 amended by Law no:5491) provides for administrative fines for the agencies and enterprises that fail to accomplish obligations

foreseen in the law and for vessels and sea transportation instruments that violate the prohibitions indicated in the law. In the **US**, environmental laws usually define who is a "person" subject to its legal requirements. However, it is not uncommon to include private entities and local, state, even federal employees and the government entities themselves (Technical Advisory Committee information). Within **Europe**, seven out of the nine countries providing criminal liability of legal persons, apply this concept to environmental crimes (Vermeulen et al., 2012).

Engagement of private actors and the use of whistle-blower and witness protection mechanisms

Due to their nature and scope, environmental offences and their impacts may be hard to detect for public authorities. For this reason, private actors, such as citizens and NGOs, play a major role in detecting such offences and some countries have introduced laws that ensure whistle-blower and witness protection. In **Malaysia**, the Environment Quality Act of 1974 provides rewards for informers in connection with detection of any offence, including environmental offences (UNEP-CAEC, 2014). In **Norway**, whistle-blowers are protected by the Working Environment Act and the country provides a witness protection programme at two levels: at the local police districts or at the National Criminal Investigation Service (Expert information). In the **Philippines**, a witness in an environmental case can be admitted into the witness protection programme of the Republic Act No. 6981, provided that the offence can be qualified as a grave felony under the Revised Penal Code, or its equivalent under special laws. Provisions on rewards for informants whose information lead to the successful apprehension of offenders can also be found in some environmental laws and ordinances promulgated by local government units (Expert information). In **South Africa** and **Zambia**, laws provide formal protection against dismissal and harassment of whistle-blowers in environmental cases. **South Africa's** National Environmental Management Act (1998) grants rewards to any person, not to public employees, who give information leading to the conviction of environmental offenders (UNEP-CAEC, 2014). In the **US**, the National Whistle-blower Center is implementing

⁷³ When liability is not specifically provided in the law, the corporation, its directors, officials and employees, may still be held liable for environmental crimes depending on the circumstances of the case, by applying the rules provided for under the Philippine corporation/commercial laws.



a Global Wildlife Whistle-blower Programme providing financial incentives to members of the public who come forward with information exposing U.S. wildlife crime⁷⁴ (Technical Advisory Committee information; National Whistleblower Center, 2017).

Domestication of international environmental laws

A number of measures have been taken at the national level to ensure proper implementation and enforcement of regional and international laws and treaties. In **Kenya**, Section 124 of the Environmental Management and Coordination Act requires authorities to take legislative measures to give effect to any international treaty, convention or agreement in Kenya or to enabling Kenya to perform relevant obligations and rights (Expert Information). In **Niger** and neighbouring countries, environmental laws are harmonised by sub-regional institutions, such as the West African Economic and Monetary Union (UEMOA), and the Economic Community of West African States (ECOWAS) (Expert information). In **Palestine**, Article 77 of the 'Law No. (7) For The Year 1999 Concerning The Environment' makes valid the "international or regional conventions and agreements as well as the provisions of the international organisations in which Palestine is a party" (Montevideo focal point information).

Depending on the countries, international and regional laws and treaties might require national transposition to be fully applicable at national level. This is of importance since international treaties can act as a common source for international obligations, and therefore improve harmonisation and cooperation. In the **Philippines**, recent environmental laws were enacted taking into consideration the Philippine's commitment to international agreements⁷⁵ (Expert information). In the **US**, ratification

of international law or treaty is not self-executing. National legislation is required to make their terms effective as prohibitions applicable within the country. Many environmental treaties have been transposed into national legislation⁷⁶ (Technical Advisory Committee information).

1.1.3 Measuring and monitoring the implementation of environmental laws

Inconsistent implementation of existing legislation is a major concern, repeatedly mentioned by experts, and which requires proper response. Once the environmental legal framework has been developed, it is crucial to measure its implementation. Such review might cover different aspects (legal, technical, financial) dealt with in the legal framework. Consequently, it might be useful to identify indicators or measures of implementation of environmental law, such as the below examples.

Environmental Ombudsman

Some countries have opted for the creation of an environmental Ombudsman. In 2007, **Hungary** created the Ombudsman for Future Generations, whose mandate is to protect and monitor the interests of future generations⁷⁷ (UNEP, 2016). In **Palestine**, the independent commission for human rights acts as an environmental ombudsman (Montevideo focal point information; Independent Commission for Human Rights, 2017). In the **Philippines**, an environmental Ombudsman was created by the Constitution to investigate violations of environmental laws involving public officials and employees⁷⁸ (Office of the Ombudsman, 2014).

National reporting mechanism

Other countries have implemented a national reporting mechanism. In **Australia**, laws provide for state of

74 The Program provides a secure and completely confidential online platform where individuals across the world can report wildlife crime to connect with attorneys who can help submit their reports to U.S. authorities and apply for rewards under the appropriate U.S. law(s).

75 For instance, the Republic Act No. 9147 (Wildlife Act) provided for CITES Management Authorities in the Philippines to ensure the country's compliance with its commitments under the CITES Convention. In addition, the participation of the Philippine's CITES Management Authorities in international workshops and meetings and membership in task forces or coordinating bodies paves the way for international cooperation against environmental crimes.

76 For instance, effective execution of the CITES occurred under the provisions of the Endangered Species act of 1973. Title 16, United States Code, Section 1538(c)(1).

77 The Ombudsman in Hungary has the power to initiate investigations upon receiving complaints, submit petitions to the Constitutional Court in case national or local regulations are in violation of the Fundamental Law, initiate intervention in public administrative court cases regarding environmental protection and submit proposals to authority to ensure the respect of the link between nation's common heritage and fundamental rights. Since his appointment, the Ombudsman proposed environmental policies, criticized inadequate proposed environmental legislation and met with representatives of civil society organizations to discuss his work plan, focusing on water resource protection, forest and land protection and waste transportation.

78 The Ombudsman in the Philippines sends letters to randomly selected national agencies and local government units to request information on their compliance with the provisions of the Ecological Solid Waste Management Act of 2000. Data are gathered and evaluated by a technical working group composed of representatives from the Environmental Ombudsman team and civic organizations.



the environment reports and agency annual reports⁷⁹ (Preston, 2015). In Flanders (**Belgium**), the Flemish High Enforcement Council for the Environment lists among its duties the development of five-year environmental enforcement programmes formulating region-wide enforcement priorities as well as strategic and operational enforcement goals. Its implementation is monitored through yearly environmental enforcement reports, with contribution by almost all environmental enforcement actors. The enforcement reports are subjected to the Flemish government, which is responsible for their approval (Vlaamse Hoge Handhavingsraad Voor Ruimte & Milieu, 2017). **Benin, Burkina Faso, Niger,** and **Togo** are regularly reporting on the implementation of national environmental laws, as well as regional and multilateral environmental agreements. Reporting highlights the improvements and weaknesses in the legal implementation (Expert information). In **India**, environment audit contemplated under the Environment (Protection) Rules of 1986, are a compulsory report to be sent to the State Pollution Control Boards for each financial year. It extends to every person carrying on an industry, operation or process under the Water Act, Air Act, and the Hazardous Waste (Management and Handling) Rules of 1989 (TAC information). In **Kenya**, the National Environment Management Authority is requested, every two years, to report on the state of the environment to the Cabinet Secretary. The Authority may direct any lead agency responsible for a specific sector of environment to prepare and submit a report on the state of this sector (Expert information). In the **Philippines**, environmental agencies are required to submit their annual reports, including enforcement accomplishments, to their respective heads of departments at the national level. These reports are evaluated in relation to the previously approved work and financial plan and are considered in the continuing efforts to conserve and protect the environment in the next fiscal year. Also, reports from different bureaus, offices or agencies are consolidated for submission by the government to international

organisations pursuant to international commitments on environmental conservation and protection (Expert information). **Sierra Leone** has been fulfilling its reporting requirement about compliance to regulations concerning the importation and exportation of ODS to the Ozone Secretariat and the Multilateral Fund. Additionally, custom officers have been trained on the control of ODS and are regularly monitored to determine the implementation of the objectives of the trainings (Montevideo focal point information). In **Sri Lanka**, the legal framework dealing with environmental crime provides for national reporting to the Ministry of Foreign Affairs and Ministry of Mahaweli Development and Environment (Montevideo focal point information).

Providing guidance on enforcement

Besides monitoring environmental law implementation, some countries have also developed enforcement guidance to help national authorities promote and enforce compliance with national laws. In **Australia**, the EPA of the State of Victoria has published a Compliance and Enforcement Policy explaining how EPA uses enforcement to achieve compliance and create credible deterrents against breaking the law. Subsequently, it has published subordinate policies and guidelines on related matters (e.g. injunctions, enforcement and prosecution of government entities, investigation of complicity, etc.) (Environment Protection Authority Victoria, 2017). In **Hungary**, the National Remediation Program published 35 guide documents, information booklets and brochures since it started in 1996 (Montevideo focal point

information). In the **Philippines**, each environment agency involved in the implementation of environmental laws has issued enforcement guidelines involving their respective mandate. These guidelines are considered as official guidance to every environmental agent in the conduct of enforcement operations up to the successful prosecution of cases⁸⁰ (Expert information). In **Tanzania**, guidelines for proportionality are provided to enforcement officers

79 For example, section 10 of the Protection of the Environment Administration Act 1991 (New South Wales) requires the EPA to produce a report on the state of the environment every three years and section 516B of the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) requires the relevant Minister to prepare a report on the Australian jurisdiction every five years. The National Parks and Wildlife Service is required by section 144B of the National Parks and Wildlife Act 1974 (New South Wales) to produce an annual report under the Annual Reports (Departments) Act 1985 (New South Wales).

80 For instance, the Biodiversity Management Bureau of the Department of Environment and Natural Resources has published its Wildlife Enforcement Handbook for terrestrial wildlife; the Bureau of Fisheries and Aquatic Resources has also issued its own enforcement guidelines for aquatic wildlife; and the CITES Management Authorities in the Philippines have been issuing enforcement notices or warnings to guide the Philippine authorities in different levels on matters that require immediate attention.



to show the relationship between amounts of penalty and seriousness and scale of offences, in order to avoid overly disparate discretions in enforcement actions against offenders (UNEP-CAEC, 2014). In March 2017, the **US** Agency for International Development (USAID) published a toolkit entitled “Measuring Efforts to Combat Wildlife Crime – A Toolkit for Improving Action and Accountability,” which recommends indicators for monitoring progress and effectiveness of ten major strategic approaches for combating wildlife crime (USAID, 2017).

At the **international** level, the UNEP Governing Council 7th Special Session adopted the ‘Guidelines on Compliance with and Enforcement of Multilateral Environmental Agreements,’ which provide step-by-step approaches for enhancing compliance with multilateral environmental agreements, strengthening the national enforcement of laws implementing those agreements, and reinforcing international cooperation (UNEP Governing Council, 2002). More recently, UNEP published the ‘Putting Rio Principle 10 into Action: An Implementation Guide’ intended to be a practical tool for government and authorities engaged in the application of Rio Principle 10. The guide provides examples of implementation of national law and practice on the three pillars of this principle (access to information, public participation and access to justice) (UNEP, 2015). More specific to wildlife, the CITES Convention provides support and guidance documentation for national implementation of CITES’s requirements and assists its Parties with their legislative planning and drafting process (CITES, 2017c). The International Consortium on Combating Wildlife Crime (ICWC) has also developed the “ICWC Indicator Framework for Combating Wildlife and Forest Crime” which enables countries to measure and monitor the effectiveness of their own law enforcement responses to wildlife and forest crimes⁸¹ (ICWC, 2016).

Compliance audit

Finally, some countries perform compliance audit to ensure that national policies are properly implemented. In **Australia**, the Auditor General of the State of New

South Wales regularly reviews government agency implementation of environmental laws⁸² (Technical Advisory Committee information; Audit Office of New South Wales, 2017). In **India**, the Supreme Audit Institution that functions under the overall control of the Comptroller and Auditor General has been regularly conducting compliance audit of government rules, laws, legislation as well as performance audit of governmental programmes and schemes for the past twenty-five years (ICED, 2017). Several countries of the **Pacific** have annual compliance committee meetings to define responses in case of non-compliance reports (Expert information).

1.2 Institutional response

This section gives an overview of the institutional response at the international, national and regional levels to better prevent and counter crimes that have serious impacts on the environment.

Financial resources

One of the main elements revealing the institutional will of a government is the provision of adequate financial resources or a funding mechanism from the government. In **Norway**, the enforcement of environmental crimes is funded through the governmental bodies responsible for the enforcement, e.g. the National Authority for Investigation and Prosecution of Economic and Environmental Crime, the Norwegian Environment Agency, and the local police districts (Expert information). In the **Philippines**, each environmental law regulating a particular activity that affects the environment (i.e. Wildlife Act, Chainsaw Act, Forestry Code, Fishery Code, etc.) includes a provision requiring the allocation of funds to ensure implementation. This budget is included in the regular annual budget of the regulatory agencies concerned. Also, fees and charges for the use of natural resources are collected and added to the fund for the conservation and protection of the environment (Expert information). In **Sierra Leone**, the Environment Protection Agency is given the freewill under the EPA Act to generate its own funds through the Environmental

81 The Framework is composed of the Assessment Guidelines and Assessment template which provide a standardized approach to measure the effectiveness of national law enforcement responses and enable a country to independently monitor performance over time to identify any changes in the effectiveness of its law enforcement responses.

82 Audits in the last few years have included managing contaminated land (2014), planning and environmental agencies (2015 and 2016), sale and lease of Crown land (2016), assessing major development applications (2017) and mining rehabilitation (2017).



Impact Assessment Licensing process, fines and levies (Montevideo focal point information). In **Switzerland**, the provision of adequate financial resources from the government is ensured by the legal framework dealing with environmental crime (Montevideo focal point information).

Political will

Collective will is also evident at the **regional** and **international** levels. For instance, the Economic Community of Central African States (ECCAS) has implemented a set of measures to promote the implementation of environmental laws.⁸³ Moreover, the recent adoption of the decisions on Synergies in preventing and combating illegal traffic and trade in hazardous chemicals and wastes⁸⁴ by the meetings of the conferences of the Parties to the Basel, Rotterdam, and Stockholm conventions is one positive example of the expression of such political commitment at the highest level (Expert information). At the international justice level, a recent policy paper on case selection from the Office of the Prosecutor of the International Criminal Court (ICC) stated that it will “give particular consideration to prosecuting Rome Statute crimes that are committed by means of, or that result in, inter alia, the destruction of the environment, the illegal exploitation of natural resources or the illegal dispossession of land” (Office of the Prosecutor of the ICC, 2016). This statement marks the first step towards an international recognition of environmental crimes and might influence national authorities to reconsider and reprioritize their commitment to investigate, prosecute and sentence them (Gallmetzer, 2017; Freeland, 2015).

1.3 Capacity-building in the enforcement chain

This section gives an overview of responses implemented at the international, national, and regional levels to

enhance the capacity of the authorities to combat crimes that have serious impacts on the environment.

1.3.1 Training and guidance

Training

Capacity-building activities are key enablers for law enforcement agencies. All actors of the environmental enforcement chain (including inspectorate and environmental agencies, police, customs, prosecutor, and judiciary) must be trained on the legal and technical aspects of environmental crimes and regularly updated about the new trends related to the issue.⁸⁵

In **Ghana**, people with technical expertise, such as officials from environmental departments, are trained as prosecutors to prosecute environmental cases (UNEP-CAEC, 2014). In **Malaysia**, prosecutions are conducted by trained Department of Environment officers (UNEP-CAEC, 2014). In **Norway**, the Police University College runs mandatory courses for police officers, police prosecutors, and judges on environmental crime-related issues. Large parts of the curriculum include legal matters. Prosecutors and judges also receive regular media training on how to deal with the press and how to use social media (Expert information). In the **Philippines**, investigators from the National Police and National Bureau of Investigation have been trained to conduct formal investigations, including on environmental crimes (three months for investigative subjects and another month for on-the-job training). Investigators from mandated environmental agencies are also trained on the matter on a regular basis. Paralegal trainings are also conducted for enforcers from local communities, NGOs and other volunteers such as forest rangers, fish wardens and wildlife enforcement officers⁸⁶ (Expert information). The **US** provides a large choice of training courses for the different authorities and agencies working on environmental cases. All EPA criminal

83 These include in particular: the creation of a dedicated service for Environment and management of natural resources (2006); the adoption of a 'General policy on environmental matters and natural resources' (2007); the creation of working groups on Rio Conventions; the creation of sub-regional network of experts on the environment; the development of a sub-regional monitoring program on MEAs; and the operationalization of a fund for the green economy in Central Africa and special eco-security units (Expert information).

84 See decisions BC-13/21, RC-8/14 and SC-8/24, available at: <http://www.brsmeas.org/Decisionmaking/DecisionsandDocuments/Decisions/tabid/2616/language/en-US/Default.aspx>; <http://www.brsmeas.org/Decisionmaking/DecisionsandDocuments/Decisions/tabid/2616/language/fr-CH/Default.aspx>; and <http://www.brsmeas.org/Decisionmaking/DecisionsandDocuments/Decisions/tabid/2616/language/fr-CH/Default.aspx>.

85 According to the experts involved in the project, training and capacity-building activities are key enablers for law enforcement agencies. They mentioned a number of topics capacity-building activities should cover, in particular: environmental legislation; information on the full range of environmental offences; crime scene management; evidence collection and management; interview management; and rights of the accused.

86 Paralegal trainings include: investigation; information gathering; proper arrest; search and seizure; chain of custody; and preparation of legal documents for filing of environmental cases in court.



investigators are required to take and pass a nine-week basic federal criminal investigation training course followed by a specific eight-week EPA environmental investigator course. In addition, all U.S. EPA criminal agents are required to take regular in-service training to remain current on qualifications to perform duties effectively and legally (TAC information). Within the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service, special agents receive up to twenty weeks of formal training in criminal investigations and wildlife law enforcement. In addition, at their first duty stations, FWS agents complete forty-four weeks of Field Training and Evaluation Program, working under close supervision of experienced training officers (U.S. FWS, 2017b). Finally, the Department of Justice ECS offers annual training for federal prosecutors and for a limited number of senior investigators. The annual training at the University of South Carolina includes both a basic training lecture session and a longer advanced program with legal updates, new developments agenda for more experienced environmental crime prosecutors and investigators (U.S. Department of Justice, 2015).

At the **international** level, INTERPOL Environmental Security Sub-Directorate has launched training courses on financial crimes in the forestry sector. The training focuses on topics such as using satellite and other technology to combat forestry crimes, conducting financial investigations, asset tracking and recovery, and digital evidence collection (INTERPOL, 2017e). UNEP's Green Custom Initiative delivers capacity-building activities to customs authorities⁸⁷ (Expert information; Green customs, n.d.).

In addition, judges should be informed and trained on how to properly sentence environmental crimes, since they represent the final step in the law enforcement chain. Since 2013, **Burkina Faso** organises 'exchange workshops' (including 86 in 2017) on environmental legislation with magistrates under training. In **Ghana**, **Indonesia** and **Malawi**, judges are trained and exposed to

major environmental issues. (UNEP-CAEC, 2014). In **Iran**, the First Conference on Environmental Law was held to explain environmental elements of judicial decisions that have environmental impact and to understand various aspects of the environmental legislation. Following the Conference, a set of training courses and workshop were held to provide judges with more practical knowledge of environmental law. In addition, as instructed by the Constitution of the country, the Head of the Judiciary ordered the establishment of ad hoc environmental courts. The Ad Hoc Council for the Investigation and Prosecution of Environmental Crimes was created to prosecute offences such as illegal land possession (UNEP n.d.). In **Israel**, judges or courts are brought to the field for one day in order to see the environmental damages, including economic ones (Expert information). In **Timor Leste**, the ministry of environment implements special environmental crime education programmes for judicial officers, in close cooperation with the ministry of justice (Montevideo focal point information). In some countries training is provided also to those who might support the judicial process: lawyers (**Kenya** and **Zambia**), technical officers (**Philippines**), police (**Ghana**) and NGOs (**Indonesia** – especially as NGOs have *locus standi* in environmental cases) (UNEP-CAEC, 2014). An interesting measure in **Uganda** consists in moving courts to the locus of the alleged offence in order to allow judicial officers to obtain first-hand information, understand the environmental matters and make a more informed judgment (UNEP-CAEC, 2014).

Several regional and international networks and organisations have developed capacity-building programmes for prosecutors and judges. In **Europe**, the European Network of Prosecutors for the Environment (ENPE)⁸⁸ shares training programmes in relation to environmental criminal law (ENPE, 2016a; ENPE, 2016b). The European Judicial Training Network (EJTN), created in 2000, provides courses, training and exchange programmes for judges and prosecutors on many different topics, including environmental law

87 The Initiative, launched in 2004, is a partnership of international organisations cooperating to enhance the capacity of customs and other relevant border control officers to monitor and facilitate the legal trade and to detect and prevent illegal trade in environmentally sensitive commodities such as: ozone-depleting substances, toxic chemicals, hazardous wastes, endangered species and certain living-modified organisms.

88 More information about the ENPE is available under section "Cooperation".



(EJTN, 2017). The European Commission's Environment Directorate-General has contracted in 2012 the Academy of European Law to develop training modules for judges on various topics of EU environmental law as well as to organise workshops and seminars on the implementation of EU environmental law⁸⁹ (European Commission, 2016c). In the **Americas**, networks have played an important role in building capacity. OAS has initiated efforts jointly with UN Environment and IUCN World Commission on Environmental Law (WCEL) on Judicial training that will be adapted to prosecutors (Expert information). In **Central America**, various agencies organised training sessions and workshops with institutions and officers responsible for environmental law enforcement, including on policy and legislation, investigation, and prosecution and sentencing of different environmental offences (Organisation of the American States, 2017b, p.18-20 and 30-31). At the **international** level, the 'Global Judicial Institute of the Environment' has been created by judges and formally launched in 2016 with the aim of supporting the role of courts and tribunals in applying and enforcing environmental laws and in promoting the environmental rule of law and the fair distribution of environmental benefits and burdens⁹⁰ (IUCN, 2016b). The UNEP Global Judges Programme has been engaged since 2002 in the development of capacity building programmes for judges, including the provision of manuals, handbooks and compendiums of decisions⁹¹ (Expert information).

Practical guidance and tools

Another important element of capacity-building is the provision of guidance and practical tools for the prevention, detection, investigation, prosecution, and sentencing (including manuals, guides, handbooks, policy, checklist, and database).

Specific and general guidance on inspection, investigation or prosecution have been developed worldwide. In **Cambodia, the Philippines, and Tanzania**, enforcement officers are being equipped with enforcement checklists, mobile laboratories, and hand-held monitoring devices for more effective enforcement⁹² (UNEP-CAEC, 2014). **Ghana** and **Nigeria** provide training manuals for enforcement officers and judiciary to avoid arbitrariness in enforcing environmental laws. Manuals need to be appropriate to specific legal systems (UNEP-CAEC, 2014). In **India**, a handbook for Wildlife Crime Investigation Officers has been brought out by the Wildlife Crime Control Bureau with a view to standardising practices and procedures that are required to be followed by the State Police and Forest departments in wildlife crime investigation⁹³ (India Wildlife Crime Control Bureau - WCCB, 2017b). **Norway** has policy guidelines for investigation and prosecution, covering a range of issues for cooperation and information-sharing among authorities in the field of environmental crime (Expert information). Regarding sentencing, the country has a database for sentences⁹⁴ and is currently building a database for environmental cases. In **Tanzania**, a 'National Environmental Investigation Manual' is provided to investigators (UNEP-CAEC, 2014). The **U.S.** EPA has promulgated several policies concerning the effective management of its environmental criminal enforcement programme. One of the included guidance documents is entitled 'The Exercise of Investigative Discretion' and discusses the criteria used by the U.S. EPA to determine which cases to pursue for criminal investigation (U.S. EPA, 2017c). In addition, the Environmental Crimes Section website on the Department of Justice intranet has electronic access to an Environmental Crimes Manual along with detailed summaries of the criminal statutes commonly used. Included are pleadings actually filed and a number of guidance documents with "best practices" (TAC information).

89 The EU Environmental Law Training Package covers: Air Quality and Noise Legislation; Biodiversity and Wildlife Trafficking; Participatory and Procedural Rights in Environmental Matters; Industrial Emissions; EIA and Nature Directives; EU Law on Environmental Impact Assessment; EU Law on Nature Protection; EU Waste Legislation; EU Water Legislation; Principles of EU Environmental Law; and Protection of Environment through Criminal Law.

90 The key activities of the Institute includes: judicial capacity-building; technical assistance; education programs; and online knowledge-exchange and -sharing for judges.

91 These include: the Compendium of Judicial Decisions on Matters Related to Environment Volumes 1-3 (1998); the Compendium of Summaries of Judicial Decisions in Environment-Related Cases (2005); the Handbook on Environmental Law (2005); the Training Manual on International Environmental Law (2006); and the Judicial Training Modules on Environmental Law (2007).

92 For instance, in the Philippines, enforcers are equipped with enforcement manuals, including guidance on: identification of endangered species; procedures to follow in conducting enforcement operations; executing affidavits for filing in court, etc. Some enforcers are also issued with mobile device equipped with applications designed for monitoring and investigation activities (Expert information).

93 The handbook details the procedure for identification, investigation and arrest in case of wildlife crimes and is expected to bring uniformity in the methodology adopted, improve investigation quality and result in better appreciation of evidence by the courts (Indian WCCB, 2017b).

94 The Lovdata database is available at: www.lovdata.no.



In **East Africa**, the East African Network for Environmental Compliance and Enforcement (EANECE) has produced the 'Harmonised Environmental Inspection and Investigation Manual for East Africa' in 2012 (UNEP-CAEC, 2014). At the **international** level, ICCWC developed the 'Wildlife and Forest Crime Analytic Toolkit' which provides an overview of the tools available to prevent and combat wildlife and forest offences⁹⁵ (UNODC, 2012). A similar toolkit is being developed for illegal trade of waste by the DOTCOM Waste project (DOTCOM Waste Project, 2017b). The INTERPOL Environmental Security Programme released a study on the "illegal Wildlife Trade on the Darknet," that shows evidence of criminals using the darkweb to sell illicit wildlife products from critically endangered species⁹⁶ (INTEPROL, 2017f). GRID-Arendal published a simple guide on how to identify forest crime, targeted to Asia and available in English, Chinese, and Indonesian (GRID-Arendal, 2014). UNODC developed several guidance targeted at investigators and prosecutors in specific countries⁹⁷ (Expert information). Finally, on the issue of waste trafficking, a variety of guidance documents have been developed under the Basel Convention for prosecutors⁹⁸ (Expert information).

Specific guidance on the selection criteria for the method of enforcement has also been produced in several countries. In **Australia**, the New South Wales EPA has produced prosecution guidelines setting out the factors that it takes into account in deciding whether, how, and in what court to prosecute offences under the legislation it administers (New South Wales Environmental Protection Authority, 2017b). In the **US**, the Fish and Wildlife Service (FWS) has published policy on Enforcement Priorities, available online. Proposed law enforcement activity is assigned one of three priorities based on the criteria

under each category: High, Medium or Low. These criteria recognize the need to focus on illegal activities having the greatest negative impact on protected species, including those protected by the CITES⁹⁹ (TAC information).

Specific guidance for sentencing has also been produced in several countries. The experts mentioned that effective sentences should include a range of sentencing options and developing guidance can support judges and court reviewing all sentencing options and harmonizing the sentences applied. In **Australia**, the New South Wales EPA has produced sentencing guidelines detailing the options available for environmental offences, including investigation costs orders, publication orders, and environmental service orders. The guidelines discuss the purpose of the orders and the principles the EPA will take into account in deciding whether to seek one or more of the orders (New South Wales Environmental Protection Authority, 2017b). In **China**, the Standing Committee of the National People's Congress and the Supreme Court have issued interpretations on the application of the Criminal Law to different types of environmental crimes¹⁰⁰ (Expert information; Chinese Supreme Court, 2016; Standing Committee, 2014). In **Sri Lanka**, prosecutor guidelines for judges have been produced by the Judge Institution (Montevideo focal point information). In **Sweden**, prosecutors formulated guidelines for corporate fines (Philipsen and Faure, 2015). In **Tanzania**, penalty determination guidelines are provided to judges (UNEP-CAEC, 2014). The **UK** has developed detailed guidance for the enforcement and sanctioning of environmental crimes. The England and Wales Sentencing Council has published a Definitive Guidelines on Environmental Offences (2014) detailing the general principles to be considered in the sentencing of

95 The Toolkit is organized into five parts (legislation, enforcement, judiciary and prosecution, drivers and prevention, data and analysis) representing one of the sectors involved in the preventive and criminal justice response to wildlife and forest offences.

96 The research identified at least 21 advertisements offering ivory, rhino horn or tiger parts and products, between December 2016 and April 2017 only. The research also shows that the majority of the tradings use cryptocurrencies such as Bitcoin.

97 For instance: Wildlife offences in Uganda – "Points to Prove" – a guide for prosecutors and investigators including sample charges and standard operating procedures; Wildlife crime in Botswana – "Points to Prove": A guide for prosecutors and investigators including sample charges and best practices guidance (2017); Wildlife Offences in Kenya – Points to Prove: A rapid reference guide for the investigation and prosecution of wildlife related offences including standards operating procedures and sample charges (2016); and Tanzania investigation and prosecution of wildlife and forestry crime – A rapid reference guide for investigators and prosecutors (Expert information).

98 This includes: the "Instruction manual on the prosecution of illegal traffic of hazardous wastes or other wastes" (2012); the "Basel Convention Training Manual on Illegal Traffic for Customs and Enforcement Agencies" (2006); and the "Guidance Elements for Detection, Prevention and Control of Illegal Traffic in Hazardous Waste" (2002). These publications are available at: <http://www.basel.int/Implementation/LegalMatters/IllegalTraffic/Guidance/tabid/3423/Default.aspx>.

99 Within the policy, the one factor most likely to establish high priority is unlawful commercial activities. The agency has targeted for decades illegal commercialization of wildlife as a top priority and sees the threat of worldwide internet sales and overnight delivery services accelerating the harm to wildlife sustainability by creating worldwide markets.

100 The Standing Committee of the National People's Congress made an Interpretation on Articles 341 and 312 of the Criminal Law related to the illegal purchase and hunting of wild animals, (Standing Committee, 2014) which has been confirmed reinforced by an interpretation of the Supreme Court. The Supreme Court has issued an interpretation on the application of the Criminal Law in the handling of criminal cases of environmental pollution (Chinese Supreme Court, 2016).



individual offenders and organisations (England & Wales Sentencing Council, 2014). In addition, the Environment Agency (England & Wales) has published three guides detailing the enforcement decisions, the types of tools available and the associated processes¹⁰¹ (Environment Agency, England, 2014). In the **US**, the Sentencing Commission published Guidelines Manual since 1987 which are regularly updated. The Manual seeks to further the basic purposes of criminal punishment: deterrence, incapacitation, just punishment, and rehabilitation. Part Q is specifically looking at offences involving the environment, including conservation and wildlife (United States Sentencing Commission, 2016).

The development of databases has proved to be a very useful tool for a range of stakeholders. In **Australia**, the New South Wales Land and Environment Court has developed a sentencing database for environmental crimes which gathers environmental cases from 1998 (following the commencement of the Protection of the Environment and Operations Act 1997)¹⁰² (Preston and Donnelly, 2008; Preston, 2007; Cain and Donnelly, 2017). **Burkina Faso** is about to publish a compilation of 500 environmental texts covering the period 1929 - 2016 to provide a better understanding of the legal frameworks relating to the environment (Expert information). At the **international** level, ECOLEX is an information service on environmental law, operated jointly by FAO, IUCN and UNEP. The ECOLEX database includes information on treaties, international soft-law, and other non-binding policy and technical guidance documents, national legislation, judicial decisions, and law and policy literature. Users have direct access to the abstracts and indexing information about each document, as well as to the full text of most of the information provided (ECOLEX, n.d.). The Legal Atlas is a legal intelligence online platform that allows conducting smart searches within

environmental laws, comparing key legal concepts among jurisdictions and assessing the quality of legal systems to effectively manage societal challenges (Legal Atlas, 2017). The SHERLOC (Sharing Electronic Resources and Laws On Crime) knowledge management portal was developed by the UN Office on Drugs and Crime to facilitate the dissemination of information regarding the implementation of the UN Convention against Transnational Organised Crime and its three Protocols. It hosts a case law database, including jurisprudence on wildlife and forest crime, a database of legislation and a bibliographic database (UNODC, 2017c).

Smart investigation and prosecution

In several countries, law enforcement representatives are using smart investigation¹⁰³ and smart prosecution¹⁰⁴ in environmental cases. In **Australia**, where sanctions are considered too light for the gravity of the act, law enforcement agencies might investigate and prosecute general criminal offences in addition to, or instead of, environmental offences (Park, I., 2014). In **Germany**, authorities apply targeted controls, consisting of controls concentrated on a specific area in a specific time frame using as many forces as possible. Targeted controls are using data from the registration system of the German federal states, which consist in a monitoring and documentation system and bookkeeping obligations for wildlife traders (European Parliament's Committee on the Environment, Public Health and Food Safety, 2016a, p.21). In **Malaysia**, standard operating procedures (SOPs) covering all aspects of environmental enforcement have been devised to be followed by all enforcement officers¹⁰⁵ (UNEP-CAEC, 2014). In **Norway**, police officers and prosecutors use smart investigation and prosecution taking into account the specificity of the case (Expert information).

101 The 'Enforcement and sanctions statement' (2014) explains the position of the UK Environment Agency on enforcement and sanctions; the 'Enforcement and Sanctions – Guidance' (2015) gives guidance on enforcement and the use of civil and criminal sanctions; and the 'Offence Response Options' (2016) provided with options available to every offence regulated by the Agency.

102 The database is made available through the Judicial Information Research System and provides a source of statistics on the type and magnitude of penalties imposed by the Land and Environment Court judiciary for specific environmental offences.

103 Smart investigation refers to methodologies and strategies that enable investigators to use their resources to the best way possible by making smart decisions for their investigation actions.

104 Smart prosecution refers to methodologies and strategies that enable prosecutors to use their resources to the best way possible by making smart decisions for their enforcement actions.

105 These SOP include: the development of annual inspection programs; the selection and categorization of industries accordance to previous compliance and records; the procedures to be followed during inspection and investigation; formal sampling; collecting of evidence; recording of statements; issuing of detention orders and prohibition orders to stop specific pollution; and the preparation of investigation paper for prosecution in courts, and consent to prosecute from the Attorney General.



1.3.2 Use of technology

Detecting, investigating, and prosecuting environmental crimes may require specific means and equipment in order to collect and conserve evidence and demonstrate the impacts of the offence.

Forensics

In recent years, forensic capacity (both in terms of training and equipment) has been greatly increased among countries. In northern **Brazil**, the Federal Police has specific units dedicated to environmental crimes, with forensic staff experts in engineering, biology, chemistry, geology, and other professions that are responsible for evidence evaluation in any crime, including environmental crimes (TAC information). In **India**, the Environment (Protection) Rules 1986 lay down the procedure for detection and inspection by taking samples in sufficient quantity to be sent to an environmental laboratory for analysis (TAC information). **Norway** has a separate laboratory within the national criminal investigation service (Kripos) and specialised trained professionals within the national authority for investigation and prosecution of economic and environmental crime (Økokrim) (Expert information). In **Romania**, the SUMAL application is a wood traceability information system developed to trace timber harvested from the forests and to provide statistical information, including point of origin, movement, destination, vehicle registration number, timber species, and type and volume of wood. Incorrect use of the for SUMAL system and traceability rules is subjected to administrative fines (Schlingemann et al., 2017). In addition, a portal using the SUMAL database and other data has been created to identify illegal cuts and enhance transparency of logging activities in the country. The portal enables users to see satellite alerts and changes in forest vegetation.¹⁰⁶ (Schlingemann et al., 2017). In **South Korea**, UN Environment supported a national Green Customs Initiative National Training Workshop on techniques and tools for risk profiling, detection, inspection and repatriation of illegally traded

chemicals and waste, ozone-depleting substances and wildlife (UN Environment, 2017b). In the **US**, the EPA has promulgated exacting forensics methodologies for the collection, preservation, and analysis of environmental samples. They also have an accredited, state of the art environmental enforcement laboratory in Denver, Colorado and others regionally located throughout the country (U.S. EPA, 2017c). In addition, in the US, the National Fish and Wildlife Forensic Laboratory in Ashland, Oregon conducts crime scene investigations, examines submitted items of evidence, and provides expert witness testimony in court¹⁰⁷ (U.S. FWS, 2017c).

At the **international** level, INTERPOL has been active in term of forensic capacity. The Environmental Security Sub-Directorate published the 'Pollution Crime Forensic Investigation Manual' to disseminate the basic principles and techniques of environmental forensic inspections and investigations and provide member countries with technical resources to enhance their environmental crime enforcement programmes (INTERPOL, 2014b). Also, in cooperation with the Digital Forensic Laboratory of INTERPOL, the Environmental Security Programme has launched a training course on Digital Forensics in Wildlife Investigations. The training helps wildlife investigators to extract and analyse data from seized electronic devices during investigations on cases related to wildlife trafficking (INTERPOL, 2017g).

Technologies

National authorities are also provided with and trained to use different technology to detect acts and impacts of environmental crime. In **Australia**, the governments of Queensland and New South Wales are using satellite technology to detect illegal native vegetation clearing (Queensland Government, 2017; New South Wales Environmental Protection Authority, 2017a). **Brazil** started monitoring illegal logging in the Amazon with satellite technology in 1988, when the National Institute for Space Research established the world's first rainforest surveillance system "Terra Amazon"¹⁰⁸ (Pontes, 2011).

¹⁰⁶ From the beginning of 2016, until March 2017, the portal has recorded 5815 alarms, 3249 checks, 3058 false alarms and 191 cases which are currently under analysis.

¹⁰⁷ In performing this mission, the Laboratory supports federal law enforcements efforts of over 200 Special Agents and Wildlife Inspectors throughout the United States and approximately 150 foreign countries who have signed the UN CITES.

¹⁰⁸ This monitoring system has been passed to other developing countries in Asia and Africa through training programs involving the Brazilian Government and international partners, such as the FAO, the Amazon Cooperation Treaty Organization and the Japan International Cooperation Agency. (Pontes, 2011).



In **Honduras**, the Public Ministry received two timber identification devices used for the detection of illegal logging (called 'xylotrons'), for training, testing, and field use (Organisation of American States, 2017b, p.24).

Kenya, Malaysia, and the **Philippines** have developed environmental monitoring systems using Google Earth and other similar services to detect the impact of mining companies on the environment. Environmental agencies provide capacity-building trainings for officers (UNEP-CAEC, 2014). In **Malaysia**, environmental officers are provided with technological equipment linked to a mobile enforcement system that allows them to analyse evidence and issue non-compliance citations on site (UNEP-CAEC, 2014). In the **Philippines**, the installation of closed circuit television in treatment storage and disposal facilities has helped with the detection of violations in the disposal of hazardous wastes, resulting in the closure of several facilities (UNEP-CAEC, 2014). In **South America**, two NGOs (Amazon Conservation Association and Conservación Amazónica) have initiated a four-year project in 2016 through innovative initiatives designed to effectively address deforestation in the Amazon forest, including a monitoring system based on satellite imagery and drones training center (The Norwegian Agency for Development Cooperation, 2016). In the **US**, a specialised team at the EPA called the National Computer Forensics Laboratory and Technical Investigative Equipment Support Center plans the search, seizure and analysis of digital evidence from the Internet, computers, servers, smartphones and other digital or electronic devices to assist in environmental criminal investigations (TAC information).

At a **regional level**, in Central America, the 'Vida Silvestre' mobile phone application has been designed to help wildlife inspectors, police, technicians, prosecutors, border officials, and the public in general to recognise the different wildlife species in their region and learn about the regulations that govern their protection, conservation, and trade. In addition, the app will allow designated government officials to receive wildlife violation and trafficking reports from the public and other officials and respond to these accordingly (Expert information; Vida

Silvestre, 2017). In the same region, relevant information about the most common wildlife illegal trafficking routes and area has been collected from Government agencies, community leaders, and local partners to create an interactive map available online (Organization of American States, 2017; Iguanawatch, 2017, p.24).

At the **international** level, the vessel monitoring systems (VMS) – a technology that tracks the location and monitors the activities of fishing vessels around the world – are taking on an increased role in fisheries management and the fight against IUU fishing. Indeed, VMS have become increasingly sophisticated, with the capability of being integrated with other management tools, including: electronic catch reporting (e-logs), integrated catch documentation schemes, observer programmes, and catch share or quota monitoring (PEW Charitable Trust, 2017). Global Fishing Watch project combines the Automatic Identification Signals (AIS) from ships with information from fishing registries, VMS data, and other sources of information about vessels and fishing fleets to understand their activities and impacts, including tracking illegal fishing (Global Fishing Watch, 2017; Marshall and Tarr, 2017).

1.3.3 Specialised units

Specialised investigation units

Most countries have implemented specialised units of investigators to provide authorities with the appropriate expertise and equipment to tackle environmental crime most efficiently. **Algeria** established a body specialised in enquiry, mandated to detect, enquire, and prepare the prosecution (Expert information). In **Brazil**, the special agency IBAMA, under the Environment Ministry, is responsible for a great deal of the environment federal policy in the country, which includes the environmental police power to control, detect and sanction administrative environmental illicit acts/omissions¹⁰⁹ (IBAMA, 2014). In **Germany**, specialised sections within police criminal investigation departments and public prosecution offices in German states are dedicated to environmental crime matters (Network of Prosecutors

¹⁰⁹ Within that power, the agency is assigned to register and receive information of transgression from civilians and other agencies as well. The IBAMA has a free "green line" (through phone calls or e-mail) to receive communication of crimes or administrative transgressions committed.



on Environmental Crimes, 2016, p.14), coupled with a specialised unit within the Scientific-Technical Department to support them (Sina, 2015, p.73). In **India**, the Wildlife Crime Control Bureau was constituted with the vision of strengthening the skills of enforcement agencies in the field of wildlife crime enforcement and providing professional assistance to create deterrence to the organised wildlife crime nexus¹¹⁰ (Indian WCCB, 2017a). In **Kenya**, four main agencies - Office of the Director of Public Prosecutions, National Environment Management Authority, Kenya Wildlife Service, Kenya Forest Service - are responsible for environmental crimes (Montevideo focal point information). In February 2017, **Morocco** formally launched a dedicated environmental police service, comprising regional environmental brigades with responsibility for enforcing environmental protection laws¹¹¹ (El Masaiti, 2017). In Norway, the National Authority for Investigation and Prosecution of Economic and Environmental Crime is responsible at the national level for investigating and prosecuting environmental crimes. Thus, financial and environmental investigators are often located together in the same unit (Expert information). In the **Philippines**, special units have been created inside the regular police and investigative bureau to deal with environmental crimes¹¹². Task Forces and special units have also been created to combat specific environmental crimes or intervene in specific areas¹¹³ (Expert information). In **Sierra Leone**, three specialised agencies - the Environment Protection Agency, the National Protected Area Authority, and the Nuclear Safety and Radiation Authority - are responsible for combating environmental crimes (Montevideo focal point information). In **Sri Lanka**, different environmental crimes

are handled by different institutions such as Department of Wildlife, Department of Coast Conservation and Coastal Resource Management Department, Department of Forest, etc. (Montevideo focal point information). In **Uganda**, a memorandum of understanding was agreed between the Departments for police and for the environment to establish the Environmental Protection Police, responsible for the security of environment agency staff, environmental monitoring and surveillance, investigation and arrest¹¹⁴ (UNEP-CAEC, 2014). In England and Wales (**UK**), the Environment Agency, established in 1996, is in charge of regulating industrial waste, contaminated land, water quality and resources, fisheries, risk of flooding and conservation and ecology (Environment Agency (England), 2017). Also, every police force in the UK has a Wildlife Crime Coordinator, or Wildlife Crime Officers. These people serve as the main liaison points for policing wildlife crime in their relevant area (World Society for the Protection of Animals, n.d., p.21). In the **US**, the main bodies responsible for environmental protection are the Environmental Protection Agency and the U.S. Departments of Interior (Fish and Wildlife Service), Commerce (National Marine Fisheries Service), Agriculture and States¹¹⁵ (U.S. EPA, 2017f; U.S. FWS, 2017a). In 2013, President Obama issued an Executive Order creating a Presidential Task Force on Wildlife Trafficking headed by three agencies, the Departments of Justice, State, and Interior¹¹⁶ (Expert information).

At the **international** level, INTERPOL is promoting the idea of specialised units of investigators through the establishment of National Environmental Security Task

110 The bureau was constituted by the Government of India following a recommendation by the Tiger Task Force (created in 2005 to monitor the status of tigers in India) highlighting the need for setting up of a Wildlife Crime Bureau at the central level. Taking into account the reports of the Tiger Task Force, the Wild Life (Protection) Amendment Act, 2006, was enacted which had enabling provisions to constitute the Wildlife Crime Control Bureau (TAC information). The Bureau is entrusted with the task of gathering intelligence related to wildlife crime and illegal wildlife trade and disseminating the same to the concerned agencies for timely action.

111 This also includes raising awareness of environmental issues and the inspection, research, investigation, verbalization and detection of environmental infringements.

112 These include the Environmental Crime Division of the National Bureau of Investigation and Environmental Crime desks in some Municipal Police Offices.

113 One task force is the Philippine Operations Group on Ivory (POGI) organized by the Department of Environment and Natural Resources to combat not only illegal trade of ivory but illegal wildlife poaching in general. Within the Biodiversity Management Bureau, Bureau of Fisheries and Aquatic Resources and Palawan Council for Sustainable Development, Wildlife Traffic Monitoring Units were established in strategic air and seaports to ensure that no illegal shipments of wildlife are committed. These units are also the ones investigating apprehensions conducted therein.

114 This resulted in many improvements, in particular: the effective end of attack on agency staff; successful arrest, investigation and prosecution as cases are handled onsite by the environmental police; better information sharing on environmental crimes between different sectors; and the reduction of illegal activities.

115 The Environmental Protection Agency was created in 1970 to ensure the protection of the environment at the national level (U.S. EPA, 2017f). The U.S. Fish and Wildlife Service (under the Department of the Interior) was created in 1940 from antecedent programmes begun as early as 1871 and dedicated to the management of fish, wildlife and natural habitats (U.S. FWS, 2017a).

116 The Task Force produced a "National Strategy for Combating Wildlife Trafficking" identifying three strategic priorities (strengthened law enforcement; reduced demand; and expanded international cooperation, commitment, and public-private partnerships) and an Implementation Plan describing specific steps to undertake to reach goals of the National Strategy and identifies how to measure progress toward them.



Forces (NEST).¹¹⁷ Several countries have established such a task force (Expert information; INTERPOL, 2017j).

Specialised prosecutor units

Countries have also established specialised prosecutor units. Several countries in the Americas have established specialised prosecutorial units within the Attorney General's Ministry to tackle environmental crime, including **Argentina, Belize, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru,** and **Venezuela** (Expert information). In **Kenya**, the Director of Public Prosecutions established a Wildlife Crime Prosecution Unit in 2014, consisting of 35 prosecutors who have undergone special training on wildlife crime, leading to an immediate rise in conviction rates. Prosecutors from the unit are also part of a team reviewing the Wildlife Conservation and Management Act 2013 and suggesting amendments to improve its application (Expert information). **Palestine** established the 'Prosecutors Combating Environmental Crimes' (Montevideo focal point information). In **Sweden**, the national environmental crime unit, established in 2009, is a highly specialised unit composed of 23 prosecutors (Network of Prosecutors on Environmental Crimes, 2016). In England and Wales (**UK**), the Environment Agency has a specific unit of environmental prosecutors (Expert information). In the Philippines, there is a special prosecutor for protected areas (Expert information). In the **US**, the Department of Justice ECS is a specialised environmental crime prosecution unit. The unit is staffed with more than 40 prosecutors, each of them authorized to charge both environmental crimes and general crimes and may include both types of charges in formal charging documents (US Department of Justice, 2015).

Specialised judiciary units

Finally, countries have established specialised units in the Judiciary (court, divisions, departments, and tribunals).¹¹⁸ In **Australia**, the Land and Environment Court of New South Wales was the first specialist environmental superior court in the world.¹¹⁹ (UNEP, 2016; Preston, 2012b). In **Brazil**, the Court of Environment and Agrarian Issues in the State of Amazonas is an example of a specialised court for environmental law hearings.¹²⁰ (Pring and Pring, 2016). In **Chile**, several environmental courts (for example in Santiago and Valdivia) address environmental damages, including pollution crimes (Expert information). In **Costa Rica**, the Environmental Administrative Tribunal was created by the Environmental Act No. 7554 of 1995 and has jurisdiction over complaints for violations of laws protecting the environment and natural resources¹²¹ (UNEP, 2016). In **El Salvador**, the judiciary has an appellate chamber for civil and environmental cases (Expert information). In **Guatemala**, the Department of Petén has a Criminal court of first instance for Narcotic drug activity and environmental crimes (Expert information). In **India**, the National Green Tribunal was established under the National Green Tribunal Act 2010 for effective and expeditious disposal of cases relating to environmental protection, including giving relief and compensation for damages to persons and property¹²² (National Green Tribunal, 2017; Gill, 2017). In **Kenya**, the Land and Environment Court has jurisdiction over any other dispute relating to environment and land (Article 162(2)(b) of the Constitution, Article 13 of the Environment and Land Court Act, 2011) (Montevideo focal point information). In **Peru**, an administrative court has function on permit review and compliance and can impose fines (Expert information). In **South Africa**, the Environmental Court of Hermanus and the Environmental

117 NEST is national multi-agency cooperative formed from police, customs, environmental agencies, other specialized agencies, prosecutors, non-governmental organizations and intergovernmental partners working together in their respective areas of expertise to accomplish a common mission or goal, such as reduction of pollution.

118 For further information on the issue, refer to Pring and Pring (2016).

119 This Court has jurisdiction over a wide variety of environmental related matters, including: aboriginal land claim cases; criminal proceedings for offences against planning or environmental laws; and environmental and planning permits. The court improved the public's ability to bring cases before it by facilitating access from rural areas away from the court and conducting final hearings at the site of the dispute. It also assists non-lawyers by providing free interpreters, guidelines and information on procedures, costs and relevant legislation. The court publishes an annual report to evaluate its performance.

120 This Court has received recognition for its innovative remedies, which include a night school for offenders to educate them on environmental protection and law in the effort to prevent recidivism, and requiring corporate offenders to repair environmental damage and pay for environmental education material, such as signs on buses and comic books for use in schools.

121 The Tribunal has the power to visit the site to assess the environmental damage, thanks to its training that includes scientific and legal instructions. The Tribunal can impose fines and administrative sanctions, but also precautionary protection measures in compliance with the in *dubio pro natura* principle.

122 The Tribunal is a specialized body equipped with the necessary expertise to handle environmental disputes involving multi-disciplinary issues (National Green Tribunal, 2017; Gill, 2017). However, the Tribunal has not been vested with powers to hear any matter related to wildlife and forestry crime; these matters are heard in the State High Court or the Supreme Court (Bhargav, 2011).



Prosecutor at the District Court in Port Elizabeth have dedicated facilities to process environmental cases (Rosencrans, 2010, pp1-2). In **Trinidad and Tobago**, the Environmental Commission is a superior court of record that adjudicates applications, appeals, and complaints under the Environmental Management Act (2000) (Expert information).

At the **international** level, UNEP published a guide for policy makers on Environmental Courts and Tribunals (ECT) designed to provide an overview for improving the adjudication processes of environmental disputes¹²³ (Pring and Pring, 2016).

1.4 National and international cooperation

This chapter gives an overview of the responses implemented at the international, national, and regional levels to enhance the cooperation and information-sharing among authorities, and between public and private actors. Authorities should seek to cooperate with a maximum of actors, including other national and international agencies (police, customs, port authorities, environmental agencies, etc.), prosecutors, regulators, companies, NGOs, etc., in order to increase detection rates and successful cases, both at the national and international levels.

1.4.1 National cooperation

Establishment of national cooperation

The importance of national cooperation/collaboration/coordination among authorities and agencies is commonly acknowledged and implemented in many countries. Such cooperation can take numerous forms and be formal (established via interagency protocols or

Memorandum of Understandings for example) or informal (direct contact between prosecutors and/or agents).

In **Australia**, the Australian Federal Police implements a joint-agency approach to investigations into environmental crime, enabling the specialist capabilities and resources of other agencies to be used (Australian Federal Police, 2017). In **Belgium**, representatives of all environmental enforcement actors are members of or observer in the Flemish High Enforcement Council for the Environment, a meeting platform where many issues involving various enforcement actors are discussed and agreements are reached to help meet each other's priorities and needs¹²⁴ (TAC information). In **Brazil**, the Brazilian government adopted a 'Plan for Protection and Combating Deforestation in the Amazon' (2004-2008) for reducing deforestation in the Amazon by 76% over five years. The plan involves several national enforcement agencies, coordinated by the Executive Office of the Presidency in close collaboration with the Federal Police¹²⁵ (UNEP & INTERPOL, 2016, p.12). Again in Brazil, police officers working on different crimes meet annually to discuss the linkages among operations, including positive and negative outcomes (Expert information). **Burkina Faso** organised in September 2017 a seminar gathering judges, police officers from different units, customs officers, penitentiary staff, forestry guards and environmental experts to improve synergies in the implementation of environmental laws (Expert information). In **Finland**, the Finnish National Group for Monitoring of Environmental Offences (founded in 1997 based on the INTERPOL resolution AGN/65/RES/25), is promoting cooperation between authorities at all levels¹²⁶ (Montevideo focal point information). In **Germany**, national cooperation on wildlife crime takes place through formalized ways of

123 The guide provides different institutional models, examples of best practices, and a roadmap for those interested in exploring, creating or improving environmental dispute resolution institutions in their country. The Guide gives an overview of the best practices to enhance access to justice and support international principles of sustainability. Best practice examples include: judicial independence, flexibility, non-law decision makers, selection of adjudicators, alternative dispute resolution (ADR), comprehensive jurisdiction, standing, remedies, enforcement powers, evaluation procedures, adequate resources, public outreach, case management services, management of experts, cost control, professional development, and commitment to continuous improvement. The guide also identifies recent trends in ECT development designed to make courts more open, transparent, accessible, affordable and accountable, including amalgamation, incrementalism and judicial reform trends.

124 Meetings and discussions in the Council are organized in thematic working groups. For instance, the police, the environmental inspectorates and the public prosecutors discussed criteria to label environmental offences serious enough to deserve priority in prosecution policy. The outcome of their discussions, a final agreement, was written down in a guidance document approved by the College of Prosecutors-General in 2012.

125 The central components of the plan were: a command and control model, including enforcement; use of satellite images to identify illegally deforested areas; regularization of land use and tenure; incentives for sustainable economic activities including interventions in soy and beef supply chains; and the expansion of protected areas and their enforcement.

126 Following the National Group's recommendation, the action plan (2015) formed regional operational level cooperation groups consisting of various authorities involved in environmental crime prevention. These groups form a nationwide network, dealing with topical issues: the roles of different authorities in environmental crime prevention; the threshold to report crimes, specific cases, expert witness testimony; new environmental crime phenomena; and development of the cooperation. Common training and operational projects have also taken place, such as a raid on waste transport vehicles in the cities Kajaani and Oulu in October 2016. These cooperative operational projects have enabled authorities to uncover and prosecute environmental offences that otherwise would have gone unnoticed.



sharing information clearly defined by official instructions and specified reporting channels, as well as an informal network of personal relations (European Parliament's Committee on the Environment, Public Health and Food Safety, 2016a). In **Indonesia**, due to the difficulty to enforce and monitor environmental regulations in all 17,000 islands of the country, the government has introduced a holistic enforcement system where police, investigators and prosecutors work together (UNEP-CAEC, 2014). In **Israel**, prosecutors and judges meet together to discuss the differences between serious and non-serious environmental crimes, and the related penalties (fine or prison) (Expert information). In **Kenya**, prosecutors engage the financial investigation unit in environmental cases (Expert information). In **Palestine**, Memoranda of Understanding and Memoranda of Cooperation established the cooperation among different agencies (Montevideo focal point information). In **Sweden**, police units, prosecutors and supervisory authorities cooperate in inspections at harbours or roads to detect illegal transports of waste (Philipsen and Faure, 2015). The **UK** opted for the creation of inter-agency groups, such as the UK CITES Officers Group, gathering members from the Department for Environment, Food and Rural Affairs, the Plant Health Agency and enforcement officers from the National Wildlife Crime Unit and UK Border Forces, as well as representatives of government institutions who meet three times a year (European Parliament's Committee on the Environment, Public Health and Food Safety, 2016b).

Considering the increasing number of agencies at the national level and the consecutive risk of competition among them or neglect of one or more agencies, experts recommended to identify, by executive decree of legislation, a primary investigative agency with authority for environmental crime enforcement. A similar centralization of expertise should also apply among prosecution agencies (Expert information; Galster, 2016). For example, in **Brazil**, the Action Plan for Prevention and Control of the Legal Amazon Deforestation (PPCDAM), aimed at reducing deforestation in the Amazon, was initially led by 13 ministries and more partners, under the direct coordination

of the Executive Office of the Presidency (then transferred to the Ministry of Environment).¹²⁷

Continued engagement

Prosecutors play a central and transitional role in the enforcement chain as they build the case with the enforcement authorities and present it to the court. Recognizing the importance of this intermediary role of the prosecutor, some countries committed themselves to ensuring a continued engagement of the law enforcement and prosecutor beyond conviction. In Flanders (**Belgium**), the court of first instance of East-Flanders organises every two years a demonstrating hearing on environmental cases (real hearing), bringing together all enforcement actors (police, inspector, environment agency) (Expert information). In **Canada**, between 2015 and 2017, the federal Environment department created committees of senior officers to provide recommendations for sentencing when an offender has been found guilty¹²⁸ (Montevideo focal point information). In **Norway**, there is a debriefing with investigators and prosecutors for all environmental cases (Expert information).

1.4.2 International cooperation

Establishment of international cooperation

Considering the transnational nature of most of crimes that have serious impacts on the environment, establishing and implementing strong international cooperation is a key element in the response to those crimes. Law enforcement officers need to be able to forward leads to their foreign counterparts using the best and fastest means available, whether formal or informal. In addition to investigative efficiency, international cooperation can result in asset sharing when it leads to successful forfeiture actions or the payment of restitution to a country whose resources have been illegally exploited and harmed by the environmental crimes (Expert information).

Internally, countries have set rules and specific measures establishing international cooperation. For example, in **Brazil**, the Environmental Crimes Act sets the rules for

127 The first phase of the Action plan (2004-2008) produced substantial results: over 41,000 fines worth USD 3.9 billion issued, 700 individuals arrested and many prosecuted; one million cubic meters of tropical timber seized; 11,000 properties, equipment and assets were confiscated or destroyed; and nearly one million hectares of productive land (pastures and soybean) embargoed (Expert information).

128 These senior officers will examine a case's evidence and specifically identify aggravating factors of the evidence to rise to the prosecutor. These aggravating factors may be outside of the realm of the case. This has resulted in prosecutors asking for higher penalties than in previous jurisprudence, which in turn acts as a deterrent.



international cooperation, including producing evidence, examining objects and places, and providing information on people and things. The law can also state that a communication system should be employed in order to facilitate the rapid and secure exchange of information with agencies from other countries (Brazilian Government, 1999, Article 77 and 78). In **Sweden**, the Prosecution Authority has international public prosecution offices with specialist competence in order to combat environmental organised cross-border crime and to permit international cooperation between prosecutors (Network of Prosecutors on Environmental Crimes, 2016).

Agreements

Several general bilateral, regional, and multilateral agreements have been established either in a region or even between countries from different regions to better respond to specific environmental issues. In **Australia** and **New Zealand**, the 'Australasian Environmental Law Enforcement and Regulators Network' (AELERT) is a network for environmental regulators across Australasia. It offers members a professional forum in which they can share and solve common issues; identify best practices and consistent approaches to environmental regulation; access a range of industry networking opportunities; and collaborate to exchange resources, information, knowledge and experience (AELERT, 2017). Specific cooperation was implemented between **German** and **Hong Kong** authorities to follow the delivery of parcels containing illegal natural resources detected in Germany with final destination of Hong Kong and thus identify and prosecute the recipients (German Federal Agency for Nature Conservation (BFN), 2015, p.41). In Africa, the **Burundi**, **Democratic Republic of Congo**, and **Rwanda** have created the Authority for the Lake Kivu and Ruzizi River through a multilateral convention, in order to reinforce cooperation among the three states, implement the rules on resources exploitation, and involve local communities in the management of these resources

(Expert information). In the **Pacific Islands**, states are increasingly entering into multilateral data-sharing agreements that provide "peer-to-peer" VMS information exchanges¹²⁹(PEW Charitable Trust, 2017). In the **US**, the EPA has established and/or joined many regional, national and international task forces and networks in order to share information with governmental partners and collaborate on enforcement trends and strategies (U.S. EPA, 2017b).

Even at the **international** level, bilateral agreements are being implemented between countries or the European Union. For instance, within the framework of the European Union Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan, the European Union has signed Voluntary Partnership Agreement (VPA) with timber-producing countries outside the EU. A VPA is a legally binding trade agreement aimed at ensuring that timber and timber products exported to the EU come from legal sources, as well as helping timber-exporting countries stop illegal logging by improving regulation and governance of the forest sector¹³⁰ (European Union FLEGT Facility, 2017; Kleinschmit, et al., 2016).

Legal assistance

More specifically, countries implemented a mutual legal assistance and extradition agreement.¹³¹ **Kenya** has signed mutual legal assistance acts to reinforce international cooperation (Expert information). In the **US**, there are two sources for mutual legal assistance policies: either through Mutual Legal Assistance Treaties (MLATs) or Letters Rogatory (for criminal assistance in those countries without MLATs or for civil and commercial evidence among countries more generally)¹³² (TAC information).

Networks

A number of regional and international networks have been created dealing specifically with environmental crime or wider issues. In several regions of the world, Wildlife

129 For instance, members of the Pacific Islands Forum Fisheries Agency have established a multiparty agreement to provide near-real time sharing of VMS data among members for all foreign-flagged vessels licenced to fish within their collective waters in the western Pacific Ocean.

130 As of October 2017, 6 countries have signed VPAs and are in the process of developing or implementing internal systems (Ghana, Cameroon, Republic of the Congo, Central African Republic, Liberia and Indonesia), while several other countries are in the negotiation or pre-negotiation phase.

131 Mutual legal assistance consists of cooperation between different countries for the purpose of gathering and exchanging information, and requesting and providing assistance in obtaining evidence located in one country to assist in criminal investigations or proceedings in another. Extradition is the legal process by which an individual is transferred from one state to another for the purposes of facing trial or sentence (European Commission, n.d).

132 One is an intra-agency, non-public website with detailed information on how to complete a request and the other, a public website with more general information. The internal policies explain the process, the office through which the request must be processed and provide sample or form paperwork on how to complete the request. A staff at Justice processes these requests assisted by Department of Justice Resident Legal Advisors overseas who coordinate with the foreign countries to process these requests. Extradition requests receive similar treatment through the same Justice staffs.



Enforcement Networks (WENs) have been established to combat the illegal wildlife trade at a regional scale. A WEN is a multi-agency, intergovernmental law-enforcement network made up of multiple countries within one region, designed to share information, develop capacity for enforcement and investigations, and learn from each other's best practices (Freeland, 2015). In **Asia**, the Asian Judge Network on Environment Asia (AJNE) was established in 2013 to enhance information and experience sharing arrangement among senior judges of the Association of Southeast Asian Nations (ASEAN) and the South Asian Association for Regional Cooperation (SAARC)¹³³ (AJNE, 2016). Again, in **Asia**, the Regional Enforcement Network for Chemicals and Waste (REN) was established to facilitate information and intelligence sharing on how to detect suspicious shipments of illegal chemicals and wastes, by providing technical guidance¹³⁴ (UN Environment, 2017c; Project REN, 2016). In the **Baltic Sea Region**, a 'Taskforce on Organised Crime'¹³⁵ has been created to promote intelligence exchange and joint enforcement efforts to combat organised crime, and includes a focus on environmental crimes (International Organizations Online, 2010). In **Europe**, the European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL), consisting of fifty-one environmental authorities in thirty-six countries carrying out numerous cooperation activities¹³⁶ (IMPEL, 2017), was created in 1992. In 2004, the European Union Forum of judges for the environment was created with the aim to promote the enforcement of national, European and international environmental law by contributing to a better knowledge by judges of environmental law, exchanging

judicial decisions and sharing experience in the area of training in environmental law (EUFJE, 2014). Finally, the European Network of Prosecutors for the Environment was created in 2012 to improve capacities, networking and information-sharing among European prosecutors¹³⁷ (ENPE, 2016a; 2016b). In **South-East Africa**, the Lusaka Agreement Task Force is an initiative gathering several countries to reduce and ultimately eliminate illegal trade in wild fauna and flora.¹³⁸

At the **international** level, the International Network for Environmental Compliance and Enforcement (INECE) is a global multi-stakeholder organisation aimed at improving enforcement and compliance through better cooperation, strengthening capacity throughout the regulatory cycle to implement and secure compliance with environmental requirements, and raising awareness of the importance of environmental compliance and enforcement to sustainable development¹³⁹ (INECE, 2017). INTERPOL is also active on environmental crime matters through the Environmental Compliance and Enforcement Committee (ECEC), a forum where law enforcement officials meet to discuss new strategies and practices, share experience and expertise, and build international cooperation.¹⁴⁰ The Committee is supported by three working groups targeted to Fishery, Pollution and Wildlife crimes (INTERPOL, 2017h). Another international network specifically looking at illegal logging is the Timber Regulation Enforcement Exchange (TREE) process, an ongoing series of networking and information-sharing meetings organised by Forest Trends, which brings together environmental NGOs and law enforcement authorities from several

133 AJNE provides judges with a platform to share knowledge and experiences on environmental adjudication, to introduce innovative ideas, to exchange economic and technical information, and to connect stakeholders, including prosecutors, lawyers, judges, regulators, and civil societies. The AJNE website presents invaluable information on environmental laws and jurisprudence in South Asia and Southeast Asia (Asian Development Bank, 2015).

134 The REN has been funded by the Swedish International Development Cooperation Agency and implemented by UN Environment in the Asian region. Updated information on chemical and waste crime and counter-measures is available online. Technical support is given to the World Customs Organization's global operation, Demeter III, which resulted in the seizure of 7000 tons of illegal wastes.

135 The Taskforce includes representatives from Denmark, Estonia, the European Commission, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden.

136 These include: awareness raising; capacity-building; peer review; exchange of information and experiences on implementation; international enforcement collaboration as well as promoting and supporting the practicability and enforceability of the European environmental legislation.

137 The ENPE intends to support practitioners to better tackle environmental crime through training, knowledge-sharing, cooperation and instilling best practices across Europe. The network focuses on four key areas: wildlife crime, waste crime, chemical pollution and prosecution and sanctioning practices (ENPE, 2016a). In 2016, the ENPE created a database on trans-frontier shipments of waste. It provides prosecutors with relevant national criminal case law and related documents from the various Member States. Full case laws are available in original language with a summary in English and decisions can be found by keyword research. If required, the decision can be translated (ENPE, 2016b).

138 Currently, the Republic of Congo (Brazzaville), Kenya, Liberia, Tanzania, Uganda, Zambia and the Kingdom of Lesotho are members of the Lusaka Agreement Taskforce, while the Republic of South Africa, Ethiopia and the Kingdom of Swaziland are signatories (Lusaka Agreement Taskforce, 2017). The Taskforce facilitates cooperative law enforcement activities, investigations on violations of national wildlife law, dissemination and exchange of information on illegal trade activities, and capacity-building, including promotion of awareness. The Taskforce has specialized technology, including ivory detectors, and it experiments with enhanced law enforcement techniques, which it then shares with party states. (Kamweti, Osiro & Mwiturubani, 2009, p.47).

139 INECE gathers environmental regulators, investigators, prosecutors, judges, employees of international environmental and development organizations, officials from customs, the police, non-governmental organizations, academia, the media, and business. INECE.

140 Created in 2012, the ECEC replaced the former Environmental Crime Committee and continues to assist INTERPOL in identifying emerging patterns and trends in the field of environmental crime enforcement.



countries concerned with this issue (Forest Trends, 2017). Within the United Nations, the International Consortium on Combating Wildlife Crime has been created in 2010 as a collaborative effort between the CITES Secretariat, INTERPOL, the UNODC, the World Bank, and the World Customs Organisation (WCO) to provide technical assistance to states in combating illegal trade in wildlife (CITES, 2017b). In addition, the Environment Management Group (EMG) brings together UN entities that have mandates or programmes related to the environment to share their activities on the issue and discuss possible areas of cooperation (Expert information). Finally, an Inter-agency task force was launched in 2017 to promote a holistic approach within the UN system to address illicit trade in wildlife and forest products (Expert information).

Aware of the numerous networks directing effort toward responding to environmental crime and of the importance of coordination among them, INTERPOL has developed a 'Directory of Environmental Law Enforcement Networks' that serves as a collated information guide on the global and regional environmental law enforcement networks. The Directory inventories fifty-eight networks (12 global, 7 African, 13 Asian, 16 European, 8 North American and 2 Central and South American), plus twenty-five environmental communications networks (mentioned in Annex 1 of the Directory) (INTERPOL, 2015b).

1.4.3 Information-sharing

Information-sharing is one of the key elements of national and international cooperation, which requires strong and secured channels. Useful information-sharing requires that the information gets in due time to the relevant decision maker(s) so that the appropriate enforcement response is initiated in a timely fashion.

Databases

Many countries have created databases to collect information and statistics related to environmental offences. In the **US**, the Bureau of Justice Statistics catalogue law enforcement statistics and criminal

justice improvement data, among its databases. The US Sentencing Commission publishes annual statistical information on sentencing in the US, including a category of "environmental/wildlife" offences describing sentencing details¹⁴¹ (TAC information). Furthermore, the Environmental Crimes Section publishes a monthly Environmental Crimes Bulletin on the intranet allowing prosecutors and law enforcement officers handling similar cases to share experiences, and the public to view updates on current federal cases (TAC information).

At the **international** level, CITES is managing the database "World Wildlife Seizure (World WISE)" which gathers data on seizure submitted by the CITES Parties. In 2016, the database contained over 164,000 seizures from one hundred and twenty countries and was for the first time analysed by UNODC, along with WCO data (UNODC, 2016b).

Platforms

Several platforms have also been developed to make cooperation and information sharing faster and more efficient. In **Europe**, on the issue of waste, the above-mentioned 'LIFE SMART Waste project' is developing an online platform to allow participating enforcement agencies to collaborate in a secure, virtual environment that transcends traditional boundaries and borders (Expert information; SEPA, 2017). Also, on the issue of wildlife, the Trade in Wildlife Information eXchange (EU-TWIX) is an online tool developed to facilitate information exchange and international cooperation among wildlife law enforcement officials in Europe¹⁴² (EU TWIX, 2016; Sacré, 2017). Building on the success of the EU-TWIX, the platform Africa Trade in Wildlife Information eXchange (AFRICA-TWIX) was launched in February 2016 between four countries in **Central Africa** to promote collaboration among enforcement agencies engaged in tackling illegal wildlife trade and related criminal activities. It comprises a mailing list (Internet Forum), and a database of seized wildlife species and products, and criminal offences (CITES) (TRAFFIC, 2016b; 2017b).

141 This includes: median and mean sentences, guilty pleas, defendant's race, etc. Detailed information on each environmental conviction is available, although not readily, through sources working with the Sentencing Commission.

142 The EU-TWIX mailing list gathers more than 900 enforcement officials across 36 European countries and 144 EU enforcement agencies and is used by European officials on daily basis to exchange information quickly and efficiently and seek help. The EU-TWIX database is secured and restricted to officials, and gather data on seizures and offences reported the countries and other relevant information and materials (Sacré, 2017).



Notices

At the **international** level, INTERPOL publishes notices, international requests for cooperation or alerts allowing police in member countries to share critical crime-related information (INTERPOL, 2017d).

1.5 Engagement with private actors

This section is particularly focused on prevention, which is one of the key strategies outlined in the realm of social control, and presents a set of direct and indirect measures aimed at creating facilities and deterring opportunities from crime, wherein deviance would be designed and developed (Dorri, 2017). Prevention can take many forms and requires the involvement of multiple actors.

1.5.1 Awareness raising

Education activities

Awareness raising and education activities for citizen and companies are key elements to prevent cases of non-compliance with environmental laws. In some countries, the implementation of such activities has even been introduced in official texts. In **Kenya**, section 9 of the **Environmental Management and Coordination Act** requires the National Environment Management Authority to “undertake, in cooperation with relevant lead agencies, programmes intended to enhance environmental education, public awareness and public participation” (Montevideo focal point information). In **Morocco**, for instance, the National Charter for the Environment and Sustainable Development contains articles on education and training, environmental research, access to decision-making processes for public and private institutions, and responsibilities of government, corporations, citizens and NGOs (Moroccan Government, 2010). In **Palestine**, the ‘Law No. (7) For The Year 1999 Concerning The

Environment’ calls for measures to enhance the public consciousness of the environment issues¹⁴³ (Montevideo focal point information). In **Sierra Leone**, the Environment Protection Agency Act, the National Protected Area Authority and Conservation Trust Fund Act, and the National Minerals Agency Act make it mandatory for the authorities to undertake awareness raising programmes among the public and businesses¹⁴⁴ (Montevideo focal point information). In **Switzerland**, the Federal Office for the Environment is required by law (Article 10e of the Federal Act on the Protection of the Environment of 7 October 1983, EPA CC 814.01) to provide information on the current state of the environment, as well as the protection and use of natural resources in Switzerland. Appropriate channels, including social media, are selected to reach different target groups.

Countries have adopted different methods and measures to raise awareness. For instance, **Australia** implemented education and awareness raising activities regarding CITES requirements targeted at Australian auction houses¹⁴⁵ (Australian Department of the Environment, 2015). In **Cambodia**, an environmental debating programme spreads awareness on environmental issues (UNEP-CAEC, 2014). In **India**, awareness campaigns are conducted at the national level on an annual basis since 1986, when the Ministry of Environment, Forests and Climate Change launched the ‘National Environment Awareness Campaign’¹⁴⁶ (Indian Ministry of Environment, Forest and Climate Change, 2017). In addition, the government of India, national organisations and public agencies implemented a campaign of information in school and universities to educate students and teachers about Article 21 of the Indian Constitution on “right to quality of life”. This campaign was the result of a Supreme Court of India’s decision of 1991 about public interest litigation brought by an environmental lawyer

143 According to Article 2, this law encourages “the compilation and publication of the various environmental information and enhance the public consciousness of the environment issues.” In addition, According to Article 4, “the Ministry shall circulate, in cooperation with the competent authorities, the concept and objects of the environmental consciousness through schools, universities, entities and clubs as well as encourage the collective and individual initiatives towards the voluntary work that aims at the protection of the environment.”

144 The National Protected Area Authority and Conservation Trust Fund Act addresses education of the public on the quality of life. The Environmental Impact Assessment Process under the EPA Act and its regulations also mandates proponents to make public disclosure of the potential impacts a project could have on the environment and the security and wellbeing of the people. Environmental Impact Assessment licences have social and community development plans aimed at improving the quality of the lives of community people.

145 Focus was given to requirements regarding proof of provenance for specimens such as rhino horn and elephant ivory. An analysis of illegal trade of wildlife products through online auction sites was also undertaken in collaboration with the International Fund for Animal Welfare Oceania.

146 A central theme to the campaign is selected for the campaign every year for which some financial assistance is provided to NGO’s, schools, colleges, universities, research institutes, women and youth organizations, army units, government departments among others, for raising awareness and conducting action-oriented activities. The campaign is conducted, supervised and monitored through thirty-four Regional Resource Agencies which have been appointed by the Ministry.



(Mehta, 2009, Chapter 18 Environmental Education: Hope for the Future.). In the **UK**, Scotland appointed the first Wildlife Crime Education Officer in 2010, to reduce the incidence of wildlife crime in Grampian (Scotland) through a programme of education and awareness raising¹⁴⁷ (PAW Scotland, 2013; 2014). In **Thailand**, the NGO WWF is strongly involved in the fight against illegal ivory trade using various sources of information and other actions, such as national petition¹⁴⁸ (WWF 2013; 2013b; 2017b). Also, a demand reduction campaign has been implemented in Thailand by the network TRAFFIC in partnership with a global social marketing organization. The 'Chi campaign' aims to tackle the illegal practice of buying and using rhino horn by changing consumers' behaviour (Expert information; TRAFFIC, 2014). In **Timor Leste**, awareness raising on environmental laws is being carried out throughout the country, even at village level (Montevideo focal point information).

As an example, at the **international** level, the website 'New Tactics in Human Rights Programme' of the NGO Centre for Victims of Torture (Centre for Victims of Torture, 2017) provides an online database of examples of environmental-related tactics.¹⁴⁹ This online platform aims to educate the general public on environmental issues and to put pressure on governments and companies (UNEP, 2016). GRID-Arendal published several "story maps" on specific issues. For instance, the story map on "Trade in plastic waste" (available in English and Chinese) outlines global trade in scrap plastic and points to illegal behaviour occurring during the entire value chain, including the consequences of informal plastic treatment which often takes place far away from where the waste is generated (GRID-Arendal, 2017).

Publication of prosecutions and sentences

Awareness raising can also consist in publishing and publicizing successful prosecutions and sentences.

Informing citizens and companies about the potential consequences of committing environmental crimes can indeed be a powerful deterrent. Experts underlined that such publicization should be targeted to the press, the public at large but also to more specific audience (such as stock exchange, industry magazines, or financiers), and requires the proactivity of officials in charge (for instance, meeting with the press, advocating on behalf of their programmes and publicizing sentences, accomplishments, and programmatic accomplishments). In **Australia**, courts are using e-mail lists to send out environmental crime sentencing decisions to media companies (TAC information). In the New South Wales State, all sentencing decisions of the Land and Environment Court for environmental crime are published online (on Caselaw and AustLii). The Court also summarizes the decisions in its publicly available Judicial Newsletter (Land and Environment Court New South Wales, 2017). In **Chile**, the National Environmental Information System provides information on environmental legislation and regulations, including the decisions of the Inspector General of the Republic in environmental matters, the final decisions of the Tribunals of Justice in proceedings of an environmental character and all other decisions emanating from authorities on environmental matters (UNEP, 2015). In **Panama**, the National Environmental Authority has established up-to-date electronic databases containing various "environmental information", including a list of sanctions for administrative offences committed in protected areas with details of paid and unpaid fines¹⁵⁰ (UNEP, 2015). In **South Africa**, the Department of Environmental Affairs publishes every year a report on all enforcement-related activities, including information on statistics for enforcement, providing details on criminal cases, number of convictions, administrative citations and fines issued, facilities inspected and number of staff members (UNEP, 2016). In **Switzerland**, according to the Swiss Criminal

147 In three years, the Officer has realized the development of an education pack for schools, delivery of seminars to over 1800 people from sixty different organizations, attendance at shows and events with over 100,000 members of the public, many news items featured locally and nationally, the development of a mobile phone application to report Wildlife Crime, and the development of other measures to improve and promote reporting of wildlife crime.

148 In 2012, WWF launched a petition to ban all ivory trade in Thailand which was signed by nearly 1.5 million people. Following the petition, the Thai Prime Minister committed to amend the national legislation with the goal of putting an end on ivory trade and to be in line with international norms (WWF, 2013a; WWF, 2013b). In 2016, WWF launched the "Ivory Free Thailand" campaign involving renowned professional sportsman and calling the general public and ivory consumers to never buy, own or accept ivory as gifts (WWF, 2017b).

149 These include: online scorecard to share information about environmental hazards; mapping of environmental violations and an online database of traditional ecological knowledge. The Program includes an online forum for human rights defenders to discuss and share their experiences in implementing tactics.

150 The database also contains interactive maps, environmental legal texts, environmental indicators, environmental management tools, and information on progress in the Reducing Emissions from Deforestation and Forest Degradation (REDD) project.



Procedure Code of 5 October 2007 (CrimPC; CC 312.0), prosecutions can be made public. Judgements are published on the official website of the court that has delivered the verdict (Montevideo focal point information). In the **US**, the EPA Environmental Appeals Board (EAB) makes all of its decisions publicly available through its website¹⁵¹ and publishes its most relevant decisions in the Environmental Administrative Decisions (EAD), a series of bound volumes available in several hundred public and law libraries throughout the country (UNEP, 2015). In addition, the US Environmental Crimes Section on the Department of Justice publishes on its website a monthly summary of action taken on environmental cases nationwide with public access (US Department of Justice, 2015).

The publication of the offence can also be part of the sentencing process. In many countries like **Australia**, courts can order the offender to publicize the offence, including the circumstances of the offence, its environmental and other consequences and any other orders made against the offender.¹⁵² Publication orders have included offenders placing advertisements in newspapers and industry publications, and corporate offenders notifying stock exchanges and corporate regulators (Preston, 2007). In **Ghana, Kenya, and Zambia**, companies guilty of environmental wrongdoing are publicly "named and shamed" through the media. Some shamed companies are also blacklisted and denied the opportunity to secure government contracts (UNEP-CEAC, 2014). In the **US**, in limited circumstances and in order to attain the goal of general deterrence, the U.S. EPA and the U.S. Department of Justice have required defendants in environmental criminal cases to publish public apologies in newspapers and trade journals explaining their wrongful conduct and apologizing for it to the public (TAC information).

1.5.2 Involvement of private actors in tackling environmental crimes

Community engagement

Besides educating and warning citizens, some countries have also opted for more inclusive options, such as promoting community engagement. In **Belize**, the 'Stand Up, Speak Up: Guide to Public Participation in Belize' published by the Institute of Environmental Law and Policy, aims to empower citizens who are interested in stopping illegal activity¹⁵³ (UNEP, 2015). In **Brazil**, the agency ICMBio has developed a voluntary programme to encourage society's participation in the management of special protected areas, to expand research and monitoring of those areas, to secure territory, to promote environmental education, and other goals prescribed in regulation (ICMBio, 2016). In **Canada**, the government intensified its engagement with Indigenous communities involved in polar bear trade in order to improve the scrutiny of this market (Montevideo focal point information). In **Germany**, individual citizens can play a role in the enforcement of environmental protection laws through reporting crimes and making applications for criminal prosecution of environmental crimes with the Public Prosecutor's Office, police or local courts (Sina, 2015, p.57). In **Kenya**, the Constitution stipulates that the people of Kenya have a duty to cooperate with the state and other persons to protect and conserve the environment and establishes their right to appeal to a court for redress if the environment is threatened (Kenyan Government, 2010). In the **Philippines**, local communities are engaged by environmental agencies under a reporting system programme or as local enforcers. Their knowledge of local situations and local players makes enforcement action more effective. In addition, the Supreme Court upheld the legal standing of minor children to file the case against a mining company based on the concept of "intergenerational responsibility" (case *Oposa vs. Factoran*¹⁵⁴). It explained that the right to a healthy environment carried with it an obligation to preserve that environment for the succeeding generations

151 All the documents the parties file on cases are available. The database contains documents of both active and closed cases from January 2006 to the present. In addition, Public Access to Electronic Court Records (PACER), a fee service, provides access to complete dockets and full text documents for most court filings in federal courts.

152 See, for example, section 250(1)(a) of Protection of the Environment Operations Act 1997.

153 The Guide provides citizens with the necessary information to report illegal activities, to hold government agencies accountable for enforcing the law and presents sample text for letters, complaints and press releases. The Guide is based on three national laws designed to promote public participation: Freedom of Information Act, Ombudsman Act and the Environmental Protection Act.

154 GR No 101083, 30 July 1993.



(Expert information). In the **Philippines** and **Thailand**, some initiatives of “adoption” of rivers and public spaces encourage a sense of “ownership” among local communities, which might limit offences against the environment (UNEP-CAEC, 2014). In **Uganda**, cooperation with civil society organisations has been established to train local community monitors on environmental laws and regulations, especially forest-related, in order to detect violations. To enhance the information flow, monitors are provided with smart phones connected to duty bearers who will process the information, take actions, and evaluate the report (UNEP-CAEC, 2014).

At the **international** level, IUCN participated in a number of initiatives aimed at empowering Indigenous Peoples and Local Communities (IPLCs) to counter illegal wildlife trade. In particular, the network reports cases of governance models in Africa and Central Asia that empower IPLCs to manage wildlife sustainably and generate social and economic benefits¹⁵⁵ (Expert information: IUCN, 2017b). The International Fund for Animal Welfare (IFAW) initiative ‘TenBoma’ combines high-tech data analysis using satellites and computers with information collected from wildlife rangers and local communities. Information is aggregated to create actionable information about poachers and other threats to wildlife, that is then shared with field team for intervention (IFAW, 2017). Finally, the international community created the initiative ‘Tribunal Monsanto’ composed of international judges to deliver an advisory opinion on the legal obligations and consequences of some of the activities of the Monsanto Company, following procedures of the International Court of Justice. The Tribunal assessed that “international law should now precisely and clearly assert the protection of the environment and the crime of ecocide” (International Monsanto Tribunal, 2017).

Support to public authorities

In some countries, NGOs and civil society play a key role, and can complement or support the role of public authorities through the detection and investigation of environmental offences or initiating cases. NGOs often

possess specialised knowledge or expertise that is valuable to enforcement personnel, either from the very outset of an investigation as a tipster or as an expert witness at sentencing testifying as a prosecution witness to facts aggravating an offender’s sentence. NGOs are a force multiplier expanding the number of enforcers, often with expertise in trafficking or trade patterns, foreign laws, or foreign species biology, and they are found worldwide. NGO personnel can be a one-time or ongoing source of information for investigators. It is however important to mention that involving NGOs in environmental cases requires a specific set of ground rules or guidelines.¹⁵⁶ In Algeria, the criminal procedure code was amended in 2015 and introduces a new provision allowing prosecutors to appoint any expert or agency who can cooperate with the police when working on a complex crime. To this end, prosecutors are provided with a list of public and private experts (Expert information). In Brazil, several NGOs are active in the enforcement of environmental crime laws by bringing public actions that challenge licensing that may harm the environment and submitting evidence to assist the prosecution (Damião Gonçalves et al., 2017). In addition, the Federal Prosecution Office in the Amazon State has signed a cooperation agreement with the NGO Instituto Amazônia Mais, in order to create an App (“MeuAmbiente”- MyEnvironment) incorporated in the institutions routine to investigate environmental crimes and correlated illicit acts, and keep track of the effectiveness of law enforcement legal responsibilities committed to other stakeholders (Ministerio Publico Federal, 2016). In China, according to the Environmental Protection Law of 2014, an organisation engaged in environmental protection for more than five consecutive years may register with authorities and litigate against environmental offences (UNEP-CAEC, 2014). In Morocco, public actors such as engineers and forestry agents are authorized to implement public prosecution. The victim may also file a case (file a civil action) to the criminal court, but is required by the Moroccan Code of Criminal Procedure to have personally suffered the damage caused by the offence (Ministère de la Justice Français, 2009). In the Philippines, NGOs participated in

¹⁵⁵ For further information on community engagement and support sustainable livelihoods and local economic development, please refer to Biggs et al (2015).

¹⁵⁶ For instance, the U.S. Department of Justice acknowledged the roles of NGOs and the ground rules for using NGOs as a source, including participation as a confidential informant, in an article published in the United States Attorneys’ Bulletin, September 2015, entitled “Working with Non-Governmental Organizations in Criminal Wildlife Cases (TAC information).”



the prosecution of environmental cases with volunteers acting as apprehending officers in several cases (as per the citizen's arrest rule) and as witnesses in courts. In addition, government agencies and NGOs have partnered to implement several activities/projects.¹⁵⁷ NGO's participation includes funding for trainings, sharing of technical expertise and maintenance of the deputized volunteers through minimum allowance even for a limited period (Expert information). In Romania, to facilitate the identification and reporting of illegal timber, a mobile phone application allows citizens to report the license plates of vehicles (Schlingemann et al., 2017). In the Seychelles, the majority of the environmental incidents are reported through "green lines".¹⁵⁸ In addition, reports can be filed by enforcement authorities, such as NGOs, private islands and agencies and the cases are then forwarded to the Department of Environment through the Legal Unit or other units (Akech & Mwebaza, 2010). In Sweden, environmental technicians are used in the courts as judges (Philipsen and Faure, 2015). In the UK, the 'UK Partnership for Action Against Wildlife Crime', is a multi-agency group comprising representatives of statutory and non-governmental organisations involved in wildlife law enforcement throughout the UK (European Parliament's Committee on the Environment, Public Health and Food Safety, 2016b). In Scotland, victims of environmental offences can make written statements, and are thus given the chance to tell the court how a crime has affected him/her physically, emotionally or financially¹⁵⁹ (Mygov.scot, 2017). In the UK and the US was created the Environmental Investigation Agency (EIA), an NGO responsible for investigating environmental crimes, campaigning (awareness raising, advocate meaningful change and policy reforms), and

cooperating with authorities and NGOs at the national and international levels (Environmental Investigation Agency, 2017). In the US, the EPA publishes a list of environmental criminals called "EPA's Most Wanted" that appears on its website in order to enlist the assistance from the public in the apprehension of environmental criminals (U.S. EPA, 2017d). Members of the public are also allowed by federal environmental laws to initiate lawsuits in federal court against actors, including corporations that violate federal environmental laws and regulations¹⁶⁰ (UNEP, 2016). NGOs also play valuable roles in the US as environmental crime-fighting partners of the U.S. government (TAC information).¹⁶¹ In Zambia, the government partners with the South Luangwa Conservation Society (SLCS), in order to fight poaching in the South Luangwa National Park. Government park rangers and SLCS personnel from local communities actively gather and share intelligence on illicit wildlife trade in the area around the park, along with conducting patrols (Banks et al., 2008).

At the **regional** level, some NGOs are very active. In **Africa**, the NGO 'EAGLE Network' contributed to several arrests of wildlife traffickers¹⁶² (EAGLE Network, 2017a). The NGO Freeland is a frontline counter-trafficking organisation working for a world that is free from wildlife trafficking and human slavery. The organisation is composed of law enforcement, development and communications specialists who work alongside partners in Asia, Africa and the Americas to build capacity, raise awareness, and promote good governance to protect critical ecosystems and vulnerable people¹⁶³ (Expert information; Freeland, 2017).

At the **international** level, INTERPOL has formal

157 These include: establishments of critical habitats; protection of specific endangered species of wildlife; and deputation of local communities as forest rangers, fish wardens or wildlife enforcement officers; etc.

158 The calls received are taken by the Education, Information and Communication Section of the Department of Environment, which process them to relevant departments for further action.

159 Written statements are not limited to environmental offences but apply to many other types of offences.

160 These includes: Resource Conservation and Recovery Act, the Clean Water Act, the Clean Air Act and the Endangered Species Act. The plaintiffs do not have to be U.S. citizens and citizens can represent themselves or be represented by an attorney – with the possibility to recover attorney's fees in certain situations (UNEP, 2016).

161 These includes: be witnesses to crime and support the filing of criminal charges by prosecutors; act as informants or co-operators under the supervision of criminal investigators; collecting information and referring it to investigators or prosecutors (this role can be confidential under the "informant's privilege"); and serve as expert witnesses in federal court.

162 The EAGLE Network consists of an agreement between EAGLE and national NGOs that are identified as being suitable to implement the project and the Law Enforcement model. As of October 2017, the network includes members from Benin, Cameroon, Congo, Gabon, Guinea, Ivory Coast, Madagascar, Senegal, Togo and Uganda.

163 Freeland develops and implements a series of programs and tools to combat wildlife trafficking, targeted and involving a wide range of actors: Government agencies, law enforcement and prosecution agencies, customs, port and border authorities, international organizations, communities, NGOs and civil society, enterprises (banks, airports, commercial airlines, seaports, shipping industry, and transport sector authorities). These include: Surviving Together; Protected-area Operational & Tactical Enforcement Conservation Training (PROTECT); Detection of Environmental Crime Training (DETECT); iTHINK support platform; Countering Transnational Organized Crime (C-TOC) which includes a training package; Field Information Support Tool (FIST); ASEAN Legal Studies and Support Program to Fight Transnational Organized Wildlife Crime; India's Wildlife Legal Help Centre (WLHC); Tracking Free Enterprises; Wildlife Friendly Skies/Seas Program; and WildScan. More information available at: <http://www.freeland.org/>

Freeland published an interesting report assessing the results of Operation Cobra I and II that took place in 2013 and 2014 between team of wildlife enforcement, police and customs officers from Asia, Africa and the US (Freeland, 2014).



(Memorandum of Understanding) and informal ways of engaging with civil society and NGOs (Expert information).

Support to victims

In some countries, it is possible for NGOs to act as 'victims' or provide support to the victims' statements in an environmental case. For instance, in **Belgium**, in a case involving an environmental NGO claiming damages in a criminal case, the Constitutional Court of Belgium ruled that NGOs are entitled to moral damages that reflect reality *in concreto* when the offence damaged the collective interest that the NGO is protecting¹⁶⁴ (Belgium Constitutional Court, 2016). In **India**, Public Interest Litigations (PILs) have played a key role in developing environmental jurisdiction. PIL are brought before the Supreme Court under article 32 and the State High Courts pursuant to article 226 of the Constitution of India as written petitions, ordinarily by individuals or NGOs acting on a *pro bono* basis. PILs provide a direct access to the courts, while eliminating the expense and delay of normal appeals. On several occasions, letters addressed by citizens to the Supreme Court and High Courts ventilating their grievance against the action or inaction of the state have been converted by the courts, acting *suo moto*, into PILs (TAC information). In **South Africa**, individuals and NGOs can "seek appropriate relief" from a court "in the interest of protecting the environment" without being required to pay the legal costs to the successful party in case of unfavourable decision (UNEP-CAEC, 2014). In **Sweden**, NGOs can argue their case before administrative courts and can appeal decisions taken under some sections of the Environmental Code (Philipsen and Faure, 2015). In **Switzerland**, NGOs as well as local communities can file criminal complaints according to the Swiss Criminal Code of 21 December 1937 (Montevideo focal point information). In **Zambia**, the Environmental Management Act 12 of 2011 gives the *locus standi* in civil litigation to whoever has knowledge, voice and capacity to sue on behalf of those who do not know how to defend themselves, without bearing the burden of non-awarding legal costs (UNEP-CAEC, 2014).

Enforcement monitoring

In some countries, it is also possible for NGOs to monitor the enforcement of sentences. For instance, in **Africa**, the NGO 'EAGLE Network' makes sure that individuals sentenced to periods of incarceration are still in prison (EAGLE, 2017b).

1.5.3 Company compliance

Strengthening commitment

The involvement of the private sector/industry in the prevention, detection, and fight against environmental crimes is more and more recognized, and some initiatives are implemented to strengthen the cooperation with, and commitment of, the industry. For instance, in **Albania**, the Container Control Programme has private sector representation on its Steering Committee to discuss and advice on new legislation and other trade-related issues. This relationship helped to develop recognition that the public-private relationship is fundamental in ensuring the Programme's success (UNODC-WCO, 2015).

Public-private cooperation can also take the form of compliance assistance and due diligence for companies in order to reduce the risk of infringement by private actors.

Compliance assistance

Compliance assistance helps individuals and companies learn how to keep from violating the law. In **Australia**, licence monitoring systems are used to manage compliance and detect deviant activities. In addition, enforcement authorities deliver capacity-building activities to different kinds of public and private actors, such as the staff of management authorities, scientific authorities, traders and NGOs (Bricknell, 2010, p.14; Australian Department of the Environment, 2015). In **Brazil**, the 'Cadastro Ambiental Rural' (CAR) initiative is a government system established to assist landowners in forested areas of the Amazon to respect the Brazil's Forest Code which requires preserving 80% of their property as native

¹⁶⁴ The Constitutional Court established that the collective interests protected by an NGO can be valued even when relating to environmental goods belonging to nobody, such as wild birds. This judgment improved dramatically the position of NGOs in Belgium as a party to criminal proceedings in general, environmental crime cases specifically, and therefore stimulates NGO-involvement in criminal cases. NGOs now can pursue damages matching the value of the collective goods they aim to protect, contributing to general crime deterrence.



vegetation¹⁶⁵ (The Nature Conservancy, 2017; Machado & Anderson, 2016, p.10). In **Costa Rica**, the Costa Rican Tourism Board, an autonomous body under the Ministry of Tourism, administers the Certification from Sustainable Tourism (CST) a point-based system to incentivise enterprises' efforts to be environmentally friendly¹⁶⁶ (UNEP, 2016). In **Ghana** and **Indonesia**, industries are encouraged to be environmentally compliant by a colour coding rating system, to show how well they perform in meeting the commitments of Environmental Impact Assessment reports. The ratings go from red to gold, and the whole process and the 100 performance indicators are publicly available on the website of the system (UNEP-CAEC, 2014). **Malaysia** established an Environmentally Hazardous Substance Notification and Registration Scheme (EHSNR) to collect information from industry about the hazardous substances that are placed on the Malaysian market. The EHSNR introduces a notification requirement for such substances manufactured in or imported to Malaysia (Government of Malaysia, 2012). In **Norway**, all police districts have established a business liaison and answer any inquiries on compliance (Expert information). Following the provisions of its Environment Protection Agency Act, **Sierra Leone** has established a functional import and export licensing system for the control of ODS and has strengthened the capacity of technical institutions that offer refrigerators and air conditioning courses.¹⁶⁷ Regional Refrigeration Associations have also been formed in the four regions of the country and have been provided with necessary training on ODS management and control (Montevideo focal point information). In **Uganda**, compliance assistance is usually provided by law to guide law enforcement. A specific clause in the compliance agreement allows the authority to prosecute in case of breach. 'Improvement notices' can be issued based on a complaint (for example from a community) and such document can be used later in prosecution (Expert information). In the **US**, enforcement agencies implement

formalized compliance through permits or permission given to persons to engage in the very conduct otherwise prohibited. Agencies have an entire permitting apparatus to process applications and issue permits and monitor permit compliance. Enforcement agencies also provide assistance through the publication of monographs, manuals and fact sheets (TAC information). In parallel, the Environmental Protection Agency helps businesses, colleges and universities, local governments, tribes and federal facilities understand and comply with environmental requirements and save money through pollution prevention techniques (U.S. EPA, 2017a).

At the **international** level, the United for Wildlife Transport Taskforce Buckingham Palace Declaration was developed and agreed among industry representatives (in particular, global transportation industry), conservation groups, and intergovernmental bodies. The Declaration includes a range of commitments and practical measures to stop the transport of illicitly acquired wildlife products, focusing on: information sharing, staff training, technological improvements, and resource sharing across companies and organisations worldwide (CITES, 2016; TRAFFIC, 2016a).

Environmental due diligence

Environmental due diligence is a process that assesses potential environmental risks related to a company's activity, in order to take appropriate measures that ensure sustainability and responsibility all along the supply chain. In the field of mineral supply chain, the OECD developed in 2011 a *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* promoting responsible private sector engagement. The Guidance aims to encourage companies to respect human rights, observe applicable rules of international humanitarian law in situations of armed conflict, avoid contributing to conflict and cultivate transparent mineral supply chains and sustainable corporate engagement in

165 Landowners use high resolution satellite images on CAR to locate and register their property. The government can then monitor properties for compliance with the Forest Code and is also using the system to assist landowners to restore degraded areas, intensify use in developed areas so less forest is removed, and maximize benefits of farming while maintaining forested portions of their lands.

166 On the basis of an evaluation that takes into account compliance with natural environment and relationship with surrounding community, businesses are assigned a rating, the higher the rating the higher the benefits in terms of publicity and profit values. The innovative program helps consumers make the most sustainable choice, at the same time it benefits local communities, expanding their offer of "green services" and reducing poverty rates.

167 These include: The Government Technical Institute in Freetown and Milton Margai College of Education and Technology.



the mineral sector¹⁶⁸ (OECD, 2016; OECD, 2017). Several countries are applying or developing similar guidance at the national level. For example, **China** launched in December 2015 the Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains, designed to align Chinese company due diligence with international standards and allow for mutual recognition with existing international initiatives and legislations. In addition, they will apply to all Chinese companies extracting and/or using mineral resources and their related products and are engaged at any point in the supply chain of minerals (OECD, 2015). Also in 2015, **Colombia** introduced a 'Single Registry for Mineral Traders' to improve the traceability of minerals produced in Colombia and ensure that mineral traders acquire their products from legal producers. The Registry introduces a number of new requirements, such as an obligation to provide financial statements and tax certificates to register, the possibility to purchase minerals

from limited actors, use of official invoices and Certificate of Origin for all minerals (OECD, 2016). In **Switzerland**, the environmental legal framework (e.g. in the field of chemicals) provides for exercising due diligence (Montevideo focal point information).

¹⁶⁸ The OECD is also piloting survey, such as the 3T (Tin, Tantalum and Tungsten) pilot survey, conducted in 2012 to assist companies implementing the Due Diligence Guidance, to learn from each other's experiences and share best practices. More than a thousand upstream and downstream companies participated in the survey and highlighted key trends and common practices, as well as remaining challenges (OECD, 2013).



Annex 2 – Members of the Technical Advisory Committee

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Annex 4 – Additional international standards, conventions and normative frameworks on environmental protection

- UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property of 1970 [http://portal.unesco.org/en/ev.php-URL_ID=13039&URL_DO=DO_TOPIC&URL_SECTION=201.html]

- Convention on Wetlands of International Importance especially as Waterfowl Habitat, 1971 [United Nations, Treaty Series., vol. 996, No. 14583.]

- Convention concerning the Protection of the World Cultural and Natural Heritage, 1972 [United Nations, Treaty Series., vol. 1037, No. 15511.]

- INTERPOL General Assembly Resolution AG-2014-RES-03 on INTERPOL response to emerging threats in Environmental Security [<https://www.interpol.int/News-and-media/Events/2014/83rd-INTERPOL-General-Assembly/83rd-INTERPOL-General-Assembly-Resolutions>]

[<http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/Default.aspx>]

- London Convention for Prevention of Maritime Pollution by Dumping Wastes and Other Matters, 1972 [<http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/Default.aspx>]

- 1973 International Convention on the Prevention of Pollution from Ships (MARPOL)

- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), 1979 [United Nations, Treaty Series, vol. 1651, No. 28395. More info: <http://www.iisd.ca/interpol/iecec/html/crsvol216num1e.html>]

- UN Convention on the Law of the Sea 1982 [http://www.un.org/depts/los/convention_agreements/convention_overview_convention.htm]

- International Tropical Timber Agreement; 1983, 1994, 2006 [<http://www.itto.int/itta/>]

- Convention on Biological Diversity, 1992 [United Nations, Treaty Series., vol. 1760, No. 30619.]

- United Nations Framework Convention on Climate Change, 1992 on greenhouse gas emissions [http://unfccc.int/essential_background/convention/items/6036.php]

- The United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention), 1993 [<http://ec.europa.eu/environment/aarhus/>]

- 1995 UN Fish Stocks Agreement "Agreement For The Implementation Of The Provisions Of The United Nations Convention On The Law Of The Sea Of 10 December 1982 Relating To The Conservation And Management Of Straddling Fish Stocks And Highly Migratory Fish Stocks [http://www.un.org/depts/los/convention_agreements/texts/fish_stocks_agreement/CONF164_37.htm]

- 1995 the FAO agreed its Code of Conduct for Responsible Fisheries to promote long-term sustainable management [http://www.un.org/depts/los/convention_agreements/texts/fish_stocks_agreement/CONF164_37.htm]

- Kyoto Protocol, 1997 on greenhouse gas emissions [http://unfccc.int/kyoto_protocol/items/2830.php]

- 2000 Cartagena Protocol on Biosafety to the Biodiversity Convention which regulates biopiracy and transport of controlled biological or genetically modified material [<http://bch.cbd.int/protocol/text/>]

- The FAO Compliance Agreement, which entered into force in 2003, is designed to close a major loophole in international fisheries management, that of the circumvention of fisheries regulations by 're-flagging' vessels under the flags of states that are unable or unwilling to enforce such measures. [<http://www.fao.org/>]



docrep/meeting/003/x3130m/X3130E00.HTM]

- Protocol against the illegal Exploitation of Natural Resources, 2006

- In 2009, the FAO brokered the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, which entered into force in 2016. The agreement closes ports to vessels suspected of illegal fishing. [<http://www.fao.org/fishery/psm/agreement/en>]

- OECD Due diligence Guidance, 2011

- Economic and Social Council resolution 2011/36 of 28 July 2011 on crime prevention and criminal justice responses to illicit trafficking in endangered species of wild fauna and flora

- Economic and Social Council resolution 2013/40 of 25 July 2013 on crime prevention and criminal justice responses to illicit trafficking in protected species of wild fauna and flora

- Paris Declaration of 2013

- Resolution 1/3 of 27 June 2014 of the United Nations Environment Assembly of the United Nations Environment Programme, on illegal trade in wildlife

- UN Resolution 68/205 of 20 December 2013, in which it proclaimed 3 March, the day of the adoption of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, as World Wildlife Day

- Resolution 23/1 of The Commission on Crime Prevention and Criminal Justice on strengthening a targeted crime prevention and criminal justice response to combat illicit trafficking in forest products 2014

- London Declaration of 2014

- Kasane Statement of 2015

- Brazzaville Declaration of 2015,

- Doha Declaration on Integrating Crime Prevention and Criminal Justice into the Wider United Nations Agenda to Address Social and Economic Challenges and to Promote the Rule of Law at the National and International Levels, and Public Participation, adopted by the Thirteenth United Nations Congress on Crime Prevention and Criminal Justice, held in Doha from 12 to 19 April 2015 [Economic and Social Council resolution 2015/19, annex.]

- UN General Assembly Resolution on Tackling illicit trafficking in Wildlife (A/RES/69/314) adopted on 30 July 2015 [https://cites.org/sites/default/files/eng/news/pr/2015/UNGA_res_illicit_trade_wildlife.pdf]

- The ministerial declaration of the high-level segment of the eleventh session of the United Nations Forum on Forests on the international arrangement on "The forests we want: beyond 2015" [<http://www.un.org/esa/forests/documents/ecosoc-resolutions/index.html>] and of the resolution on the international arrangement on forests beyond 2015 adopted by the Forum at its eleventh session [<http://www.un.org/esa/forests/documents/ecosoc-resolutions/index.html>]

- UN General Assembly Resolution on Tackling illicit trafficking in wildlife (A/71/L.88) adopted on 5 September 2017 [<http://undocs.org/A/71/L.88>]



REFERENCES

- AECEN. (2015). Rapid Country Program Assessments. Available online at: <http://www.aecen.org/rapid-country-program-assessments>
- AELERT. (2017). About Australasian Environmental Law Enforcement and Regulators Network. Available online at: <https://www.aelert.net/about-aelert/overview>
- Aglionby, J. (3 June 2016). Agencies detect sharp increase in environmental crime. *Financial Times*. Available online at: <https://www.ft.com/content/ae6a9af0-294a-11e6-8ba3-cdd781d02d89>
- Akech, M. and Mwebaza, R. (2010) Enforcement of Environmental Crime Laws: A Framework Training Manual for Law Enforcement Agencies. Available online at: <https://issafrica.s3.amazonaws.com/site/uploads/Handbooks-2010-ECPTTrainerManual.pdf>
- Alvazzi del Frate, A., Herman V. Benjamin, A., Heine, G., Norberry, J., Prabhu, M. (1995). Environmental Protection at National and International Levels: Potentials and Limits of Criminal Justice: An Overview of the Empirical Study. Available online at: https://www.mpicc.de/files/pdf2/4_overview.pdf
- Arnold, F. S., Forrest, A. S. and Dujack, S. R. (1999). Environmental Protection: Is It Bad for the Economy? A Non-Technical Summary of the Literature. Prepared under EPA Cooperative Agreement CR822795-01 with the Office of Economy and Environment, U.S. Environmental Protection Agency, Washington, D.C. 20460. Available online at: <https://yosemite.epa.gov/ee/epa/erm.nsf/oeT/212979DC5448DEAD8525683000732F35>
- Asian Development Bank. (2015). Fifth ASEAN Chief Justices' Roundtable on Environment Asean Judicial Cooperation on the Environment - The Proceedings. Available online at: <http://www.ajne.org/resources>
- Asian Judges Network on Environment. (2016). About the Asian Judges Network on Environment. Available online at: <http://www.ajne.org/articles>
- Audit Office of New South Wales (2017). Website of the Audit Office of New South Wales. Available online at: <http://www.audit.nsw.gov.au/>
- Australian Department of the Environment and Energy. (2017). Ozone Depleting Substances. Available online at: <http://www.environment.gov.au/protection/ozone/ozone-depleting-substances>
- Australian Department of the Environment. (2015). Convention on International Trade in Endangered Species of Wild Fauna and Flora. Biennial Report 2013-2014 of Australia. Available online at: <https://cites.org/eng/resources/reports/biennial.php>
- Australian Department of the Environment. (2013). The Compliance and Enforcement Measures We Use. Compliance and Enforcement Policy. Available online at: https://www.environment.gov.au/system/files/resources/2caa19c8-4393-4ffa-be0c-ed246f93f604/files/epbc-act-compliance-enforcement-policy_1.pdf
- Australian Federal Police. (2017). Environmental Crime. Available online at: <https://www.afp.gov.au/what-we-do/crime-types/environmental-crime>
- Banco Central do Brazil. (2008). Resolução N ° 3545. Available online at: http://www.bcb.gov.br/pre/normativos/res/2008/pdf/res_3545_v1_0.pdf
- Banks D., Davies C., Gosling J., Newman J., Rice M., Wadley J. and Walravens F. (2008) Environmental Crime: A Threat to Our Future. Environmental Investigation Agency, London, UK.
- Barclay, K. (2014). Following the Proceeds of Illegal Fishing in the Asia-Pacific: Supply Chain Intervention Points. In Rose, G. (Ed.), Following the Proceeds of Environmental Crime: Forests, Fish and Filthy Lucre. Routledge Ltd.
- Basel Convention. (2011). Basel Convention Overview. Available online at: <http://www.basel.int/TheConvention/Overview/tabid/1271/Default.aspx>



Belgium Constitutional Court. (2016). Judgment number: 7/2016. Available online at: http://www.const-court.be/cgi/judgments_popup.php?lang=en&ArrestID=4048

Bhargav, P. (2 May 2011). Everything You Need to Know About the National Green Tribunal. Conservation India. Available online at: <http://www.conservationindia.org/resources/ngt>

Bhuyan, R. (26 December 2016). The gap in environmental crime statistics: half of India's environmental crimes were recorded in Rajasthan. *Live Mint E-paper*. Available online at: <http://www.livemint.com/Opinion/aE8vmBDeBKOJCODKhBwctN/The-gap-in-environmental-crime-statistics.html>

Biggs, D., Cooney, R., Roe, D., Dublin, H., Allan, J., Challenger, D., and Skinner, D. (2015). Engaging local communities in tackling illegal wildlife trade Can a 'Theory of Change' help? Discussion Paper August 2015. Available online at: <http://pubs.iied.org/pdfs/146561IED.pdf>

Bodega Zugasti, D. de la. (2014). Illegal use of poisoned-baits. Legal Analysis and Investigation.

SEO/BirdLife-Proyecto Life+ VENENO. Available online at: http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.showFile&rep=file&fil=VENENONO_Illegal_use_Manual.pdf.

Boekhout van Solinge, T. (2010). Equitorial Deforestation as a Harmful Practice and a Criminological Issue. In White, R. (Ed.), *Global Environmental Harm: Criminological Perspectives*. Willan Publishing.

Brazilian Government. (2014a). Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis. Available online at: <http://www.brasil.gov.br/meio-ambiente/2014/08/saiba-como-denunciar-crimes-e-agressoes-ao-meio-ambiente>

Brazilian Government. (2014b). Instituto do Patrimonio Historico e Artistico Nacional. Available online at: <http://portal.iphan.gov.br>

Brazilian Government. (2014c). Instituto Chico Mendes de Conservacao da Biodiversidade. Available online at: <http://www.icmbio.gov.br/portal/>

Brazilian Government. (2014d). Fundacao Nacional do Indio. Available online at: <http://www.funai.gov.br>

Brazilian Government. (1999). Environmental Crimes Law of Brazil. Available online at: <https://www.animallaw.info/statute/brazil-crimes-brazilian-environmental-crimes-law>

Brazilian Government. (1996). Lei n. 9.296, 24 July 1996. Available online at: http://www.planalto.gov.br/ccivil_03/leis/L9296.htm

Bricknell, S. (2010). Environmental Crime in Australia. Australian Institute of Criminology Reports. Research and Public Policy Series 109. Available online at: <http://aic.gov.au/publications/current%20series/rpp/100-120/rpp109.html>

Cain, M., and Donnelly, H. (2017). Transparent and Consistent Sentencing in the Land and Environment Court of NSW: Costs as an Aspect of Punishment. Judicial Commission of New South Wales. Research Monograph 40. Available online at: <https://www.judcom.nsw.gov.au/wp-content/uploads/2017/07/Monograph-40-Volume-1.pdf>

Carrington, D. (2016). Waste Crime is 'The New Narcotics', says Environment Agency Chief. *The Guardian*. Available online at: <https://www.theguardian.com/environment/2016/sep/22/ea-chief-waste-is-the-new-narcotics>

Cass, V., in Edwards, S., Edwards, T., and Fields, C., eds. (2010). *Environmental Crime and Criminality: Theoretical and Practical Issues*. Routledge Ltd.

Castillo, T. (2015). Organised Crime and Environmental Crime: Analysis of EU Legal Instruments. EFFACE project. Available online at: <http://efface.eu/organised-crime-and-environmental-crime-analysis-eu-legal-instruments>

Centre for Victims of Torture. (2017). *New Tactics*



in Human Rights. Available online at: <https://www.newtactics.org/>

Chamber of Mines of South Africa. (2017). Illegal Mining in South Africa. Available online at: <http://www.chamberofmines.org.za/industry-news/publications/presentations/send/7-2015/417-illegal-mining-submission-to-the-mhsc-by-the-chamber-of-mines>

Chinese Supreme Court. (2016). Interpretation of the Supreme People's Court and the Supreme People's Procuratorate on Several Issues Concerning the Application of Law in the Handling of Criminal Cases of Environmental Pollution. Adopted at the 1698th meeting of the Judicial Committee of the Supreme People's Court on November 7, 2016 and at the 58th meeting of the Twelfth Procuratorial Committee of the Supreme People's Procuratorate on December 8, 2016, and to be in force on January 1, 2017. No. 29 [2016] of the Supreme People's Court. Available online at: <http://www.lawinfochina.com/Display.aspx?lib=law&Cgid=287324>

Chinese Standing Committee (2014). Interpretation of the Standing Committee of the National People's Congress on Articles 341 and 312 of the Criminal Law of the People's Republic of China

(Adopted at the 8th Session of the Standing Committee of the Twelfth National People's Congress on April 24, 2014). Available online at: <http://en.pkulaw.cn/display.aspx?cgid=223984&lib=law>

CITES. (n.d.). National Laws for Implementation of the Convention. Resolution Conf. 8.4 (Rev. CoP15). Available online at: <https://cites.org/eng/res/08/08-04R15.php>

CITES. (2017a). What is CITES? Available online at: <https://www.cites.org/eng/disc/what.php>

CITES. (2017b). The International Consortium on Combating Wildlife Crime. Available online at: <https://www.cites.org/eng/prog/iccwc.php>

CITES. (2017c). National Laws for Implementing the Convention. Available online at: <https://cites.org/>

legislation

CITES. (2017d). CITES Welcomes Powerful New UN Resolution on Tackling Illicit Wildlife Trafficking. Press release 12 September 2017. Available online at: https://cites.org/eng/news/pr/CITES_welcomes_new_powerful_UN_resolution_to_tackle_wildlife_trafficking_12092017

CITES. (2016). Transport Sector Steps up to Fight Illicit Wildlife Trafficking. Press release 16 March 2016. Available online at: https://cites.org/eng/news/pr/transport_sector_steps_up_to_fight_illicit_wildlife_trafficking_14032016

CITES and GRASP. (2006). CITES/GRASP Orang-utan Technical Mission

Indonesia. Available online at: https://cites.org/sites/default/files/common/prog/ape/ID_mission06.pdf

Clifford, M. (1998). Environmental Crime: Enforcement, Policy and Social Responsibility, 1st edition. AN Aspen Publication.

Clifford, M., Terry, D. (2012). Edwards, Environmental Crime, 2nd edition. Jones & Bartlett Learning.

Conference of the Parties to the United Nations Convention against Transnational Organized Crime. (2016). Report of the Conference of the Parties to the United Nations Convention against Transnational Organized Crime on its Eighth Session, held in Vienna from 17 to 21 October 2016. CTOC/COP/2016/15. Available online at: <http://www.unodc.org/unodc/en/treaties/CTOC/CTOC-COP-session8.html>

Conference of the Parties to the United Nations Convention against Transnational Organized Crime. (2012). Technical Assistance Provided to States in the Application of the United Nations Convention against Transnational Organized Crime to New Forms and Dimensions of Transnational Organized Crime. Report of the Secretariat. Sixth session. CTOC/COP/2012/7. Available online at: <https://www.unodc.org/unodc/treaties/CTOC/CTOC-COP-session6.html>



Corcoran, P. (29 September 2016). Illegal Mining a Golden Opportunity for Mexico Crime Groups. Insight Crime.. Available online at: <http://www.insightcrime.org/news-analysis/mexico-crime-groups-increasing-involvement-illegal-mining>

Costa, R. and Sampath, S. (2011). India: Environmental liability and contamination regulations. *EHS Journal*. Available online at: <http://ehsjournal.org/http://ehsjournal.org/ravi-costa-and-sanjay-sampath/india-environmental-liability-and-contamination-regulations/2011/>

Council of Europe. (2015). Recommendation N° 177 (2015) on the Gravity Factors and Sentencing Principles for the Evaluation of Offences against Birds, and in particular the Illegal Killing, Trapping and Trade of Wild Birds. Available online at: <https://wcd.coe.int/ViewDoc.jsp?p=&id=2397713&Site=&direct=true>

Council of the European Union. (2014). EnviCrimeNet Intelligence Project on Environmental Crime. Preliminary Report on Environmental Crime in Europe. Note 16438/14. Available online at: <http://www.statewatch.org/news/2014/dec/eu-council-envi-crime-net-16438-14.pdf>

Cuvillier, L. (25 June 2014). How Chinese Mining Companies Sustain Organized Crime in Mexico. VICE News. Available online at: <https://news.vice.com/article/how-chinese-mining-companies-sustain-organized-crime-in-mexico>

CWIT Project. (2014). Countering Wee Illegal Trade. Work Package 5: Crime Analysis. Deliverable 5.3. Evaluation Matrix to Codify the Crime Types.

Damião Gonçalves, E., Pimentel Garcia, L., Filho, M., and Quiroga Advogados, M. (2017). Environmental Law and Protection in Brazil: An Overview. Practical Law: A Thomson Reuters Legal Solution. Available online at: <http://us.practicallaw.com/2-508-8459>

Defenders of Wildlife. (2015). New Report Shows Extent of Wildlife Trafficking From Latin America to the United States. Available online at: <https://www.defenders.org/>

[org/press-release/new-report-shows-extent-wildlife-trafficking-latin-america-united-states](http://www.defenders.org/press-release/new-report-shows-extent-wildlife-trafficking-latin-america-united-states)

Department for Environment, Food and Rural Affairs of the United Kingdom Government. (2013). Waste Legislation and Regulations. Available online at: <https://www.gov.uk/guidance/waste-legislation-and-regulations>

DOTCOM Waste Project. (2017a). Online Training Toolkit. Available online at: <http://www.dotcomwaste.eu/>

DOTCOM Waste Project. (2017b). Development of Tools to Counter Illegal Management of Waste (DOTCOM Waste) Project. Available online at: <http://www.dotcomwaste.eu/>

Dorri, N., Heidari, M. (2017). The strategy of implementing criminal policy in environmental crimes. Crime and Criminology. Islamic Azad University Isfahan (Khorasgan) Branch, Isfahan, Iran. *Journal of Earth, Environment and Health Sciences*. Published by Wolters Kluwer – Medknow.

Duhaime, C. (2012). French Court Convicts 5 Men for Carbon Trading Fraud and Money Laundering. Duhaime's Anti-Money Laundering Law in Canada. Available online at: <http://www.antimoneylaunderinglaw.com/2012/01/french-court-convicts-5-men-for-carbon-trading-fraud-and-money-laundering.html>

EAGLE Network. (2017a). Annual Reports. Available online at: <http://www.eagle-enforcement.org/annual-reports/>

EAGLE. (2017b). Legal Follow-up. Available online at: <http://www.eagle-enforcement.org/legal-follow-up/>

ECOLEX. (n.d.). About ECOLEX. Available online at: <https://www.ecolex.org/p/about/>

Ellefsen, R. (2012). Eco-global Crimes: Contemporary Problems and Future Challenges. Routledge Ltd.

Elliott, L., Schaedla, W. H. (2016). Handbook of Transnational Environmental Crime. Edward Elgar Publishing.



Elliott, L. (2012). Fighting transnational environmental crime. *Journal of International Affairs*. 66(1), 87-104.

Elliott, L. (2007). Transnational environmental crime in the Asia-Pacific: An “un(der)securitized” security problem? *The Pacific Review*. 20(4), 499–522.

El Masaiti, A. (24 February 2017). Morocco Launches Environmental Police. Morocco World News. Available online at: <https://www.morocccoworldnews.com/2017/02/209229/environmental-police-to-be-launched-on-february-23/>

England and Wales Sentencing Council (2014). Environmental Offences – Definitive Guidelines. Available online at: <https://www.sentencingcouncil.org.uk/publications/item/environmental-offences-definitive-guideline/>

EnviCrimeNet. (2016). Report on Environmental Crime. Available online at: <http://www.envicrimenet.eu/EN/images/docs/envicrimenet%20report%20on%20environmental%20crime.pdf>

EnviCrimeNet. (2015). Intelligence Project on Environmental Crime. Report on Environmental Crime in Europe. Available online at: http://www.envicrimenet.eu/EN/images/docs/ipecc_report_on_environmental_crime_in_europe.pdf

Environment Agency (England). (2017). About us. Available online at: <https://www.gov.uk/government/organisations/environment-agency/about>

Environment Agency (England). (2014). Environment Agency Enforcement, Sanctions and Offences. Available online at: <https://www.gov.uk/government/publications/environment-agency-enforcement-and-sanctions-statement#history>

Environment Protection Authority Victoria. (2017). Compliance and Enforcement Policy. Available online at: <http://www.epa.vic.gov.au/our-work/compliance-and-enforcement/ce-policy>

Environment Protection Authority Victoria. (2012). Enforceable Undertakings Guidelines. Victoria Government Gazette. No. S 142 Tuesday 1 May 2012. By Authority of Victorian Government Printer. Available online at: <http://www.epa.vic.gov.au/our-work/compliance-and-enforcement/enforceable-undertakings>

Environmental Audit Committee of the House of Commons. (2005). Corporate Environmental Crime. Second Report of Session 2004–05. Report, together with formal minutes, oral and written evidence. Available online at: <https://www.publications.parliament.uk/pa/cm200405/cmselect/cmenvaud/136/136.pdf>

Environmental Investigation Agency. (2017). About EIA. Available online at: <https://eia-international.org/about-eia>

Environmental Investigation Agency. (2008). Environmental Crime - A Threat to our Future. Available online at: https://www.unodc.org/documents/NGO/EIA_Ecocrime_report_0908_final_draft_low.pdf

Environmental Justice Foundation. (21 March 2017). 14 Year Jail Sentences for Thai Human Traffickers. Press Release. Available online at: <https://ejfoundation.org/news-media/2017/press-release-jail-sentence-thai-human-traffickers>

European Commission. (2016a). Environmental Crime Introduction. Available online at: <http://ec.europa.eu/environment/legal/crime/>

European Commission. (2016b). The Precautionary Principle. Summary of: Communication (COM(2000) 1final) on the Precautionary Principle. Available online at: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3A132042>

European Commission. (2016c). Co-operation with Judges. Available online at: <http://ec.europa.eu/environment/legal/law/judges.htm>

European Commission. (n.d.). Mutual Legal Assistance and Extradition. Available online at: <http://ec.europa.eu/justice/criminal/judicial->



cooperation/legal-assistance/index_en.htm

European Judicial Training Network. (2017). About us. Available online at: <http://www.ejtn.eu/About-us/>

European Network of Prosecutors for the Environment. (2016a). About ENPE. ENPE Newsletter March 2016. Available online at: <https://www.environmentalprosecutors.eu/newsletters>

European Network of Prosecutors for the Environment. (2016b). Launching the ENPE Environmental Crimes Database. ENPE newsletter - Issue 3 December 2016. Available online at: <https://www.environmentalprosecutors.eu/newsletters>

European Parliament's Committee on the Environment, Public Health and Food Safety. (2016a). Wildlife Crime in Germany. In depth analysis. Directorate General for Internal Policies Policy Department A: Economic and Scientific Policy. IP/A/ENVI/2015-10

European Parliament's Committee on the Environment, Public Health and Food Safety. (2016b). Wildlife Crime in the United Kingdom. In depth analysis. Directorate General for Internal Policies Policy Department A: Economic and Scientific Policy. IP/A/ENVI/2015-10

European Parliament and Council of the European Union. (2008). Directive 2008/99/EC on the protection of the environment through criminal law of 19 November 2008. *Official Journal of the European Union* L328/28. Available online at: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32008L0099>

European Union Action to Fight Environmental Crime. (2014). Policy Brief 1: Limitations and Challenges of the Criminal Justice System in Addressing Environmental Crime. November 2014. Available online at: <http://efface.eu/policy-brief-1-criminal-justice-system-addressing-environmental-crime>

European Union FLEGT Facility. (2017). Voluntary Partnership Agreements. Available online at: <http://www.euflegt.efi.int/vpa>

European Union Forum of Judges for the Environment. (2014). Presentation. Available online at: <http://www.eufje.org/index.php/en/>

EUROPOL. (2017). Serious and Organised Crime Threat Assessment. Crime in the Age of Technology. Available online at: <https://www.europol.europa.eu/socta/2017/>

EUROPOL. (2013). Threat Assessment 2013 Environmental Crime in the EU. EUROPOL Public Information. Available online at <https://www.europol.europa.eu/publications-documents/threat-assessment-2013-environmental-crime-in-eu>

EUROPOL. (2011). Use of Improvised Illegal Waste Disposal Sites by Criminals and OC Groups in the EU. Available online at: https://webcache.googleusercontent.com/search?q=cache:nLna444VOA8J:https://www.europol.europa.eu/sites/default/files/documents/008-2011_oc-scan_policy_brief_open_version.pdf+&cd=3&hl=it&ct=clnk&gl=it&client=firefox-b-ab

Europol-OHIM. (2015). 2015 Situation Report on Counterfeiting in the European Union - A Joint Project between Europol and the Office for Harmonization in the Internal Market. Available online at: <https://www.europol.europa.eu/content/counterfeit-goods-produced-eu-rise>

EU TWIX. (2016). EU TWIX Trade in Wildlife Information Exchange. Available online at: <http://eu-twix.org/>

FAO. (2016). The State of World Fisheries and Aquaculture 2016. Contributing to food security and nutrition for all. Rome. 200 pp. Available online at: www.fao.org/3/a-i5555e.pdf

FAO. (2001). International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing. Available online at: <http://www.fao.org/docrep/003/y1224e/y1224e00.htm>

Farmer, A., Germani, A.R. and Sollund, R. (2015). Conclusions of the EFFACE Case Studies. Available online at: <http://efface.eu/>



Forest Trends. (2017). Forest Policy, Trade, and Finance » Timber Regulation Enforcement Exchange. Available online at: <http://www.forest-trends.org/program.php?id=401>

Freeland. (2017). Freeland Website. Available online at: <http://www.freeland.org/>

Freeland. (2015). Wildlife Enforcement Networks. Available online at: <http://www.freeland.org/programs/wens/>

Freeland. (2014). Reversing the Tide of Wildlife Poaching and Trafficking. Mapping Trends - Analyzing and Preparing Countermeasures. Available online at: <http://ithink-now.org/wp-content/uploads/2016/02/Reversing-the-Tide-Report-July-2014.pdf>

Freeland, S. (2015). Addressing the International Destruction of the Environment during Warfare under the Rome Statute of the International Criminal Court. Intersentia.

Gallmetzer, R. (2017). Prosecute Climate Crimes. UN Environment. Available online at: <http://web.unep.org/ourplanet/march-2017/articles/prosecute-climate-crimes>

Galster, S. (2016). Crisis of coordination: building a strong, lasting shield for wildlife in Asia. *Frontline Review*. No. 2016/03. Available online at: http://freeland.org/wp-content/uploads/2016/03/Frontline-Review_Crisis-of-Coordination.pdf

German Federal Agency for Nature Conservation. (2015). Convention on International Trade in Endangered Species of Wild Fauna and Flora. Biennial Report 2013-2014 of the Federal Republic of Germany.

Gill, G. N. (2017). Environmental Justice in India: The National Green Tribunal. Routledge.

Global Forest Atlas. (2017). Illegal logging. Available online at: <http://globalforestatlas.yale.edu/forest-use/logging/logging/illegal-logging>

Global Initiative against Transnational Organized Crime, Estelle Levin Ltd., Deutsche Gesellschaft für Internationale Zusammenarbeit. (2017). Follow the Money Financial Flows Linked to Artisanal and Small-Scale Gold Mining. A Tool for Intervention. Available online at: <http://globalinitiative.net/documents/follow-the-money-financial-flows-linked-to-artisanal-and-small-scale-gold-mining-tool-for-intervention/>

Global Initiative against Transnational Organized Crime. (2016). Organized Crime and Illegally Mined Gold in Latin America. Available online at: <http://globalinitiative.net/wp-content/uploads/2017/02/tgiatoc-oc-and-illegally-mined-gold-in-latin-america-report-1718-digital.pdf>

Global Initiative against Transnational Organized Crime and Black Market Watch. (2015). Illicit Trade: Undermining Development. Available online at: <http://globalinitiative.net/wp-content/uploads/2016/08/IllicitTradeUnderminingDevelopment-1.pdf>

Gibbs, C. and Boratto, R. (2017). Oxford Research Encyclopedia of Criminology. Available online at: <http://criminology.oxfordre.com/view/10.1093/acrefore/9780190264079.001.0001/acrefore-9780190264079-e-269>

Global Fishing Watch. (2017). About the Project. Available online at: <http://globalfishingwatch.org/the-project>

Gogan, S. (2016). Beyond Deforestation: Illegal Gold Mining and Human Health. Public Policy Peru. University of Maryland School of Public Policy in Peru. Available online at: <https://umdpolicyperu2016.wordpress.com/2016/03/19/beyond-deforestation-illegal-gold-mining-and-human-health/>

Goodstein, E. (1999). The Trade-Off Myth: Facts & Fictions About Jobs and the Environment. Island Press. Washington, D.C. Covelo, California.

Gosling, J. (2014). Global Response to Transnational Organized Environmental Crime. Available online at: <http://globalinitiative.net/wp-content/uploads/2016/11/global-initiative-global-response-to-transnational-organized->



environmental-crime-jan-2014-web-version.pdf

Government of Malaysia. (2012). Online Notification and Registration of Environmentally Hazardous Substances (EHSNR). Available online at: <https://www.e-ehs.doe.gov.my/app/webroot/portal/>

Green Customs. (n.d.). The Green Custom Initiative. Available online at: <http://www.greencustoms.org/>

GRID-Arendal. (2017). The Trade in Plastic Waste. Available online at: <https://www.grida.no/publications/333>

GRID-Arendal. (2014). How to identify Forest Crime - Asia. Available online at: <https://www.grida.no/publications/233>

Haelein, C. (2017). Below the Surface: How Illegal, Unreported and Unregulated Fishing Threatens our Security. Royal United Service Institute for Defense and Security Studies. Available online at: https://rusi.org/sites/default/files/201707_rusi_below_the_surface_haenlein.pdf

Hall, M. (2011). Environmental victims: Challenges for criminology and victimology in the 21st century. *Varstvoslovje: Journal of Criminal Justice & Security*, 13(4), p.371.

Haq, Z. (2015). Bad Risks, Fake Pesticides Stoke Punjab's Worst Farm Crisis in Years. *Hindustantimes*. Available online at: <http://www.hindustantimes.com/punjab/bad-risks-fake-pesticides-stoke-punjab-s-worst-farm-crisis-in-years/story-8avxcqflwOjANddjhl3cfO.html>

Holdgate, M. W. (1980). *A Perspective of Environmental Pollution*. Cambridge University Press.

Holme, R. (2003). Drinking water contamination in Walkerton, Ontario: Positive resolutions from a tragic event. *Water Science and Technology*, 47, 1–6.

ICED. (2017). Supreme Audit Institution of India. Available online at: www.iced.cag.gov.in

ICCWC. (2016). ICCWC Indicator Framework for Combating Wildlife and Forest Crime - A self-Assessment

Framework for National Use. Assessment Guidelines. Available online at: https://cites.org/eng/prog/iccwc.php/Tools

ICMBio. (2016). Voluntariado ICMBio. Available online at: http://www.icmbio.gov.br/portal/sejaumvoluntario

Iguanawatch. (2017). Available online at: https://www.iguanawatch.info/

IMPEL. (2017). About IMPEL. Available online at: https://www.impel.eu/about-impel/

Independent Commission for Human Rights. (2017). Website of the Independent Commission for Human Rights. Available online at: http://icmr.ps/en/1

Indian Ministry of Environment, Forest and Climate Change. (2017). National Environmental Awareness Campaign (NEAC). Available online at: http://www.moef.nic.in/division/national-environmental-awareness-campaign-neac

Indian Wildlife Crime Control Bureau. (2017a). Creation of WCCB. Available online at: www.wccb.gov.in/Content/Creationofwccb.aspx

Indian Wildlife Crime Control Bureau. (2017b). Hand Book for Wildlife Crime Investigation Officers. Available online at: http://wccb.gov.in/

International Council on Mining and Metals. (2012). The Role of Mining in National Economies: Mining's Contribution to Sustainable Development. Third Edition. Available online at: https://www.icmm.com/romine/index

International Fund for Animal Welfare. (2017). Our Work. tenBoma. Available online at: http://www.ifaw.org/united-states/our-work/wildlife-trade/tenboma

International Labor Organization. (2012). The Global Impact of E-waste: Addressing the Challenge. Available online at: http://ilo.org/sector/Resources/publications/WCMS_196105/lang--en/index.htm



International Labor Organization. (2008). Observation (CEACR). Adopted 2007, published 97th ILC session (2008). Forced Labor Convention, 1930 (No. 29) - Peru (Ratification: 1960). Available online at: http://www.ilo.org/dyn/normlex/en/f?p=1000:13100:0::NO:13100:P13100_COMMENT_ID:2280132

International Maritime Organization. (2017). International Convention for the Prevention of Pollution from Ships (MARPOL). Available online at: [http://www.imo.org/en/about/conventions/listofconventions/pages/international-convention-for-the-prevention-of-pollution-from-ships-\(marpol\).aspx](http://www.imo.org/en/about/conventions/listofconventions/pages/international-convention-for-the-prevention-of-pollution-from-ships-(marpol).aspx)

International Network for Environmental Compliance and Enforcement. (2017). About. Available online at: <https://inece.org/about/>

International Monsanto Tribunal. (2017). Advisory Opinion. Available online at: <http://en.monsantotribunal.org/Conclusions#>

International Organizations Online. (2010). Taskforce on Organized Crime in the Baltic Sea Region. Available online at: <https://www.uia.org/s/or/en/1100044658>

International Union for Conservation of Nature. (2017a). Wildlife Trafficking. Available online at: <https://www.iucn.org/regions/europe/our-work/wildlife-trafficking>

International Union for Conservation of Nature (2017b). Beyond Enforcement Initiative. Commission on Environmental, Economic and Social Policy. Available online at: <https://www.iucn.org/commissions/commission-environmental-economic-and-social-policy/our-work/specialist-group-sustainable-use-and-livelihoods-suli/communities-and-illegal-wildlife-trade/beyond-enforcement-initiative>

International Union for Conservation of Nature. (2016a). World Declaration on the Environmental Rule of Law. Outcome Document of the 1st IUCN World Environmental Law Congress. Available online at: [http://iucnael2016.no/wp-content/uploads/2016/06/WORLD-DECLARATION-ON-THE-ENVIRONMENTAL-RULE-OF-LAW-Near-Final-](http://iucnael2016.no/wp-content/uploads/2016/06/WORLD-DECLARATION-ON-THE-ENVIRONMENTAL-RULE-OF-LAW-Near-Final-Draft-.pdf)

Draft-.pdf

International Union for Conservation of Nature. (2016b). Judges Establish the Global Judicial Institute for the Environment. Available online at: <https://www.iucn.org/news/world-commission-environmental-law/201607/judges-establish-global-judicial-institute-environment>

INTERPOL. (2017a). Environmental Crime. Available online at: <http://www.interpol.int/Crime-areas/Environmental-crime/Environmental-crime>

INTERPOL. (2017b). INTERPOL Warning on Human Trafficking Links to the Fishing Industry. Press release 04 May 2017. Available online at: <https://www.interpol.int/News-and-media/News/2017/N2017-057>

INTERPOL. (2017c). Anti-wildlife Trafficking Operation Results in Global Arrests and Seizures. Press release 02 March 2017. Available online at: <https://www.interpol.int/News-and-media/News/2017/N2017-022>

INTERPOL. (2017d). Notices. Available online at: <https://www.interpol.int/INTERPOL-expertise/Notices>

INTERPOL. (2017e). INTERPOL Programme to Combat Financial Crimes in Forestry Sector Launched in Indonesia. Press release 10 March 2017. Available online at: <https://www.interpol.int/en/News-and-media/News/2017/N2017-027>

INTERPOL. (2017f). Research Identifies Illegal Wildlife Trade on the Darknet. Press release 14 June 2017. Available online at: <https://www.interpol.int/News-and-media/News/2017/N2017-080>

INTERPOL. (2017g). INTERPOL Launches First Digital Forensics Training Course for Wildlife Investigations. Available online at: Press release 30 June 2017. <https://www.interpol.int/News-and-media/News/2017/N2017-086>

INTERPOL. (2017h). Environmental Crime Committee and Working Groups. Available online at: <https://www.interpol.int/Crime-areas/Environmental-crime/Committee-and-Working-Groups>



Working-Groups

INTERPOL. (2017i). Hazardous Materials Seized in Largest Global Operation against Illegal Waste. Press release 8 August 2017. Available online at: <https://www.interpol.int/News-and-media/News/2017/N2017-100>

INTERPOL. (2017j). Task Forces: National Environmental Security Task Forces. Available online at: <https://www.interpol.int/Crime-areas/Environmental-crime/Task-forces>

INTERPOL. (2017k). Project Leaf. Available online at: <https://www.interpol.int/Crime-areas/Environmental-crime/Projects/Project-Leaf>

INTERPOL. (2015a). Environmental Crime and its Convergence with other Serious Crimes. Available online at: <https://www.interpol.int/Crime-areas/Environmental-crime/Resources>

INTERPOL. (2015b). Directory of Environmental Law Enforcement Networks. Available online at: <https://webcache.googleusercontent.com/search?q=cache:IfcWKqHQJqQJ:https://www.interpol.int/Media/Files/Crime-areas/Environmental-crime/Directory-of-Environmental-Law-Enforcement-Networks/+&cd=1&hl=it&ct=clnk&gl=it&client=firefox-b-ab>

INTERPOL. (2014a). General Assembly Resolution AG-2014-RES-03 on INTERPOL Response to Emerging Threats in Environmental Security. Available online at: <https://www.interpol.int/News-and-media/Events/2014/83rd-INTERPOL-General-Assembly/83rd-INTERPOL-General-Assembly-Resolutions>

INTERPOL. (2014b). Pollution Crime Forensic Investigation Manual Volume I of II. Environmental Security Sub-Directorate. Available online at: <https://www.interpol.int/Crime-areas/Environmental-crime/Resources/Publications>

INTERPOL. (2013). Guide to Carbon Trading Crime. Available online at: <https://www.interpol.int/Media/Files/Crime-areas/Environmental-crime/Guide-to-Carbon-Trading-Crime-2013>

INTERPOL-IFAW. (2013). Project web: an investigation into the ivory trade over the internet Within the European Union. Available online at: <http://www.ifaw.org/united-states/resource-centre/project-web-investigation-ivory-trade-over-internet-within-european-union>

INTERPOL Pollution Crimes Working Group. (2009). Assessing the Links between Organized Crime and Pollution Crimes. Available online at: <https://www.interpol.int/ar/Media/Files/Crime-areas/Environmental-crime/Interpol-Pollution-Crimes-Working-Group-Assessing-the-Links-between-Organised-Crime-and-Pollution-Crimes>

INTERPOL-UNEP. (2016). Strategic Report: Environment, Peace and Security – A Convergence of Threats. Available online at: www.interpol.int and www.unep.org

International Tropical Timber Organization. (2017). What are Illegal Logging and Illegal Trade? Available online at: http://www.itto.int/feature06_01/

IPEN, BAN and indyACT. (2016). Lebanon Plans to Dump Its Garbage on Africa or Middle East Neighbors. Press release 16 January 2016. Available online at: <http://www.ipen.org/news/press-release-lebanon-plans-dump-its-garbage-africa-or-middle-east-neighbors>

Iran Data Portal. (2017). Penal Code. Available online at: <http://irandataportal.syr.edu/penal-code>

Johns, M. (2014). Regional Plan of Action to Promote Responsible Fishing Practices in the South-East Asia Region: Cooperative mechanisms. In Rose, G. (Ed.), *Following the Proceeds of Environmental Crime: Forests, Fish and Filthy Lucre*. Routledge Ltd.

Kakabadse, Y. (2011). The fight against wildlife crime. Enforcement v. corruption. *Environmental Policy and Law*, 41(3).

Kamweti, D., Osiro, D. and Mwiturubani D. A. (2009). Monograph 166: Nature and Extent of Environmental Crime in Kenya. Pretoria, Institute for Security Studies.

Kenya National Bureau of Statistics. (2017). Economic



Survey 2017. Available online at: <https://www.knbs.or.ke/>

Kenyan Government. (2010). Constitution of Kenya. Available online at: <http://www.kenyalaw.org/lex/actview.xql?actid=Const2010>

Kleinschmit, D., Mansourian, S., Wildburger, C., and Purret, A. (2016). Illegal Logging and Related Timber Trade – Dimensions, Drivers, Impacts and Responses. A Global Scientific Rapid Response Assessment Report. IUFRO World Series Volume 35. Vienna. Available online at: <https://www.iufro.org/science/gfep/illegal-timber-trade-rapid-response/report/>

Lambin, T. (2015). Ivory, Non-State Armed Groups and Terrorism. European Year for Development. Available online at: <https://europa.eu/eyd2015/en/wwf-world-wide-fund-nature/posts/ivory-non-state-armed-groups-and-terrorism>

Land and Environment Court New South Wales. (2017). Judicial newsletters. Available online at: http://www.lec.justice.nsw.gov.au/Pages/publications/judicial_newsletters.aspx

Lawson, S. (2004). The Ramin Racket: The Role of CITES in Curbing Illegal Timber Trade. Environmental Investigation Agency and Telapak.

Legal Atlas. (2017). Available online at: <http://www.legal-atlas.net/>

Li, H. (2016). Why Environmental Regulation Is Good For The Economy. Available online at: <https://publicpolicy.wharton.upenn.edu/live/news/1545-why-environmental-regulation-is-good-for-the>

Library of Congress. (2015). Wildlife Trafficking and Poaching: South Africa. Available online at: <https://www.loc.gov/law/help/wildlife-poaching/southafrica.php>

Lusaka Agreement Taskforce. (2017). Lusaka Agreement on Co-operative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora. Available online at: <http://lusakaagreement.org/>

Machado, F. and Anderson, K. (2016). Brazil's New Forest Code: A Guide for Decision-Makers in Supply Chains and Governments. WWF-Brazil. Available online at: http://assets.wwf.org.uk/downloads/wwf_brazils_new_forest_code_guide_1.pdf

Marshall, W. and Tarr, J. (2017). How Satellite Surveillance is Hauling in Illegal Fishers. Medium and World Economic Forum. Available online at: <https://medium.com/world-economic-forum/how-satellite-surveillance-is-hauling-in-illegal-fishers-6d8047df272b>

Martin, P., Boer, B. and Slobodian, L. (2016). Framework for Assessing and Improving Law for Sustainability - A Legal Component of a Natural Resource Governance Framework. IUCN Environmental Policy and Law Paper No. 87. Available online at: <https://portals.iucn.org/library/node/46120>

May, C. (2017). Transnational Crime and the Developing World. Global Financial Integrity. Available online at: <http://www.gfintegrity.org/report/transnational-crime-and-the-developing-world/>

Mehtam M. C. (2009). In the Public Interest: Landmark Judgements & Orders of the Supreme Court of India on Environmental & Human Rights (Volume I). Prakriti Publications.

Milieu Ltd, T.M.C. Asser Institute and Pace. (2011). Considerations on the Application of the Precautionary Principle in the Chemicals Sector. Final Report. Available online at: http://ec.europa.eu/environment/chemicals/reach/pdf/publications/final_report_pp.pdf

Milieu Consortium (Milieu Ltd – DDH Consulting – ViSKon). (2006). Study on the Enforcement of the EU Wildlife Trade Regulations in the EU-25. Final Report: Overview Paper. Available online at: ec.europa.eu/environment/cites/pdf/studies/enforcement_trade.pdf

Mining Africa. (2017). Illegal Mining in Africa – Darkness and Danger. Available online at: <http://www.miningafrikanet/mining-news/illegal-mining-in-africa/>



Ministère de la Justice Français – Service des affaires européennes et internationaux (SAEI). (2009). Les pollutions maritimes : régime des infractions et des peines notion de responsabilité. Pollutions maritimes – Le cas du Maroc. CNRS – JURISCOPE. Available online at: <http://www.juriscope.org/>

Ministerio Publico Federal. (2016). MPF/AM formaliza parceria com aplicativo de denúncias ambientais MeuAmbiente.. Available online at: <http://www.mpf.mp.br/am/sala-de-imprensa/noticias-am/mpf-am-formaliza-parceria-com-aplicativo-de-denuncias-ambientais-meuambiente>

Moroccan Government. (2010). National Charter for the Environment and Sustainable Development. Available online at: http://www.chartenvironnement.ma/index.php?option=com_content&view=article&id=125&Itemid=216&lang=en&limitstart=1

Mueller, G. (2010). Environmental Crime and Criminality. Routledge Ltd.

Multilateral Fund for the Implementation of the Montreal Protocol. (2016). Available online at: <http://www.multilateralfund.org/Our%20Work/policy/default.aspx>

Mygov.scot. (2017). Make a Victim Statement. Available online at: <https://www.mygov.scot/victim-statement/>

National Green Tribunal Website. (2017). Available online at: <http://www.greentribunal.gov.in/>

National Whistleblower Center. (2017). The Global Wildlife Whistleblower Program. Available online at: <http://www.whistleblowers.org/wildlife>

Nature Conservancy. (2017). Brazil's Forest Code: Using Law to Protect the Rainforest. The Nature Conservancy. Available online at: <http://www.nature.org/ourinitiatives/regions/southamerica/brazil/placesweprotect/brazils-forest-code.xml>

Nellemann, C. (Editor in Chief); Henriksen, R., Kreilhuber, A., Stewart, D., Kotsovou, M., Raxter, P., Mrema, E., and Barrat, S. (2016). The Rise of Environmental Crime – A Growing Threat to Natural Resources Peace, Development

and Security. A UNEP-INTERPOL Rapid Response Assessment. United Nations Environment Programme and RHIPTO Rapid Response–Norwegian Center for Global Analyses. Available online at: www.rhipto.org

Nellemann, C., Henriksen, R., Raxter, P., Ash, N., Mrema, E. (2014). The Environmental Crime Crisis – Threats to Sustainable Development from Illegal Exploitation and Trade in Wildlife and Forest Resources. A UNEP Rapid Response Assessment. United Nations Environment Programme. Available online at: www.grida.no

Nellemann, C. UNEP-IUCN-CITES. 2013. Elephants in the dust- The African Elephant Crisis. www.unep.org

Nellemann, C., INTERPOL Environmental Crime Programme. (2012). Green Carbon, Black Trade: Illegal Logging, Tax Fraud and Laundering in the Worlds Tropical Forests. A Rapid Response Assessment. United Nations Environment Programme, Available online at: www.grida.no

Nellemann, C. UNEP-INTERPOL. 2010. Last stand of the gorilla-Environmental crime and conflict in the Congo Basin.

UNEP. 2009. The last stand of the orangutan. State of Emergency: Illegal Logging, Fire and Palm Oil in Indonesia's National Parks. www.unep.org

Network of Prosecutors on Environmental Crimes. (2016). Manual on Prosecuting Environmental Crime in the Baltic Sea Region. Available online at: <http://helcom.fi/Lists/Publications/Manual%20on%20prosecuting%20environmental%20crime%20in%20the%20Baltic%20Sea%20region,%20ENPRO%202016.pdf>

New South Wales Environmental Protection Authority. (2017a). Native Vegetation. State of the Environment 2015. Available online at: <http://www.epa.nsw.gov.au/about-us/publications-and-reports/state-of-the-environment/state-of-the-environment-2015/13-native-vegetation>

New South Wales Environmental Protection Authority.



(2017b). Policies and Guidelines. Available online at: <http://www.epa.nsw.gov.au/licensing-and-regulation/legislation-and-compliance/policies-and-guidelines>

New South Wales Environmental Protection Authority. (2017c). Guidelines on Enforceable Undertakings. Available online at: <http://www.epa.nsw.gov.au/resources/publicregister/enforceable-undertaking-guide-160640.pdf>

The Norwegian Agency for Development Cooperation. (2016). Monitoring Deforestation with Satellites and Drones. Available online at: <https://www.norad.no/en/front/funding/climate-and-forest-initiative-support-scheme/grants-2013-2015/projects/monitoring-deforestation-with-satellites-and-drones/>

OECD. (2017). OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. Available online at: <http://www.oecd.org/corporate/mne/mining.htm>

OECD. (2016). Responsible Business Conduct. Due diligence in Colombia's gold Supply Chain: Overview. Available online at: <http://www.oecd.org/corporate/mne/implementingtheguidance.htm>

OECD. (2013). Upstream Implementation of the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. Final Report on one-year pilot implementation of the Supplement on Tin, Tantalum, and Tungsten. Available online at: <http://mneguidelines.oecd.org/implementingtheguidance.htm>

OECD. (2016). OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas: Third Edition, OECD Publishing, Paris. Available online at: <http://www.oecd.org/corporate/mne/mining.htm>

OECD. (2015). Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains. Available online at: <http://mneguidelines.oecd.org/chinese-due-diligence-guidelines-for-responsible-mineral-supply-chains.htm>

OECD. (2013). Evading the Net: Tax Crimes in the Fisheries Sector. Available online at: <http://www.oecd.org/ctp/crime/evading-the-net-tax-crime-fisheries-sector.pdf>

OECD. (2012a). Environmental Outlook to 2050: The Consequences of Inaction. Available online at: http://www.oecd-ilibrary.org/environment/oecd-environmental-outlook-to-2050_9789264122246-en

OECD. (2012b). Recommendation of the Council of the OECD on Regulatory Policy and Governance. Available online at: <https://www.oecd.org/governance/regulatory-policy/49990817.pdf>

OECD. (2011). Illegal Trade in Environmentally Sensitive Goods: Draft Synthesis Report. COM/TAD/ENV/JWPTE(2011)45. OECD Trade and Agriculture Directorate/Environment Directorate.

OECD. (1997). Experience with the Use of Trade Control Measures in the Convention on International Trade in Endangered Species (CITES). Joint Session of Trade and Environment Experts. COM/TD/ENV(97)10/FINAL. Available online at: www.oecd.org/tad/envtrade/36786767.pdf

Office of the Ombudsman. (2014). Frequently Asked Questions. What is the Jurisdiction the Environmental Ombudsman? What are its Current Projects? Available online at: <http://www.ombudsman.gov.ph/index.php?home=1&navId=Mg==&subNavId=MTY=&l=3>

Office of the Prosecutor of the International Criminal Court. (2016). Policy Paper on Case Selection and Prioritisation. Available online at: https://www.icc-cpi.int/itemsDocuments/20160915_OTP-Policy_Case-Selection_Eng.pdf

Office of the United States Attorneys. (2017). United States Attorneys' Bulletins. Available online at <https://www.justice.gov/usao/resources/united-states-attorneys-bulletins>

Organisation of the American States General Assembly. (2017a). Resolution 2907 on Advancing Hemispheric



Security: A Multidimensional Approach. AG/RES. 2907 (XLVII-O/17). Adopted at the first plenary session, held on June 20, 2017. Available online at: scm.oas.org/doc_public/ENGLISH/HIST_17/AG07451E03.doc

Organisation of American States. (2017b) Monitoring Progress of the Environmental Cooperation Agenda in the CAFTA-DR Countries. Seventh Evaluation Report. CAFTA-DR Environmental Cooperation Program. Available online at: http://www.caftadr-environment.org/wp-content/uploads/2017/09/7th-CAFTA-DR-ME-Report_english-FINAL.pdf

Queensland Government. (2017). Assessing Land Clearing using Satellite Technology. Available online at: <https://www.qld.gov.au/environment/land/vegetation/mapping/land-clearing>

Park, I. (2014). Following the Proceeds of Bluewater Crime: Case Studies from an Australian Fishery In Rose, G. (Ed.),. Following the Proceeds of Environmental Crime. Forest, Fish and Filthy Lucre. Routledge Ltd.

Partnership for Action against Wildlife Crime in Scotland. (2014). Minister Launches Online Wildlife Crime Education Pack. Available online at: <http://www.gov.scot/Topics/Environment/Wildlife-Habitats/paw-scotland/Resources/Newsletters/issue8/features/education-pack>

Partnership for Action against Wildlife Crime in Scotland. (2013). Crime Prevention through Education and Awareness. Available online at: <http://www.gov.scot/Topics/Environment/Wildlife-Habitats/paw-scotland/Resources/Newsletters/issue7/people/education-officer>

Pereira, R. M. (2015). Environmental Criminal Liability and Enforcement in European and International Law. Brill Nijhoff Publishing.

Perelygin A., Selin A., Ivanov V. Metal Fingerprint: Countering Illicit Trade in Precious Metals and Gemstones. Policy Paper 4/2008. Available online at: <http://www.eastwest.ngo/idea/metal-fingerprint-countering-illicit-trade-precious-metals-and-gemstones#sthash.FpyjoFL8.dpuf>

Pink, G., and White, R. (2016). Environmental Crime and Collaborative State Intervention. Palgrave Macmillan.

Philipsen, N.J. and Faure, M.G. (2015). Fighting Environmental Crime in Sweden: A Country Report. Study in the framework of the EFFACE research project, Maastricht: Maastricht University, METRO. Available online at: file:///C:/Users/Elise/Downloads/EFFACE_Fighting%20Environmental%20Crime%20in%20Sweden.pdf

Pontes, N. (2011). Brazil Exports Satellite Rainforest Monitoring. Deutsche Welle. Available online at: <http://www.dw.com/en/brazil-exports-satellite-rainforest-monitoring/a-15516250>

Pramod, G., Nakamura, K., Pitcher, T. J., and Delagran, L. (2014). Estimates of illegal and unreported fish in seafood imports to the USA. *Marine Policy*, 48, 102-113. Available online at: <http://www.sciencedirect.com/science/article/pii/S0308597X14000918>

Preston, B. J. (2017). The Judicial Development of the Precautionary Principle. Presentation by The Hon. Justice Brian J Preston Chief Judge, Land and Environment Court of New South Wales at the 'World Conference on Environment 2017'. 25-26 March 2017. New Delhi, India.

Preston, B. J. (2015). The effectiveness of the law in providing access to environmental justice: An introduction. In Martin, P., Bigdeli, S. Z., Daya-Winterbottom, T., du Plessis, W., and Kennedy, A., (Eds.),. The Search for Environmental Justice. Edward Elgar.

Preston, B. J. (2012a). The enduring importance of the rule of law in times of change. *Australian Law Journal*, 178-180. Available online at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2345986

Preston, B. J. (2012b). Benefits of judicial specialisation in environmental law: The land and environment court of New South Wales as a case study. *Pace Environmental Law Review*, (29)2, 396-440. Available online at: <http://digitalcommons.pace.edu/cgi/viewcontent.cgi?article=1692&context=pelr>



Preston, B. J. (2010). A judge's perspective on using sentencing databases. *The Judicial Review*, 9(4). Available online at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2346035

Preston, B. J. (2007). Principled sentencing for environmental offences – Part 2: Sentencing considerations and options. *Criminal Law Journal*, 31(3).

Preston, B. J. and Donnelly, H. (2008). Achieving Consistency and Transparency in Sentencing for Environmental Offences. Judicial Commission of New South Wales. Monograph 32.

Pring, G. and Pring, C. (2016). Environmental Courts & Tribunals: A Guide for Policy-Makers. Global Environmental Outcomes LLC (GEO) and University of Denver. Study for the United Nations Environment Programme. Available online at: <http://wedocs.unep.org/bitstream/handle/20.500.11822/10001/environmental-courts-tribunals.pdf?sequence=1>

Project REN. (2016). Regional Enforcement Network for Chemicals and Waste. Available online at: <http://www.projectren.org/index.php>

Ren, B. (2013). Environmental Protests and Local Governance in Rural China. In Ren, B. and Shou, H. (Eds.), *Chinese Environmental Governance: Dynamics, Challenges, and Prospects in a Changing Society*. Palgrave Macmillan.

Rose, G. (2014). *Following the Proceeds of Environmental Crime. Forest, Fish and Filthy Lucre*. Routledge Ltd.

Rosencrans, K. (2010). Environmental Courts Prove to Be Effective. Stop Illegal Fishing: Case study Series 2. Available online at: www.traffic.org/non-traffic/Stop-illegal-fishing-case-study-1.pdf

Rossi, M. (2016). Illegal Gold Mining has Supplanted Cocaine Trafficking as Latin America's Criminal Endeavor of Choice. Quartz. Available online at: <https://qz.com/867104/illegal-gold-mining-has-supplanted-cocaine-trafficking-as-latin-americas-criminal-endeavor->

[of-choice/](#)

Rotterdam Convention (2010). Rotterdam Convention Overview. Available online at: <http://www.pic.int/TheConvention/Overview/tabid/1044/language/en-US/Default.aspx>

Royal Institute of International Affairs. (2002). International Environmental Crime. The Nature and Control of Environmental Black Markets. Workshop Report. Available online at: http://ec.europa.eu/environment/legal/crime/pdf/env_crime_workshop.pdf.

Rucevska, I., Nellemann, C., Isarin, N., Yang, W., Liu, N., Yu, K., Sandnæs, S., Olley, K., McCann, H., Devia, L., Bisschop, L., Soesilo, D., Schoolmeester, T., Henriksen, R., and Nilsen, R. (2015). Waste Crime – Waste Risks: Gaps in Meeting the Global Waste Challenge. A UNEP Rapid Response Assessment. United Nations Environment Programme and GRID-Arendal, Nairobi and Arendal. Available online at: www.grida.no

Sacré, V. (2017). EU-TWIX: A Successful Tool for Wildlife Law Enforcement Officials in Europe. Presentation at the EU Environmental Crime Enforcement Networks Conference 2017, Oxford, UK.

Sahu, M. (2013). Precautionary Principle of Environmental Law. NewIndiaLaw. Available online at: <https://newindialaw.blogspot.it/2013/05/precautionary-principle-of.html>

Schlingemann, L. (Editor in Chief); de Bortoli, I., Favilli F.; Egerer, H.; Musco, E.; Lucas T.; Lucius, I. (Eds). (2017). *Combating Wildlife and Forest Crime in the Danube-Carpathian Region*. Available online at: <https://europa.eu/capacity4dev/unep/documents/combating-wildlife-and-forest-crime-danube-carpathian-region>

Scotford, E. (2017). *Environmental Principles and the Evolution of Environmental Law*. Hart Publishing.

Secretariat of the Basel, Rotterdam and Stockholm Conventions. (2017). Analysis on Possible Synergies in Preventing and Combating Illegal Traffic and Trade in



Hazardous Chemicals and Wastes. In UNEP/CHW.13/INF/49; UNEP/FAO/RC/COP.8/INF/34; and UNEP/POPS/COP.8/INF/51. Available online at: <http://basel.int/TheConvention/ConferenceoftheParties/Meetings/COP13/tabid/5310/Default.aspx>

Sellar, J. (2010). How Serious is Wildlife Crime? Freedom From Fear Magazine. Available online at: <http://f3magazine.unicri.it/?p=387>

Semuels, A. (2017). Do Regulations Really Kill Jobs? Available online at: <https://www.theatlantic.com/business/archive/2017/01/regulations-jobs/513563/>

SEPA. (2017). LIFE SMART Waste project. Available online at: <http://www.lifesmartwaste.com/>

Sesnie, S., Tellman, B., Wrathall, D., McSweeney, K., Nielsen, E., Benessaiah, K., Wang, O. and Rey, L. (2017). A spatio-temporal analysis of forest loss related to cocaine trafficking in Central America. *Environmental Research Letters*, (12)5. Available online at: <http://iopscience.iop.org/article/10.1088/1748-9326/aa6fff#erlaa6fffs12>

Shuqin, Y. (2010). The Polluting Behaviour of the Multinational Corporations in China. In White, R. (Ed.), Global Environmental Harm: Criminological Perspectives. Willan Publishing.

Shover, N. and Routhe, A. S. (2005). Environmental Crime. *Crime & Justice* Volume 32. pp. 321, 372.

Sina, S. (2015). Fighting Environmental Crime in Germany: A Country Report. Study in the framework of the EFFACE research project, Berlin: Ecologic Institute.. Available online at: http://efface.eu/sites/default/files/EFFACE_Fighting%20Environmental%20Crime%20in%20Germany_0.pdf

Situ, Y., and Emmons, D. (2000). Environmental crime: The criminal justice system's role in protecting the environment. Thousand Oaks, CA: SAGE Publications.

Smandych, R., and Kueneman, R. (2017). The Canadian-Alberta Tar Sands: A Case Study of State-Corporate

Environmental Crime. In White, R. (Ed.), Global Environmental Harm: Criminological Perspectives. Willan Publishing.

Smeby, F., Henriksen, R., and Nellemann, C. (2017). Combating Poaching and Illegal Logging in Tanzania: Voices of the Rangers - Hands-On Experiences from the Field. GRID-Arendal. Available online at: https://gridarendal-website.s3.amazonaws.com/production/documents/s_document/331/original/Tanzania_draft2.pdf?1491561606

Stiles, D., Redmond, I., Cress, D., Nellemann, C., Formo, R.K. (eds). 2013. Stolen Apes – The Illicit Trade in Chimpa zeas, Gorillas, Bonobos and Orangutans. A Rapid Response Assessment. United Nations Environment Programme,

Stimson. (2015). Environmental Crime. Defining the Challenge as a Global Security Issue and Setting the Stage for Integrated Collaborative Solutions. Available online at: <http://www.stimson.org/enviro-crime/>

Song, Q., and Li, J. (2014). Environmental effects of heavy metals derived from the e-waste recycling activities in China: a systematic review. *Waste Management*, (34)12, 2587–2594. Available online at: <http://www.sciencedirect.com/science/article/pii/S0956053X14003675>

Srigboh, R. K., Basu, N., Stephens, J., Asampong, E., Perkins, M., Neitzel, R.L., and Fobil, J. (2016). Multiple elemental exposures amongst workers at the Agbogbloshie electronic waste (e-waste) site in Ghana. *Chemosphere*, 164: 68-74. Available online at: <https://www.ncbi.nlm.nih.gov/pubmed/27580259>

Stockholm Convention. (2008). Stockholm Convention Overview. Available online at: <http://chm.pops.int/TheConvention/Overview/tabid/3351/Default.aspx>

Takemura, N. (2010). The Criticality of Global Environmental Crime and the Response to Chaos Criminology. In White, R. (Ed.), Global Environmental Harm: Criminological perspectives. Willan Publishing.



Taylor, S., Jones, P., Sarah Ettlinger, Hudson, J. (2014) Waste Crime: Tackling Britain's Dirty Secret. A report commissioned by the Environmental Services Association Education Trust (ESAET), written by Eunomia Research & Consulting. Available online at: <http://www.eunomia.co.uk/reports-tools/waste-crime-tackling-britains-dirty-secret/>

The Economist (2014). Environmental regulations may not cost as much as governments and businesses fear. Available online at: <https://www.economist.com/news/finance-and-economics/21637411-environmental-regulations-may-not-cost-much-governments-and-businesses>

The Environmental Justice Foundation (EJF), Oceana, The Pew Charitable Trusts and WWF (2017). The EU IUU Regulation Analysis: Implementation of EU seafood import controls. Available online at: <http://www.iuuwatch.eu/2017/03/analysis-member-states-progress-implementation-import-controls-iuu-regulation/>

The PEW Charitable Trust. (2017). Tracking Fishing Vessels around the Globe. Issue Brief 12 April 2017. Available online at: http://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2017/04/tracking-fishing-vessels-around-the-globe?_ga=2.164244662.866901900.1501852065-2147064301.1501852065

The PEW Charitable Trust (2013). Illegal, Unreported and Unregulated Fishing. Frequently asked questions. Available online at: <http://www.pewtrusts.org/en/research-and-analysis/analysis/2013/02/25/illegal-unreported-and-unregulated-fishing-frequently-asked-questions>

The PEW Charitable Trust. (2013). Illegal, Unreported and Unregulated Fishing. Frequently Asked Questions. Available online at: <http://www.pewtrusts.org/en/research-and-analysis/analysis/2013/02/25/illegal-unreported-and-unregulated-fishing-frequently-asked-questions>

The Times South Africa. (2017). Dungeons of Gold. Available online at: <https://www.pressreader.com/south-africa/the-times-south-africa/20170522/281479276353972>

TRAFFIC. (2017a). Wildlife Trade: What is it? Available online at: <http://www.traffic.org/trade/>

TRAFFIC. (2017b). Use of AFRICA-TWIX Promoted in Republic of Congo and DRC. Available online at: <http://www.traffic.org/home/2017/5/4/use-of-africa-twix-promoted-in-republic-of-congo-and-drc.html>

TRAFFIC. (2016a). Global Transport Leaders Sign Historic Declaration in Fight to Shut Down Illegal Wildlife Trafficking Routes. Available online at: <http://www.traffic.org/home/2016/3/15/global-transport-leaders-sign-historic-declaration-in-fight.html>

TRAFFIC. (2016b). Platform to Enhance Collaboration in Countering Illegal Wildlife Trade Launched in Central Africa. Available online at: <http://www.traffic.org/home/2016/2/16/platform-to-enhance-collaboration-in-countering-illegal-wild.html>

TRAFFIC (2014). Innovative campaign promotes success from within. Press release 22 November 2014. Available online at: <http://www.traffic.org/home/2014/9/22/innovative-campaign-promotes-success-from-within.html>

TRAFFIC. (2008). Wildlife Trade: What is it? Available online at: <http://www.traffic.org/trade/>

Tollefson, J. (2013). A Light in the Forest: Brazil's Fight to Save the Amazon and Climate-Change Diplomacy. Foreign Affairs. Available online at: <https://www.foreignaffairs.com/articles/brazil/2013-02-11/light-forest>

Union Carbide Corporation. (2016). Curative Petition Regarding the 1989 Bhopal Settlement. Available online at: <http://www.bhopal.com/Bhopal-Litigation-in-India/Curative%20Petition>

United Kingdom House of Parliament. (2017). Environmental Crime. Parliamentary Office of Science & Technology. Post Note Number 547 January 2017. Available online at: <http://researchbriefings.parliament.uk/ResearchBriefing/Summary/POST-PN-0547#fullreport>

United Kingdom Sentencing Council. (2014).



Environmental Offences – Definitive Guidelines. Available online at: <https://www.sentencingcouncil.org.uk/publications/item/environmental-offences-definitive-guideline/>

United Nations Economic Commission for Europe and United Nations Economic Commission for Africa. (2014). Environmental Performance Reviews: Morocco Synopsis. Available online at : https://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE_CEP_170_En.pdf

UN Environment. (2017a). Minamata Convention on Mercury. Available online at: <http://www.mercuryconvention.org/Convention/tabid/3426/language/en-US/Default.aspx>

UN Environment. (2017b). Strengthening Environmental Enforcement in Asia and the Pacific. Available online at: [http://www.unep.org/environmentalgovernance/strengthening-environmental-enforcement-asia-and-pacific?ct=t\(Environmental_Governance_Update_July_2017_25_2017\)&mc_cid=e1f20d6cd7&mc_eid=6fab44d9fc](http://www.unep.org/environmentalgovernance/strengthening-environmental-enforcement-asia-and-pacific?ct=t(Environmental_Governance_Update_July_2017_25_2017)&mc_cid=e1f20d6cd7&mc_eid=6fab44d9fc)

UN Environment. (2017c). Fighting Chemical and Waste Crime. Our Planet. Available online at: <http://www.unep.org/ourplanet/march-2017/unep-work/fighting-chemical-and-waste-crime>

UNEP. (2016). Compendium of Good Practices on Human Rights and the Environment. Available online at: <http://www.unep.org/environmentalgovernance/compendium-good-practices-human-rights-and-environment>

UNEP. (2015). Putting Rio Principle 10 into Action. An Implementation Guide. Available online at: <http://wedocs.unep.org/handle/20.500.11822/11201>

UNEP. (2014). UNEP Yearbook 2014. Emerging Issues in our Global Environment. Available online at: <http://apps.unep.org/repository/publication-type/unep-year-book>

UNEP. (2013). UNEP and INTERPOL Assess Impacts of Environmental Crime on Security and Development. Press Release. Available online

at: <http://staging.unep.org/newscentre/Default.aspx?DocumentID=2755&ArticleID=9686&Lang=en>

UNEP. (2012). Geo5 Report Chapter 6: Chemicals and Waste. Available online at: www.unep.org/geo/pdfs/geo5/GE05_report_C6.pdf;

UNEP. (2011). UNEP Yearbook 2011. Emerging Issues in our Global Environment. Available online at: <http://apps.unep.org/repository/publication-type/unep-year-book>

UNEP. (2010). Harmful Substances and Hazardous Waste. Available online at: www.unep.org/pdf/brochures/HarmfulSubstances.pdf

UNEP. (2007). Illegal Trade in Ozone Depleting Substances. Asia and Pacific Region. Available online at: <http://www.unep.fr/ozonaction/information/mmcfiles/6075-e-illegal-trade-asia.pdf>

UNEP. (2002). Guidelines on Compliance with and Enforcement of Multilateral Environmental Agreements. Available online at: <http://staging.unep.org/delc/Portals/119/UNEP.Guidelines.on.Compliance.MEA.pdf>

UNEP-CAEC. (2014). Enforcement of Environmental Law: Good Practices from Africa, Central Asia,

ASEAN Countries and China. Available online at: <http://wedocs.unep.org/handle/20.500.11822/9968>

UNEP, CITES, IUCN, TRAFFIC. (2013). Elephants in the Dust – The African Elephant Crisis. A Rapid Response Assessment. United Nations Environment Programme, GRID-Arendal.

UNEP Global Environmental Alert Service. (2012). Transnational Environmental Crime – A Common Crime in Need of Better Enforcement, Thematic Focus: Environmental Governance.

UNEP Governing Council. (2013). Decision 27/9 Advancing Justice, Governance and Law for Environmental Sustainability. 27th Session of UNEP Governing Council/Global Ministerial Environment



Forum. Available online at: <https://www.informeia.org/en/decision/advancing-justice-governance-and-law-environmental-sustainability#decision-body-field>

UNEP Governing Council. (2002). Decision SS. VII/4. Compliance with and Enforcement of Multilateral Environmental Agreements. Report of the Governing Council on the Work of Its Seventh Special Session/Global Ministerial Forum.

UNEP Montreal Protocol OzonAction Programme. (2016). Available online at: <http://web.unep.org/ozonaction/>

UNEP-MONUSCO-OSESG. (2015). Experts' background report on illegal exploitation and trade in natural resources benefitting organized criminal groups and recommendations on MONUSCO's role in fostering stability and peace in eastern DR Congo. Final report. Available online at https://postconflict.unep.ch/publications/UNEP_DR Congo_MONUSCO_OSESG_final_report.pdf.

UNEP Ozone Secretariat. (2017). The Vienna Convention for the Protection of the Ozone Layer. Available online at: <http://ozone.unep.org/en/treaties-and-decisions/vienna-convention-protection-ozone-layer>

United Nations Economic and Social Commission for Asia and the Pacific. (2009). What is Good Governance? Available online at: <http://www.unescap.org/sites/default/files/good-governance.pdf>

United Nations General Assembly. (2017). Resolution A/71/L.88. Tackling Illicit Trafficking in Wildlife. General Assembly. Seventy-first Session. Agenda Item 13. Integrated and Coordinated Implementation of and Follow-up to the Outcomes of the Major United Nations Conferences and Summits in the Economic, Social and Related Fields. Available online at: <http://undocs.org/A/71/L.88>

United Nations General Assembly. (2015). General Assembly Resolution 70/1. Transforming our World: the 2030 Agenda for Sustainable Development. A/RES/70/1. Available online at: <http://undocs.org/A/RES/70/1>

United Nations General Assembly. (2012). General Assembly Resolution 66/288. The Future We Want. A/RES/66/288. Available online at: <https://sustainabledevelopment.un.org/futurewewant.html>

United Nations General Assembly. (2013). General Assembly Resolution 67/189. Strengthening the United Nations crime prevention and criminal justice programme, in particular its technical cooperation capacity. A/RES/67/189. Sixty-seventh session Agenda item 103 (20 December 2012). Available online at: <http://www.un.org/Docs/journal/asp/ws.asp?m=A/Res/67/189>

United Nations General Assembly. (1990). Resolution 45/121 on the Role of Criminal Law in the Protection of Nature and the Environment, Eighth United Nations Congress on the Prevention of Crime and the Treatment of Offenders (Havana, Cuba, 1990). Available online at: https://www.mpicc.de/files/pdf2/17_annex.pdf

UNICRI. (2017). Environmental Crimes. Available online at: <http://www.unicri.it/topics/environmental/>

UNICRI. (2016a). Strengthening the Security and Integrity of the Precious Metals Supply Chain. Technical Report. Available online at: http://www.unicri.it/news/article/2016-05-25_Technical_Report_on_Strengthening

UNICRI. (2016b). Illicit Pesticides, Organized Crime and Supply Chain Integrity. Available online at: http://www.unicri.it/in_focus/on/Illicit_Pesticides

UNHCR. (2015). Brazilian Mine Disaster: This is Not the Time for Defensive Posturing. Available online at: <http://www.ohchr.org/en/NewsEvents/Pages/DisplayNews.aspx?NewsID=16803&LangID=E>

UNODC. (n.d.) Environmental Crime – The Trafficking of Wildlife and Timber. Available online at: https://www.unodc.org/documents/toc/factsheets/TOC12_fs_environment_EN_HIRES.pdf

UNODC. (2017a). Crime and Criminal Justice. Available online at: <http://www.unodc.org/unodc/en/data-and-analysis/crime-and-criminal-justice.html>



UNODC. (2017b). Transnational Organized Crime: Let's Put them Out of Business. Environmental Crime: Trafficking in Wildlife and Timber. Available online at: <https://www.unodc.org/toc/en/crimes/environmental-crime.html>

UNODC. (2017c). SHERLOC Sharing Electronic Resources and Laws on Crime. Available online at: <https://sherloc.unodc.org/>

UNODC. (2017d). Environmental Crime: Trafficking in Wildlife and Timber. Available at <https://www.unodc.org/toc/en/crimes/environmental-crime.html>

UNODC. (2016a). World Drug Report 2016. Available online at: http://www.unodc.org/doc/wdr2016/WORLD_DRUG_REPORT_2016_web.pdf

UNODC. (2016b). World Wildlife Crime Report Trafficking in Protected Species. Available online at: <https://www.unodc.org/unodc/fr/data-and-analysis/wildlife.html>

UNODC. (2015). Criminal Justice Response to Wildlife and Forest Crime in Cambodia. A Rapid Assessment. Available online at: <https://www.unodc.org/southeastasiaandpacific/en/resources/toc/wildlife.html>

UNODC. (2013). Transnational Organized Crime in East Asia and the Pacific a Threat Assessment. Available online at: https://www.unodc.org/documents/data-and-analysis/Studies/TOCTA_EAP_web.pdf

UNODC. (2012). Wildlife and Forest Crime Analytic Toolkit. Revised Edition. Available online at: https://www.unodc.org/documents/Wildlife/Toolkit_e.pdf

UNODC. (2011a). Transnational Organized Crime in the Fishing Industry. Focus on: Trafficking in Persons, Smuggling of Migrants, Illicit Drug Trafficking. Available online at: <https://www.unodc.org/unodc/en/human-trafficking/2011/issue-paper-transnational-organized-crime-in-the-fishing-industry.html>

UNODC. (2011b). Organized Crime and Instability in Central Africa: A Threat Assessment. Available online at: <https://www.unodc.org/documents/data-and-analysis/>

[Studies/CentralAfrica_Report_2011_web.pdf](#)

UNODC. (2009). What Does Environmental Crime have in Common with Organised Crime? Available online at: <https://www.unodc.org/unodc/en/frontpage/what-does-environmental-crime-have-in-common-with-organised-crime.html>

UNODC-WCO. (2015). Container Control Programme. Annual Report 2015. Available online at: https://www.unodc.org/documents/organized-crime/containerprogramme/CCP_Annual_Report_2015_final_February.pdf

United Nations Permanent Mission. (2017). Inter-Agency Task Force Launched to Combat Illicit Wildlife Trade. Available online at: <https://www.un.int/news/inter-agency-task-force-launched-combat-illicit-wildlife-trade>

United Nations Security Council. (2014). Letter dated 13 November 2014 from the Chair of the Security Council Committee Pursuant to Resolutions 1267 (1999) and 1989 (2011) Concerning Al-Qaida and Associated Individuals and Entities Addressed to the President of the Security Council. The Islamic State in Iraq and the Levant and the Al-Nusrah Front for the People of the Levant: Report and Recommendations Submitted Pursuant to Resolution 2170 (2014). S/2014/815. Available online at: <http://www.securitycouncilreport.org/>

United Nations Security Council. (2004). Report of the Secretary-General on the Rule of Law and Transitional Justice in Conflict and Post-Conflict Societies. S/2004/616. Available online at: <http://undocs.org/S/2004/616>

United Nations University. (2015). The Global E-Waste Monitor 2014. Quantities, Flows and Resources. Available online at: <https://unu.edu/news/news/ewaste-2014-unu-report.html>

United Nations Web Services Section. (2017). Sustainable Development Goals – 17 Goals to Transform our World. The Sustainable Development Agenda. Available online at: <http://www.un.org/sustainabledevelopment/development->



agenda/

United States Courts. (2016). Environmental Crime Tops List by Organizations. <http://www.uscourts.gov/news/2016/12/22/environmental-crime-tops-list-organizations>

United States Department of Justice. (2015). Environmental Crimes Monthly Bulletins. Available online at: <https://www.justice.gov/enrd/selected-publications/environmental-crimes-monthly-bulletins-2015-2006>

United States Department of Justice Office of the Inspector General Audit Division. (2010) The drug enforcement administration's clandestine drug laboratory cleanup program. Audit Report 10-29 June 2010)

United States Department of State. (n.d.). Wildlife Trafficking. Available online at: <https://www.state.gov/e/oes/ecw/wlt/>

United States Environmental Protection Agency. (2017a). Compliance Assistance. Available online at: <https://www.epa.gov/aboutepa/about-office-enforcement-and-compliance-assurance-oeca>

United States Environmental Protection Agency. (2017b). Criminal Enforcements and Intergovernmental Partnerships. Available online at: <https://www.epa.gov/enforcement/criminal-enforcements-intergovernmental-partnerships>

United States Environmental Protection Agency (2017c). Criminal and Enforcement Policy. Available online at: <https://www.epa.gov/enforcement/criminal-enforcement-policy-guidance-and-publications>

United States Environmental Protection Agency. (2017d). EPA's Most Wanted. Available online at: <https://www.epa.gov/enforcement/epa-fugitives>

United States Environmental Protection Agency. (2017e). National Enforcement Investigations Center. Available online at: <https://www.epa.gov/enforcement/national-enforcement-investigations-center-neic>

United States Environmental Protection Agency. (2017f). Our Mission. Available online at: <https://www.epa.gov/aboutepa/our-mission-and-what-we-do>

United States Environmental Protection Agency. (2016). Laws and Regulations. Available online at: <https://www.epa.gov/laws-regulations/laws-and-executive-orders>

United States Fish and Wildlife Service. (2017a). Our Mission. Available online at: https://www.fws.gov/help/about_us.html

United States Fish and Wildlife Service. (2017b). About Service Special Agents. Available online at: <https://www.fws.gov/le/special-agents.html>

United States Fish and Wildlife Service. (2017c). About the Laboratory. Available online at: <https://www.fws.gov/lab/about.php>

United States Fish and Wildlife Service. (2016). Administration Takes Bold Step for African Elephant Conservation: Completes Near-Total Elephant Ivory Ban to Cut Off Opportunities for Traffickers. Conserving the Nature of America. Available online at: https://www.fws.gov/news/ShowNews.cfm?_ID=35686

United States Sentencing Commission. (2016). Guidelines Manual. Available online at: <http://www.ussc.gov/guidelines>

University of Maryland. (2017). Global Forest Change. Available online at: <https://earthenginepartners.appspot.com/science-2013-global-forest>

USAID. (2017). Measuring Efforts to Combat Wildlife Crime: A Toolkit for Improving Action and Accountability. Available online at: <https://rmportal.net/biodiversityconservation-gateway/gateway-resources/measuring-efforts-to-combat-wildlife-crime-a-toolkit-for-improving-action-and-accountability>

Vermeersch, E. (in press). Pollution Crimes and Global Security in Transnational Crime and Global Security. ABC CLIO.



Vermeulen, G. De Bondt, W. and Ryckman, C. (2012) Liability of legal persons for offences in the EU. Antwerpen-Apeldoorn-Portland, Maklu, 79-84.

Vida Silvestre. (2017). Available online at: <http://vidasilvestre.net/>

Vira, V. and Ewing, T. (2014). Ivory's Curse: The Militarization & Professionalization of Poaching in Africa. Born Free USA and C4ADS. Available online at: <http://www.bornfreeusa.org/downloads/pdf/Ivorys-Curse-2014.pdf>

Vlaamse Hoge Handhavingsraad Voor Ruimte & Milieu. (2017). Flemish High Enforcement Council for the Environment. Available online at: <http://www.vhrm.be/english>

Weisse, M. and Dow Goldman, E. (2017). Global Tree Cover Loss Rose 51 Percent in 2016. World Resources Institute. Available online at: <http://www.wri.org/blog/2017/10/global-tree-cover-loss-rose-51-percent-2016>

Williams, C. (1996). An Environmental Victimology. *Social Justice*, 23: 16–40. Available online at: <https://www.questia.com/library/journal/1G1-274227024/an-environmental-victimology>

White, R. (2017). Technology as a Tool. In McGuire, M. R. and Holt, T. J. (Eds.), the Routledge Handbook of Technology Crime and Justice.. Routledge International Handbooks.

White, R. (2015). Crime and the Natural Environment. Subject: Criminology and Criminal Justice, Criminological Theories. Oxford Handbooks Online.

White, R., and Heckenberg, D. (2014). Green Criminology: An Introduction to the Study of Environmental Harm. Routledge Ltd.

White, R. (2013). Crimes against Nature: Environmental Criminology and Ecological Justice. Routledge Ltd.

White, R. (2011). Transnational Environmental Crime. Toward an Eco-Global Criminology. Routledge.

World Bank. (2013). Artisanal and Small-Scale Mining. Brief. Available online at: <http://www.worldbank.org/en/topic/extractiveindustries/brief/artisanal-and-small-scale-mining>

World Health Organisation (2017). Drinking-water. Factsheet. Available online at: <http://www.who.int/mediacentre/factsheets/fs391/en/>

World Society for the Protection of Animals. (n.d.). Wildlife Crime in the UK. Available online at: http://www.worldanimalprotection.org.uk/sites/default/files/uk_files/documents/wildlife_crime_in_the_uk_report.pdf

World Ocean Review. (n.d.). Illegal Fishing. Available online at: <http://worldoceanreview.com/en/wor-2/fisheries/illegal-fishing/>

World Wildlife Fund. (2017a). Illegal Logging. Available online at: http://wwf.panda.org/about_our_earth/deforestation/deforestation_causes/illegal_logging/

WWF. (2017b). Wildlife Trade Campaign. Ending Illegal Ivory Trade. Available online at: <http://www.wwf.or.th/en/wildlifetradecampaignth/>

WWF. (2017c). Illegal Fishing. Overview. Available online at: <https://www.worldwildlife.org/threats/illegal-fishing>

WWF (2016). Living Planet Report 2016. Risk and resilience in a new area. WWF International, Gland, Switzerland. Available online at: <https://www.worldwildlife.org/pages/living-planet-report-2016>

WWF. (2013a). WWF Calls on Thai Government to Ban Ivory Trade. Loophole in Thai Law Threatens



African Elephants. Available online at: <https://www.worldwildlife.org/press-releases/wwf-calls-on-thai-government-to-ban-ivory-trade>

WWF. (2013b). Thai Prime Minister Announces End to Ivory Trade. Available online at: http://wwf.panda.org/wwf_news/?207736

Wyatt, T. (2013). Wildlife Trafficking - A Deconstruction of the Crime, the Victims, and the Offenders. Critical Criminological Perspectives. Palgrave Macmillan.

