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A Convergence of Threats

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The Convergence of Threats to Environment, Peace and Security

Foreword

Abuse of the environment is the fourth largest criminal activity in the world. Worth up to USD 258 billion, it is increasing by five to seven per cent every year and converging with other forms of international crime. It is, therefore, a growing threat to peace, security and stability. This report assesses that threat and recommends solutions that we can pursue through international cooperation.

The many crimes related to the exploitation of the environment and its natural resources are insidious, with implications for every aspect of our lives. They rob governments of much needed revenues, people of livelihoods, and communities of peace and security. This report provides evidence that armed groups are benefitting from such crimes and engaging with wider criminal networks. The combined consequences are dangerous: forcing women and children into labour; putting habitats and biodiversity at risk; and undermining attempts to control global warming.

The scale, scope and complexity of this growing area of international crime are clear. Therefore, the scale, scope and force of the joint response from the United Nations, member states and key partners must be just as clear. It must include better information sharing, civilian protection and law enforcement, as well as a deeper understanding of what creates and spreads conflict.

The vast majority of countries believe fighting these crimes is a national priority and requires a stronger response. That is why UN Environment and INTERPOL are strengthening their partnership and offering greater support to member states. However, we can all do more. We hope that this report will encourage the international community to join forces with us in rapidly adopting a more comprehensive approach to tackling crime convergence in peace, security and sustainable development.

Erik Solheim, Under-Secretary-General of the United Nations and Head of UN Environment

Jürgen Stock, INTERPOL Secretary General

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ABBREVIATIONS AND ACRONYMS

ADF-NALU	Allied Democratic Forces – National Army for the Liberation of Uganda
BMEL	German Federal Ministry of Food and Agriculture
CAR	Central African Republic
CBD	Convention on Biological Diversity
CCPCJ	Commission on Crime Prevention and Criminal Justice
CITES	Convention on International Trade in Endangered Species
CMS	Convention on the Conservation of Migratory Species of Wild Animals
COP 16	Conference of the Parties 16, CITES Bangkok 2013
CWIT	Combating WEEE Illegal Trade
DPKO	Department for Peacekeeping Operations
DRC	Democratic Republic of the Congo
DSS	Department of Safety and Security
ECEC	Environmental Compliance and Enforcement Committee
ECOLEX	Joint UN Environment/FAO/IUCN information service on environmental law
ECOSOC	Economic and Social Council
ENS	Environmental Security Programme
FAO	Food and Agriculture Organization
FARC	Revolutionary Armed Forces of Colombia
FARDC	Armed Forces of the Democratic Republic of the Congo
FDLR	Democratic Forces for the Liberation of Rwanda
GDP	Gross Domestic Product
GHG	Greenhouse Gases
ICCWC	International Consortium on Combating Wildlife Crime
IFAW	International Fund for Animal Welfare
ILO	International Labour Office
INL	Bureau of International Narcotics and Law Enforcement Affairs
IST	Investigative Support Team
IUCN	International Union for Conservation of Nature
IUU	Illegal, Unreported, and Unregulated Fishing

LATF	Lusaka Agreement Task Force
LEAF	Law Enforcement Assistance for Forests project
LRA	Lord's Resistance Army
MEA	Multilateral Environmental Agreements
MoU	Memorandum of Understanding
NCB	National Central Bureau
NEST	National Environmental Security Task Forces
NORAD	Norwegian Agency for Development Cooperation
ODA	Official Development Assistance
ODS	Ozone Depleting Substances
OECD	Organisation for Economic Co-operation and Development
PIC	Rotterdam Convention on Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
POPS	Stockholm Convention on Persistent Organic Pollutants
REDD	Reducing Emissions from Deforestation and forest Degradation
RIACM	Regional Investigative and Analytical Case Meeting
SAWEN	South Asia Wildlife Enforcement Network
UN	United Nations
UNDP	United Nations Development Programme
UNEA	United Nations Environment Assembly
UNFCCC	United Nations Framework Convention on Climate Change
UNOCC	United Nations Operations and Crisis Centre
UNODC	United Nations Office on Drugs and Crime
UNSC	United Nations Security Council
UNTOC	United Nations convention against Transnational Organized Crime
USAID	United States Agency for International Development
VAT	Value Added Tax
WCO	World Customs Organization
WEEE	Waste of Electrical and Electronic Equipment
WIST	Wildlife Incident Response Team

EXECUTIVE SUMMARY

Environmental crime globally is valued at somewhere between USD 91 billion and 259 billion,¹ or up to twice the amount of global Official Development Assistance (ODA).² It is rising by 5-7 per cent annually³ and is increasingly threatening not only governments' revenues, legitimate businesses and sustainable development, but also peace and security. This report summarizes some of the key areas in which INTERPOL and UN Environment are developing their strategies and activities to counter environmental crime – a collective term describing any illegal activity carried out by a criminal entity to generate profits, which results in harm to our ecosystem, by damaging environmental quality, hastening biodiversity loss, and depleting natural resources.

Our ecosystem relies primarily on the conservation of environmental quality, biodiversity, and natural resources. It is therefore crucial to address crimes impacting these areas:

- *Environmental quality*: crimes adversely affecting air, land, and water typically involve companies and/or organized crime groups which contribute to threatening environmental quality;
- *Biodiversity*: elephants, rhinoceroses,⁴ bears, Asian big cats, antelopes, great apes, pangolins, turtles and tortoises are species which are endangered as a direct result of poaching and trafficking, revealing a well-established criminal supply chain;
- *Natural resources*: criminal activities associated with and resulting from illegal logging, illegal fishing and illegal mining deplete the planet's essential resources. A variety of players are implicated in these crimes, ranging from those involved in the harvesting or extraction phases, to the international sellers.

From information and intelligence gathered by INTERPOL and UN Environment, environmental crime appears to be characterized by:

- *A high-profit, low-risk nature*: the opportunities for large profits, coupled with the low risk of being arrested encourage criminal entities to engage in environmental crime;
- *A criminal supply chain*: environmental commodities are trafficked with the help of a large number of criminals who intervene at various stages, forming a criminal supply chain;
- *Transcontinental trafficking trends*: the source of the commodity is typically located in a continent different from its final destination. Criminals use a variety of concealment and smuggling techniques, relying on complex circulation routes to avoid detection;
- *A convergence with other crimes*: the traffic in environmental commodities is facilitated by other criminal activities, such as corruption, in order to avoid any seizures or arrests by the authorities. However, environmental crime also fuels other crimes (e.g. financial crime).

In 2015, INTERPOL prepared a questionnaire which it sent to its member countries through the National Central Bureaus (NCBs) on environmental crime and emerging threats, and related national priorities. To date, 69 INTERPOL member countries have replied, representing a 36 per cent response rate. Although the limited number and sporadic nature of the responses received do not

provide a comprehensive picture of the magnitude of environmental crime globally, the answers collected reveal that environmental crime is a national priority for 80 per cent of the countries responding. In their replies to the questionnaire, more than 60 per cent of countries also reported new crimes or new *modi operandi*, indicating growing sophistication and adaptation by transnational organized crime groups. The link with other criminal activities is of particular interest: 84 per cent of the countries responding report a convergence between environmental crime and other serious crimes, including:

- *Corruption* (42 per cent)
- *Counterfeiting* (39 per cent)
- *Drug trafficking* (36 per cent)
- *Cybercrime* (23 per cent)
- *Financial crime* (17 per cent).

Drawing on INTERPOL's work with its member countries and UN Resolutions, the present report elaborates on this issue of crime convergence, by exploring the links between environmental crime and a wide range of other criminal activities, such as organized crime or terrorism. In its Resolution S/RES/2195 (2014), the UN Security Council recognized that, as a transnational organized crime, environmental crime benefits, in some instances, non-state armed groups and terrorist organizations. Efforts to curb wider environmental crimes have therefore become particularly important in response to threats against peace and security, which are so vital to sustainable development, and will require a coherent response and leadership across countries and the UN.

Based on the questionnaire's results and the findings of this report, INTERPOL and UN Environment jointly aim to assist countries in effectively enforcing national and international environmental law, including environmental treaties, through the following recommendations:

1. ***INTERPOL and UN Environment call upon the international community and their member countries to support a comprehensive and multidisciplinary approach in tackling environmental crime and its convergence with other criminal activities:*** INTERPOL and UN Environment recognize the imperative need to address environmental crime from a multidisciplinary angle. The intricate nature of crimes related to environmental quality, biodiversity, natural resources, and the impact on peace and security require a multi-agency response and an integrated strategy. Environmental crime cannot be tackled in isolation: it calls for a global and cooperative effort. This will also require a wider response from the UN, the Security Council and Sanctions committees, and from countries. This equally involves securing innovative partnerships and bridging gaps between the different sectors, by encouraging dialogue across policy, law-enforcement, and research levels;
2. ***INTERPOL and UN Environment will support greater information exchange across sectors, and efforts to reduce threats to security and peace:*** INTERPOL must strengthen its support to and contribution in the collection, sharing, and analysis of information, across all sectors. By increasing their information-sharing capacity, INTERPOL and UN Environment can ensure that informed decisions and comprehensive responses are taken towards securing peace, security, and sustainable development. INTERPOL and UN Environment will strengthen their efforts to address the role of natural resources in conflicts benefiting armed groups, in

support of peacekeeping operations and development, and seek to address within their mandates the wider convergence with trafficking activities, including oil, drugs, antiques, and counterfeits;

3. ***INTERPOL and UN Environment will encourage an increased global focus on the implementation of environmental policy***: the international community must recognize and address environmental crime as a serious threat to peace, security, and sustainable development. Strengthening the environmental rule of law at all levels involves eliminating safe havens for criminals, including disrupting overseas tax havens, improving legislation at international and national levels, developing enforcement mechanisms and strengthening existing ones, and applying dissuasive penalties with substantial sanctions and punishments. It also involves capacity building and technological support to enforcement agencies, and adjudication capacities in the area of environmental crime;
4. ***INTERPOL and UN Environment call for stronger financial support including through Official Development Assistance***: the organizations call upon the international development community to recognize and address environmental crime as a serious threat to sustainable development, and to strengthen the share of ODA to governance and judicial sector reform, including combating and preventing environmental crime. This should be targeted at capacity building and technological support for relevant agencies at the national, regional and global levels which are engaged in law enforcement efforts against environmental crime. Capacity building is urgently needed in information collection, collation and analysis, inter-agency collaboration, enforcement, investigations, prosecution, and the judiciary, especially in developing or fragile countries.

1 INTRODUCTION

In June 2015, with the support of the Environmental Compliance and Enforcement Committee (ECEC), INTERPOL devised a questionnaire on environmental crime. It was sent to INTERPOL member countries with a view to collecting information on current trends, emerging threats and national priorities to effectively combat environmental crime. Crimes committed against the environment have, in recent years, received increased attention owing to their significant impact on environmental quality, biodiversity, and natural resources, as well as on development, peace and security. In fact, this growing attention on environmental crime has placed the issue high on the international policy agenda.⁵

International agreements and resolutions are encouraging the adoption of national laws to criminalize activities that harm the environment. However, the absence of an internationally recognized definition of environmental crime makes it difficult to address the problem effectively. Although there is no universally agreed definition of “environmental crime”, it is often understood as a collective term used to describe any illegal activity carried out by a criminal entity to generate profits, which results in the harm of our ecosystem, by damaging environmental quality, hastening biodiversity loss, and depleting natural resources.

The scale and nature of environmental crime have been well recognized in decisions taken by, among others, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (e.g. decisions and resolutions following COP 16),⁶ the United Nations Commission on Crime Prevention and Criminal Justice, the United Nations Office on Drugs and Crime (UNODC),⁷ the Economic and Social Council (ECOSOC), the UN Security Council, United Nations General Assembly, INTERPOL,⁸ and the World Customs Organization (WCO), as well as by many countries. High-level political conferences have also addressed the issue, most notably in Botswana and Paris (December 2013), London (February 2014), and Tanzania (May 2014), as well as during the UN Environment Assembly (UNEA) sessions I and II in Nairobi (June 2014 and May 2016). These efforts have led to resolutions being adopted at the UNEA in 2014 and 2016, at the UN General Assembly in 2015 on tackling illicit trafficking in Wildlife (A/RES/69/314), in 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, and by the INTERPOL General Assembly (AG-2014-RES-03).

Currently, the cost of environmental crime is estimated to be in the range of USD 91-259 billion, or up to twice the amount of global Official Development Assistance (ODA).⁹ During the last decade, the scale of environmental crime has risen by about 5-7 per cent, which is twice the global gross domestic product (GDP) growth rate. As a consequence, enforcement efforts show an increasing degree of organization in individual crimes, with correspondingly serious convictions. Cases of illegal logging and money laundering worth hundreds of millions of US dollars demonstrate the existence of networks with resources that dwarf the resources of local enforcement, investigation and prosecuting powers in hotspot areas.¹⁰

Major environmental crimes, drives and impacts

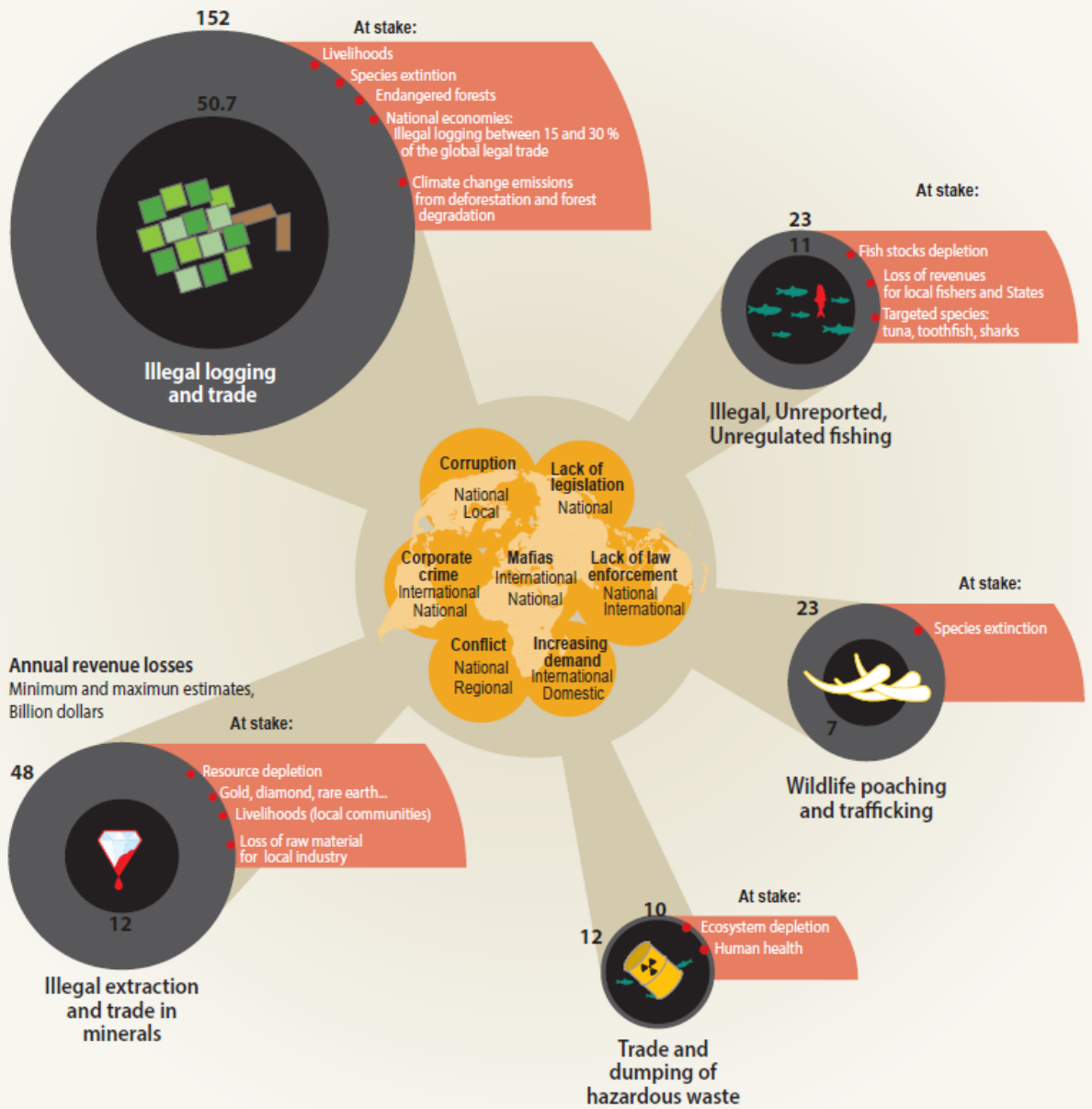
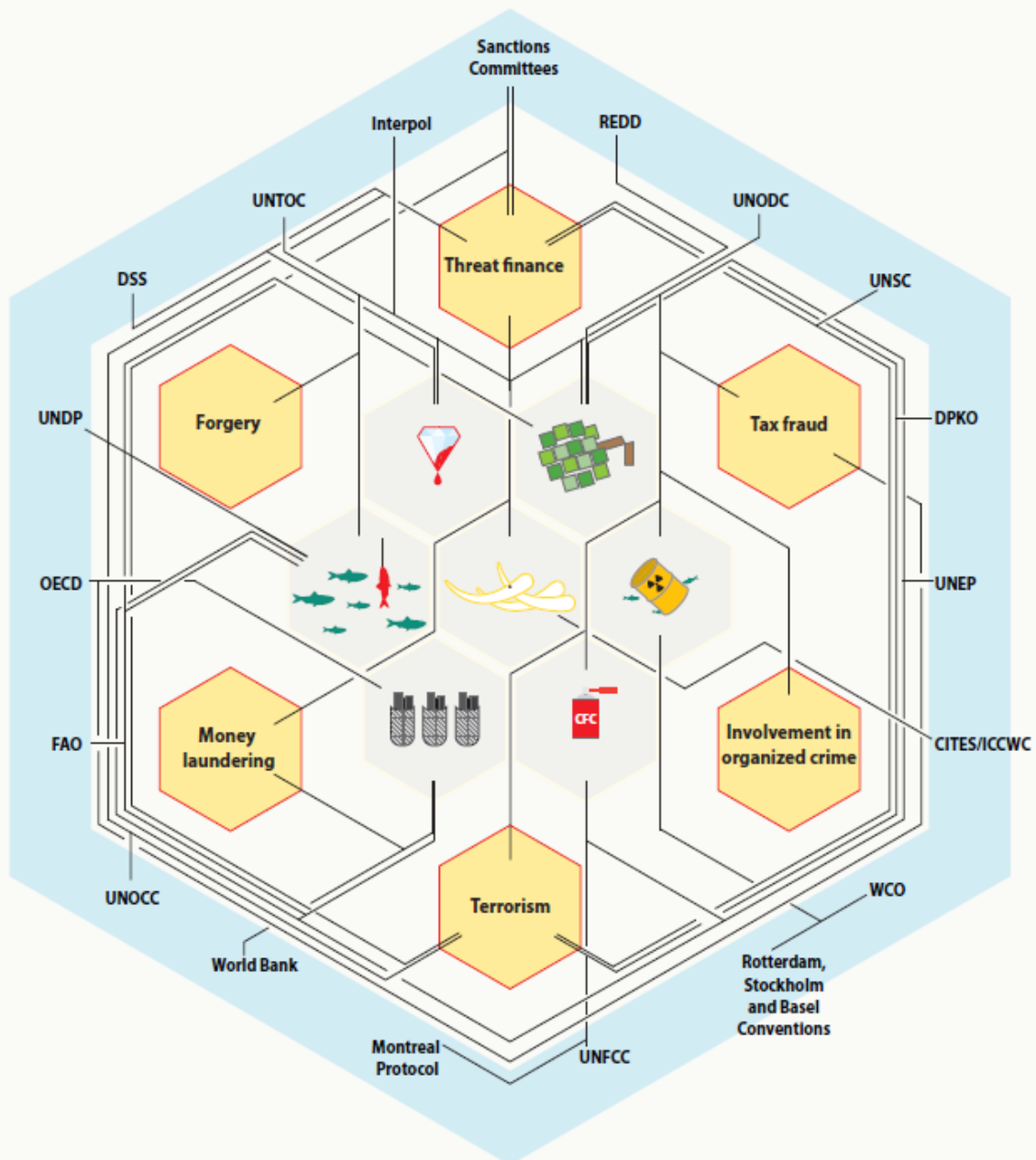


Fig.1: Environmental crime goes far beyond wildlife and includes timber, fish, minerals, and even hazardous waste. Other aspects, such as the illegal exploitation and trade in oil and chemicals are likely to become more prevalent in the years ahead.

Rather than focusing purely on the wrongful nature of an act, INTERPOL’s General Assembly emphasized the concept of environmental security in its 2014 resolution by recognizing the impact that environmental crime can have on a country, from the environmental implications to the political and economic consequences. By integrating environmental security in their activities, INTERPOL and UN Environment see environmental crime as a collective term, enabling both agencies to address it through a broad approach, encompassing other criminal activities, such as financial crime, organized crime, or terrorism. INTERPOL and UN Environment realize that criminal networks

engaged in environmental crime are also involved in other crimes, such as corruption or diverse trafficking (drugs, weapons, human beings).

A network of international organizations to combat environmental crime Selected international actors involved in assisting countries in combating environmental crimes



Sources: RHIPTO analysis of UN agencies and International conventions, 2016

Fig. 2: The need for coordination and collaboration on information and analysis: a number of agencies and intergovernmental organizations, including INTERPOL and the UN, are involved in the fight against environmental crime. The illustration is in no way a formal description of mandates, merely an illustration of the range of some of the UN entities, protocols and conventions engaged and significantly affected by environmental crime.

By accepting this broad and inclusive notion of environmental crime, INTERPOL and the Commission on Crime Prevention and Criminal Justice (CCPCJ) can address environmental crimes within the framework of the established laws on serious crimes, including – but not limited to – serious financial crimes, organized crime, and financing threats or acts of terrorism, where the damage to environmental quality, the hastening of biodiversity loss, or the depletion of natural resources is a means to this goal and an aggravating condition. Given the complexity and the severity of the threat to the environment, such an approach provides prosecutors with far more powerful tools for prosecution and prevention, with proportionality between offence, intent and punishment. This essentially means that the sheer scale of environmental crime causes impacts across the Sustainable Development Goals. It also subsequently has a direct bearing on a wide range of countries, institutions, and UN agencies, requiring a wider collaboration and coordination across the UN and interactions with countries.

In this context, the responses to the ECEC questionnaire play a crucial role: among the 69 countries responding, 80 per cent consider environmental crime as a national priority. In addition, more than 60 per cent report new crimes, or *modi operandi*, indicating growing sophistication and adaptation by transnational organized crime groups. The links with other criminal activities is of particular interest: 84 per cent of the countries responding confirm a convergence between environmental crime and other serious crimes, including:

- *Corruption* (42 per cent)
- *Counterfeiting* (39 per cent)
- *Drug trafficking* (36 per cent)
- *Cybercrime* (23 per cent)
- *Financial crime* (17 per cent).

This report draws on the results of the questionnaire and looks into the different environmental crime priorities reported by countries. For each crime, the main threats are briefly addressed before focusing on the criminal activity itself. This entails explaining the crime in question, for example by providing details on concealment and smuggling techniques as well as the circulation route (source, transit, and destination countries). As with any legitimate business, criminals involved in the large-scale trafficking in environmental commodities have also, in most cases, developed a supply chain of their own. Therefore, for each environmental crime, the report examines the criminal supply chain, covering the different stages and individuals involved in the illegal trade in an environmental commodity, from obtaining it as a raw material to delivering it as a final product to end-users. This trafficking is facilitated by or results in a number of other criminal activities, suggesting a convergence of crimes.

In the face of the growth and the devastating effects of environmental crime, INTERPOL has worked towards assisting its member countries and developing its activities to fight environmental crime. Therefore, this report also presents an overview of INTERPOL's work and main achievements in this regard. Despite international efforts, including from INTERPOL and UN Environment, environmental crime has destructive consequences, not only on our ecosystem, but also on our societies. This report therefore explores the impact of environmental crime and demonstrates that it leads to serious implications for the development of vulnerable communities, peace and security.

Taking up the responses to the questionnaire, this report aims to provide an overview of environmental crime, and its convergence with other criminal activities. In parallel, it describes INTERPOL's involvement in law-enforcement responses, and links the work of UN Environment to highlight the negative effects of environmental crime on development, peace and security. Specifically, the report is divided into nine sections:

- *The Environmental Security Programme* refers to the INTERPOL team responsible for addressing environmental crime, as well as its different projects and partners;
- *UN Environment* is the UN unit working on environmental-related issues. This section also includes the central conventions providing the framework for the unit's activities;
- *Environmental Crime from the National Perspective* focuses on the questionnaire and the findings from countries' answers. The results highlight the current and emerging trends with regard to environmental crime, and provide information on national priorities and needs;
- *Environmental Quality*: this section examines the current state of our air, soil, and water, focusing on the main criminal challenges and on how INTERPOL addresses them;
- *Biodiversity*: it concentrates on the main species threatened by animal poaching and the subsequent trafficking in their parts and derivatives. It also provides an overview of INTERPOL's approach to curtail crimes targeting these species;
- *Natural Resources*: this section considers forestry crime, fisheries crime, and illegal mining. It also highlights INTERPOL's activities to tackle these criminal activities;
- *Findings* presents the conclusions drawn from the previous sections on crimes damaging environmental quality, hastening biodiversity loss, and depleting natural resources;
- *A Convergence of Threats* elaborates on the impact of environmental crime on the development of vulnerable communities with a direct link with the concepts of peace and security;
- *Recommendations* concludes the report by providing directions to better address environmental crime, which ultimately threatens peace, security, and sustainable development.

2 THE ENVIRONMENTAL SECURITY PROGRAMME

The team within INTERPOL responsible for addressing environmental crime is the Environmental Security Programme (ENS). It aims to assist member countries¹¹ in the effective enforcement of national and international environmental laws, including environmental treaties. In this way, INTERPOL contributes to the conservation of the world's environment, biodiversity and natural resources. To that end, it works towards realizing specific goals by means of a series of instruments and activities.

2.1 Objectives

Through ENS, INTERPOL assists its member countries to enforce environmental laws in partnership with the relevant law enforcement agencies. In other words, it works towards enhancing and developing the capabilities of member countries with respect to the deterrence, suppression, apprehension, investigation and prosecution of environmental criminals. The primary areas of support are:

- *Information management and intelligence:* INTERPOL assists member countries in the identification of crimes and criminals through intelligence analysis and investigative support. It encourages the exchange of information and intelligence between agencies responsible for the enforcement of environmental laws. In addition to providing analysis, INTERPOL also centrally stores the supplied information in its global databases;
- *Capacity building and development:* through training, international or regional meetings, and investigative support, INTERPOL aims to share expertise in order to develop and enhance skills in the field of environmental enforcement;
- *Operations and investigations:* INTERPOL assists law enforcement agencies on the ground to understand crime trends, analyze information, conduct operations, and, ultimately, arrest criminals involved in environmental crime. To this end, INTERPOL provides technical support and expertise to environmental law enforcement agencies in their operational pursuits;
- *Communication and advocacy:* INTERPOL emphasizes the significant role played by law enforcement agencies involved in countering environmental crime. It promotes an intelligence-led approach in the enforcement of laws through the identification of international trends and patterns in environmental crime. The team stimulates law enforcement communication and the role of advocacy in reinforcing law enforcement responses;
- *Networks:* INTERPOL engages and establishes relationships at national and international levels through networks. It encourages the development of networks between traditional police, environmental law enforcement authorities, and other regulatory and enforcement agencies, both nationally and internationally.

2.2 Instruments

In order to support and assist countries in their fight against environmental crime, INTERPOL provides a set of tools and services, including:

- *The I-24/7 system* is a secure global communication system connecting law enforcement officers from the 190 member countries. This not only ensures a secure method of exchanging sensitive information, but also provides access to some of INTERPOL's databases;
- *Notices* are requests for cooperation or specific alerts. Within the scope of its activities on environmental security, INTERPOL relies particularly on Red Notices, which seek the location and the arrest of wanted persons; Blue Notices, which are used to collect information on individual or locate him/her; Purple Notices, which are typically published to seek or provide information on a given *modus operandi*; and Green Notices, which aim to provide warnings and intelligence about persons who have committed criminal offences and who are likely to repeat these crimes in other countries;
- *Ecomessages* are standard formatted messages to report an incident or a seizure. This provides a uniform intelligence and data-reporting system for the many different law enforcement agencies involved, which also facilitates the analysis of information and overcomes language and communication barriers;
- *National Environmental Security Task Forces (NESTs)* are national multi-agency cooperation initiatives bringing together police, customs, environmental agencies, other specialized agencies, prosecutors, non-governmental organizations (NGOs) and intergovernmental partners to address a specific crime issue;
- *Regional Investigative and Analytical Case Meetings (RIACMs)* bring together national law enforcement officers to analyze information and intelligence regarding significant cases, and to collaboratively pursue investigative outcomes;
- *Investigative Support Teams (ISTs)* are INTERPOL teams deployed to provide case-specific investigative support to national authorities, notably by sharing expertise with regard to investigation techniques and responses to identify and deter specific environmental crimes;
- *Operations*: these coordinated regional and global responses are set up to dismantle criminal networks, share information and intelligence, form multi-disciplinary teams to tackle environmental crime, strengthen regional, national, and international law enforcement capacities, and raise awareness. In 2015, INTERPOL launched the *Connexus Initiative*. Within the scope of this unprecedented initiative, INTERPOL coordinated a number of operations:
 - *Amazonas II* (forestry crimes in Central and South America)
 - *Enigma III* (electronic waste trafficking)
 - *Log* (forestry crimes in West Africa)
 - *Maya* (illicit goods and counterfeiting in Central America, North America and the Caribbean Region)
 - *Paws II* (biodiversity crimes in Asia)

- *Pesc-Am* (marine protected species and high risk fishing vessels operating in Central America)
 - *Stingray* (illegal fishing)
 - *Support to COBRA III* (biodiversity crimes in Africa and Asia)
 - *Worthy II* (biodiversity crimes in Africa).
- *Publications*: INTERPOL has worked on a number of documents, from analytical and operational reports to investigative manuals. They were developed in collaboration with experts from INTERPOL member countries for informational purposes for the public and the law enforcement community. These publications also include joint reports with UN Environment on the scale and extent of environmental crime associated threats.

2.3 Activities and Projects

Through ENS, INTERPOL provides a common and neutral platform for the international law enforcement community to address environmental crime and unite national efforts regarding compliance and enforcement at a global level. In this regard, INTERPOL's activities fall under three themes:

- *Environmental quality* comprises all the components that form the ecosystem, which provides and sustains life. The law enforcement effort in this sector addresses any influence, act or impact that results in a negative or eroding condition upon the environment. In other words, it tackles any criminal activity that threatens the integrity of our air, soil, and water;
- *Biodiversity* refers to the world's flora and fauna in their many forms. The objective is to protect endangered species from poaching, curtail the illegal trade in flora and fauna, and reinforce conservation efforts. This report focuses on crimes against species particularly targeted by criminals, based on the information and intelligence shared by countries: elephants, rhinos, bears, Asian big cats, antelopes, great apes, pangolins, turtles and tortoises. Nevertheless, this is not an exhaustive list of threatened and endangered biodiversity species. Other species targeted by criminals range from exotic plants and birds to sharks;
- *Natural resources* refer to raw materials that can be either organic (biotic) or inorganic (abiotic), including wood, fish, and minerals. The law enforcement community is concerned with the security of these natural resources, which are commonly exploited for economic gain.

To date, INTERPOL has developed its strategy to address environmental crime through four projects, each focusing on a specific crime area. The projects are assisted by the ECEC, which provides guidance on relevant issues. INTERPOL's environmental security activities are funded by a number of governmental and non-governmental agencies, as well as charitable funds. The funding supports efforts to ensure long-term capacity-building, improve international information and intelligence exchange, and coordinate enforcement efforts.

Project LEAF

Project LEAF (Law Enforcement Assistance for Forests) focuses on forestry crime, that is illegal logging and timber trafficking. While the project is not strictly limited to one specific area, the bulk of its activities targets Central and South America, as well as West Africa where forestry crime is prolific. The project also plans to extend its activities to Southeast Asia.

Project Leaf is funded by the Norwegian Agency for Development Cooperation (NORAD), the United States Bureau of International Narcotics and Law Enforcement Affairs (INL), and the German Federal Ministry of Food and Agriculture (BMEL).

Project Predator

Project Predator mainly focuses on the poaching of Asian big cats and the trafficking of their parts and derivatives. Nevertheless, criminal activities occurring in Asia and targeting other species, such as elephants, rhinos, antelopes, pangolins, turtles and tortoises, also fall under the scope of the project.

Over the years, the project has been funded by the European Commission (under the International Consortium on Combating Wildlife Crime (ICCWC)), the INL, and the Snow Leopard Trust. Project Predator's long-standing relationship with the United States Agency for International Development (USAID) has resulted in vital law enforcement developments and achievements across Asia.

Project Scale

Project Scale targets illegal fishing and associated criminal or administrative violations. As fisheries crime is a global threat by nature, Project Scale is not limited to a specific geographical area. The harvest may occur in crime-prone regions with extensive fish stock, such as Southeast Asia, Western Africa or Latin America, but the ramifications are worldwide (e.g. flag State, port State, nationality of the officers and of the crew).

Project Scale is currently funded by INL, PEW Charitable Trusts, and NORAD (FishINTEL).

Project Wisdom

Within the scope of Project Wisdom, INTERPOL particularly aims to tackle the poaching of elephants and rhinos, as well as the subsequent trafficking of ivory and rhino horns. The project specifically focuses on the criminal activity taking place in Africa. It also supports transcontinental investigations, as ivory and rhino horns are trafficked mainly to Asian countries.

Project Wisdom has received funds from the International Fund for Animal Welfare (IFAW), but the bulk of its financing now comes from the Wildcat Foundation.

The ECEC

Composed of senior officials and decision-makers from all INTERPOL member countries, the ECEC aims to provide strategic advice on relevant issues and global support. Its work is facilitated by three working groups:

- *The Fisheries Crime Working Group* focuses on projects related to fisheries crime and associated crimes;
- *The Pollution Crime Working Group* oversees projects linked to the illegal disposal of and trafficking in waste, as well as matters that erode environmental quality;
- *The Wildlife Crime Working Group* conducts projects on wildlife poaching and trafficking. A sub-working group has also been created under this Working Group to focus on forestry crime.

This report highlights the importance of the ECEC as an indispensable partner of INTERPOL when it comes to environmental security. This is reflected into the support it provided in connection with the questionnaire presented in the section 4. *Environmental Crime from the National Perspective*.

2.4 External Partners

In recognition of the serious transnational nature of environmental crime, INTERPOL has formed a number of bilateral and multilateral partnerships. They stimulate international cooperation and underline INTERPOL's collaboration with countries and international organizations to combat environmental crime. INTERPOL has benefited from public and private contributions to support its activities in the field of environmental crime:

- *ICCWC* is composed of five intergovernmental organizations – CITES, INTERPOL, UNODC, the World Bank, and WCO. Together, they raise awareness and assist countries in their efforts to fight wildlife crimes. ICCWC activities are funded by the European Commission, the Netherlands, Sweden, the United Kingdom, the United States, and the World Bank;
- *IFAW*: the longstanding partnership between IFAW and INTERPOL resulted in a Memorandum of Understanding (MoU), which paved the way for more formal cooperation between INTERPOL and NGOs on environmental security-related issues;
- *The European Commission* has been supporting joint activities through its funding of ICCWC;
- *The Governments of Cyprus, France, Norway, the Netherlands, the United Kingdom, and the United States*;
- *The Lusaka Agreement Task Force (LATF)* is a permanent task force set up by the Lusaka Agreement on Co-operative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora. The LATF assists member countries and partners in combating the trafficking in flora and fauna, through its support to law enforcement, capacity building, and the organization of conferences and meetings;

- *The PEW Charitable Trusts;*
- *The Snow Leopard Trust;*
- *The South Asia Wildlife Enforcement Network (SAWEN)* is an enforcement network, which aims to raise awareness on wildlife trafficking and its impact on a global level. It contributes to enhanced international cooperation, by promoting information-sharing or developing response strategies;
- *The UN Environment:* INTERPOL closely works with the UN and is involved in various UN Conventions on environmental management issues. Together, INTERPOL and UN Environment have also produced joint reports, including *The Environmental Crime Crisis* (2014) and *The Rise of Environmental Crime* (2016);
- *The Wildcat Foundation.*

3 UN ENVIRONMENT

UN Environment is the UN body responsible for dealing with environment-related issues. It works toward achieving a clear set of objectives by means of a number of instruments and within the scope of the environmental rule of law. UN Environment is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system, and serves as an authoritative advocate for the global environment.

The work of UN Environment encompasses assessing global, regional and national environmental conditions and trends, developing international and national environmental instruments, and strengthening institutions for the wise management of the environment. Drawing upon scientific evidence, priorities emerging from global and regional fora, and an assessment of where UN Environment can make a transformative difference. In particular, UN Environment helps its member countries cooperate to achieve agreed environmental priorities, and supports efforts to develop, implement and enforce new international environmental laws and standards. It also works with countries and other stakeholders to strengthen their laws and institutions, helping them achieve environmental goals, targets and objectives.

3.1 Objectives

UN Environment has been engaged in identifying and mitigating the impacts of environmental crime since 1973, with a focus on criminal activities, such as forestry crime, fisheries crime, illegal wildlife trade, illegal trade in hazardous waste and chemicals, air pollution, and other forms of environmental crime, including the role of natural resources for threat finance and in conflicts. Thanks to its cross-cutting thematic priorities, UN Environment can address a wide range of challenges which derive from environmental issues:

- *Climate Change*
- *Disasters and Conflicts*
- *Ecosystem Management*
- *Environmental Governance*
- *Chemical and Waste*
- *Resource Efficiency*
- *Environment Under Review.*

3.2 Instruments

The thematic priorities, which guide UN Environment's work, are addressed thanks to a number of tools, such as:

- *Environmental rule of law*
- *Conventions*
- *Protocols*

- *Monitoring mechanisms*
- *Reporting and awareness-raising*
- *Support to peace-keeping operations*
- *Conflict, disaster and post-conflict assessments*
- *UN-wide collaboration*
- *Rapid-response investigations.*

UN Environment also contributes directly to environmental security in a wider context through its partnerships and collaboration across the UN, and includes managing a range of conventions related to environmental security, and resolutions made at the United Nations Environment Assemblies I and II in 2014 and 2016. These include, but are not limited to:

- *CITES*¹²
- *Convention on the Conservation of Migratory Species of Wild Animals (CMS)*¹³
- *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention)*¹⁴
- *Stockholm Convention on Persistent Organic Pollutants (POPS)*¹⁵
- *Rotterdam Convention on Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC)*¹⁶
- *Vienna Convention for the Protection of the Ozone Layer & Montreal Protocol on Substances that Deplete the Ozone Layer (Ozone Convention and Protocol)*¹⁷
- *Multilateral Fund Secretariat for the Implementation of the Montreal Protocol (Funding Secretariat)*¹⁸
- *Convention on Biological Diversity (CBD).*¹⁹

3.3 Environmental Rule of Law

UN Environment has a long history of contributing toward the development and implementation of environmental law. The Law Division is the focal branch within UN Environment which oversees the many facets of this global legal framework. The role of the Law Division is primarily to ensure the progressive development of environmental laws across different environmental sectors and levels of governance.

At the global level, the Law Division has been pivotal in the facilitation of intergovernmental platforms for the promotion and implementation of multilateral environmental agreements (MEAs) and defining international environmental norms. At the regional and national levels, the Law Division has supported many forums as well as the utilization of resources aimed at strengthening legal principles, policies and guidelines that seek to address environmental issues, especially transboundary legal challenges. These fundamental activities, along with specific sectoral work, such as enhancing freshwater and marine law, form the central aspects of the Law Division's work in building and strengthening global environmental laws. Its current mandate principally stems from the 2009 Montevideo Programme for the Development and Periodic Review of Environmental Law

which forms a broad strategy for the international legal community and UN Environment in formulating the activities in the field of environmental law for the decade commencing in 2010.

Key Activities

Key activities undertaken by the Law Division include:

- *Progressive Development of Environmental Law*: working to be at the forefront of international legal developments by enhancing environmental laws at all levels;
- *Developing and promoting environmental rule of law around the globe*: ensuring that environmental law delivers for people and the planet;
- *Protecting Human Rights and the Environment*: increasing the understanding of inter-linkages between human rights and the environment;
- *Improving Environmental Governance of Global Commons*: identifying methods to strengthen institutions and laws which protect natural resources in the Global Commons;
- *Preventing Transboundary Environmental Crime*: improving legal and policy mechanisms to better combat illegal transnational environmental activities;
- *Examining Environmental Impacts of Military Activities*: furthering the development of environmental norms in relation to natural harm from military action;
- *Helping to build a Green Economy*: assisting in developing and strengthening laws, policies and institutions that build a green economy;
- *Strengthening and “Greening” Water Laws*: working with partners and governments to enhance water laws/institutions, especially related to transboundary resources.

Legal Resources and Capacity-Building

- *Judges Programme* aims to better equip legal practitioners, judges and jurists in their roles interpreting and applying environmental laws;
- *Training Manual on International Environmental Law* seeks to provide a comprehensive overview of environmental law for legal stakeholders from all backgrounds;
- *Global Training Programme on Environmental Law and Policy* is an annual training programme aimed at building the capacity of Government officials to develop/implement environmental law;
- *Building Capacity to Strengthen Carbon Markets – Africa*: meetings, workshops and materials to strengthen implementation of Clean Development Mechanism initiatives in African nations;

- *Green Customs Initiative* is a partnership of international organizations aimed at enhancing the capacity of customs in facilitating legal trade, and preventing illegal trade, of environmentally sensitive commodities;
- *InforMEA* is a knowledge management platform that brings together 12 global MEAs to develop harmonized and interoperable information systems in support of knowledge management activities among MEAs for the benefit of Parties and the environment community at large;
- *ECOLEX* is an information service on environmental law, operated jointly by UN Environment, the Food and Agriculture Organization (FAO), and the International Union for Conservation of Nature (IUCN). It provides information on treaties, non-binding policy and technical guidance documents, national legislation, judicial decisions, and law and policy literature.

4 ENVIRONMENTAL CRIME FROM THE NATIONAL PERSPECTIVE

In their last joint report, INTERPOL and UN Environment indicated that environmental crime had risen by 26 per cent since 2014.²⁰ They also highlighted some connections with other crimes, such as fraud and money laundering. In this context, with the support of the ECEC, INTERPOL devised a questionnaire which was sent to its member countries²¹ in June 2015, focusing on current and emerging trends, as well as national priorities with regard to environmental crime. The countries' answers helped to better understand environmental crime from different national perspectives. The results emphasize the priority crime areas, the ramifications with other crimes, and the law enforcement needs to address environmental crime more effectively.

4.1 Value and Limitations of the Results of the Questionnaire

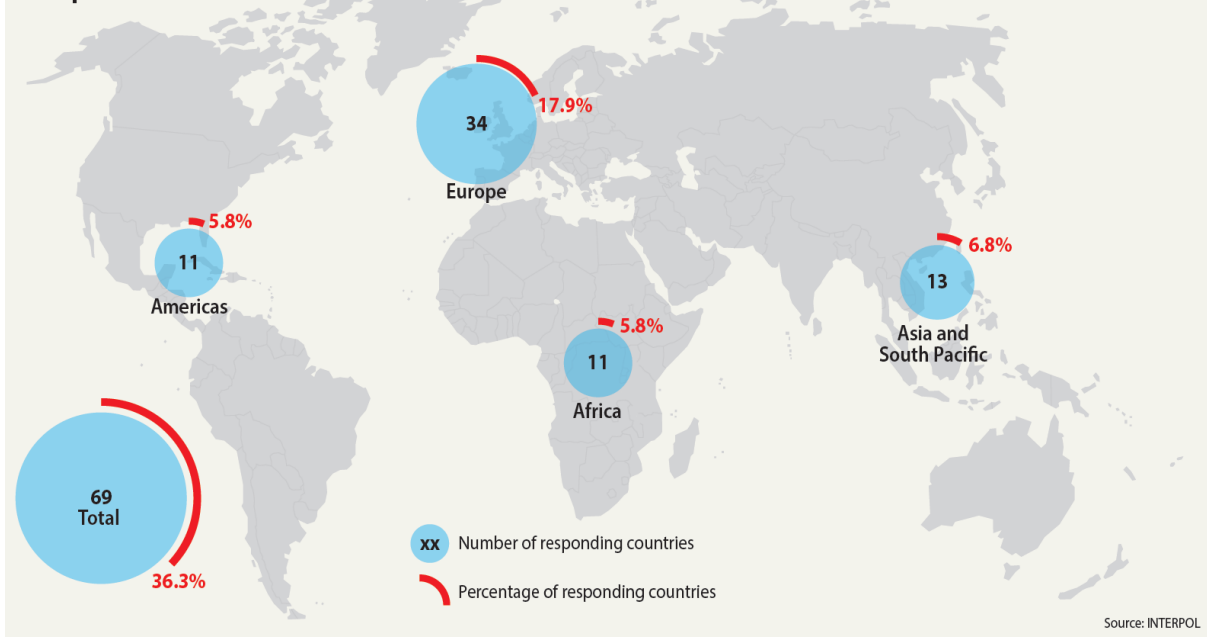
The aim of the questionnaire was to identify current and emerging trends, as well as national priorities with regard to environmental crime. In other words, the objective was twofold: assessing environmental crime on a global scale, and identifying national needs.

The information collected is critical, as it will provide the basis for the future planning of INTERPOL's activities linked to environmental crime. The results will help to drive intelligence-led enforcement, and provide the basis for future collaboration and operational planning between INTERPOL, law enforcement agencies, and environmental authorities.

The questionnaire provides input directly from member countries, which is an opportunity for INTERPOL to identify national needs, compare them with its current activities, and pinpoint areas where INTERPOL could help to bridge gaps and provide its assistance. In other words, the results of this questionnaire can substantially help INTERPOL shape its strategic direction in terms of environmental security, so that it can develop better tailored strategies to assist member countries on national, regional, and international levels.

To date, INTERPOL has collected 98 completed questionnaires sent by national agencies from 69 countries. This represents a 36 per cent response rate among INTERPOL member countries. However, the limited number and sporadic nature of the responses received prevent any objective or comprehensive picture of the magnitude of environmental crime globally. Firstly, the response rate is just slightly more than one third of INTERPOL member countries, which leaves out the potential input from 121 countries.

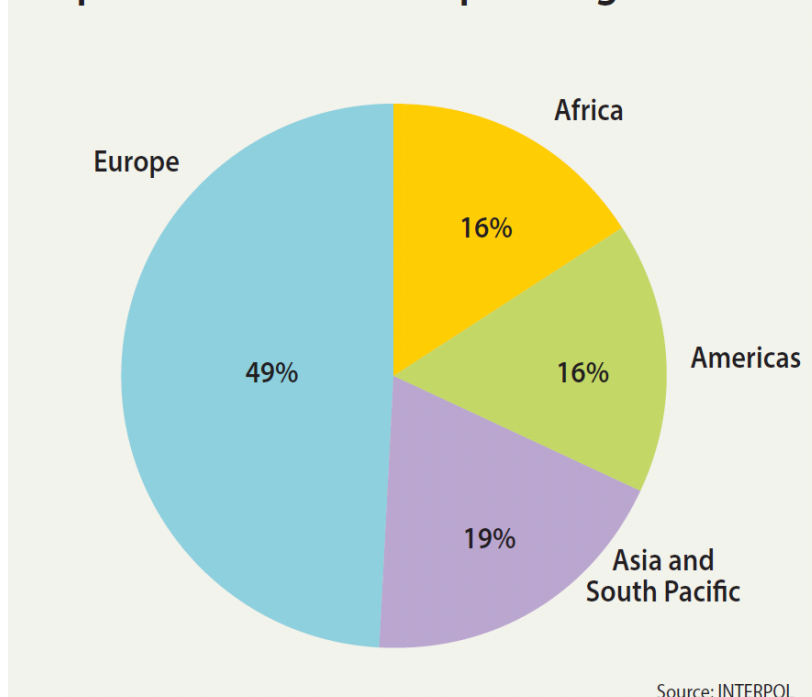
Response Rate from INTERPOL Member Countries



Moreover, looking at the responses received only, the results themselves present a biased picture. The response rate for each region emphasizes a disproportionate participation and the need to encourage a greater contribution from all member countries:

- *Africa* (16 per cent)²²
- *Americas* (16 per cent)
- *Asia and South Pacific* (19 per cent)
- *Europe* (49 per cent).

Response Rate from Responding Countries



The current results offer an incomplete picture of the global scale of environmental crime. European countries make up nearly half of the respondents, which places the emphasis on prolific crimes occurring in Europe (e.g. waste crimes). Correspondingly, the results indicate that waste trafficking is the second priority for countries after wildlife poaching and trafficking. By contrast, illegal mining ranks seventh on the list of environmental priorities, although INTERPOL has received strong evidence that it is plaguing countries in Africa and Latin America. Greater and more balanced participation from all regions might reveal different results and priorities.

Therefore, the low response rate from countries in Africa, the Americas, and Asia and South Pacific undermines the accuracy of INTERPOL's current interpretation of the answers received. The results are likely to reflect European concerns with regard to environmental crime rather than provide a global overview of the issue. In other words, the results of the questionnaire offer an incomplete picture, which stems from the disproportionate response rate between regions, and calls for a higher participation from member countries, particularly in Africa, the Americas, and Asia and South Pacific.

4.2 Findings

The questionnaire's results reveal a list of priority crime areas, indicating which environmental crimes affect countries the most. Participating countries also report links with other crimes, suggesting a convergence of crimes. However, they underline INTERPOL's role in assisting them in the fight against environmental crime and call for greater efforts.

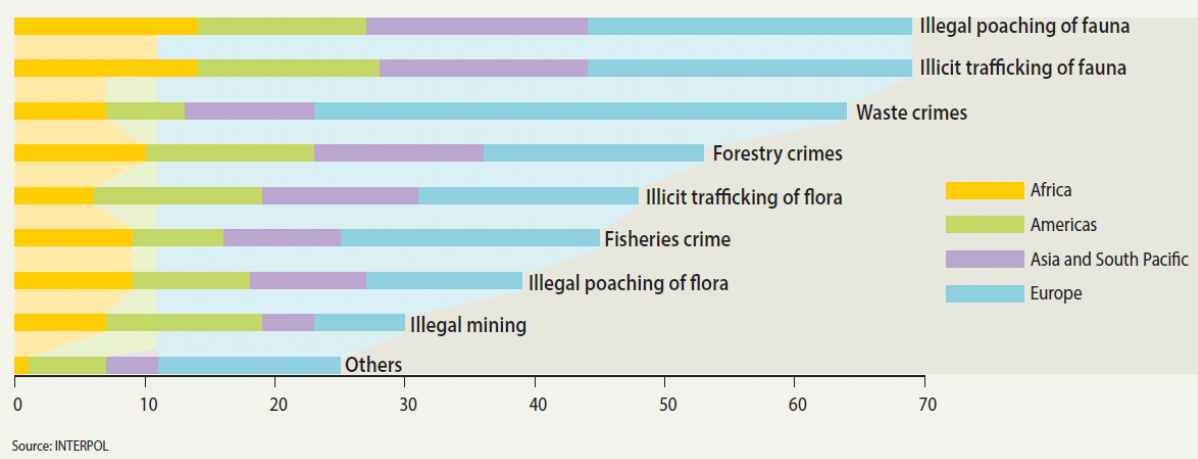
Environmental Crime Priorities

The results show that environmental crime is a national priority for 80 per cent of the countries responding. Although several countries stress the need to continue efforts to raise awareness about environmental crime, this is an encouraging fact, and suggests that this criminal activity has become a cause for greater concern in INTERPOL member countries.

The results also reveal that the current threats and subsequent national priorities in regard to environmental crime are:

- *Illegal poaching of fauna* (70 per cent)
- *Illicit trafficking in fauna* (70 per cent)
- *Waste crimes* (64 per cent)
- *Forestry crimes* (54 per cent)
- *Illicit trafficking in flora* (48 per cent)
- *Fisheries crime* (45 per cent)
- *Illegal poaching of flora* (38 per cent)
- *Illegal mining* (30 per cent).

Environmental Crime Priorities



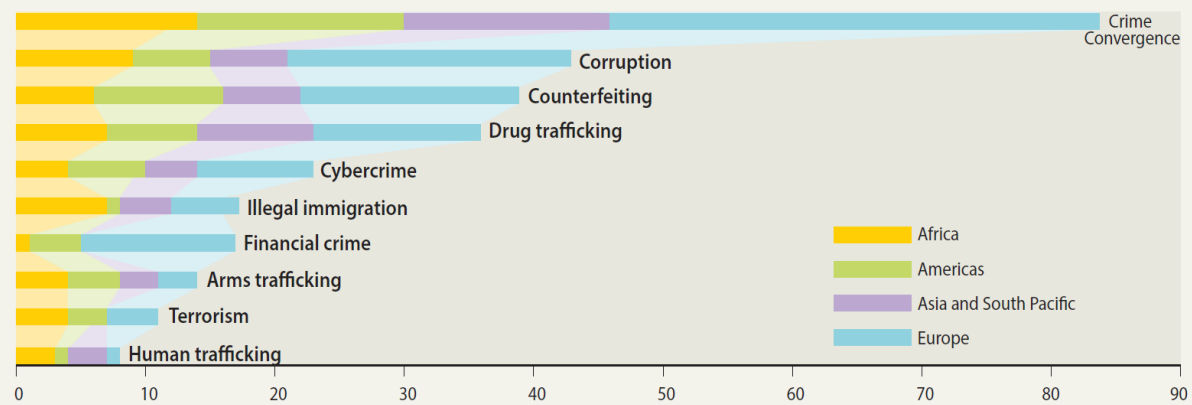
INTERPOL activities cover these crime areas within the scope of its projects – Project Leaf, Project Predator, Project Scale, and Project Wisdom. Through them, INTERPOL is involved in the different areas of environmental crime, with the exception of waste crimes. Until 2015, they were addressed within the scope of Project Eden, which aimed primarily at combating the illegal trade in waste, and particularly e-waste. In view of the questionnaire’s results, ensuring the existence of this project appears essential, as 64 per cent of countries consider the illegal transportation and dumping of hazardous waste as a priority (listed second out of eight priority areas).

Crime Convergence

The replies of the questionnaire highlight that environmental crime converges with other serious crimes, according to 84 per cent of those responding. These crimes include:

- *Corruption* (42 per cent)
- *Counterfeiting* (39 per cent)
- *Drug trafficking* (36 per cent)
- *Cybercrime* (23 per cent)
- *Illegal immigration* (17 per cent)
- *Financial crime* (17 per cent)
- *Arms trafficking* (14 per cent)
- *Terrorism* (12 per cent)
- *Human trafficking* (9 per cent).

Crime Convergence



Source: INTERPOL

These criminal activities are additional challenges for authorities already combating environmental crime, which has links with two or more crimes for 65 per cent of the responding countries. Nearly 30 per cent even report that environmental crime coincides with four or more crimes. This demonstrates the cross-over with other crimes, some facilitating environmental crime (e.g. corruption) and others resulting from it (e.g. financial crime). This draws the attention to the need for a comprehensive response, tackling not only the direct threats to environmental quality, biodiversity, and natural resources, but all crimes which accompany environmental crime, from financial crime to organized crime.

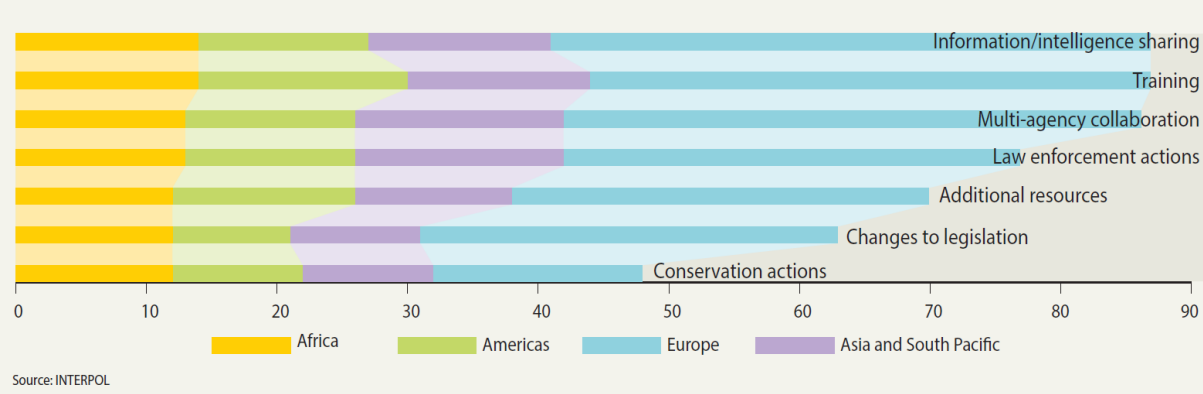
The questionnaire highlights that environmental crime is a cross-cutting criminal activity which cannot be tackled in isolation from other crimes. In other words, this requires a multidisciplinary approach, based on international cooperation, intelligence- and information-sharing, and multi-agency collaboration. However, the results also revealed that countries suffer from vulnerabilities in these areas.

National Needs

In addition to providing an overview of the current situation regarding environmental crime, the questionnaire's results also show structural vulnerabilities undermining national enforcement responses. This information is crucial for INTERPOL to develop a strategy, which is in line with countries' needs. From the responses received, INTERPOL identified the following priorities to efficiently fight environmental crime:

- *Information- and intelligence-sharing* (88 per cent)
- *Training* (88 per cent)
- *Multi-agency collaboration* (87 per cent)
- *Law enforcement actions* (77 per cent)
- *Additional resources* (70 per cent)
- *Changes to legislation* (62 per cent)
- *Conservations actions* (48 per cent).

National Needs to Reduce Environmental Crime



Information- and intelligence-sharing (88 per cent) and multi-agency collaboration (87 per cent) are listed at the top of the priorities for member countries. In other words, this emphasizes internal (national) and external (international) issues in terms of cooperation with other agencies and/or member countries with regard to environmental crime. Another area which is particularly important to member countries is training (88 per cent), suggesting that they aim to develop their expertise with regard to environmental crime.

As emphasized earlier, the exchange of information, capacity-building and development, and networks, which aim to facilitate multi-agency collaboration for instance, are the primary areas of INTERPOL's support. In other words, the Organization already provides assistance to member countries in these domains within the wider scope of stimulating international cooperation. The results of the questionnaire suggest the need to pursue efforts to encourage information- and intelligence-sharing, training, and multi-agency collaboration. According to 54 per cent of the responding countries, INTERPOL's role is crucial in encouraging and enhancing international cooperation, particularly with regard to information- and intelligence-sharing. Similarly, 52 per cent of the respondents consider that the Organization contributes to capacity-building and strengthening national expertise, particularly through the organization of trainings, seminars, and working groups, for example.

In addition, the responding countries also highlight:

- *INTERPOL tools and services*: countries emphasize the impact of INTERPOL, which stimulates international cooperation through its instruments and technical support (e.g. I-24/7, Notices);
- *INTERPOL operational support*: countries underline the importance of INTERPOL's efforts to organize operations or events (e.g. NESTs, RIACMs), which constitute platforms facilitating the exchange of information and experience-sharing;
- *The ECEC Working Groups*: countries indicate that the support of the ECEC Working Groups is useful to them. They stress the importance of the Committee to assist them to address environmental crime issues;
- *INTERPOL's role in awareness-raising*: although environmental crime has become higher on national agendas, it is still necessary to continue raising awareness, which is an area where

INTERPOL's role is recognized by member countries.

The results of the questionnaire show that member countries rely on INTERPOL's work to combat environmental crime: 96 per cent underline areas where the Organization is a prominent player and/or could be of further assistance. However, they also share concerns about coordination between INTERPOL and other international organizations, such as EUROPOL. In fact, three countries raise the issue of overlapping events or initiatives organized by INTERPOL and EUROPOL, suggesting that both of them should work towards better planning and/or coordinated actions.

Drawing from the countries' answers to the questionnaire, the following sections elaborate on the main environmental crimes, which damage environmental quality, hasten biodiversity loss, and deplete natural resources. In addition to detailing the criminal activities and the links with other crimes, the report also focuses on INTERPOL's responses to address these threats to our ecosystem.

5 ENVIRONMENTAL QUALITY

Human activities are largely responsible for climate change, notably by damaging environmental quality. Societies are slowly turning to more sustainable ways to live, consume, and trade. However, environmental quality continues to be the victim of a range of illicit activities, which contribute to air pollution and land degradation, and adversely affect water resources.

5.1 Air

Air pollution is an economic, social, and environmental issue. As a serious health risk, it is responsible for approximately 7 million premature deaths per year and constitutes an economic drain.²³

Human activities responsible for air pollution cause the release of air pollutants, in particular greenhouse gases (GHG), suspended particulate matter, and tropospheric ozone. The main anthropogenic sources of air pollution are:

- *Fossil-fuel emissions (e.g. coal, petroleum, natural gas)*: in particular, the transportation sector (road and maritime traffic) relies on the combustion of fossil fuels, releasing major air pollutants (e.g. sulphur dioxide, carbon monoxide and dioxide, nitrogen oxide);
- *Industrial sites (power plants, manufacturing facilities, mines) and agricultural activities (use of pesticides and fertilizers)* alter the quality of air, by releasing toxic pollutants, such as lead, chromium, arsenic, cadmium, and mercury;
- *Waste and hazardous substances* threaten the quality of our ecosystem by contributing largely to air pollution. Landfills, for instance, not only release toxic substances (leachates), but also generate methane, a major GHG. Another concern is the problem of hazardous materials, including Ozone Depleting Substances (ODS), which contain sulphuric acid, chlorine, and bromine. Their long-lasting existence – up to 120 years – and their toxicity classify them as highly dangerous for the environment and human health. Section 5.2. *Land* further explores the issue of waste.

Criminal Activity

According to the International Energy Agency, industrial activities account for almost a third of the global energy consumption and 36 per cent of carbon dioxide emissions.²⁴ In this context, a market-based carbon pricing system (“cap-and-trade”) aimed to decrease carbon emissions was developed. Under this emissions trading scheme, companies can emit carbon set to a certain limit (*cap*). If they exceed it, they can offset their surplus emissions by purchasing carbon credits from another company. Alternatively, spare carbon credits can be sold to those requiring more (*trade*).²⁵

As a new market, emissions trading schemes present gaps in their regulatory framework. These constitute opportunities for unscrupulous companies to circumvent the system in place:

- *To obtain carbon credits:* some companies overstate their estimates or engage in corrupt practices in order to claim or receive more carbon credits;
- *To sell carbon credits:* certain companies have been involved in the sale of fake or already used carbon credits. Others also manipulate carbon prices, allowing them to make significant profits.²⁶

Overall, the new nature of carbon markets has generated loopholes which are fully exploited by disreputable firms at different stages of the supply chain.

Criminal Supply Chain

Companies manipulating the gaps in emissions trading schemes engage in criminal behavior at different stages:

- *Setting the projected emissions target:* after studies to quantify emissions and set targets, companies communicate their projected emissions. In order to obtain more carbon credits, criminal companies sometimes communicate false estimations or argue that their activities will reduce emissions to a larger degree than in reality;
- *Reporting on the emissions target:*
 - *Offsetting surplus emissions:* companies may be in a situation where they need to buy more carbon credits because they produced more emissions than initially planned. In such cases, companies sometimes report false measurements or engage in bribery with those in charge of delivering the carbon credits;
 - *Selling leftover credits:* companies have found in the sale of carbon credits various ways to generate profits (e.g. selling overpriced credits or already used ones). Because this is an attractive solution for companies, they sometimes try to obtain more credits when they set their emissions target as mentioned above. When successful, they are allocated more credits than necessary, allowing them to sell their surplus to other companies.

Crime Convergence

Emissions trading schemes are closely linked to other illegal activities which facilitate environmental crime. More specifically, as an emerging market, carbon trading is not necessarily covered by the regulations on money laundering, a fact which criminals exploit to the full. Generally speaking, this highlights the ramifications of carbon trading with financial crimes. Carbon markets provide the right setting for criminals to engage in securities fraud and embezzlement for instance: they deliver deceptive information to investors, particularly by manipulating carbon prices. Similarly, transfer mispricing is a common practice: companies trade carbon credits at artificial prices for the purpose of tax avoidance. Another example of tax fraud is Value Added Tax (VAT) fraud or “carousel” fraud, which refers to the practice whereby a trader obtains carbon credits without tax and sells them with

a tax to companies. However, after the transaction, the traders typically disappear and keep the amount of the tax paid by the buyers. In other words, governments do not receive the revenue from this tax at any stage.

In addition to financial crimes, cybercrime has become an issue of great concern in carbon trading. Criminals steal carbon credits from registries where transfers between sellers and buyers occur. Hacking methods lead to incorrect carbon credit figures, hindering the purpose of emission trading schemes, which aim to reduce carbon emissions by setting an emission limit. If companies manage to illegally obtain more credits than those allocated to them, carbon emissions will not decrease. Moreover, by stealing account data, companies engage in phishing practices and identity theft, highlighting serious security threats.

INTERPOL's Response

Until 2015, INTERPOL focused, through Project Eden, on air pollution crimes, such as carbon trading. Criminal manipulations of the carbon credit system are still an emerging issue. However, after looking into the criminal activity, INTERPOL produced the *Guide to Carbon Trading Crime* (2013) which aims to simplify a complex field of investigation, by offering a comprehensive presentation of carbon markets with case studies as well as a detailed analysis of vulnerabilities, based on the emerging character of the market.

Although INTERPOL is looking at securing partnerships to ensure that the project can continue to carry out its activities, it has already undertaken a number of other initiatives to encourage international cooperation to preserve environmental quality, particularly with regard to waste crimes as the next section shows.

5.2 Land

The world's population is more than 7 billion people and is expected to exceed 9 billion by 2050.²⁷ With a constantly growing urbanization rate,²⁸ the pressure put on land is tremendous. Land degradation results from excessive land use (e.g. agriculture, construction) and land pollution, caused mainly by anthropogenic activities deteriorating the earth's surface and soil, which eventually leads to land exhaustion. This degrades the ecosystem, which fails to provide for our common needs, such as agriculture. From desertification to soil erosion and nutrient depletion, the effects of land degradation are of great concern. This comes about mainly as a result of:

- *Urbanization*: this reflects both population growth and large construction enterprises. In order to provide accommodation and allow industries to grow, cities inexorably expand, encroaching on land;
- *Pollution from waste and hazardous substances*: the lack of planning or the absence of adequate infrastructure to dispose of waste inevitably leads to pollution, as land becomes a dumping ground. Hazardous substances infiltrate the ground, contaminating the soil and water, posing serious health and environmental risks;

- *Industrial and agricultural activities* rely on environmentally destructive methods harming the environment and our ecosystem in general. Industrial activities not only use mechanical processes (e.g. mining), which considerably damage the soil, but they also require the use of toxic chemicals (e.g. mercury). Similarly, the use of pesticides, insecticides, and intensive agricultural practices to satisfy rising consumption trends and ensure food security, pollute the air, soil, and water, eventually leading to land exhaustion.

Criminal activity

Criminal activities causing land degradation mainly relate to the trafficking in waste. Although illegal mining also contributes to damaging the soil and polluting the environment, it is dealt with more extensively in section 7.3. *Minerals*.

Trafficking in waste is understood as the improper management of waste (collection, transport, storage, disposal), as well as the illegal trade and movement of waste. The trafficking in waste primarily concerns Waste of Electrical and Electronic Equipment (WEEE),²⁹ ODS, end-of-life vehicles, and used tyres.

The illegal waste market operates alongside legitimate markets and *modi operandi* have become varied and sophisticated, complicating the work of authorities in detecting waste crimes:

- *Concealment methods* range from mixing the waste with legal merchandise to hiding it in vehicles. Criminals use containers, cylinders, or packaging, which are unmarked or repainted, with false labels and fake stickers;
- *Smuggling techniques*: mislabeling, false declarations of content, and fraudulent authorizations are common practices to avoid detection and seizures. These techniques facilitate the smuggling of waste internationally as the table below shows.

Circulation route	Location
Source	Canada, Central Asia, China, Europe, Russia, United States.
Transit	Belgium, Germany, the Netherlands.
Destination	Central Asia, China, Eastern Europe, Ghana, India, Japan, Nigeria, Pakistan, Southeast Asia, South Korea.

Criminal Supply Chain

Waste trafficking relies on the involvement of a chain of criminals who intervene at each stage of the criminal supply chain:

- *The production*: waste-producing companies are typically involved in the production of waste on a large-scale. Delinquent companies fail to meet the legal requirements of proper disposal in order to avoid associated costs;
- *The collection* falls under the responsibility of waste-management companies. In waste crimes, they are typically hired by waste-producing companies, which instruct them to

collect the waste. By illegally disposing of the waste (e.g. clandestine landfills, illegal burning of waste), waste management companies can generate substantial profits;

- *The transport* mainly involves shipping companies, which are intermediaries in the supply chain. Shipping agents deal with the information that they receive from the hiring companies, allowing them to produce the necessary documentation (e.g. bill of lading) and organize the payments or deposits. They are usually not aware of what the consignments contain, although they have the possibility of verifying the information and the content. Moreover, with millions of containers shipped every year around the world, authorities can only check a limited number of consignments, which constitutes further incentives for criminals;
- *The sale*: the end-users are typically profit-seeking companies, which aim to exploit the opportunities behind the trafficking in waste: through refurbishment, refining, repair, or reuse of waste (particularly WEEE products), companies can increase their profits from this parallel activity.

Crime Convergence

It is well known that the trafficking in waste has links with other types of crime. Financial crimes are particularly prevalent, with recurrent incidents of tax evasion and fraud. This occurs particularly through the misclassification of waste (e.g. hazardous waste labelled as non-hazardous), allowing for substantial savings on the tax amount.

There are also significant and widespread issues of corruption in the area of waste management, commencing from the point of issue of licenses, through the transportation chain, around border controls, to the point of disposal. A wide range of people (e.g. harbor officials, police, customs, traders and brokers, shipping lines, importers and exporters) may be involved along the entire supply chain.

Trafficking in waste, particularly e-waste, has also led to the emerging phenomenon of “digital dumping”. The improper disposal of e-waste has created gaps in cyber-security, with hard drives being illegally disposed of and trafficked to West Africa where numerous cases of cybercrime have been reported. E-waste presents opportunities for criminals to retrieve sensitive information (e.g. governmental security contracts recovered; personal information used to commit identity theft).

INTERPOL's Response

Until 2015, INTERPOL was involved in fighting the traffic in waste through Project Eden. It initiated or participated in a number of initiatives, including:

- *Project CWIT (Countering WEEE Illegal Trade) (2013-2015)*: this initiative, supported by a consortium of partners and funded by the European Commission, Norway, and Switzerland, investigated the traffic surrounding WEEE. The findings and recommendations on how to improve WEEE management and reduce related illegal activities were compiled in a report;³⁰

- *Project LITE* (2011) was launched to assess the context of ODS smuggling and concealment. This has not only made it possible to provide case studies from countries in the different regions of the world, but it has also raised awareness about ODS and their trafficking;
- *Operations*:
 - ENIGMA I (2012) led to the identification of 43 companies and the seizure of more than 240 tonnes of waste;
 - ENIGMA II (2014) resulted in the seizure of more than 200 tonnes of tyres, over 50 containers of WEEE, 135 containers of household waste, and at least 1200 refrigerators;
 - ENIGMA III (2015) led to significant seizures, including at least 228 containers of waste, 150 tonnes of tyres, refrigerators, hazardous substances, and end-of-life vehicles.
- *Publications* offer an insight into criminal trends to better detect and deter waste crimes:
 - The two volumes of *INTERPOL Pollution Crime Forensic Investigation Manual* (2015)
 - *Ozone Depleting Substances Smuggling and Concealment - Case Study Handbook* (2013)
 - *Strategic Analysis Report on Illegal Export of Electronic Waste to Non-OECD Countries* (2011)
 - *Electronic Waste and Organized Crime: Assessing the Links* (2009).
- *Workshop*: in July 2014, INTERPOL organized an Operational Workshop on Controlling Environmentally Regulated Substances (Jakarta, Indonesia). The event was an opportunity to share experience and expertise, organize a practical exercise,³¹ and reflect on the development of tailored responses to tackle the traffic in environmentally hazardous substances, notably ODS.

5.3 Water

Water is one of the most plentiful resources on our planet. Although it is a key factor for development, some populations still suffer from water deprivation.³² As a scarce commodity, states and institutions are facing pressing challenges to ensure water security, as they aim to provide access to clean water and sanitation. The quality of water is particularly compromised by human-induced pollution, such as:

- *Improper waste management*: until the 1970s, there was no or inadequate waste management planning to dispose of waste, which was discharged into the water. The transition towards disposing properly of waste accumulated as a result of a growing urbanization rate, the development of tourism, and the intensification of industrial activities proved challenging, as the *Khian Sea* episode illustrates.³³ The main issues now concern consumer behavior, which contributes to marine litter and plastic pollution, as well as

developing countries confronted with the need to adopt waste-management policies adapted to their growth;

- *Marine projects*: environmental impact assessments have demonstrated the detrimental effect of underwater construction projects, such as the Öresund crossing,³⁴ but more importantly of ocean mining. As the seabed offers large quantities of minerals and metals, it draws considerable attention. The exploitation and extraction of the seabed's resources, however, endangers the marine ecosystem, notably by disrupting the marine habitat of species;
- *Leakages from sewer lines and underground storage*: leaks from damaged and/or old sewage systems and underground storage tanks release hazardous substances, such as sulphates, chlorides, nitrates, or petroleum products (e.g. gasoline, diesel, kerosene, oil). They contaminate not only underground and drinking water, but also rivers and oceans;
- *Leachates from landfills, pesticides, and fertilizers*: these toxic substances eventually pollute groundwater, rivers, and oceans, as a result of infiltrations in the soil and land runoffs;
- *Oil pollution*: one of the most devastating sources of water pollution is oil spills, which typically involves the discharge of petroleum into the water. They generally occur through negligence or intentional non-compliance. Although the number of incidents has significantly decreased over the past years,³⁵ this remains an issue for concern, as the environmental impact is considerable and long-lasting.

Criminal Activity

There is a wide variety of water-related crimes but this report distinguishes between three categories: water fraud, water pollution, and water theft.

- *Water fraud* involves the alteration of sampling techniques or results to avoid treatment costs. The main danger from these practices is the negative health implications. For instance, when statistics are manipulated deceitfully to promote water as being clean, it poses a genuine health risk as the water supplied may not be as clean and safe as advertised;
- *Water pollution* implies the intentional contamination of water, usually by companies or vessels (e.g. improper disposal of sewage, chemicals and waste, oil spills). The following trends can be underlined with regard to:
 - *Oil-pollution crimes* include illegal oil discharges, false statements or records, and bypassing pollution prevention equipment. Illegally operating vessels have sailed under the national flags of countries, such as Cyprus, Denmark, Djibouti, United Kingdom, Hong Kong (China), Italy, Liberia, the Netherlands, Norway, and Russia;
 - *Illegal garbage discharges* entail the illegal discharge of garbage and the absence or the illegal alteration of garbage record books.

- *Water theft* is understood, here, as non-revenue water, that is the unauthorized use and consumption of water before it reaches the intended end-user. It is estimated that between 30 and 50 per cent of the global water supply is illegally purchased.³⁶ Regions experiencing chronic water stress (e.g. Southern Europe, Africa) and marginalized deprived areas (e.g. slums in India, Bangladesh, or Brazil) are particularly vulnerable. Local communities are, therefore, forced to find alternative solutions to fulfil their daily needs for water. In Africa, the number of unregulated wells has skyrocketed from 2 million to an estimated 23-25 million in a decade. While this reflects poor water management, this practice is also conducive to the major degradation of water resources.³⁷

Criminal Supply Chain

In cases of pollution (e.g. illegal waste discharge and oil spill), water is not considered as a commodity, which can be traded. In other words, water pollution is not about obtaining water as a raw product and trafficking in it: water suffers collateral damage of negligence or criminal behavior. Water pollution not only affects environmental quality but it also disrupts business activities. Oil spills contaminate an area which can sometimes be very large (e.g. BP oil spill in 2014³⁸), thereby destabilizing other sectors, such as fisheries, and disrupting the supply chain of the companies active in the polluted region.

Criminals involved in other water-related crimes, such as water fraud and water theft, jeopardize the integrity of the existing supply chain. The supply of water takes place in two general stages:

- *Production*: before reaching its end-users, water is usually collected from a source point, such as lake, river, or groundwater. It is then routed, through a ground-level or underground structure, to a treatment facility. After being purified, the water is piped to a storage system, such as a reservoir, tank, or cistern. An underground network finally connects the storage facility to the end-users. To ensure the quality of the water supplied, different samples are collected and analyzed at each point (collection, treatment, and storage). However, the samples and the results provided are sometimes tainted with fraud, undermining the supply chain integrity and posing a serious health risk, as mentioned earlier;
- *Distribution*: the delivery of water to end-users highlights two issues. On the supply side, the public sector is sometimes involved in over-billing or imposing maintenance charges which should not be borne by the consumers. Alternatively, on the demand side, end-users are sometimes engaging in reprehensible behavior to evade costs associated with the access to water (e.g. concealing illegal connections, tampering with meter readings).

Crime Convergence

Water crimes intersect with other criminal activities. Financial motivations spur on unscrupulous individuals wishing to avoid costs. Fraud and document forgery are common practices (e.g. presenting forged or false declarations, manipulating the vessels' records detailing their waste and oil discharges, reporting fake results of analyses to eliminate costs associated with water treatment).

This is compounded by endemic corruption. In the public sector, bribery, misappropriation of funds, and fraud plague the tendering and procurement processes in creating the water-supply infrastructure. This also highlights the disregard for health and safety regulations, which put the life of consumers at risk. In parallel, corrupt practices between public and private actors can take place at several stages: some consumers engage in administrative corruption to influence the design of the water-supply infrastructure to ensure easier access to water or to benefit from preferential treatment in general (e.g. higher flow of water, repairs). This exacerbates the problem of unequal and unfair distribution of a vital resource, based on a corrupt system that relies on bribes.

Corruption in the water sector is also fueled by the involvement of organized crime, and more specifically mafia-type groups. The monopoly over the water supply underpins the power and influence that organized crime groups have over vulnerable communities living in poor and/or marginalized areas (e.g. slums), particularly in Bangladesh, Brazil, and India.

The misuse of water for terrorist purposes is not new and highlights the problem of water being exploited for criminal ends. More recently, the control of dams in Iraq by the terrorist group Daesh, (also known as the Islamic State or ISIL), has raised concerns about some populations which could be threatened by the group's decision to flood villages or deprive them of water in regions already facing water scarcity. Similarly, the Nigerian terrorist group, Boko Haram, is believed to have poisoned water sources, resulting in the death of cattle as well as the displacement of populations. Not only do terrorist acts targeting water or the water infrastructure directly affect populations, but they can also contribute to pollution.³⁹

INTERPOL's Response

In cooperation with the Pollution Crime Working Group, INTERPOL has focused on solutions to better detect and address water crimes. INTERPOL's key initiatives include:

- *Conferences*: in June 2016, INTERPOL took part in the 21st Pollution Crime Working Group Meeting, which welcomed senior level law enforcement and intelligence officials from NCBs, and worldwide environmental protection agencies from 30 countries in Glasgow. This event highlighted the global aspiration to place greater emphasis on intelligence, analysis and operational support. More specifically, a strong desire has been expressed to research and engage more actively on water-related crimes;
- *Publications*: in the investigative manual on *Illegal Oil Discharges from Vessels* (2007), INTERPOL offers an overview of the criminal behavior at sea that leads to water pollution, including oil spills. The document was updated and is supplemented by the *Illegal Garbage Discharges from Vessels*, released in June 2016 during the 21st Pollution Crime Working Group Meeting in Glasgow;
- *Project Clean Seas* (since 2002): this initiative of the Pollution Crime Working Group aims to bring together experts on ship-related pollution. Within the framework of this project, INTERPOL has been working with its member countries to prevent oil spills, encouraging information-sharing on vessels involved in illegal oil discharges and assisting countries in the creation of Purple Notices on oil companies which refuse to pay clean-up costs.

6 BIODIVERSITY

The trafficking in wildlife deriving from the poaching of elephants, rhinos, bears, Asian big cats, antelopes, great apes, tortoises and turtles involves a variety of criminals in a defined criminal supply chain. This illegal activity, which colludes with a number of other crimes, is addressed by INTERPOL's projects Predator and Wisdom.

6.1 Criminal Activity

Elephants

The increase in elephant poaching has created an alarming situation. The population of forest elephants is estimated to have dropped by about 62 per cent between 2002 and 2011. The Savanna elephant declined by 30 per cent (144,000 elephants) between 2007 and 2014 in 15 out of 18 range countries. The current decline, caused primarily by poaching, is 8 per cent per year.⁴⁰ In the three years up to the end of 2012, an estimated 100,000 elephants were illegally poached in Africa, with annual estimates ranging from 30,000 to 40,000 generating an average of 211 metric tonnes of illegal ivory per year.

Ivory, nicknamed "white gold", is prized for ornamental purposes as well as its symbolic value. In China, for instance, it is representative of a person's status, while in Southeast Asia, it is viewed as a token of good luck. Generally, this popularity drives a high demand, which is inevitably conducive to elevated prices. Poached African ivory may represent an end-user street value in Asia of an estimated USD 165-188 million worth of raw ivory, in addition to ivory from Asian sources.

Elephant poaching is typically perpetrated by local people and is characterized by the use of firearms, homemade weapons (e.g. machetes, spears), and poison.⁴¹ The activity can be driven by bush meat hunting or self-defense, but it is mainly stimulated by the international trade. In the latter case, the ivory is containerized to be transshipped and exported to international markets.

Cases of large-scale trafficking often involves the transport of ivory from targeted African countries where there is a large population of elephants. The ivory typically transits through African countries before being shipped to Asia as the table below shows. About two-thirds of large-scale ivory shipments use maritime containers, the quantity of which, corresponds to the poaching of several hundreds of elephants. The containers are rarely sent from countries from which the ivory originates and identifying the provenance usually requires DNA analysis.

Circulation route	Location
Source	Botswana, Democratic Republic of the Congo (DRC), Kenya, South Africa, Tanzania, Zimbabwe.
Transit	Botswana, Burundi, DRC, Kenya, Nigeria, South Africa, Togo, Uganda, Zimbabwe.
Destination	China, Hong-Kong, Malaysia, Singapore, Sri Lanka, Thailand, United Arab Emirates, Vietnam.

Rhinos

Rhino-poaching incidents have multiplied 20 fold in just six years. Figures not only clearly demonstrate the threat, but also the reality of extinction: Java and Sumatran rhinos are fewer than 100 in number, and the Western Black Rhino was declared extinct in 2006. Rhinos rank among the most endangered species as a direct result of poaching and trafficking. In 2015, poachers killed at least 1,338 rhinos in Africa, the highest number in decades.⁴² South Africa, the country that holds the vast majority of the world's rhinos, lost at least 1,175 rhinos in 2015, down slightly from the record high in 2014, when 1,215 rhinos were killed.⁴³ As of May 2016, 363 rhinos had already been killed in South Africa, particularly affecting Kruger National Park, which was home to between 8,001 and 9,290 white rhinos in 2014, and has been the epicenter of rhino poaching.⁴⁴

Poaching levels are at their highest, highlighting an increasing demand for rhino horns. In Asia, and particularly in China, rhino horns, especially in powder form, are believed to have healing powers, contributing to their widespread appeal, despite the lack of scientific evidence. In the Middle East, rhino horns are used as dagger handles, where they represent a status symbol.

Rhino poaching typically involves the use of sophisticated equipment (e.g. night-vision, tranquilizers, silencers) to avoid detection. Firearms and poison are commonly used for poaching, but more traditional methods have also been reported, such as cable snares. The international trafficking of rhino horns highlights a trade from African countries to Asia (see table below). Criminals usually smuggle rhino horns in suitcases, however, some seizures suggest other concealment methods (e.g. wooden boxes, resin sculptures). The use of Asian, and especially Vietnamese tourists, has become a widespread smuggling technique, although criminals also use internet and local shops to sell the horns.

Circulation route	Location
Source	Kenya, Mozambique, South Africa, Zimbabwe.
Transit	Bangladesh, Kenya, Mozambique, Myanmar, Namibia, South Africa, Zimbabwe.
Destination	Bhutan, China, Laos, Myanmar, Nepal, Singapore, Taiwan, Thailand, Vietnam.

Bears

It is estimated that six out of eight bear species are threatened with extinction. The illegal trade particularly targets the Asian Black Bear, the Brown Bear, the Sloth Bear, and the Sun Bear. Bears are illegally poached to either be held captive or for their parts and derivatives. Demand for their skin and bile drives high prices, which attracts poachers. When captured alive to be kept in captivity, bears are held in extreme conditions in bile extraction sites, breeding facilities, and circuses.

Different poaching methods are used (e.g. baits, electrocution, firearms) depending on whether the bear is to be captured alive or killed. Bears are typically found in Asia, but also in Canada, Russia, and in the United States (see table below). The demand is particularly driven by the Asian and South Pacific region, European countries, and the United States. Similarly, criminals use a variety of concealment techniques, ranging from simple packaging to car tyres or strong smelling goods, such

as coffee. In order to avoid detection, the bear or its parts and derivatives are transported in vehicles which do not raise suspicion (e.g. use of fake official plates) or by air.

Circulation route	Location
Source	Asia, Canada, Russia, United States.
Transit	Asia, particularly Southeast Asia.
Destination	Australia, China, European Union, Japan, United States, Vietnam.

Asian Big Cats

This term designates big cats found in Asia, including, but not restricted to, tigers and leopards. They are hunted mostly for their skin and meat, but are also kept alive to be held captive in circuses or farms. The illicit market for Asian big cats, their parts and derivatives, poses a serious threat to their existence. For instance, the tiger population in the 1900s was estimated to be approximately 100,000. However, it is now believed there are fewer than 4,000 tigers.⁴⁵ The value of Asian big cats' parts and derivatives reaches up to USD 20,000, which provides a profitable and attractive business to criminals.

Poachers use methods ranging from firearms to basic and traditional weapons (e.g. wires, snares). Poison is also a common technique, especially in Nepal, Bhutan, Bangladesh, and India, which list among source countries as the table below shows. The use of the pesticides Carbofuran and Furadan⁴⁶ has also been reported in some cases of tiger and leopard poaching in India. Criminals usually smuggle the animals by choosing transport means that do not attract attention (e.g. public transport, ambulances, official vehicles). In Nepal, India, Bhutan, and Bangladesh, criminals primarily transport animals' parts and derivatives (e.g. skins, bones, teeth, claws) in pieces, while in Southeast Asia, big cats tend to be smuggled either alive or dead in one piece. They are concealed into containers or bags, concealed among other goods, or disguised as souvenirs or handicrafts.

Circulation route	Location
Source	Bangladesh, India, Indonesia, Laos, Malaysia, Nepal, Russia, Thailand.
Transit	Bhutan, Laos, Myanmar, Nepal, Thailand, Vietnam.
Destination	Southeast Asia, particularly China and Vietnam.

Antelopes

Antelopes, more particularly Tibetan antelopes, are poached for their wool, which is used for Shahtoosh shawls. However, "poaching for Shahtoosh wool from Tibetan or Chiru antelopes caused a dramatic drop of likely 80-90 per cent or nearly a million Chiru antelopes in China in the 1990-2000s" (Nellemann, Henriksen, Raxter, Ash & Mrema, 2014, p.9). This drastic decline in the antelope population threatens them with extinction.

The Tibetan antelope has become a target for criminals. As a luxury good, its wool is particularly fashionable, and therefore, highly valued on international markets: the sale of Shahtoosh shawls can

reach over USD 5,000. Although their price on the black market has decreased over the past 20 years, they remain high, driving the poaching of the Tibetan antelopes and the traffic in their wool.⁴⁷

The wool is typically used to make the shawls in China or Nepal. It is only then that it is smuggled to international markets, particularly in Asia and Europe (see table below). The trafficking is facilitated by diverse concealment methods, varying from hiding the Shahtoosh shawls in passenger luggage or amongst legal shawls to being mislabeled as cashmere shawls.

Circulation route	Location
Source	China.
Transit	India, Nepal.
Destination	Asia, France, Germany, Italy, Kuwait, Switzerland, United Kingdom, United Arab Emirates, and United States.

Great Apes

Great apes – a designation which covers bonobos, chimpanzees, gorillas and orangutans – are particularly endangered for a variety of reasons, including self-defense from local communities and loss of habitat due to deforestation. Their illegal poaching and trafficking, however, is mainly driven by the demand for bush meat trade, traditional African medicine, and the market for live animals (e.g. pet collectors, breeding centers, zoos, amusement parks, circuses).

In September 2016, the IUCN downgraded the Eastern Gorilla, now numbering fewer than 5,000 individuals to the status of critically endangered. From 2005 to 2011, UN Environment reported that at least 1,019 orangutans, 643 chimpanzees, 98 gorillas, and 48 bonobos were captured from the wild for illegal trade. Based on extrapolations – and inherent uncertainty – it is likely that as many as 22,218 wild great apes were lost between 2005 and 2011 because of the illegal trade, with chimpanzees comprising 64 per cent of that number. The annual average loss of 2,972 great apes could have serious consequences for the biodiversity of key regions, given the important role great apes play in maintaining healthy ecosystems.

Poachers usually target young apes, as they are smaller and less dangerous to humans. Nevertheless, “removing juvenile gorillas from the wild invariably necessitates the killing of their mothers, and perhaps other members of the family group, and is, thus, particularly destructive to the species as a whole” (Nellemann, Redmond & Refisch, 2010, p.54). Once poached, the animal is smuggled via air, land, or water, using diverse transport means (e.g. vessels, vehicles, local airplanes, individuals, diplomatic post). The trafficking in great apes is believed to have shifted from being a by-product of traditional conservation threats, such as deforestation, mining and bush meat hunting, to a more sophisticated business driven by demand from international markets in Asia and Europe (see table below).⁴⁸

Circulation route	Location
Source	Burkina Faso, Burundi, Cameroon, Central African Republic (CAR), Congo, Côte d'Ivoire, DRC, Equatorial Guinea, Gabon, Ghana, Guinea, Guinea Bissau, Indonesia, Liberia, Mali, Nigeria, Rwanda, Sierra Leone, South Sudan, Tanzania, Uganda.
Transit	Cameroon, DRC, Egypt, Kenya, Malaysia, Nigeria, South Sudan, and Uganda.
Destination	China, Europe, Gulf countries, Southeast Asia.

Pangolins

As the most trafficked mammals, pangolins have become a highly endangered species. In some regions, they are now extinct while, in others, their number is critical, with a drop by up to 94 per cent of their population. They are especially wanted for their scales, but also for their skin and meat. The demand for pangolin parts and derivatives is sustained by the market for luxury goods, because they are viewed as an exotic and delicacy product. Due to the resulting shortage in pangolins, prices for their parts are skyrocketing on the illicit market (e.g. several thousand dollars per kilogram in some Asian countries).

Although consignments tend to contain up to 2 tonnes of pangolin parts and derivatives, the animals are not poached all at once. Rather, they are caught or killed at different times, in separate locations, and by different individuals, which can make criminals very difficult to trace and detect. Moreover, they rely on diverse smuggling techniques, from declaring the pangolin as another good (e.g. food, timber, electronic material) to concealing it with licit or illicit items (e.g. ivory, rhino horns, fish) in shipping containers. Pangolins are also often trafficked through postal services or by travelling tourists to Asian countries as the table below highlights.

Circulation route	Location
Source	Cameroon, Kenya, Mozambique, Myanmar, Nigeria, Sierra Leone, Togo, Uganda.
Transit	Belgium, France, Germany, Indonesia, Laos, Malaysia, Myanmar, the Netherlands, Singapore, Switzerland, Thailand, Turkey, United Arab Emirates, United Kingdom.
Destination	China, Hong Kong (China), Singapore, Thailand, Vietnam.

Tortoises and Turtles

The demand for live tortoises and turtles, and their shells and meat, has positioned them as a target for poachers. The catering, jewelry, and exotic-animal markets undeniably play a role in this illegal activity. In parallel, traditional medicine contributes to the poaching of tortoises and turtles, which is partly driven by the high demand for scutes or "bekko", which is mainly made of keratin and covers the shell.

Tortoises are typically poached outside the monsoon seasons: they are more easily found at that time of the year as they tend to look for food during that period.⁴⁹ Turtles, on the other hand, are particularly vulnerable to poaching in the so-called “Coral Triangle” formed by Indonesia, Malaysia, and the Philippines.⁵⁰ Although juvenile specimens of both tortoises and turtles are targeted, adults can also be subject to poaching. Tortoises and turtles are transported primarily on foot by locals, but they can also be smuggled via train, planes, or boats.⁵¹ Ultimately, international markets, particularly in Asia and South Pacific, drive poaching incidents.

Circulation route	Location
Source	India, Indonesia, Madagascar, Malaysia, Philippines.
Transit	Bangladesh, India, Laos, Pakistan, Singapore, Thailand.
Destination	China, Japan, Jordan, Kazakhstan, Kyrgyzstan, Lebanon, Taiwan.

6.2 Criminal Supply Chain

The poaching of animals and the traffic in their parts and derivatives rely on a large and complex supply chain, involving a significant number of individuals:

- *The poaching*: poachers often come from a low-income background, looking for alternative means to provide for their families. They are usually provided with the necessary equipment by middlemen;
- *The transport* typically involves middlemen, who serve as couriers. They are tasked with the logistical organization, taking charge of the transaction and the transport of the animals or their parts from the poachers to traders or wholesalers;
- *The exportation*: intermediaries, who are usually part of organized crime groups, facilitate international smuggling (e.g. use of front companies, corruption of authorities);
- *The sale*: animals and their parts and derivatives are sold to end-user markets, which typically involve the catering and jewelry sectors, as well as farms, circuses, and pet stores.

6.3 Crime Convergence

The resources required to smuggle large quantities of commodities (i.e. consignments reaching up to several tonnes of ivory) suggest the involvement of organized crime groups, which have the financial resources and the capacity to conduct large trafficking operations. Due to their vast network of contacts, they can undermine transparency within local authorities, by working with the complicity of some of them from the procurement of licenses to the avoidance of controls.

Because organized crime is inherently connected to financial crime, it is not surprising that animal poaching and trafficking converge with fraud, tax evasion, and money laundering. As profit-driven entities, criminals exploit the weaknesses of the system to increase their financial margins.

In some instances, wildlife trafficking is linked to funding non-state armed groups. Ivory, for instance, provides a portion of income raised by militia groups in CAR and DRC, and is probably a primary source of income to the Lord's Resistance Army (LRA) currently operating in the border triangle of CAR, DRC, and South Sudan. Ivory is similarly believed to be a source of income to Sudanese Janjaweed and other horse gangs operating between Chad, Niger and Sudan. Given the estimated elephant population and the projected number of killed elephants within the striking range of these militia groups, the annual income from ivory to militias in the entire Sub-Saharan range is probably in the order of between USD 4 and 12.2 million.

There is, however, limited evidence to establish a clear and direct link between wildlife trafficking and the funding of rebel groups and terrorist organizations. It is believed that the illegal trade in wildlife has a significantly smaller role compared with natural resources, which can constitute the primary financial source of income for certain criminal groups as Section 7. *Natural Resources* further explores.

6.4 INTERPOL's Response

INTERPOL addresses crimes against Asian and African biodiversity through Project Predator and Project Wisdom, respectively.

Project Predator is concerned primarily with the preservation of Asian big cats, but it also focuses on other wildlife species populating Asia (e.g. elephants, rhinos, bears, great apes, pangolins, tortoises and turtles). Its activities include:

- *Publications*: Project Predator has produced several documents analyzing criminal trends concerning wildlife poaching and subsequent trafficking in Asia, including:
 - *Assessment of Enforcement Responses to Tiger Crime* (2014)
 - *Assessment on Illegal Bear Trade* (2014)
 - *Strategic Analysis on Rhinoceros Crime* (2011).
- *Operations*: since 2010, Project Predator has facilitated nine operations⁵² involving nearly 50 countries, which yielded significant results. The authorities arrested more than 560 individuals and seized at least 100 tigers and leopards, 56 skins, hundreds of kilograms of big cat bones, 12.8 tonnes of ivory, almost 11 tonnes of pangolins, in addition to scales and meat, and more than 2,500 turtles and tortoises;
- *Events*: a large number of conferences, training sessions, and workshops have been organized throughout Asia in order to stimulate international cooperation and provide analysis, expertise, and technical support;
- *The Tiger Crime Initiative*: this comprehensive approach brings together INTERPOL, tiger range countries, and partner organizations to better address tiger poaching. To this end, the initiative involves a set of strategic, operational, and tactical objectives.

Project Wisdom deals with African biodiversity, and particularly addresses the poaching of elephants and rhinos in Africa as well as the subsequent trafficking of ivory and rhino horns. To tackle these crimes, Project Wisdom has worked on the following:

- *Publications:* Project Wisdom has released several documents presenting and analyzing the trends in the trafficking of elephant ivory and rhino horns. Publications include:
 - *Elephant Poaching and Ivory Trafficking in East Africa: Assessment for an Effective Law Enforcement Response* (2014)
 - ICCWC manual on *Guidelines on Methods and Procedures for Ivory Sampling and Laboratory Analysis* (2014)
 - *An Investigation into the Ivory Trade over the Internet within the European Union* (2013).
- *Operations:* Project Wisdom organized a number of operations, the most recent one being Operation Worthy II (2015). It aimed at tackling ivory trafficking in Africa and led to the investigation of 25 criminal groups and the arrest of more than 370 individuals. The authorities also seized 4.5 tonnes of elephant ivory and rhino horns;
- *Support:* as part of Project Wisdom and with the support of ICCWC, INTERPOL has delivered a number of conferences, training sessions and workshops throughout Africa to raise awareness of poaching and traffic in wildlife species, and to provide expertise and technical assistance. In 2016, INTERPOL, supported by ICCWC, organized a RIACM on reptiles in Singapore and a workshop on shahtoosh in Lyon. ICCWC also facilitated the deployment of a Wildlife Incident Response Team (WIST), such as the WIST sent to Dubai, United Arab Emirates, in 2015, which collected ivory samples and facilitated the exchange of relevant information between different countries in Africa and Asia.

7 NATURAL RESOURCES

Numerous countries and corporations have significantly invested in the exploitation of natural resources. However, because it is an extremely lucrative business, the trade of natural resources is also coveted by criminals. In particular, the forestry, fisheries, and mining sectors considerably suffer from criminal groups, which can deploy subsequent resources in the traffic in environmental commodities.

7.1 Forestry

Forests cover approximately 30 per cent of the Earth's land surface.⁵³ Their environmental value is immense: they act as carbon sink, storing a large portion of GHGs and lessening the impact of these gases on the atmosphere. Furthermore, trees are essential for the functioning of the water cycle, and protect certain species from the sun in some areas. However, deforestation has become a pressing issue, which not only leads to the release of large quantities of carbon, but also to the destruction of many species' habitat. Deforestation mainly results from:

- *Agriculture*: globalization and productivity pressures force farmers to expand their land capacity to grow more crops and feed more livestock. Poor farmers resort to deforestation, especially in Latin America and Southeast Asia, with the "slash and burn" practice;⁵⁴
- *Urbanization*: the need for more space has become a pressing issue where urbanization is particularly rapid, leading to deforestation and putting additional pressure on land;
- *The wood industry*: the demand for wood-based products (e.g. paper, furniture) is constantly increasing, contributing to deforestation: "for example, wood-based panel trade has increased 800 per cent in the last 30 years and this trend is expected to continue" (FAO, 2007);
- *Firewood and charcoal*: in Africa, 90 per cent of the wood consumed is used for fuel and charcoal.⁵⁵ Its demand, however, drives deforestation, and its burning has a devastating impact on the environment, causing the release of air pollutants.

Criminal Activity

Illegal logging and timber trafficking: high prices and increased demand for certain wood species⁵⁶ and products stimulate forestry crimes. This carries serious economic consequences for governments, as it constitutes between USD 51 billion and 152 billion every year in lost revenue.⁵⁷ Illegal logging is estimated to make up 80 per cent of log production in Brazil, 73 per cent in Indonesia, and 50 per cent in Cameroon.⁵⁸ The trafficking in timber relies on the following trends:

- *Concealment methods*: criminals can easily mix legal and illegal wood, which makes it difficult for authorities to detect the illegally trafficked items. This can occur on legitimate cutting sites (i.e. when quotas are exceeded) or on milling sites;

- *Smuggling techniques*: timber is usually transported in trucks or vessels in remote areas. The use of forged or false permits and mis-declaration to hide the origin or the species of the wood facilitates the traffic to international markets, such as China, European Union countries, or the United States as the table below indicates.

Circulation route	Location
Source	Amazon Rainforest, ⁵⁹ Congo Basin, ⁶⁰ Southeast Asia (particularly in Malaysia, Indonesia, PNG, and Myanmar), Russia.
Destination	China, European Union, United States.

Charcoal Trafficking: charcoal results from the burning of wood at high temperatures without oxygen. It can be made from any trees, but in Africa, the *Combretum* species gives the highest quality of charcoal. As an accessible, cheap, and effective fuel, it is the primary source of household energy in Africa. It is also widely used in Gulf countries but, due to strict legislation on deforestation, they have to import charcoal. The high demand for this valued commodity stimulates the illegal trade in Africa, threatening regional security and stability. Despite the 2012 UN ban to tackle the links with terrorism,⁶¹ the bulk of the charcoal exported from Eastern Africa, either originates from or transits through Somalia, despite other source countries located in Africa, as the table below indicates.

Circulation route	Location
Source	DRC, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Tanzania, Uganda.
Transit	Djibouti, Ethiopia, Kenya, Somalia, Tanzania.
Destination	Burundi, Rwanda, Uganda, Gulf countries – particularly Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates, Yemen.

An analysis of the trafficking reveals the following trends:

- *Concealment methods*: the charcoal is often transported in bags and sometimes mixed with other goods, such as sugar;
- *Smuggling techniques*: charcoal is extremely light compared with wood and is therefore easily moved. It can be transported on foot, by road (e.g. in trucks or on bicycles), or by sea. In order to smuggle the charcoal, criminals rely on forged authorizations, which are facilitated by corruption (e.g. use of military trucks with the collusion of authorities in DRC with the involvement of the Democratic Forces for the Liberation of Rwanda (FDLR)).⁶²

Criminal Supply Chain

Forestry crime has become a highly organized criminal activity, which developed around a clear supply chain:

- *The issuance of permits* refers to the government's administrative decisions to allocate forested land for clearing, and forestry activities. High-level corruption may be involved in the decision to issue of permits to certain people or companies;
- *The harvest* is the logging of the wood. The illegal activity often takes place in areas close to legal logging sites, the timber being mixed onsite to conceal its origin. It occurs typically in remote areas (inaccessible by road, conflict zones) at night or on weekends to avoid detection;
- *The transportation*: the wood is transported to mills or processing plants. In this phase too, criminals also proceed where and when surveillance is low to avoid any detection;
- *The processing* consists of sawing and processing the logs at mills. The wood can then be moved more easily, as it can fit into smaller vehicles and be less visible. At this stage, the illegally obtained wood is often mixed with legal wood;
- *The export*: the wood is shipped to importing countries, which often involves criminals attempting to circumvent regulations (e.g. permits, quotas, taxes, CITES certificates);
- *The sale*: criminals use a variety of methods to put timber on the retail market, from mislabeling to false declarations of the origin or type of wood.

Crime Convergence

As with other environmental crimes, illegal logging and associated criminal activities are closely linked to financial crime, such as money laundering, tax fraud and tax evasion. Criminals involved in forestry crimes resort typically to unlawful practices, such as providing deceptive or suspect banking documents, hiding the sources of illegal earnings and cash payments.

Corrupt practices are also deeply anchored in forestry crime, with a wide range of people involved, from field officers to high-level representatives.⁶³ Bribery can occur at any stage of the supply chain (e.g. to obtain licenses, to avoid controls, to process and trade in the logs). The complicity of authorities at checkpoints and border controls ensures that the traffic goes smoothly. Although public officials are regularly bribed, there have also been cases of abuse of power from them to extort money or to engage in rent-seeking, nepotism, and cronyism.

Links between forestry crime and drug trafficking have also been established, especially in Latin America. There is evidence that criminal groups involved in drug trafficking have extended their activities to illegal logging and timber trafficking, from taxing the wood to increase profits to using similar transportation, concealment and smuggling techniques, as well as circulation routes.⁶⁴

Furthermore, the trafficking in charcoal is also believed to have links with terrorist organizations and armed groups. For instance, Al Shabaab has reportedly been collecting taxes on charcoal being traded in Somalia with the intention of purchasing drugs and arms. The group's control of key ports – Kismayo, Baraawe, Buur Gaabo – has allowed it to smuggle charcoal under the guise of sugar trade with Gulf countries.⁶⁵ Similarly, in DRC, the FDLR controls the entire charcoal traffic with the

connivance of local and corrupt government officials (e.g. taxation on charcoal traders, protection of FDLR sites).⁶⁶

The involvement of terrorist organizations and armed groups in illegal logging and associated crimes also suggests human rights abuses, which are inherent in the methods used by these groups. In fact, they are notorious for resorting to violence to exert power. These abuses range from forced labor and sexual exploitation to kidnapping and murder.⁶⁷

INTERPOL's Response

Under Project LEAF, INTERPOL focuses on illegal logging and associated crimes, such as financial crime and corruption. The activities and achievements of Project LEAF include:

- *Publications*: a number of documents (guides, investigative manuals) addresses forestry crimes and their links with corruption and financial crimes. Recent publications include:
 - *Uncovering the Risks of Corruption in the Forestry Sector (2016)*
 - *The Illicit Charcoal Trade in Eastern Africa (2016)*
 - *Practical examples of Forestry Crimes for the issue of INTERPOL Notices (2016)*
 - *Forest Crime Manual: An Officer's Guide to Illegal Logging and Forest Crime (2013)*.
- *Events*: conferences, training sessions, workshops, RIACMs and NESTs are regularly organized to stimulate international cooperation and provide technical support or expertise;
- *Operations*: since 2012, Project LEAF has been involved in no fewer than 10 operations in Latin America and Africa. The most recent ones are:
 - *Amazonas II (2014-2015)* brought together 12 countries from Latin America.⁶⁸ It led to the seizure of more than 56,000 cubic meters of timber, worth approximately USD 47 million. The authorities also recovered 20,000 logs and 1,200 sacks of charcoal, and arrested at least 200 individuals;
 - *Log (2015)*: nine West African countries⁶⁹ took part in this operation, which led to significant seizures, including 38 tonnes of charcoal, approximately USD 90 million worth of rosewood (*Pterocarpus erinaceus*) and the arrest of 21 individuals.

7.2 Fisheries

Fishery resources resulting from the harvesting of fish and aquaculture⁷⁰ constitute a basic source of the global food supply: these two sectors produced 158 million tonnes of fish and fish products in 2012, 86 per cent of which were intended for human consumption. Furthermore, the fisheries sector fulfils substantial economic functions.⁷¹ “[It] covers a range of economic activities related to the capturing, harvesting, processing, and trading of marine and fresh water living resources at sea and in lakes, rivers, canals and coastal zones” (International Labour Organization (ILO), 2013, p.3). Overall, 12 per cent of the global population currently work in the fisheries sector.⁷²

Criminal Activity

The complexity of and gaps in the international legislation to provide a framework regulating fishing activities foster opportunities for criminals. Annual loss due to fisheries crime is estimated between USD 10 billion and USD 23.5 billion, which represents between 11 and 26 million tonnes of fish products.⁷³ In addition to the economic repercussions, fisheries crime destabilizes the activity of legitimate fishermen. It also exacerbates the issue of overfishing and depleting livestock, which poses a serious threat to food security and the conservation of the marine ecosystem.

Fisheries crime encompasses a large range of illicit activities and is therefore understood as illegal fishing and associated criminal or administrative violations, including:

- *The three major types of unlawful fishing activities* – Illegal, Unreported, and Unregulated (IUU) fishing:⁷⁴
 - *Illegal fishing* occurs when a fishing vessel violates national or international regulations (e.g. fishing during unauthorized periods, fishing in protected areas or of protected species);
 - *Unreported fishing* refers to unreported or inaccurately reported fishing activities;
 - *Unregulated fishing* consists of fishing by vessels without nationality or in contravention of the laws regulating fishing in a specific area.
- *Associated criminal violations*: those specifically involved in fisheries crime seek to exploit the weakest regulatory schemes in terms of the flags they fly, the ports they use, the countries whose waters they fish in, and the markets to which they sell their products. They also rely on certain countries for their banking services;
- *Administrative violations*: numerous administrative breaches have been identified in fisheries crime, ranging from document forgery to false declarations in order to facilitate the traffic to Asia and the South Pacific, Europe, and the United States.

Circulation route	Location
Source	Central and South America, Southeast Asia, West Africa
Destination	China, European Union, Japan, Southeast Asia, United States

Criminal Supply Chain

The criminal supply chain linked to fisheries crime highlights the complex nature of the trafficking in the fisheries sector:

- *The harvest* refers to the fishing stage, in which vessels violate any legislation regulating the activity (e.g. overrun of quotas, use of banned fishing methods).⁷⁵ Vessels operate under multiple identities and flags, which they frequently change at sea;
- *The transport*: criminals involved in fisheries crime have developed complex and illegal transshipment practices, whereby two vessels meet and pass cargo between them, bringing

illegally caught products into the market. During this process, the illegal fish is typically mixed with legal catch;

- *The processing* occurs using on board or inland facilities, in which the fish are cleaned and turned into consumable fish and fish products. The fish can also be concealed with legal catch, or with other goods at this stage;
- *The sale*: fish and fish products are typically exported to be sold to wholesalers and international companies. These buyers, however, may not be aware of the criminal nature of the merchandise.

Crime Convergence

Fisheries crime is linked to a number of illegal activities. Driven by profits, unscrupulous fishing companies engage in tax evasion and fraud to avoid additional costs. Of particular concern is the issue of fraud with regard to food hygiene: for instance, concealing illegal catches with legal ones (e.g. tuna); relabeling expired products as fresh; falsifying the origin of the fish; declaring quantity of catches smaller than the actual quantity.⁷⁶

Corruption is present at each stage of the criminal supply chain in the fishing industry. This facilitates, for instance, the allocation of fishing licenses, the avoidance of compliance controls, the manipulation of registers, or the negotiation of quotas.

Some cases have also highlighted links between the fisheries sector and other illicit trafficking, suggesting the ramifications with organized crime. For example, drug syndicates are believed to have smuggled cocaine in fishing vessels, using the same circulation routes as them. This has been particularly true for drug trafficking occurring from both the United States and Canada to Europe, with African countries being used as transit points.⁷⁷ There has also been evidence of criminals involved in arms trafficking and terrorist activities, using fishing vessels as a strategy to hide their activities. In this regard, the Caribbean and Southeast Asia provide ideal conditions (e.g. minimal use by authorities of satellite to track fishing vessels).⁷⁸

In parallel, a problem rampant in the fisheries sector is that of human trafficking. It is particularly prone to human rights abuses, with evidence of forced labor, people smuggling, and illegal workers: “forced labor and human trafficking take place on board fishing vessels because of the isolation of the workplace, strong competition within the industry and the ready supply of vulnerable workers, many of them migrant laborers” (International Labour Office (ILO), 2013, p.1).

Some experts have also highlighted the links between fishing activities and maritime piracy, particularly in Somalia. Poverty has created ideal conditions for local populations to engage in small acts of illegal fishing. It is believed that the fishing community gradually turned to maritime piracy to maximize their profits at sea. One of their techniques consists of attacking fishing vessels in order to use them at a later stage (i.e. “mother ships”) to deceive their future targets.⁷⁹

INTERPOL's Response

Through Project Scale, INTERPOL targets illegal fishing and associated criminal or administrative violations. Key initiatives and achievements include:

- *Publications*: Project Scale has drafted documents, which offer an overview of criminal trends in regard to fisheries crime, and guidelines to better detect them and apprehend criminals, such as the *INTERPOL Study on Fisheries Crime in the West African Coastal Region* (2014);
- *Operations*: INTERPOL has coordinated a number of operations targeting fisheries crime, including:
 - *Operation Stingray II (2012-2013)* is an intelligence-led investigation of high-risk fishing vessels operated by transnational organized crime groups. The operation resulted in the detaining of four vessels (including the *Kunlun*), the sinking of two others (i.e. *Viking* and *Thunder*), and the identification of several suspects. INTERPOL helped countries to gather evidence and facilitate arrests or extradition processes;
 - *Operation Pesc-Am (2015)* sought to preserve marine protected species and identify high-risk fishing vessels operating in Central America in order to disrupt illegal fishing activities occurring in the region. It involved the exchange of intelligence regarding foreign fishing vessels of interest and protected species.
- *Technical and operational support*: INTERPOL has deployed an IST to Sao Tomé and Príncipe, and conducted several NESTs with countries associated with Operation Stingray and other past operations (e.g. Costa Rica, Senegal, Central America, West Africa). These initiatives were aimed at assisting countries in their investigations and stimulating international cooperation in important transnational cases. INTERPOL also provided support to countries with the publication of Notices.

7.3 Minerals

Minerals are a common source of revenue for countries. Their prized value is determined by the multiple and diversified use of the resource (e.g. construction sector, aircraft industry, electronics, medicine), which fulfils important economic and industrial functions.⁸⁰ Minerals can be classified in three categories:⁸¹

- *Metallic minerals* include ferrous metals (e.g. iron, manganese), base metals (e.g. copper, lead, zinc), precious metals (e.g. gold, silver, the platinum-group metals), and radioactive minerals (e.g. uranium, radium);
- *Non-metallic minerals* also called industrial minerals, they are generally used for construction and ornamental purposes (e.g. phosphate, sand, limestone, gemstones);
- *Mineral fuels*: primarily destined for the energy sector, they are better known as fossil fuels (e.g. petroleum, natural gas, coalbed methane, tar sands).

The bulk of mining takes place in official mining sites, built in line with legal requirements as well as with the current environmental, social, and labor considerations. The main types of mining are:

- *Surface mining*, which is the removal of the upper layers of the rock and soil by mechanical methods⁸² to extract the mineral. Not only does surface mining involve substantial environmentally-destructive techniques, but it also generates a large amount of waste;⁸³
- *Underground mining*, which refers to the extraction of minerals by miners who access the ores through tunnels or shafts. Although this technique is far less damaging on the surface, it still carries environmental consequences (e.g. land subsidence, use of toxic substances);
- *Deep-sea mining*, which involves the extraction of sea-floor massive sulphides, manganese nodules, and cobalt-rich ferromanganese crusts. In addition to the vessels responsible for noise, air pollution, and leaks, the consequences on the marine ecosystem are considerable by introducing light in a dark area, tampering with the quality of water (e.g. dust, salinity, sediment) and disrupting the natural balance of the ecosystem;⁸⁴

Mining activities have serious environmental repercussions: the use of mercury, for instance, is particularly harmful to workers' health. It also infiltrates the soil and causes air, land, and water pollution. Overall, mining threatens the environment by inciting deforestation, using aggressive techniques (e.g. explosives), and causing accidents (e.g. uranium mining operations responsible for radioactive pollution in Kazakhstan, Turkmenistan, and Uzbekistan).⁸⁵

Criminal Activity

Illegal mining activities have particularly flourished in Africa, Asia, and Latin America where mineral resources are prominent. These activities are characterized by poor working conditions and they usually carry significant health and safety risks. It is, however, important to distinguish between informal mining and illegal mining.

Informal mining implies that mining activities are carried out without the necessary authorizations but in legitimate areas, and with simple, artisanal techniques and tools. However, the workers' lack of supervision and expertise is conducive to environmental problems (e.g. pollution of soil and water, destruction of crops).

Illegal mining, on the other hand, falls completely outside the scope of any legal framework: it takes place without licences, in prohibited zones, and is characterized by the use of heavy machinery. Furthermore, illegal mining has deep ramifications with other criminal activities, often involving organized crime groups.⁸⁶ This is particularly true in source countries located in Latin America, although illegal mining also occurs in Africa and Asia (see table hereafter).

Circulation route	Location
Source	Africa (DRC, Ghana, Guinea, Mali, Mozambique, South Africa, Tanzania, Uganda, Zambia, Zimbabwe), Central and Southeast Asia (particularly the Mekong region), ⁸⁷ Latin America (Argentina, Brazil, Chile, Colombia, Mexico, Peru, Venezuela)
Destination	China, European Union, Japan, Southeast Asia, United States

Criminal Supply Chain

The study of illegal mining reveals that those involved in this activity have developed a specific criminal supply chain:⁸⁸

- *The extraction:* minerals are usually extracted by local miners, who also act as runners, to deliver them to middlemen;
- *The transport:* middlemen, as an intermediary link in the chain, are in charge of the logistical organization, from purchasing the minerals to concealing them. They also engage with national buyers who act as points of contact with larger criminal groups and provide them with the minerals;
- *The export:* through local syndicate leaders, the criminal groups deal with the exportation technicalities. They rely on front companies based internationally to transit and smuggle the minerals. This involves the intervention of local and international partners, who ensure that the traffic appears legal. Criminals also use the same itinerary as for the licit trade in minerals to smuggle those illegally mined;⁸⁹
- *The sale:* the international buyers are in contact with refiners and engage with legitimate businesses to sell the minerals to consumers, who are usually unaware of the illegal character of the commodity they buy.

Crime Convergence

As with other environmental crimes, illegal mining is linked to financial crime, particularly money laundering. For instance, Colombian drug barons were known to have developed a sophisticated strategy, involving jewelry dealers in the United States. Investing in precious metals allowed drug cartels to launder drug money, increase their profits, and buy more weapons, before reinvesting a part of the profits in the traffic in minerals, forming a downward spiral.⁹⁰

Because financial crime and corruption tend to be closely related, it is no surprise that it also plagues the mining sector. From illegal sites protected by officials (e.g. Malaysia) to corrupt practices to obtain authorizations or to turn a blind eye to the traffic of illegally mined resources, corruption is deeply entrenched in the mining sector.

Illegal mining is also strongly associated with human trafficking. The working conditions are extremely difficult (e.g. number of hours, toxic exposure, weak infrastructure) and constantly put the lives of miners at risk. Illegal mining is also characterized by a workforce of women and children

to reduce labor costs. These miners tend to be illegal migrants, who were often smuggled into the country and who entered the circle of slavery, sexual exploitation, and forced labor.

Another trend of illegal mining is the connection with terrorist organizations and armed groups. Given their control over the mining sector in certain regions, these groups fully exploit the opportunities for profit in extracting and trafficking minerals. For instance, the Revolutionary Armed Forces of Colombia (FARC) are believed to fund 20 per cent of their activities with the revenue from illegal mining.⁹¹ There is also evidence suggesting that Al Shabaab and the Allied Democratic Forces-National Army for the Liberation of Uganda (ADF-NALU) have extended their activities to trafficking in minerals.⁹²

INTERPOL's Response

INTERPOL currently deals with illegal mining within the scope of Project LEAF, although the Organization aims to extend its activities through the creation of a specific project designed solely to tackle illegal mining and associated crimes:

- *Action against Illegal Mining Initiative*: still in its incipient stage, the aim is to dismantle the criminal networks involved in illegal mining and associated crimes in Africa and Latin America, by enhancing cooperation between the law enforcement community, experts, and analysts;
- *Ongoing discussions*: INTERPOL has been engaging primarily with NCBs to identify potential risks and threats, as well as their needs. INTERPOL is also in contact with a number of international agencies to discuss illegal mining.

8 FINDINGS

The information gathered by INTERPOL and UN Environment on environmental crime, supported by the results from the ECEC questionnaire, indicates that it is a lucrative activity carrying limited risks. It relies on a well-established criminal supply chain, involving a variety of actors, which facilitate the transcontinental traffic in commodities. The links with other criminal activities are of particular interest, highlighting the convergence of crimes as a major enabler of environmental crime.

8.1 A High-Profit, Low-Risk Activity

Environmental crime is characterized by its high-profit, low-risk nature. The demand for environmental commodities, which can reach very high prices on the illicit market, and the lack of effective deterrents, are major drivers of environmental crime. Overall, illegal activities targeting the environment, biodiversity, or natural resources are extremely lucrative, but carry comparatively limited risks for criminals, because of a number of situational factors which facilitate environmental crime at local, national, and global levels.

At the local level, environmental crime is an alternative to poverty for disadvantaged populations. It can provide an additional, and sometimes the only, source of earning for them. Criminal networks often exploit the needs of vulnerable communities, i.e. tasking locals with poaching, logging, or mining in exchange for food, money, or medicine. These networks facilitate the poaching or harvesting by providing the equipment necessary to commit such crimes. The indirect involvement of criminal networks, which do not engage in the poaching itself for instance, allows them to remain detached from the crime and evade authorities. Thus, at the local level, environmental crime generally involves the participation of low-income populations, which are exploited by criminal networks, suggesting a connection between poverty and environmental crime.

At the national level, weak institutions expose countries to heightened risks of environmental crime. This is particularly true in fragile and developing states, where environmental crime is sometimes given insufficient priority, which provides opportunities for criminals to manipulate gaps. In addition to a weak legal framework to address environmental crimes, many authorities lack the expertise and the resources necessary to detect and prevent them. This may be further compounded by a lack of transparency within these authorities. Overall, poor enforcement capacity, coupled with inadequate legal systems and shaky institutions, provide an ideal setting for criminals to engage in environmental crime.

At the global level, environmental crime “is driven and sustained by consumers who are willing to pay high prices for the commodity, regardless of its origin or legality” (UNEP, CITES, IUCN, & TRAFFIC, 2013, p.40). High demand is due either to the symbolic value or to the rare nature of some environmental commodities, which command exorbitant prices. Because they risk very little, yet stand to gain so much, criminals are increasingly drawn to environmental crime and to the traffic in environmental commodities.

In sum, local, national, and global conditions contribute equally to and enable crimes against environmental quality, biodiversity, and natural resources. However, these enabling factors are also

supplemented by the involvement of a wide range of individuals, criminalizing the supply chain of environmental commodities.

8.2 The Criminal Supply Chain

Broadly speaking, to enable the traffic in environmental commodities, criminal networks have established a criminal supply chain comprising three main phases: production, transfer, and sale. Each of these phases may involve several stages (e.g. transport between point of harvesting to processing sites, sale between middlemen and local traders). This three-phase chain is indicative of the wide range of perpetrators implicated in environmental crime and the intricate structure of their criminal business.

The first phase of the criminal supply chain refers to the source of the crime, whereby an illegally obtained good results in, or *produces*, an illegal commodity. This occurs through the prohibited disposal of hazardous substances, wildlife poaching, and the harvest or extraction of natural resources. This *production phase* often involves locals living in low-income communities, which are exploited by criminal networks as previously mentioned. Although they constitute the first link in the chain, they are not the priority target in the eyes of law enforcement authorities, which aim primarily to dismantle the criminal networks behind the entire traffic.

The second phase of the criminal supply chain consists of *transferring* the commodity from the source location through transit points to the destination, which is facilitated by a wide range of individuals. For instance, those tasked with transporting the goods locally are not the same people as those who process or sell them. This *transfer phase* is also characterized by the involvement of players higher up in the criminal supply chain, such as international traders and companies, who enable the traffic internationally. Another specific feature is the implication of organized crime syndicates: they facilitate the transport and trade of environmental commodities, which are intended for international markets.

The *sale phase* involves the end-users, who constitute a crucial link in the criminal supply chain. They range from the companies paying for more carbon credits to the jewelers purchasing minerals, restaurants buying rare animal parts, or the consumers themselves. In cases of large-scale trafficking, the *sale phase* typically occurs across continents, far-removed from the crime source. The Asian, European, and North American markets are most commonly concerned, as they constitute major destination points where certain commodities, such as ivory or minerals, are particularly prized. However, end-users are not always aware of the illicit character of the product they purchase. For instance, criminals who illegally harvest fish, typically mix it with legal catch, which makes it almost impossible to distinguish between legal and illegal products in the sale phase. Nevertheless, the end-users ultimately drive environmental crime, by forming a high demand for illegal commodities, and by consenting to pay high prices for them.

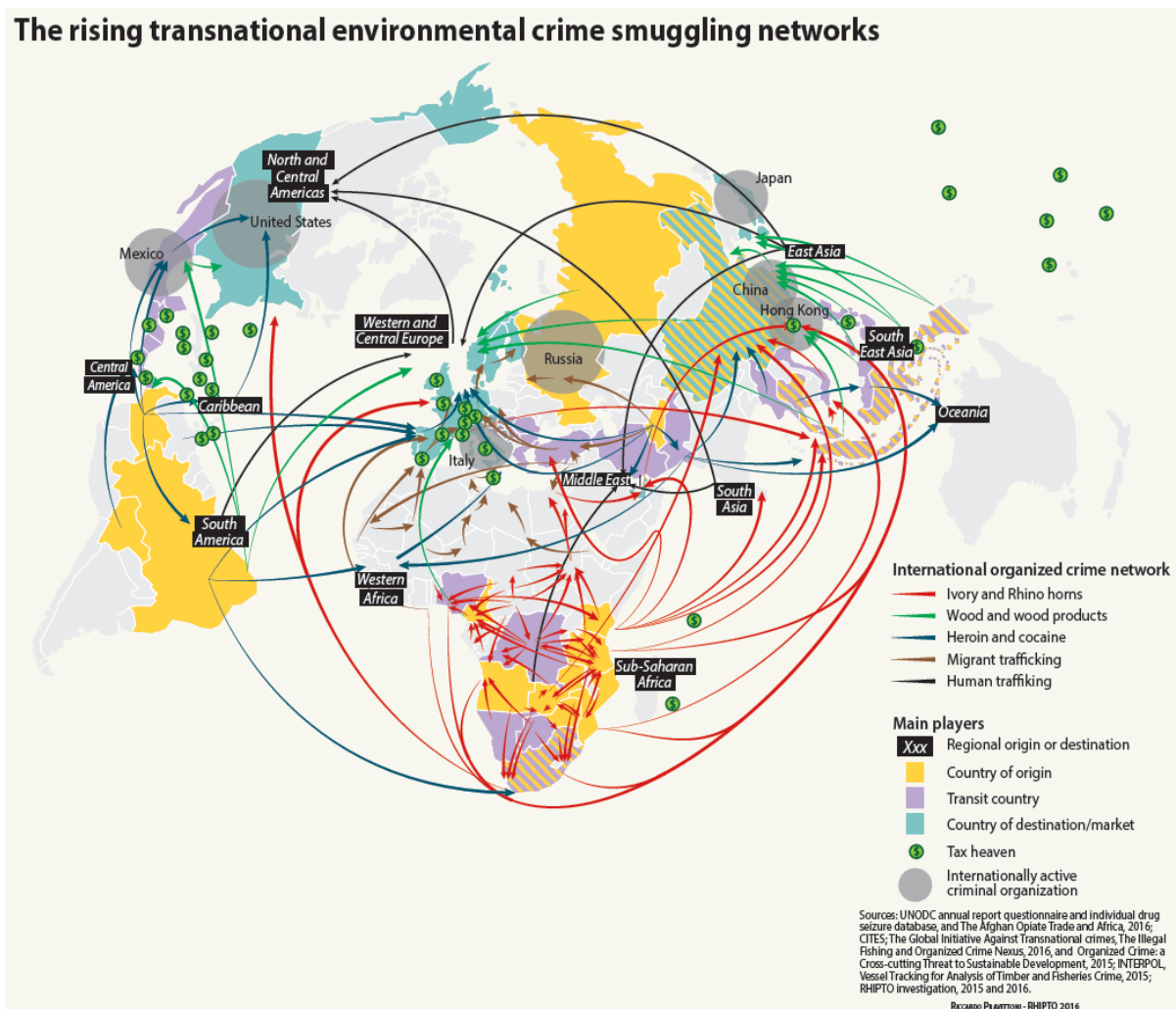
Overall, environmental criminals operate within an established business model, navigating gaps to remain undetected from the production to the sale. The wide range of players involved in the supply chain enables the transcontinental traffic in environmental commodities.

8.3 A Transcontinental Traffic

An analysis of the circulation routes used to traffic in environmental commodities reveals that they are smuggled not only transnationally, but also transcontinentally. Although the flows vary depending on the commodity, the following trends have been identified:

- **Source:** Africa (biodiversity, natural resources), Asia (environmental quality, natural resources), Europe (environmental quality), and Latin America (natural resources);
- **Transit:** mainly via airports or seaports:
 - Africa: Dar es Salaam and Zanzibar (Tanzania), Entebbe (Uganda), Kenyatta and Mombasa (Kenya)
 - Asia: Hong Kong (China), Singapore
 - Europe: Antwerp (Belgium), Hamburg (Germany), Rotterdam (the Netherlands)
 - North America: San Diego and Houston (United States)
- **Destination:** mainly Asia, but also Europe and North America.

The rising transnational environmental crime smuggling networks



Although the traffic in commodities can occur within the same continent (e.g. illegal waste internally trafficked from Western Europe to Eastern Europe), significant seizures of hazardous substances, wildlife (including animal parts and derivatives), and natural resources showed that these goods were being exported from one continent to another. However, the aspect which draws the most attention among the law enforcement community, and calls for a transcontinental response, is the link between Africa and Asia – specifically China and Southeast Asia – due to a high demand on the Asian market, such as for African biodiversity.

The transcontinental traffic in environmental commodities typically involves their smuggling in large quantities across long distances, which requires sophisticated *modi operandi*. Consequently, criminals have developed complex circulation routes for trafficking of this kind. They rely on different transportation modes, with numerous transit points. The most common and widespread practice is to use certain airports or seaports, which have become, over time, major trafficking hubs. The goods are also sometimes sent to front companies, which appear to operate legitimately. In order to evade detection, criminals resort to diverse concealment techniques, from mixing legally obtained goods with illegal ones (e.g. timber, fish), to the use of forged licences, permits, or import/export documents.

In sum, the traffic in environmental commodities reveals complex circulation routes across different countries and continents, highlighting the transcontinental nature of environmental crime. The intricate nature of the schemes developed by criminals and the resources deployed to enable such large-scale trafficking suggest the involvement of large criminal networks and collusion with other criminal activities.

8.4 Crime Convergence

As seen in previous sections and highlighted in a previous INTERPOL report,⁹³ there is clear evidence that environmental crime has connections with other illegal activities, with criminal networks engaged in many other crimes. In other words, there is a host of other illegalities which accompany, facilitate, or result from environmental crime.

Corruption represents a key facilitator for trafficking in environmental commodities across the overall supply chain. The existence of corruption in law enforcement agencies allows criminals to obtain necessary documents, such as licenses or permits, and to circumvent arrests or seizures. The analysis of criminal trends draws attention to a concerning fact: public officials appear to be both a target⁹⁴ and a source⁹⁵ of corrupt practices. In other words, they not only passively contribute to corruption (e.g. bribery), but they can also have an active role (e.g. extortion). As officials trade enforcement integrity for financial gain, they jeopardize the entire justice system and the general stability of their country.

Environmental crime is also inherently linked to financial crimes, such as money laundering or tax evasion. More specifically, investigations highlight the role played by corporations, whose involvement is contingent upon generating and maximizing profit, by evading costs associated with adhering to environmental laws and procedures (e.g. disposal of waste, water treatment). In this sense, corporations are directly implicated, as they are the initiators of the crime. Alternatively, they

sometimes have a more indirect role, being used as front or shell companies to facilitate the transit of commodities, particularly in the transfer phase. Corporations generally have the financial means and the network of contacts to cover their tracks (e.g. production of invoices, licenses), operating a sophisticated financial scheme of complex money flows using different currencies or accounts to issue and receive payments.

The analysis of environmental crime trends and patterns shows that it is also intrinsically linked to organized crime. The convoluted nature of the traffic in commodities⁹⁶ suggests considerable capabilities and a vast network to enable the movement of goods across continents, which is arranged by organized crime groups. They have the means to organize large-scale trafficking operations from both a financial and logistical standpoint.

Moreover, the connection between environmental crime and organized crime groups indicates links with other trafficking. The *modi operandi* and itineraries employed are often similar to those used by organized crime syndicates, particularly for drug and arms trafficking. Furthermore, organized crime groups involved in both environmental crime and other trafficking activities, such as human trafficking, are also often implicated in a variety of abuses, which are typically associated with organized crime (e.g. sexual exploitation, illegal immigration). These groups feed on the illegal workforce, using forced labor to commit environmental crime.

Although environmental crime is often characterized by the involvement of organized crime groups, some cases indicate that certain armed groups and terrorist organizations have also turned to environmental crime. For instance, the FARDC are renowned for their stranglehold on minerals in DRC.⁹⁷ Similarly, Al Shabaab has historically earned significant profits from the illicit charcoal trade (i.e. over USD 250 million from charcoal exports and shareholding from Somalia's ports, such as Kismayo or Barawe).⁹⁸ Evidence even suggests that certain groups initially involved in other crimes, such as drug trafficking, have extended their activities to environmental crime owing to its highly profitable nature. For instance, the FARC, which traditionally generated revenue through the drug trade to support its activities, have found an alternative source of income by taxing timber and minerals.

Overall, there are clear indications of the convergence between environmental crime and other crimes. Some, such as corruption, facilitate the traffic in environmental commodities, while others, such as financial crime, are by-products. Overall, this collusion of crimes constitutes a direct threat to development, peace, and security.

9 A CONVERGENCE OF THREATS

Environmental crime contributes to destroying the ecosystem, as criminals damage environmental quality, hasten biodiversity loss, and deplete natural resources. However, environmental crime also impacts our society, as it constitutes a direct threat to development, peace, and security.

9.1 Threats to Development

As mentioned before, environmental crime is sometimes viewed as an alternative to poverty for low-income populations. Their needs are exploited by criminal groups which rely on them for activities, such as illegal poaching, logging, fishing, or mining. In other words, local and impoverished communities are drawn to environmental crime to survive, reflecting an *active dependence* on the criminal activity. This dependence on environmental crime is also seen in certain poor areas, such as in Bangladesh, Brazil, and India, where organized crime groups control the water supply. In these countries, populations living in slums often have access to water exclusively through such criminal groups. This *passive dependence* on environmental crime also reflects the complexity of an adapted law enforcement response: tackling the illegally controlled supply of water in these regions would deprive local communities of a vital resource. Whether these populations are actively or passively dependent on environmental crime, they are the targets of criminal groups and victims of adverse consequences. For example, these populations are subject to the volatile nature of prices set by organized crime syndicates on resources which are essential for development, such as water. Furthermore, the dependence on environmental crime, which is perceived as a survival option, not only turns poor communities into accomplices to the crime, but also draws them into a life influenced by crime. In other words, the vulnerable nature of these communities is exacerbated by environmental crime, which jeopardize their development.

Moreover, even if local populations do not participate in environmental crime, their lives can still be destabilized by environmental criminals. The cohabitation between legal and illegal activities not only creates tensions but also undermines the labor of legitimate workers. Similarly, communities comprising individuals involved in criminal activities, such as environmental crime, are more likely to be prone to social problems, such as violence, disease, drugs, alcohol, gambling, and prostitution. Moreover, the possibility of “easy money” can attract a large number of individuals while the infrastructure necessary to support a large influx of people does not exist. This can result in adverse consequences and serious health implications (e.g. access to clean water). Moreover, the attractiveness of certain regions (e.g. timber, minerals) has led to the expulsion of local populations, as the case of indigenous communities illustrates: in order to exploit an area for its resources, criminal groups, corporations, and even corrupt authorities have resorted to financial arguments, force, or other means in order to remove populations from their lands. Such processes jeopardize the existence of indigenous communities, leading to their displacement and forcing them to integrate in a society with different values, culture, or lifestyle. In this sense, indigenous, and more generally local, populations constitute vulnerable communities directly affected by environmental crime. Because criminals bring along undesirable effects, the development of these populations is considerably impacted.

Consequently, local and impoverished populations are often direct or indirect victims of environmental crime, which draws them into a criminal spiral. The vulnerable nature of these communities is either exacerbated by or a result of environmental crime, which constitutes a serious barrier to development. However, wrongful acts damaging environmental quality, hastening biodiversity loss, and depleting natural resources, also have repercussions on a national scale, affecting regional stability in some areas.

9.2 Threats to Peace and Security

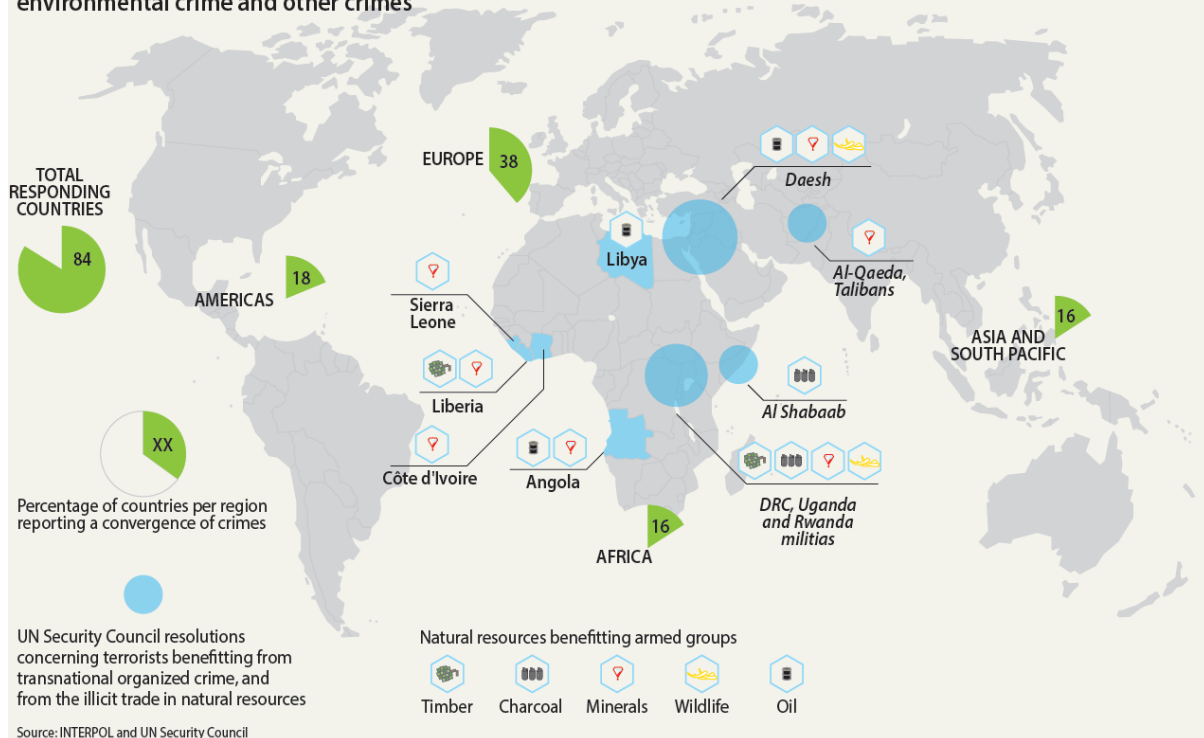
Natural resources managed sustainably can provide a platform for wealth, economic growth, as well as job and business development. They can also help provide a major source of revenue for governments to build the country, provide social services, and alleviate poverty. However, some non-state armed groups, terrorist groups and criminal networks thrive on environmental crime to fund their activities. They exploit natural resources, such as minerals including gold, coltan and diamonds, in conflict areas and fund non-state armed groups, posing a serious threat to peace and security. It is estimated that at least 40 per cent of internal conflicts have a link to natural resources.⁹⁹ Non-state armed groups – including terrorist organizations such as Al-Qaida, Daesh, the Taliban, and rebel groups in DRC, to mention just a few – are funded by the revenue of a number of trafficking, including in environmental commodities, such as waste, wildlife, timber, charcoal, fish, and minerals (Resolution S/RES/2195 (2014)).¹⁰⁰

The UN Security Council expressed concerns in its Resolution S/RES/2195 (2014) that terrorist groups, notably Al-Qaida, benefit from transnational organized crime and from the trafficking of environmental commodities, including oil, wildlife, charcoal, gold and other minerals. The Security Council has also underlined the risks from the illegal exploitation of and traffic in natural resources by armed groups, for example in the case of DRC (Resolutions S/RES/1857 (2008), S/RES/2136 (2014), and S/RES/2198 (2015)). Similarly, the Resolution S/RES/2277 (2016) identifies the FDLR, the Allied Democratic Forces (ADF) and the LRA as examples of armed groups also involved in the illegal exploitation of natural resources in DRC. The LRA (UN listed as CFe.002) with its leader Joseph Kony (UN listed as CFi.009) exemplifies an armed group that is listed on the UN sanctions list for, among other things, elephant poaching (S/2014/42 para 232) and ivory trafficking since at least 2014, and for looting gold and diamonds.

While there is strong evidence of armed groups funding their activities through the traffic in natural resources, there are also some examples of terrorist organizations involved in the criminal activity. Al Shabaab (UN listed as SOe.001) has, for instance, been the subject of sanctions listed by UN resolutions (S/RES/1844 (2008) Sanctions List). Listed as a terrorist organization by eight states, including the United Kingdom and the United States, Al Shabaab is affiliated with Al-Qaida according to the UN Group of Experts (S/2013/467). The Group of Experts (S/2014/726) has documented the role of charcoal traffic in funding Al Shabaab with a market value of at least USD 250 million in 2013 and 2014, continuing the trend documented in 2012 (S/2013/440).

The convergence of threats

INTERPOL questionnaire and UN Security Council Resolutions highlight a convergence between environmental crime and other crimes



In this context, the UN Security Council has prohibited the imports and exports of environmental commodities, including:

- *Acetic anhydride*: imports benefiting the Taliban (2001–2002) S/RES/1333 (2000)
- *Charcoal*: exports from Somalia (2012-) S/RES/2036 (2012); its interdiction S/RES/2182 (2014) and S/RES/2244 (2015)
- *Oil*:
 - Modular refineries involving Al-Qaida and Islamic State S/RES/2161 (2014) and S/RES/2199 (2015)
 - Oil exports from non-government controlled areas of Libya (2014–2016) S/RES/2146 (2014); S/RES/2213 (2015) and S/RES 2278 (2016)
 - Oil imports to stop or limit funding to armed groups, such as the military junta in Sierra Leone (1997–1998) S/RES/1132 and UNITA in Angola (1993–2002) S/RES/864 (1993); the 1991 coup in Haiti (1993–1994) S/RES/841 (1993)
- *Timber*: exports from Liberia (2003–2006) S/RES/1478 (2003) and S/RES/1521 (2003).

10 RECOMMENDATIONS

Environmental crime is a growing and devastating threat destabilizing our entire ecosystem. Criminals damage environmental quality, hasten biodiversity loss, and deplete natural resources, all of which result in challenging and destructive consequences, such as climate change. Through the ECEC questionnaire, member countries clearly expressed their environmental crime priority areas, which made it possible to provide an overview of the different criminal activities. Drawing on the results of the ECEC questionnaire and the information collected by INTERPOL and UN Environment within the scope of their respective activities, this report found that environmental crime is a high-profit and low-risk activity, which has developed around a criminal supply chain for each crime area. The variety of players involved at all stages, and the convergence with numerous types of crime – such as organized crime or corruption – allow criminals to traffic in environmental commodities on a transcontinental basis. In addition to its repercussions on environmental quality, biodiversity, and natural resources, environmental crime is also responsible for undermining local and regional stability. Its main consequence is to jeopardize the development of vulnerable communities as well peace and security.

In light of the results of the questionnaire and the findings of this report, INTERPOL and UN Environment jointly aim to assist countries in effectively enforcing national and international environmental laws and treaties, through the following recommendations:

1. ***INTERPOL and UN Environment call upon the international community and their member countries to support a comprehensive and multidisciplinary approach in tackling environmental crime and its convergence with other criminal activities:*** INTERPOL and UN Environment recognize the imperative need to address environmental crime from a multidisciplinary angle. The intricate nature of crimes related to environmental quality, biodiversity, natural resources, and the impact on peace and security require a multi-agency response and an integrated strategy. Environmental crime cannot be tackled in isolation: it calls for a global and cooperative effort. This will also require a wider response from the UN, the Security Council and Sanctions committees, and from countries. This equally involves securing innovative partnerships and bridging gaps between the different sectors, by encouraging dialogue across policy, law-enforcement, and research levels;
2. ***INTERPOL and UN Environment will support greater information exchange across sectors, and efforts to reduce threats to security and peace:*** INTERPOL must strengthen its support to and contribution in the collection, sharing, and analysis of information, across all sectors. By increasing their information-sharing capacity, INTERPOL and UN Environment can ensure that informed decisions and comprehensive responses are taken towards securing peace, security, and sustainable development. INTERPOL and UN Environment will strengthen their efforts to address the role of natural resources in conflicts benefiting armed groups, in support of peacekeeping operations and development, and seek to address within their mandates the wider convergence with trafficking activities, including oil, drugs, antiques, and counterfeits;
3. ***INTERPOL and UN Environment will encourage an increased global focus on the implementation of environmental policy:*** the international community must recognize and

address environmental crime as a serious threat to peace, security, and sustainable development. Strengthening the environmental rule of law at all levels involves eliminating safe havens for criminals, including disrupting overseas tax havens, improving legislation at international and national levels, developing enforcement mechanisms and strengthening existing ones, and applying dissuasive penalties, with substantial sanctions and punishments. It also involves capacity building and technological support to enforcement agencies, and adjudication capacities in the area of environmental crime;

4. ***INTERPOL and UN Environment call for stronger financial support including through Official Development Assistance:*** the organizations call upon the international development community to recognize and address environmental crime as a serious threat to sustainable development, and to strengthen the share of ODA to governance and judicial sector reform, including combating and preventing environmental crime. This should be targeted at capacity building and technological support for relevant agencies at the national, regional and global levels which are engaged in law enforcement efforts against environmental crime. Capacity building is urgently needed in information collection, collation and analysis, inter-agency collaboration, enforcement, investigations, prosecution, and the judiciary, especially in developing or fragile countries.

NOTES

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- ¹ Nellemann, Henriksen, Kreilhuber, Stewart, Kotsovou, Raxter, Mrema, & Barrat, 2016.
- ² Official development assistance (ODA) is a term coined by the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD) to measure aid. The DAC first used the term in 1969. It is widely used as an indicator of international aid flow. It includes some loans (OECD, n.d.).
- ³ Nellemann et al., 2016.
- ⁴ Hereafter abbreviated as rhinos.
- ⁵ Nellemann, Henriksen, Raxter, Ash, & Mrema, 2014.
- ⁶ Scanlon, 2013; 15 April 2013.
- ⁷ UNODC, 2016.
- ⁸ <http://www.interpol.int/Crime-areas/Environmental-crime/Environmental-crime>
- ⁹ Nellemann, Henriksen, Kreilhuber, Stewart, Kotsovou, Raxter, Mrema, & Barrat, 2016.
- ¹⁰ Nellemann et al., 2014.
- ¹¹ When not specified, “member countries” refer to INTERPOL member countries.
- ¹² <http://www.cites.org/>
- ¹³ <http://www.cms.int/>
- ¹⁴ <http://www.basel.int/>
- ¹⁵ <http://chm.pops.int/Home/tabid/2121/mctl/ViewDetails/EventModID/1007/EventID/227/xmid/6921/Default.aspx>
- ¹⁶ <http://www.pic.int/>
- ¹⁷ http://ozone.unep.org/new_site/en/index.php
- ¹⁸ <http://www.multilateralfund.org/default.aspx>
- ¹⁹ <http://www.cbd.int/>
- ²⁰ Nellemann et al., 2016.
- ²¹ The questionnaire was sent to the National Central Bureaus (NCBs), which disseminated it to their relevant national agencies.
- ²² Figures expressed in this section refer to the percentage out of the 69 responding countries, rather than the 190 member countries.
- ²³ UN Environment, 2014a.
- ²⁴ International Energy Agency, 2007.
- ²⁵ Kossoy, Peszko, Oppermann, Prytz, Klein, Blok, Lam, Wong, & Borkent, 2015.
- ²⁶ INTERPOL, 2013b.
- ²⁷ UN Environment, 2007a.
- ²⁸ More than 50 per cent to date and expected to be superior to 70 per cent by 2050 (ibid.).
- ²⁹ The exponential growth in world-wide electronic waste correlates with the turnover of electronic products (e.g. televisions, computer, fridges, cell phones) (Shamim, Mursheda, & Rafiq, 2015).
- ³⁰ Huisman et al, 30 August 2015.
- ³¹ The participants were able to inspect two containers of waste at the Tanjung Priot Port, Jakarta, which is the largest seaport in Indonesia (Regional Enforcement Network for Chemicals and Waste (REN), 18 July 2014).
- ³² Nellemann et al., 2016.
- ³³ Philadelphia’s solution to waste was to rely on incinerators from the 1970s. As the amount of ash from the waste burnt began to accumulate in landfills, it was shipped on the *Khian Sea* to be unloaded in the Caribbean and Central America. After local authorities denied authorization to the ship to discharge the ash (13,000 tonnes), the *Khian Sea* sailed for 2 years so as to find a place to unload the waste. In 1988, the ship docked in Singapore without its cargo. It is believed that the ashes were dumped into the ocean (Sloep & Blowers, 1996).
- ³⁴ This project, at the initiative of Denmark and Sweden, aimed at bridging the countries to improve traffic and trade. It consisted in building a bridge, an island, and a tunnel, involving the use of heavy machinery on marine ground (Nauwelaers, Maguire, & Ajmone Marsan, 2013).
- ³⁵ Between 1970 and 1980, 788 incidents were recorded (3,192,000t of oil spilled) while between 2000 and 2010, 181 incidents occurred (33,000 t of oil spilled) (International Tanker Owners Pollution Federation (ITOPF), 2016).

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- ³⁶ Felbab-Brown, 2015.
- ³⁷ Felbab-Brown, 2015.
- ³⁸ The Deepwater Horizon oil spill, which occurred on April 20th, 2010 in the Gulf of Mexico, destabilized the entire region. At least 1,100 miles of coastline, 1,200 square miles of deep ocean floor, and 68,000 square miles of surface water were polluted as a result of the oil spill. It is estimated that the financial loss for the fisheries sector amounted USD 247 million from shutting down the activity in the region (Greenfield, 04 March 2016).
- ³⁹ Pipelines have been targeted by acts of sabotage, causing oil leaks. In some cases, however, leaks are believed to have been caused by an old and rusty infrastructure, suggesting the responsibility from oil companies (e.g. Shell in Nigeria) (Smith, 01 February 2016).
- ⁴⁰ Chase et.al., 31 August 2016.
- ⁴¹ Poison is cheap and easy to acquire, difficult to detect, and it can target a large number of animals while also leaving their body and the parts intact (Ogada, 17 August 2014).
- ⁴² IUCN, 09 March 2016.
- ⁴³ Van Noorden, 25 January 2016.
- ⁴⁴ Department of Environmental Affairs, 10 May 2015; 2016.
- ⁴⁵ Nellemann et al., 2014.
- ⁴⁶ Highly toxic chemical, which has been prohibited in numerous countries, but not in Asia (Potter, Nurse, & Hall, 2016).
- ⁴⁷ In the 1990s, prices for Shahtoosh shawls reached up to 20,000 Swiss Franc whereas they are now sold between 500 and 2,000 Swiss Franc (Notice 331 published on 13 October, 2015. Retrieved from: <http://www.interpol.int/INTERPOL-expertise/Notices/Purple-notices-percentE2percent80percent93-public-versions/2015>).
- ⁴⁸ Stiles, Redmond, Cress, Nellemann, & Formo, 2013.
- ⁴⁹ D’Cruze, Singh, Morrison, Schmidt-Burbach, Macdonald, & Mookerjee, 2015.
- ⁵⁰ van Dijk & Shepherd, 2004.
- ⁵¹ Ibid.; D’Cruze et al., 2015.
- ⁵² The most recent operations were for the Protection of Asian Wildlife Species (PAWS) in 2014 and 2015.
- ⁵³ UN Environment, 2012.
- ⁵⁴ It consists in cutting and burning trees to clear the land, the ash temporarily enhancing soil fertility.
- ⁵⁵ Nellemann et al., 2014.
- ⁵⁶ The principal targets of illegal logging are Ramin, Mahogany, African Teak, and Brazilian Rosewood tree species (INTERPOL, 2013a).
- ⁵⁷ Nellemann et al., 2014.
- ⁵⁸ Environmental Investigation Agency & Telepak, 2001.
- ⁵⁹ The Amazon Rain forest spreads on Brazil, Peru, Colombia, Bolivia, Venezuela, Guyana, Suriname, Ecuador, and the French Guiana.
- ⁶⁰ The Congo Basin spans across Cameroon, CAR, DRC, Republic of the Congo, Equatorial Guinea, and Gabon.
- ⁶¹ UN, 24 October 2014.
- ⁶² Dranginis, 2016.
- ⁶³ INTERPOL, 2013a.
- ⁶⁴ Bargent, 07 July 2014; Nellemann et al., 2016.
- ⁶⁵ Glodberg, 2012; Ward, 2014; Turbiville, Meservey, & Fores, 2014.
- ⁶⁶ Dranginis, 2016.
- ⁶⁷ Ibid.
- ⁶⁸ Argentina, Bolivia, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Paraguay, and Peru.
- ⁶⁹ Benin, Burkina Faso, Côte d’Ivoire, Gambia, Ghana, Mali, Mauritania, Senegal, and Togo.
- ⁷⁰ FAO, 2012b.
- ⁷¹ FAO, 2014.
- ⁷² Steiner, 2013.
- ⁷³ Beke, & Blomeyer, 2014.
- ⁷⁴ Martini, n.d.

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- ⁷⁵ Banned fishing techniques include bottom trawling, bycatch, the use of poison and explosives, and ghost fishing (ibid.).
- ⁷⁶ OECD, 2013.
- ⁷⁷ Ibid.
- ⁷⁸ UNODC, 2011.
- ⁷⁹ UNODC, 2010; UNODC, 2011.
- ⁸⁰ The Mining, Minerals and Sustainable Development Project, 2002.
- ⁸¹ Several classification exist, depending on the approach chosen (e.g. geological, economic, industrial). Since this section mainly focuses the mining industry, the industrial approach is preferred here.
- ⁸² Open-pit, terrace, area or contour strip, auger.
- ⁸³ Natural Resource Governance Institute, 2015.
- ⁸⁴ UN Environment, 2014b.
- ⁸⁵ Tynybekov, 2013.
- ⁸⁶ Clad, McDonald, & Vaughn, 2011.
- ⁸⁷ Ibid.
- ⁸⁸ Prendergast & Lezhnev, 2009.
- ⁸⁹ United Nations Interregional Crime and Justice Research Institute (UNICRI), 2015.
- ⁹⁰ Liddick, 2004; United States Department of Justice, 12 April 2010.
- ⁹¹ The Global Initiative, 06 July 2013.
- ⁹² Montero, 28 February 2012; Gatimo, 02 March 2016.
- ⁹³ INTERPOL, 2015b.
- ⁹⁴ Passive corruption represents the supply-side of corruption, which typically involves the bribery of public officials. This is particularly true for law enforcement officers or agents at control points being offered money or other contributions to issue licenses or overlook the offense.
- ⁹⁵ Active corruption represents the demand-side, whereby public officials are using their position to engage in corrupt practices, such as extortion.
- ⁹⁶ This includes, for instance, evading detection thanks to sophisticated and diverse concealment techniques and transportation modes, smuggling large quantities of an illicit merchandise to another country or continent.
- ⁹⁷ United States Department of State, 2014.
- ⁹⁸ UN Security Council, 13 October 2013.
- ⁹⁹ UN Environment, 2009.
- ¹⁰⁰ Nellemann et al., 2014, 2016.

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