



INTERPOL

# Strategic Report

## The Nexus between Organized Crime and Pollution Crime



June 2022

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*Front cover image: This image provided by NCB Rome to INTERPOL was taken during an inspection of illegal waste shipments carried out in 2021 in the framework of the INTERPOL Operation 30 Days at Sea 3.0. The Italian Coast Guard seized and prevented 11,000 tonnes of metal scraps mixed with plastic, rubber, mineral oil and other contaminants from being loaded onto bulk carriers for illegal export.*

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## Definitions

Definitions contained in the United Nations Convention against Transnational Organized Crime:

**Organized Crime:** “Organized criminal group” means a structured group of three or more persons, existing for a period of time and acting in concert with the aim of committing one or more serious crimes or offences established in accordance with this Convention, in order to obtain, directly or indirectly, a financial or other material benefit<sup>1</sup>.

**Structured group:** “Structured group” shall mean a group that is not randomly formed for the immediate commission of an offence and that does not need to have formally defined roles for its members, continuity of its membership or a developed structure<sup>2</sup>.

**Transnational offence:** An offence is transnational in nature if:

(a) It is committed in more than one State;

(b) It is committed in one State but a substantial part of its preparation, planning, direction or control takes place in another State;

(c) It is committed in one State but involves an organized criminal group that engages in criminal activities in more than one State; or

(d) It is committed in one State but has substantial effects in another State<sup>3</sup>.

Other definitions:

**Pollution crime:** in the absence of an internationally agreed legal definition of pollution crime, INTERPOL refers to “pollution crime” as an umbrella term describing a range of criminal activities involving the trafficking and/or the illegal management of potential contaminants, and resulting in environmental pollution. It includes the following non-exhaustive types of crime: waste crime; marine pollution crime; fuel, oil and gas smuggling and illegal refineries; illegal use and trade in chemicals and plastic; and carbon trading crime.

Several conventions contribute to create an international legal framework covering activities that are referred to as “pollution crime” in this report, including: the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal; the Stockholm Convention on Persistent Organic Pollutants; the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade; the Montreal Protocol on Substances that Deplete the Ozone Layer; the International Convention for the Prevention of Pollution from Ships (MARPOL) and the Protocols thereto, among others.

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<sup>1</sup> United Nations Convention against Transnational Organized Crime, Art 2 (a).

<sup>2</sup> United Nations Convention against Transnational Organized Crime, Art 2 (c).

<sup>3</sup> United Nations Convention against Transnational Organized Crime, Art 3.2.

## Acronyms

INTERPOL	International Criminal Police Organization
NCB	INTERPOL National Central Bureau
OC	Organized crime
OCG	Organized criminal group
OC-PC	Organized crime-pollution crime nexus
PC	Pollution crime
PCWG	INTERPOL Pollution Crime Working Group
SIENA	Europol's Secure Information Exchange Network Application
TOC	Transnational Organized Crime
UNTOC	United Nations Convention against Transnational Organized Crime

## Executive Summary

INTERPOL refers to “pollution crime” as an umbrella term describing a range of criminal activities involving the trafficking and/or the illegal management of potential contaminants, and resulting in environmental pollution. It includes the following non-exhaustive types of crime: waste crime; marine pollution crime; fuel, oil and gas smuggling and illegal refineries; illegal use and trade in chemicals and plastic; and carbon trading crime.

This report analyses the convergence between certain organized crime activities (OC) and pollution crime (PC) (or OC-PC nexus), with the objective to support law enforcement agencies (LEAs) in INTERPOL member countries to improve their response to such criminal activities.

In particular, this report attempts to answer to three key strategic questions:

- Is the OC-PC nexus a global or a localized phenomenon?
- Does the OC-PC nexus proceed from organized criminal groups expanding their business into illegal pollution activities, or rather from the criminalization of the environmental compliance sector through a shift towards illegal practices by legitimate companies?
- What strategies and operational tactics can law enforcement agencies deploy to disrupt the criminal networks behind pollution crimes?

To address these questions, INTERPOL adopted the following methodology:

- Collection of cases of pollution crime with indicators of organized crime investigated by INTERPOL member countries, through a request sent to all INTERPOL National Central Bureaus;
- Analysis of 27 cases shared by member countries with the INTERPOL General Secretariat. Most of those cases concerned waste crime and involved a great variety of environmentally sensitive commodities. The analysis was developed by correlating ten key features concerning relations among suspects and *modus operandi*; and
- Validation of the findings and consultations with national experts in the framework of a multiregional meeting organized by INTERPOL.

Overall 19 INTERPOL member countries from every region of the world contributed to this report through their cases and expertise. Analysis suggests that an OC-PC nexus has almost certainly emerged globally and it represents a threat facing many, if not most, INTERPOL member countries. Organized criminal groups of any size have been found involved in cases of pollution crime in many countries worldwide, with illicit operations ranging from local activities to large-scale intercontinental trafficking worth millions USD. Despite significant data gaps on the links between organized crime and pollution crime in some regions of the world, the available information and intelligence deliver coherent and conclusive findings on the existence of such nexus. In particular, findings point to the coexistence of two parallel phenomena or operational models.

On the one hand, organized criminal groups expand and/or diversify their illicit activities to infiltrate the waste management sector and other profitable markets involving environmentally sensitive commodities. These criminal groups usually have a hierarchical structure with a centralized command. They commit mainly illicit waste disposal (sometimes coupled with waste trafficking), fraud and racketeering. The relatively simple logistic organization and limited number of stakeholders involved

in these offences allow the group to manage the entire crime cycle through a centralized decision-making process and a strict chain of command.

On the other hand, legitimate companies operating in the environmental compliance sector shift towards illegal business practices and commit pollution crime to increase their profits. From an organizational perspective they appear more flexible and decentralized chains of individual suspects or clusters of various companies/criminal groups. Such structure better serves the purpose of trafficking waste across borders. The complex logistics of transnational waste trafficking requires a more sophisticated division of roles among suspects with diverse capacities and expertise, who cooperate opportunistically at the different stages of the criminal activity.

Despite those organizational variants, some patterns and characteristics are commonly found across most, if not all, of the OC-PC cases and regions of the world. These include motives, *modus operandi* and divisions of roles among the suspects, as described in the following paragraphs.

A financial motive is almost certainly the main driving factor for suspects to commit an OC-PC offence, as well as the key common denominator among different OC-PC offences. Pollution crime can be remarkably lucrative to those companies and criminal groups involved, sometimes representing a multi-million dollar illegal business.

Pollution offenders are innovative, adaptive and at times sophisticated in their methods of operation. In most cases analysed, suspects were organized in the form of flexible groups or networks, with the ability to infiltrate several different industries and markets where environmentally sensitive commodities are involved. This includes the agricultural, construction, energy, mining, and waste management markets, among others. They are also skilled in moving commodities for profit globally by relying on an international network. By often running a legitimate business as a cover, those criminal groups and networks move swiftly between legal and illegal activities. Their professional business competencies allow them to expand and diversify their illegal activities taking advantage of legislative gaps and changes in market value following new policies. In some cases, they are able to penetrate the public sector and local politics as well, and exercise their influence on public tenders, policymaking and law enforcement to succeed in their criminal activities.

The most common *modus operandi* identified in cases of pollution crime, particularly when committed by organized criminal groups, is the use of various types of frauds and financial crimes as a core component or facilitator of the pollution offence. Precisely, document fraud, tax evasion and money laundering are common components of pollution crimes. Corruption is sometimes involved as well. These financial flows are significant as pollution crime often involves multi-million dollar businesses. Identifying the specific pollution crime types where most financial flows concentrate may better guide law enforcement agencies in strategically deploying the use of financial investigations to tackle the proceeds of crime, and therefore identify the suspects.

The majority of OC-PC cases presents a clear division of roles among individuals and/or companies participating in the offences. The division of roles usually responds to two complementary needs. First, the provision of different resources (personnel, equipment, etc.) and services (facility management, transportation, falsification of paperwork, political support, etc.), reflecting the stakeholders' respective expertise in different branches of the business. Second, the need for cooperation and coordination between individuals and companies in different countries to manage the international trade. Based on these criteria, three key role types were found across different cases and regions of the world: initiation of the business and procurement of the commodities; brokering and transportation; reception and treatment and/or retail of the commodities.



The analysis conducted on these cases indicates also that the OC-PC activity is likely to be conducted over a period of several years by the same suspects. Several experts contributing to this report argued that all too often law enforcement fails to deter pollution offending, possibly generating the perception among suspects that pollution crime is a high profit but low risk crime. In fact, suspects of pollution crime are rarely charged with organized crime offences. In the cases under review, suspects were rarely prosecuted, and when subject to criminal justice they were mostly prosecuted pursuant to environmental and/or fraud-related offences. Sentences ranged from short-term imprisonment to fines corresponding to a limited share of the profits made from those criminal activities. By comparison, these penalties are significantly lower than those usually applied to organized crime offences.

If not already, law enforcement authorities in INTERPOL member countries should prioritise investigation of pollution offences. Pollution crime often transcends national borders. It threatens legitimate businesses, security and the rule of law through regular convergence with other serious crimes, infiltration in public administrations and the sophisticated professional expertise displayed by many waste criminals. The global challenge of the OC-PC nexus represents an urgent call for increased law enforcement action at the national level. INTERPOL supports its member countries in tackling this challenge by-facilitating international cooperation and capacity building activities.

Around the world, law enforcement agencies are faced with similar challenges when investigating pollution crimes. Key challenges include: limitations of investigative powers; cooperation gaps between environmental regulatory authorities and police responsible for enforcement of organized crime; low prioritization of pollution enforcement; inadequate knowledge of pollution crime and lack of specialized training in most law enforcement agencies, which results in limited detection capacity; and legal obstacles where pollution crime is not one of the predicate offences that can be prosecuted under organized crime laws. International law enforcement cooperation is often hindered by poor contacts between specialized investigators; legal restrictions to information sharing; and limited visibility on countries' newly adopted regulations.

As a result of analysis, it is recommended that national law enforcement agencies consider the following:

- Elevate pollution crime to a priority level in national law enforcement agendas, shifting from a reactive to a proactive approach when investigating such crimes domestically, and proactively engaging in cooperation with foreign authorities and INTERPOL to tackle transnational cases.
- Integrate tools and techniques of organized crime and financial investigations into environmental crime investigations on a regular basis, either through a more multi-disciplinary training of investigators, or by establishing permanent multi-agency task forces.
- Undertake systematic and accurate data collection and intelligence analysis (particularly network analysis) on the companies and criminal networks charged with pollution crimes, to support intelligence-led operations.

In order to operationalise the three recommendations outlined above, managers of national law enforcement agencies may consider implementing a comprehensive approach to pollution crime enforcement, comprising of four mutually reinforcing pillars: prevention, intelligence gathering, enforcement and strategy.

- **Prevention** of pollution crimes involves raising awareness among law enforcement agencies and deterring offences through preventive searches and intensive scrutiny of suspect companies and hotspots.
- **Intelligence gathering** is instrumental to executing intelligence-led enforcement actions. It may be conducted via different tools and techniques depending on the powers of each agency, such as undercover agents and a trustful network of sources on the ground, including informants (criminals, private sector stakeholders, and whistleblowers), community sources, or NGO experts. Financial intelligence is particularly relevant to OC-PC cases.
- To promote effective **enforcement**, relevant agencies should take steps to establish multi-agency, multi-disciplinary task forces, as well as to use specialized investigative techniques (e.g. controlled deliveries, surveillance technologies, databases of companies) whenever relevant and within their powers. Channels of international cooperation, including through INTERPOL operational and investigative support, shall be pursued as much as possible when addressing transnational crimes.
- At the **strategic level**, law enforcement leaders should invest in continuous specialized training in both environmental and financial investigations for frontline officers. They should also pursue partnerships with regulatory authorities, private sector entities and relevant international partners, including INTERPOL.

## Introduction

In recent years, INTERPOL-coordinated global law enforcement operations<sup>4</sup> targeting pollution crimes committed on land, in internal waters and at sea, have exposed indicators of the likely involvement of (transnational) organized crime in a number of cases. This involvement, its nature and implications need to be better understood by the international law enforcement community in order to develop targeted law enforcement strategies able to disrupt the criminal networks behind illicit waste trade and other pollution crimes.

The OC-PC nexus has been previously assessed by INTERPOL and its Pollution Crime Working Group (PCWG) in a number of analytical reports starting from 2006<sup>5</sup>. For example, in 2009 such link could be established by reviewing 36 closed court cases from eight countries<sup>6</sup>. INTERPOL analysis also showed that criminal networks involved in pollution crimes have been found to be involved in theft, human trafficking, fraud, drugs and firearms trafficking, and money laundering as well<sup>7</sup>. More recently, another report highlighted how criminal networks have quickly adapted to new environmental legislation concerning plastic waste, and they have diversified and displaced their illegal activities across different countries and plastic waste markets<sup>8</sup>.

The OC-PC link has also been explored in many academic studies and documented by other relevant organizations, including the Global Initiative Against Transnational Organized Crime<sup>9</sup>, the United Nations Office on Drugs and Crime<sup>10</sup>, and Europol<sup>11</sup>, among others. However, previous data collection

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<sup>4</sup> Operation 30 Days of Action (2017), Operation 30 Days at Sea (2018), Operation 30 Days at Sea 2.0 (2019) and Operation 30 Days at Sea 3.0 (2020-2021).

<sup>5</sup> The report of the INTERPOL Pollution Crime Working Group entitled *Assessing the links between organized crime and pollution crime* (2006) established the link between organized criminal groups and pollution crime by reviewing case studies from several countries. The report is available at: <https://www.interpol.int/content/download/5175/file/INTERPOL%20Pollution%20Crimes%20Working%20Group%20-%20Assessing%20the%20Links%20between%20Organized%20Crime%20and%20Pollution%20Crimes.pdf> (accessed March 2022).

<sup>6</sup> The INTERPOL report entitled *Electronic Waste and Organized Crime – Assessing the Links* (2009) analysed information on 36 closed court cases from Canada, Italy, Germany, Japan, Mexico, Sweden, the United Kingdom, and the United States of America. The report is available at: <https://www.interpol.int/content/download/5174/file/Electronic%20Waste%20and%20Organized%20Crime%20-%20Assessing%20the%20Links.pdf> (accessed March 2022).

<sup>7</sup> INTERPOL, *Environmental crime and its convergence with other serious crimes*, 2015, <https://www.interpol.int/content/download/5086/file/INTERPOL%20Strategic%20Report%20-%20Environmental%20Crime%20and%20its%20Convergence%20with%20other%20Serious%20Crimes.pdf> (accessed March 2022).

<sup>8</sup> INTERPOL, *Strategic Analysis Report: Emerging criminal trends in the global plastic waste market since January 2018*, 2020, [https://www.interpol.int/content/download/16123/file/Public%20INTERPOL%20Report%20\\_criminal%20trends-plastic%20waste.pdf](https://www.interpol.int/content/download/16123/file/Public%20INTERPOL%20Report%20_criminal%20trends-plastic%20waste.pdf) (accessed March 2022).

<sup>9</sup> The Global Initiative against Transnational Organized Crime, *The Global Response to Transnational Organized Environmental Crime*, 2014, <https://globalinitiative.net/wp-content/uploads/2019/04/TGIATOC-The-Global-Response-to-Transnational-Organized-Environmental-Crime-web.pdf> (accessed March 2022).

<sup>10</sup> United Nations Office on Drugs and Crime [UNODC], *Transnational Organized Crime in East Asia and the Pacific – A Threat Assessment*, 2013, chapters 9 and 10 on E-waste and ODS trafficking in Asia, [https://www.unodc.org/documents/data-and-analysis/Studies/TOCTA\\_EAP\\_web.pdf](https://www.unodc.org/documents/data-and-analysis/Studies/TOCTA_EAP_web.pdf) (accessed March 2022).

<sup>11</sup> Europol, *Environmental Crime in the EU – Threat Assessment 2013*, chapter 2 on waste trafficking, <https://www.europol.europa.eu/publications-events/publications/threat-assessment-2013-environmental-crime-in-eu> (accessed March 2022).

efforts by both INTERPOL and other relevant organizations have left several information and intelligence gaps that the present report aims to fill through an updated and more comprehensive assessment.

A key gap that is currently unclear is whether the OC-PC nexus is a global or a localized phenomenon. This gap is due to the lack of a multiregional comparative analysis based on a global data collection process. Information on the OC-PC nexus has traditionally been available to both law enforcement agencies and the general public only in a limited number of countries. This reflects a significant global discrepancy between a narrow set of countries where this nexus has been widely recognized and investigated, and the rest of the world where pollution crime investigations from an OC angle have been rare; therefore, information on this nexus is very limited.

In order to fill the abovementioned gap, the present assessment looks at the OC-PC nexus from new angles. In particular, it tries to overcome a traditional view of organized crime as a structured hierarchical mafia, considering instead that the organization of criminal activities can take more loose and flexible forms. In fact, an earlier INTERPOL report pointed out that “rather than exhibiting the traditional hierarchical, centralized structure of organized crime, the involvement of organized criminality in pollution crimes is more loosely structured. Small groups organize for a period of time to commit crime to obtain financial or other benefit, but disperse under pressure to form new groups”<sup>12</sup>. Based on these considerations, one key issue to address in the present report was whether it is established organized criminal groups conducting illegal pollution activities, or rather the criminalization of the environmental compliance business sector.

## Objectives

This report aims to address the following strategic questions:

- Is the OC-PC nexus a global or a localized phenomenon?
- Does the OC-PC nexus proceed from organized criminal groups expanding their business into illegal pollution activities, or rather from the criminalization of the environmental compliance sector through a shift towards illegal practices by legitimate companies?
- What strategies and operational tactics shall law enforcement prioritize to disrupt the criminal networks behind pollution crimes?

To answer these questions, this document pursues two complementary objectives. First, to raise awareness among the INTERPOL community on the prevalence and threats posed by the OC-PC nexus through analysis. Second, to instigate greater discussion and action across the INTERPOL community on innovative measures to tackle organized pollution crime.

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<sup>12</sup> INTERPOL, *Electronic Waste and Organized Crime – Assessing the Links*, op. cit., page 30.

## Methodology

The methodology underpinning the present report consists of a three-step process: data collection, analysis and expert review.

### Step 1: Collection of cases of pollution crime involving organized crime

In August 2018, INTERPOL launched a call for case studies of pollution crimes involving organized crime, reaching out to all INTERPOL National Central Bureaus (NCB) and members of the INTERPOL Pollution Crime Working Group (PCWG). This call resulted in the collection of 27 cases covering a variety of pollution crime types, submitted by eleven member countries<sup>13</sup>. The cases are summarized in Appendix 1: Snapshots of the cases analysed.

These cases presented indicators of organized crime, including 19 cases of transnational nature that may amount to transnational organized crime. Interestingly, the large majority of cases highlighted a convergence with other crime types, particularly fraud, money laundering and corruption; but sometimes also illegal labour, violation of immigration laws, and illicit drug trafficking.

### Step 2: Comparative analysis

INTERPOL conducted a comparative analysis of the collected cases to identify the key patterns and *modus operandi* in the organization of pollution crimes. To capture the actual profile of the pollution crime area, INTERPOL adopted an analytical approach consisting of interpreting the concept of organized crime as a *modus operandi* – a way of perpetrating an offence according to the parameters of a structured division of roles and a financial motive. Therefore, we looked into the roles and articulation among actors involved in the offences, to verify if the constituent elements of the universally agreed definition<sup>14</sup> of organized crime were met.

To deliver a more comprehensive profile of pollution criminality, such criminal network analysis was embedded in a comparative analysis correlating ten variables:

- Type of criminal organization
- Structure of the chain of command and articulation of relations and roles among the suspects
- Presence of clear division of roles among the suspects
- Prevalence of individuals or companies
- Type of pollution offences
- Geographical scale of the crime (domestic or transnational)
- Number of individual suspects involved
- Presence of corruption and infiltration in politics and the public sector
- Regions of the world where the offences took place
- Convergence with other crimes

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<sup>13</sup> Australia, Germany, Italy, Malawi, Netherlands, Slovakia, Spain, Timor-Leste, United Kingdom, and Zambia. One country chose to remain anonymous.

<sup>14</sup> United Nations Convention against Transnational Organized Crime, Art 2 (a) and (c).

This analytical correlations scheme is illustrated in a simplified graphic presented in Appendix 2: Correlations scheme.

### **Step 3: Expert review in the framework of the Analytical and Investigative Expert Group Meeting**

In order to review and expand the analytical findings on the OC-PC nexus and to discuss strategies to disrupt this nexus, INTERPOL convened a meeting of national experts from countries who provided the above mentioned case studies and/or where high risk indicators of the OC-PC nexus were identified by INTERPOL through intelligence review. The meeting entitled “Analytical and Investigative Expert Group Meeting on the Involvement of Organized Crime in Pollution Crime” (hereinafter referred to as “the Meeting”) took place from 20 to 22 March 2019 at INTERPOL General Secretariat in Lyon, France, with the participation of 22 experts from 16 member countries<sup>15</sup>. Experts in attendance included police investigators, environmental enforcement officers, and criminal intelligence analysts.

INTERPOL preliminary analytical conclusions on the spatial distribution, the scale, the economic value and profile of the OC-PC nexus had been disseminated to all participants through a discussion paper prior to the meeting. Based on this common understanding of the OC-PC nexus, the participants’ discussion focused on: reviewing cases of pollution crimes with linkages to organized crime in order to identify common denominators across countries and regions, and discussing common investigative challenges and develop a set of investigative guidelines to support countries in addressing and disrupting the OC-PC nexus.

The conclusions of the meeting, complementing the analytical findings from the cases review, are included in the present report.

Overall, this report is based on data and contributions provided by 19 countries from many regions of the world: Australia, Germany, Ghana, India, Indonesia, Italy, Malawi, Malaysia, the Netherlands, Nigeria, Norway, Slovakia, South Africa, Spain, Thailand, Timor-Leste, United Kingdom, and Zambia<sup>16</sup>. This represents an unprecedented multiregional data basis for a report on this topic.

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<sup>15</sup> Australia, Germany, Ghana, India, Indonesia, Italy, Malaysia, the Netherlands, Nigeria, Norway, South Africa, Spain, Thailand, Timor-Leste, United Kingdom, and Zambia.

<sup>16</sup> One additional country from the Americas declined to be identified.

## Analysis: Reviewing the cases

### The cases of pollution crime analysed in this report

The 27 cases analysed in this assessment came from four regions of the world, as depicted in Figure 1 below: Africa (four cases), the Americas (two cases), Asia-Pacific (two cases) and Europe (19 cases).



Figure 1. Number of OC-PC cases submitted and reviewed, by region

Despite this regional imbalance, similar crime types were found across various regions.

Figure 2. Number of OC-PC cases, by type of crime below shows that the large majority of the cases submitted by member countries for this report and referred to in Figure 1 involved waste crimes (22), particularly waste trafficking and waste mismanagement / illegal dumping. Two cases concerned illegal mining, another two cases were regarding fraud, and there was one case of racketeering associated with breach of environmental regulations. These types of crime represent only some areas of pollution crime. The reason why they were the only pollution crime types reported in this data set may be that these are the pollution crime areas where countries focus their attention the most and/or where the links with organised crime are the most prevalent compared to other forms of pollution crime.

The analysis of these cases indicates that the OC-PC activity is likely to be conducted over a period of several years by the same suspects. The offences referred to in Figure 2 occurred between 2010 and 2018, with the large majority of them taking place between 2015 and 2018. There was not enough information to establish for how long such offences were perpetrated on average. However, a limited sample indicated that the time-frame of the violations was usually four to five years, extending to 15 years in one case.

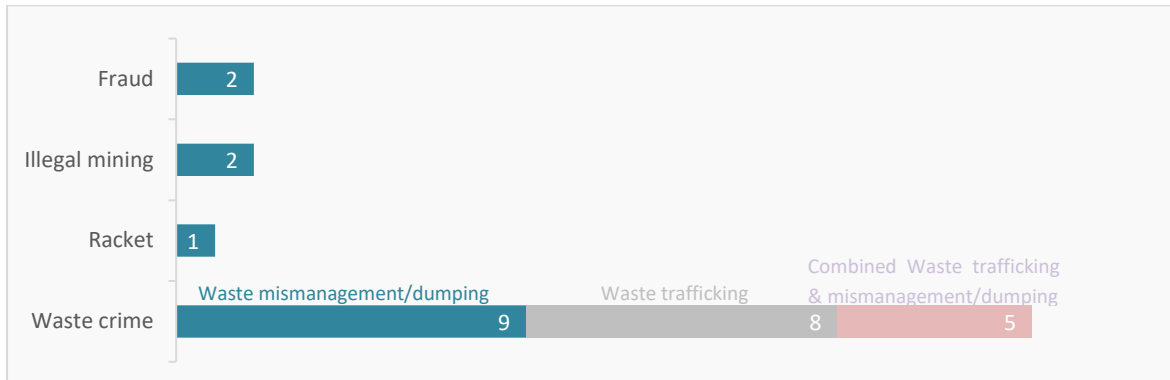


Figure 2. Number of OC-PC cases, by type of crime

Some of the cases mentioned in Figure 2 generated a related or a follow up investigation. For example, in Germany, a major case of waste crime led to the discovery of 90 subsequent cases with regard to the origin of the waste, economic crime, corruption and organized crime.

### Environmentally sensitive commodities involved in the cases

As shown in Figure 3 below, offences involved a wide range of waste types as well as other environmentally sensitive commodities such as non-biodegradable plastic bags, pesticides and fertilizers. There were also some cases of environmental frauds including CO<sub>2</sub> emission allowances, waste-to-energy based cryptocurrency, and contracts for waste disposal.

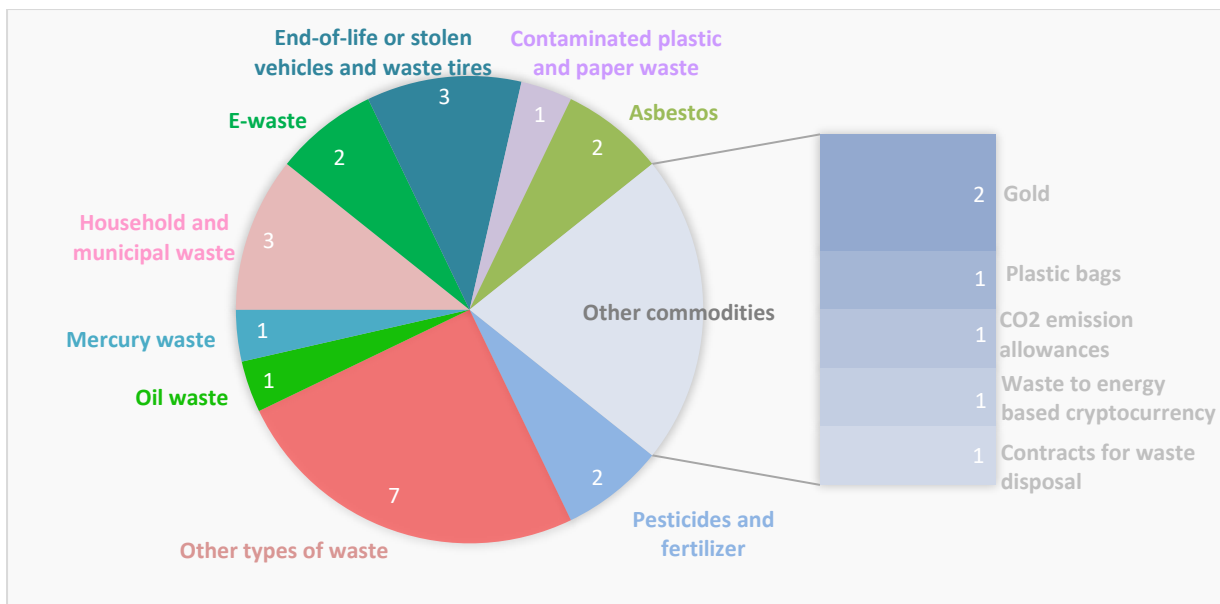


Figure 3. Environmentally sensitive commodities involved in the reviewed OC-PC cases by number of cases



The variety of substances involved in criminal activities indicates that organized pollution crime infiltrates several industries and markets, including the agricultural, construction, energy, mining, and waste management markets, among others.

## Geographical scale of crimes

Of the 27 pollution crime cases referred to INTERPOL, 19 were related to transnational offences and eight to domestic crimes. The transnational cases encompassed all types of pollution crimes with the exception of illegal waste management and dumping, though this was prevalent at a domestic level. Transnational offences involved an equal proportion of intra-regional and interregional flows. At the regional level, flows usually occurred across neighbouring countries. The most prevalent interregional flows involved exports from European countries to African countries (mainly in West Africa) and to East Asian countries. In limited instances there were links Europe-Middle East, Europe-Latin America and North America-Latin America.

## The economic value of the offences

A third of the 27 cases showed figures related to the proceeds<sup>17</sup> of these criminal activities. Profits of each case ranged from USD 175 000 to USD 58 million, corresponding to an average of USD 19.6 million for each case. An estimate projection<sup>18</sup> indicates that the proceeds of crime of the 27 cases combined may have amounted to USD 529.45 million. These figures indicate that pollution crime can be remarkably lucrative to those companies and criminal groups involved, sometimes representing a multi-million dollar illegal business.

Corruption of public officials was reported in the context of several cases reviewed in this assessment. For instance, one case of fraud relating to licence for waste disposal involved also USD nine million of bribes. However, it seems that corruption took place more commonly in the form of obtaining some benefits from public officials in exchange for a share of the profit from the criminal activity, rather than in the form of an upfront payment (bribe).

A financial motive is almost certainly the main driving factor for suspects to commit an OC-PC offence, as well as the key common denominator among different OC-PC offences. This consideration is supported by several findings: (i) there was no other apparent benefit in any of the cases other than the financial one; (ii) the multi-million dollars proceeds of some of the crimes suggest that there was an obvious financial interest in undertaking such illegal activities; (iii) other key motives behind suspects committing an OC-PC offence were, such as gaining concurrence power on a market or cultivating drugs, were described as anecdotal by participating countries, and always leading to an ultimate financial goal (personal enrichment or increased profit of a company).

There was no clear correlation between the highest profits and a specific crime type or commodity. As a result, it is currently difficult to accurately assess whether an illicit market is most profitable than others. This point could be further investigated in the future with the support of additional

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<sup>17</sup> "Proceeds of crime" shall mean any property derived from or obtained, directly or indirectly, through the commission of an offence [United Nations Convention against Transnational Organized Crime, article 2 (e)].

<sup>18</sup> The estimate projection corresponds to the average proceeds of each offence based on figures available for ten cases (USD 19.5 million), multiplied for the total number of cases.

information and intelligence provided by member countries. Identifying the specific pollution crime type where most financial flows concentrate may better guide law enforcement agencies in strategically deploy the use of financial investigations to tackle the proceeds of crime, and therefore the offenders.

Some countries also reported the alarming figures related to the decontamination costs that were necessary to clean up unauthorised landfills following illicit waste dumping activities. These costs ranged between USD six million and 37 million for a single site or case (USD 15.6 million on average). Although decontamination costs do not relate directly to law enforcement, they provide a measurable indicator of the significant impact of pollution crimes on society, among other measurable indicators, such as pollution indexes, that fall outside of the scope of this assessment.

Considering such impacts, along with the high profits generated by pollution crimes for criminal groups, is important to determine the significance of the OC-PC phenomenon. As a result, law enforcement agencies may be better informed to afford adequate attention and efforts to address such threat.

## Key suspects identified

As discussed in the Methodology section, the core assessment was developed through a comparative analysis correlating ten variables. This complex correlations scheme, illustrated in the graphic in *Appendix 2: Correlations scheme*, led to the classification of four main types of criminal organizational structures recurring in connection with pollution crimes:

- (i) Centralized criminal groups (nine cases);
- (ii) Chain of individual suspects operating at the different stages of the offence (six cases);
- (iii) Clusters of centralized criminal groups (three cases); and
- (iv) Mafia clans (three cases)<sup>19</sup>.

Due to similar characteristics across the different variables, these four types of organizational structures can be grouped in two categories or patterns.

### Pattern 1: Centralized criminal groups and mafia clans

This structure consists of a single cohesive group of suspects that manage the entire life cycle of the offence. There is a clear chain of command articulated either through the hierarchical structure of the group (where a leader supervises the other members), or through a centralized command jointly handled by a few members of the group (where the group is small in terms of number members).

In most cases, the group is comprised of private individuals, but in some cases it may also correspond to a single company. These groups include both large criminal syndicates and formal long-lasting criminal organizations, as well as informal short-term groups. The link to large crime syndicates was identified in seven cases. For instance, in the reporting year, the UK Environment Agency detected 16 organized criminal groups in the pollution crime area. In another country that chose to remain

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<sup>19</sup> In six cases, information was insufficient to allow for this analysis.

anonymous, police identified 18 criminal organizations managing illegal mining operations across 281 municipalities of the country in 2018 alone. However, in cases presented by other countries, it could have rather been a more temporary, loose informal group coming together opportunistically for a period of time to commit one or a series of offences.

These criminal groups and clans tend to engage in illicit waste disposal (occasionally coupled with waste trafficking), fraud and racketeering. While these offences typically involve a limited number of stakeholders, the crime itself can be of high profile. The majority of cases involving domestic offences were linked to this type of organizational structure.

Analysis suggests that when the crime does not involve a sophisticated logistical organization, especially if perpetrated at the local scale, it is mainly conducted by centralized criminal groups or mafia clans, who can manage the entire crime cycle through a centralized decision-making process and a strict chain of command.

An exception to this pattern is represented by one case where a single criminal group with a strong hierarchical structure and chain of command, was managing alone very complex logistical operations extending within and across national borders. This was made possible by the establishment of a very strong network of accomplices in the political, public administration, military, law enforcement and aerial transportation sectors, all cooperating with and reporting to the clan's leader.

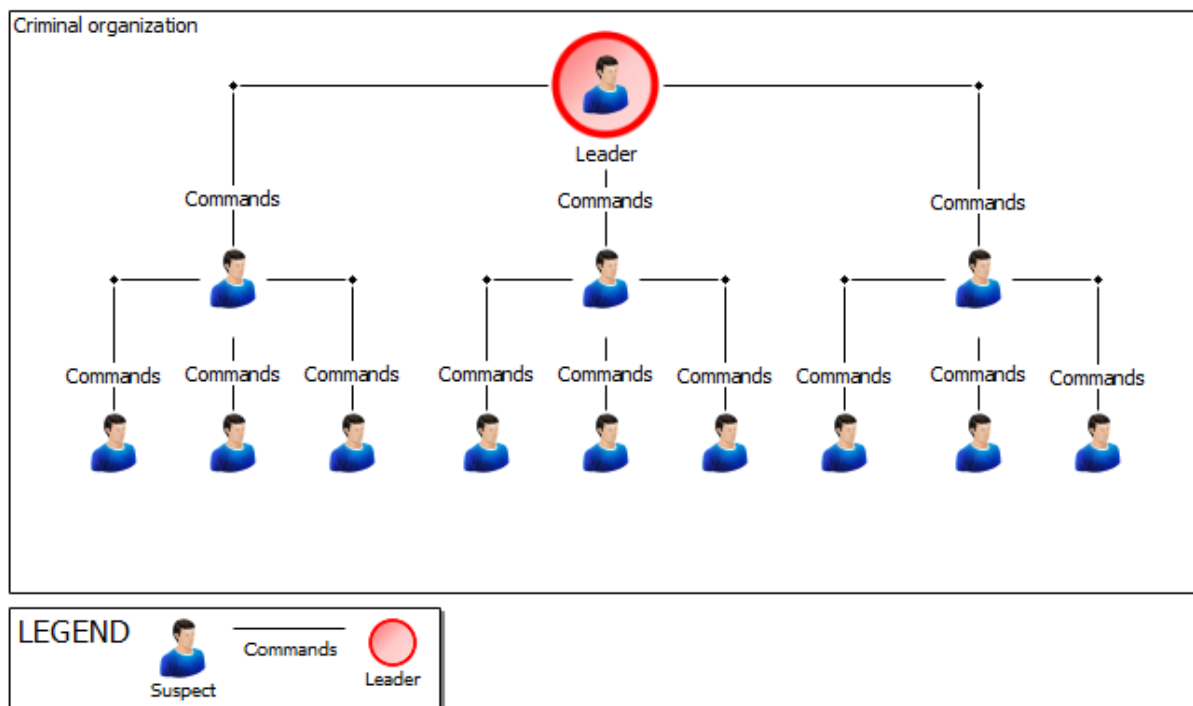


Figure 4: Outline of the organizational structure defined as centralized criminal groups and mafia clans

## Pattern 2: Decentralized networks and chains of individual suspects

This type of organizational structure consists of a linear chain or horizontal network of individual brokers and middlemen, companies or criminal groups, each of them covering a specific stage of the offence. Based on their sectorial expertise, suspects make profit and then leave the business in the hands of the subsequent stakeholder who follows up with the next stage of the offence. Instead of a vertical chain of command, these chains/networks rather operate according to an opportunistic logic of business complementarity and a division of roles. Companies are the key actors in this type of criminal scheme.

The chain/network structure is prevalent when the crime is logistically complex, requiring movements across borders, interventions by a variety of stakeholders, and a higher degree of organization. This horizontal structure responds to the need to coordinate actions among individual companies or brokers with specific capacities and expertise, who cannot control the overall business cycle alone, or are not able to operate transnationally alone. Chains and networks are particularly active in transnational waste trafficking, which involves sophisticated logistical organization in order to manage the steps relating to waste collection, export, import and delivery carried out by different operators in different places at the international scale.

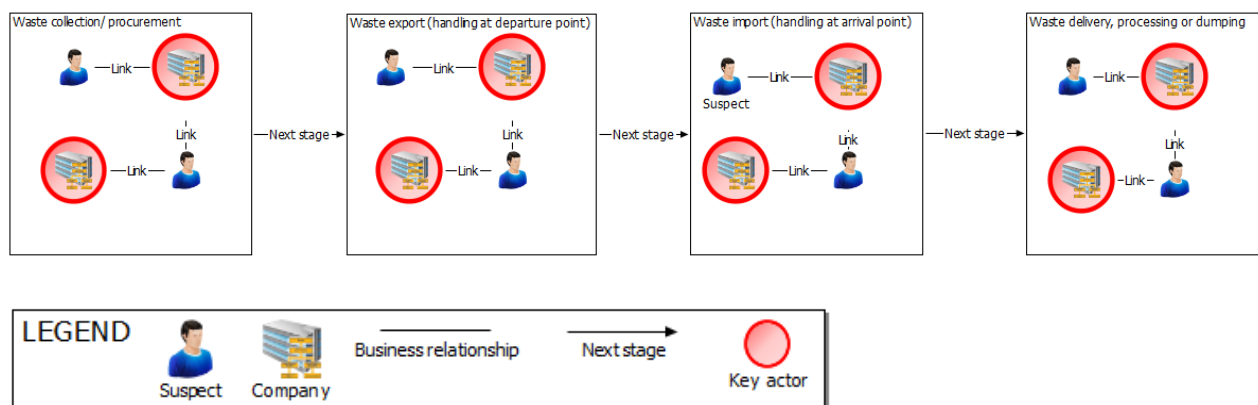


Figure 5: Outline of the organizational structure defined as decentralized networks and chains of individual suspects

## The articulation of roles among suspects

The majority of cases collected detailed a clear division of roles among individuals and/or companies participating in the offences. This was the key characteristics of all cases where the criminality was structured in a chain of suspects or network of criminal groups; to a lesser extent, it was also a very relevant feature of several centralized criminal groups.

The number of different roles identified in each case ranged between two and ten, with the highest frequency of cases involving three or four roles. Overall, the division of roles responded to two complementary needs: first, the provision of different resources (personnel, equipment, etc.) and services (facility management, transportation, falsification of paperwork, political support, etc.), reflecting the stakeholders' respective expertise in different branches of the business. Second, the need for cooperation and coordination between individuals and companies in different countries to manage the international trade.

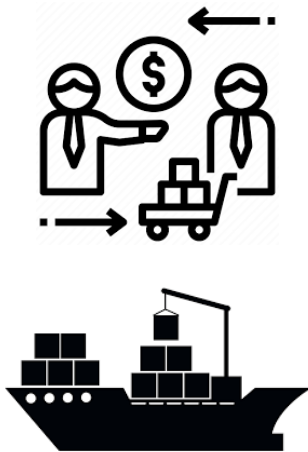
Three similar role types or role groups were found across cases, crime types and regions:

### Role type 1: Initiation of the business and procurement of the commodities



This role typically consists of companies (or sometimes individuals) based in the country where the crime or the criminal group originates, who plan the illicit business and arrange (legally or illegally) the commodities subject to the offence (such as by extracting natural resources or collecting waste). It includes collectors, buyers, drivers and consignees.

### Role type 2: Brokering and transportation



Middlemen who provide administrative, commercial distribution and logistics services to facilitate the offences. They may be part of the same group who initiated the business (in centralized criminal groups), or may be external intermediaries contracted by the initiator of the business through "consultancy fees" or as "consultancy companies" (in chains and networks of suspects). It includes a variety of jobs covering the issuance of documentation such as customs declarations and disposal invoices, the sourcing of commercial partners and destination sites, and transportation: waste brokers, exporters, trading companies, shipping agents and companies, helpers loading containers, drivers, buyers, and other types of facilitators.

### Role type 3: Reception and treatment and/or retail of the commodities



At the final stage of the offence, recipients of the commodities take care of their disposal or commercialization. These actors include managers of dumping sites, accomplices at licenced landfills, individuals contracted to dump waste, business partners in destination countries, wholesale agents and retailers.



Figure 6. Role types frequently identified among suspects in the reviewed OC-PC cases

Additional roles were recognized in some cases involving financial crime and corruption, namely: trustees located in tax havens facilitating illicit money flows, especially payments of bribes; and public officials facilitating the offence(s) by obstructing inspections and enforcement, sharing confidential information, etc.

This assessment lacked information to establish whether or not all the individuals involved in each role knew they were part of a criminal activity. In some cases, professional shippers, brokers and retailers may have not be aware that they were participating in an illegal scheme. When investigating pollution crimes, law enforcement agencies may bear in mind that such crimes often represent an illegal business within a regulated industry. Therefore, particular attention should be given to determine the exact role and responsibilities of each actor in order to uncover organized illegal conducts.

### Case Study One

In a case provided by the Slovakia, an organized criminal group consisting of individuals with family bonds unlawfully operated a premises used for waste management according to clearly divided roles:

- Father: bought the premises, dealt with the high profile customers and made the most serious decisions.
- Son 1: dealt with lower profile customers, decided where the waste stored in the premises would be disposed of.
- Son 2: dealt with running office and supervising office personnel.
- Father's girlfriend: running all the financial operations, money withdrawal in cash.
- Girlfriend of Son 1: dealt with running office and supervising office personnel, as well as lower profile customers.
- Landfill operator: actual disposing of waste, handling waste within the promises, taking care of waste management premises.



Figure 7: Seizure of an illegal end-of-life vehicles management site in Italy by the Carabiniere during the global Operation 30 Days of Action, coordinated by INTERPOL

## The size of the criminal enterprises<sup>20</sup>

The size of the criminal organizations mentioned in the cases shared with INTERPOL for this report varied considerably. There was no consistent pattern in the number of individuals and/or companies involved in each offence, or correspondence with a specific criminality structure. Cases frequently involved two to four or nine to twelve suspects, but a few cases involved up to 26-28 individuals (suspects, investigated, detained or prosecuted in court). This further supports the finding that a great variety of criminal groups (in terms of size and structure) are involved in OC-PC offences.

On the contrary, information regarding the number and size of companies involved in each offence was only provided in a couple of cases. This sample was not enough to form any conclusive observation on the profile of the companies allegedly committing pollution crimes.

### Case Studies Two

Spain presented two cases involving 11 and 18 companies respectively.

The Operation Enigma III, conducted by Germany (including 14 individual cases resulting in 33 criminal and 32 regulatory proceedings), identified 19 companies based in that country and 184 businesses in West Africa cooperating on waste smuggling.

The extent to which OC-PC criminal enterprises penetrate the public sector and operate across borders are also useful parameters to estimate their size in terms of influence. The following sections will expand on these topics to complement the initial observations outlined in the previous paragraphs.

## The influence exercised by suspect pollution offenders on the public sector

The analysis of the 27 cases collected for this report revealed that a key characteristic of pollution criminality is the capacity of those involved to penetrate the public sector and local politics. Some public sector accomplices actively participate in the commission of the offences to share profits and benefits. Other corrupted public officials facilitate the criminal activity by providing confidential information or by containing enforcement.

Based on the cases analysed, it appears that the support of local politicians and/or public officials is typically instrumental to perpetrating two types of offences:

- (i) those that involve the exploitation of municipal areas (e.g. landfills exploited for illicit waste disposal); and

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<sup>20</sup> There are multiple ways to measure the size of these criminal enterprises, such as a triangulation combining the volume of illicit commodities treated, the profits made, and the number of individuals and/or companies involved. In the absence of comparable data on the amount of commodities trafficked and dumped, and having previously discussed the financial aspects (which did not have a clear correlation with the other two criteria), we will focus on the latter parameter.

- (ii) those that imply the manipulation of the public administration (e.g. frauds related to disposal licences; obtaining confidential information on evaluation of bids and on price quotations of competitors in tender; and obtaining preference when bidding a contract for waste disposal).

While corruption of border officials was not clearly mentioned in the cases of transnational traffic collected for this assessment, there were nevertheless some anecdotal accounts of corrupted law enforcers facilitating movements within national borders. Although the present assessment cannot establish any trend in this regard, national law enforcement agencies may consider undertaking deeper investigations into potential corruption of border and other frontline officers, particularly in connection with illicit movements of environmentally sensitive commodities.

### **Case Studies Three**

Corruption of public officials emerged in the framework of the Spanish Operation Regulator, which discovered a mayor cooperating with a network of offending companies. The mayor was facilitating illegal waste dumping activities within the municipality by obstructing inspections and enforcement, including by hiring a gang to threaten a member of the municipality council who was taking investigative action.

Similarly, in Germany a company used fictitious invoices to channel USD 8.9 million to a Swiss subsidiary with a view to paying bribes to politicians (through trustees located in tax havens abroad) in return for being given preferential treatment when bidding on contracts for waste disposal, receiving confidential information such as evaluation of the bids and price quotes of competitors (through middlemen lobbyists), and being granted retroactive discounts.

Another country participating in this assessment investigated a case of illegal gold extraction and trade where the corruption of some public officials emerged clearly. The offences were perpetrated across the vast national territory and intercontinentally. A criminal organization managed this business with the active cooperation of two officials of the army, an official of the penitentiary administration, the legal advisor of a local government, the administrator of a national airport, and a pilot employed by a national commercial airline.

## **The extent to which suspect pollution offenders operate across borders**

As shown in the majority of cases analysed for this report, many OC-PC suspects operate across international borders. In addition to conducting one or more unlawful OC-PC activities in the same country in which they reside, suspects' unlawful activity will typically transcend at least one other country. In one of the cases shared with INTERPOL, a criminal group was active in 18 countries (see Case Study Four below).

Unlawful OC-PC activities of a particular suspect or group may not be limited to a global geographic region. In one third of cases shared with INTERPOL, the suspects managed intercontinental operations, across two or three regions of the world. Case Study Four below is an example of these global operations.



#### **Case Studies Four**

Two cases investigated in the Netherlands illustrate how pollution crime suspects are sometimes able to operate at the intercontinental level. In the first case, a small Pakistani criminal group based in Dubai managed Value-Added Tax (VAT) frauds with CO<sub>2</sub> emission allowances in the Netherlands. In the second case, some Dutch e-waste exporters relied on local intermediaries to illegally ship their commodities to Ghana, and then laundered the profits in Türkiye.

Moreover, Operation Rotamm, conducted by Spanish authorities, uncovered a criminal group illegally trading waste tires across 18 European, West African, Caribbean and South American countries.

### **Is this organized crime?**

Regardless of their hierarchical, centralized or horizontal structures, the suspects identified in the 27 cases analysed in this assessment met the constituent elements of the definition of organized crime set by the United Nations Convention against Transnational Organized Crime (UNTOC). Organized crime should not be regarded as a crime itself, but rather as a way of committing crimes in an organized manner. Therefore, the present assessment put the suspects into the perspective of their operating relations, rather than their belonging to a clan or syndicate.

A degree of criminal organization was apparent in each of the 27 cases shared with INTERPOL. Offences were conducted with a clear division of roles among several individuals or companies in most cases and with a (sometimes very complex) logistical chain. Such structure implies that planning, organization and concerted execution were essential. Action during a certain time frame was certainly necessary to commit these offences, and profit was quite obviously the motive.

In the present assessment, it is also observed that in most cases suspects are organized in the form of flexible groups or networks. A small number of cases involved “traditional” criminal syndicates, such as “mafia style” or “gang style” types of organized criminal group. However, the large majority of suspects identified in other cases are usually businessmen and businesswomen operating under the cover of a legitimate firm, or as a network of individual brokers.

Nineteen out of twenty-seven cases shared with INTERPOL represented transnational organized crime (TOC) due to the cross-border nature of the offence. TOC displayed a similar incidence across every region, emerging in all Latin American cases, in the majority of African and European cases, and in half of the Asia-Pacific cases.

Similarly, it is not possible to establish significant regional differences in terms of type of criminality/OC structure. In Europe and Asia-Pacific, both centralized criminal groups and chains/networks are found. The Americas provided only two cases with the same type of criminal group. Information on OC structures from Africa is missing. The sample of cases collected is too limited to understand how pollution criminality articulates in the different regions and thus establish if there are similar or different patterns. A larger sample of cases would be needed to develop this analysis.

## Organized criminal groups infiltrating the waste management sector and corporate crime across the same sector

In an attempt to explain the nature of OC-PC, the present assessment based on the 27 cases collected found the coexistence of two parallel phenomena:

- On the one hand, legitimate companies operating in the environmental compliance sector shift towards illegal business practices and commit pollution crime to increase their profits. In the cases analysed, companies were the prevalent suspects in the organizational models named “clusters of criminal groups” and the “chains of suspects” described earlier in this report. In these horizontal structures, each role corresponds to a specific expertise and business area, typically covered by different specialized companies.
- On the other hand, organized criminal groups expand and/or diversify their illicit business to infiltrate the waste management sector and other profitable markets involving environmentally sensitive commodities. Based on the 27 cases collected, groups of private individuals were the main suspects in the organizational structure named “centralized criminal groups” in previous sections. Such groups included both existing criminal organizations active in various crime areas, and new groups coming together specifically to commit an environmental offence.

These two types of criminality often coexist and blend. Running a legitimate, regulated business as a cover for illegal operations was identified during the Meeting as a common pattern in OC-PC cases, especially concerning waste crime, with regular involvement of financial frauds and document forgery and/or manipulation. This infiltration into legitimate businesses reveals a certain level of sophistication of the criminal enterprise and of professional competencies among the suspects, essential to conceal the criminal activity through the manipulation of legal records. The involvement of senior businessmen in pollution-related criminal activities was reported in several instances during the Meeting.



*Figure 8: Illegal shipment of electrical and electronic waste found in the Netherlands during Operation 30 Days of Action, coordinated by INTERPOL*

## Key *modus operandi* and criminal innovations characterizing pollution crimes

The cases under review presented both well-known *modus operandi* and some criminal innovations. Despite the variety of their applications, some key *modus operandi* recurred in most cases.

### Running a legitimate business as cover

This method enables the organized criminal activity to outwardly display all of the requirements to authorities in terms of licences and authorisations that legitimise the activities, and enables movements between legal and illegal activities. Criminal groups using this method have a good working knowledge of the business both from the legal and illegal perspective, which assists in facilitating their crime. This *modus operandi* emerged from several cases detected in Australia, the Netherlands, Slovakia, Spain, United Kingdom and Zambia.

### Frauds and corruption in the waste management sector

Most frequently, informal waste disposal involves frauds to circumvent the higher costs of licit disposal. Such frauds generate profits for both waste producers and collectors (money saving) and for waste brokers (cashing in fees for disposal services never delivered). Despite the mutual benefit, in some of the 27 cases analysed, the waste producers/collectors were not consenting accomplices of the offending brokers, but were deceived to pay a fee in exchange for waste treatment, recycling or disposal services which in fact never took place. **Document fraud** was an essential component of this environmental and economic fraud, particularly the falsification of licences and invoices to prove the alleged legal disposal, as reflected in several cases provided by Australia, Germany, Slovakia, Spain and United Kingdom.

In the cases analysed, document and financial frauds were sometimes connected to the **corruption** of public officials and disposal facility operators. Public and private sector corruption is instrumental to committing pollution offences, especially in relation to the fraudulent paperwork that is needed to conceal the illegal activity (such as disposal permits or customs declarations). In other cases, bribes were paid to local administrations in exchange for ignoring pollution offences and abstaining from enforcement action.

### Smuggling waste internationally through frauds

The illegal transboundary movements of waste and other environmentally sensitive commodities usually relies on document fraud relating to goods and/or people. In the cases of transnational trafficking collected for this assessment, goods were usually subject to false declaration in customs paperwork. In particular, they were declared either as second-hand commodities instead of waste, or as a different waste type which is allowed for export, or as a legal good. In few cases, visa fraud (falsified particulars and supporting documents in visa applications) was instrumental in allowing waste traders to travel internationally. Countries observing these dynamics include Germany, the Netherlands, Spain, United Kingdom, and Zambia.

## Taking advantage of changes in market values following the entry into force of new regulations

As in many other illicit markets, waste criminals exploit emerging business opportunities when the market value of a commodity suddenly increases or decreases as a result of a new regulation banning this commodity or its international trade; or when waste disposal or recycling facilities have reached capacity. The cases under review exposed two opposing scenarios that can be exploited by waste criminals.

- **A commodity gains value** in the market following its ban because there are not immediate substitutes available, thus its trafficking becomes profitable, as reflected in a case of illicit mercury trade provided by Germany.
- Alternatively, **a commodity's value drops** in the market when it is phased out and producers look for cheap ways to get rid of the leftover inventory. This scenario creates two illicit business opportunities: for international traders to export the phased out substance to countries where such a substance remains legal and in use (as reported by Zambia with reference to import of toxic pesticides); and for organized criminal groups to initiate a new racket (as found in Italy where non-biodegradable plastic bags were banned).

## Taking advantage of legislative gaps

Pollution crime thrives on the exploitation of legislative gaps, particularly by diverting environmentally sensitive commodities from markets where they are banned or expensive to dispose of, to markets where they are unregulated or less strict regulations exist. According to information provided by Zambia, the prosecution of a case of import of electronic waste (falsely declared as second hand goods) was lost in court in that country because the relevant national legislation did not classify end-of-life electronic equipment as waste.

## Improper sorting and mixing of waste

Concealment is consistently identified as a key smuggling method in cases of waste trafficking detected during INTERPOL operations. In some cases reported by Germany and the Netherlands for the purpose of this report, hazardous waste was concealed or mixed with clean waste at sorting facilities and then shipped abroad, making detection of the illegal activity difficult. Concealment of smuggled waste requires planning and cooperation among various suspects, and therefore it is an indicator of possible organized criminal activity.

## Involvement of financial crimes

The involvement of financial crimes is a key feature of every type of pollution crime, as indicated by the 27 cases collected for this assessment as well as by many other cases reported in the framework of INTERPOL operations and INTERPOL Pollution Crime Working Group meetings. Tax evasion is often part of the pollution offence itself, which in turn fuels money laundering as a way to divert illicit profits into legitimate businesses and properties. This widespread *modus operandi* suggests that financial investigations are a very relevant tool to detect and address pollution crimes.

### **Change of *modus operandi***

According to several national investigators who contributed to this report, including during the Meeting, pollution criminals are often professionals with an expert knowledge of their business sector. As soon as their illegal activities are detected by authorities, they often have the ability to quickly adapt and shift to another criminal activity.

### **Lawful to unlawful**

Similarly, according to the same national investigators, expert pollution offenders appear to have considerable contacts within the waste industry, enabling them to move swiftly between companies, alternating legal and illegal activities, and seizing opportunities to defraud, as shown in some cases reported by the United Kingdom.

### **Criminal converges with other crimes**

Crime convergence may occur in three ways: when a crime is committed to facilitate another crime; when a crime triggers another; or when multiple related or unrelated crimes are perpetrated by the same criminal group. All these instances are reflected in the cases analysed.

The convergence of pollution crimes with other criminal activities was found in 70 per cent of the cases reviewed for this assessment. Half of these cases involved between four and ten different crimes associated with the pollution offences. Crime convergence was prevalent in the Americas and in Asia-Pacific, significant in Europe, less significant in Africa.

Those convergent cases outlined four cross-cutting patterns. Firstly, the intersection with financial crimes was the most prevalent. More than half of the cases involved one or more types of financial crimes, particularly tax evasion as part of the offence itself, and money laundering as a “follow up offence” to divert illicit profits into legitimate businesses and properties. Extortion and fraudulent bankruptcy also emerged in some cases.

Secondly, nearly half of the cases involved fraud and document forgery, which were key components of the main pollution offence. This included a wide range of fraud types, such as cashing in fees for waste disposal services never delivered; falsification of customs declarations and waste disposal invoices; sale of falsely declared goods (such as waste sold as second-hand goods); frauds in CO2 emissions allowances; and visa frauds, to name a few.

Thirdly, corruption is the third most frequent offence associated with pollution crimes. Additional crimes that emerge with a lower incidence in connection with pollution offences include: abuse of office, intimidation and threat, illegal employment, immigration offences, insider trading, receiving and selling stolen and illegal goods, drug trafficking, illicit trade of explosives, manipulation of administrative paperwork, crimes against consumer rights, racketeering, and vehicle theft. Although the use of violence is not common, it is however noted that violence related to a pollution crime is a clear indicator of the involvement of organized crime.

Fourthly, it is worth noting that crime convergence is observed consistently across all regions, types of pollution crime, and structures of the criminal organizations involved. Most of the associated crimes are instrumental to enabling the pollution offence to take place. The implication for law enforcement

agencies is to target not only the pollution crimes themselves, but also the related offences (e.g. through financial investigations or stricter anti-fraud measures) in order to disrupt the crime completely.

## Investigators in charge of the cases

In the 27 cases collected for this assessment, Police were the main authority conducting investigations, followed by environmental agencies. At least half of the cases reached a prosecutor's office. In a few instances, customs and anti-fraud authorities led or supported investigations. In most cases, it was unclear to what extent the lead agencies coordinated with other relevant authorities in the course of investigations.

Due to information gaps in the cases provided to INTERPOL, it is not clear how most offences are first discovered. Informants, tips from the public, intelligence and detection at border crossing were mentioned in some cases, while in other cases it appears that an existing police or environmental agency investigation led to other lines of inquiry. For example, some of the cases reported by Germany were detected as a result of information gathered during prior investigations on other cases. The UK Environment Agency conducted eight separate investigations to dismantle a major organized criminal group involved in pollution offences.

The call for case studies launched by INTERPOL to conduct this assessment did not focus on the investigative techniques used to address the 27 cases, therefore limited information was collected in this regard. Still, some countries highlighted the use of covert phone tapping, database searches and financial investigations.

## Prosecution and adjudication of the cases

Information on prosecution was provided in nearly half of the cases collected for this assessment. Suspects were mostly charged and prosecuted pursuant to environmental and/or fraud-related offences. In only three cases suspects were charged with organized crime offences (in the Slovakia and Spain).

This can be explained in various ways. First, in many countries pollution crime is not a predicate offence<sup>21</sup> that can be prosecuted under organized crime laws. Second, environmental protection agencies that are responsible for investigating pollution crimes usually lack mandates to investigate organized crime and often work separately from those law enforcement agencies that deal with organized crime. Third, the low prioritization of pollution crime by policymakers and law enforcement agencies in some countries often means that pollution crimes are not listed as a "serious crime" under national legislation, and therefore seldom reach the prosecution stage.

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<sup>21</sup>All countries (State Parties of the United Nations Convention against Transnational Organized Crime) integrate a definition of "predicate offence" in their national law. Predicate Offences include *ad minima* all serious crime and a comprehensive range of offences associated with organized criminal groups, according to the United Nations Convention against Transnational Organized Crime.

Information on trials were available in seven out of the twelve cases prosecuted. Half of these seven cases were still pending judgement at the time of this assessment. Sentences were reported in three cases and involved short jail terms (up to 18 months) or a fine of nearly USD 370,000.

By comparison, these penalties are significantly lower than those customarily applied to organized crime offences. A fine of such amount corresponds to a limited share of the profits made in most of the cases reviewed in this report. Several national experts gathered in the Meeting argued that such low penalties are not commensurate to the damage caused by pollution crimes to the environment, human security, and economic development. They also agreed that such sentences are not sufficient to deter further offending, possibly generating the perception among suspects that pollution crime is a high profit but low risk crime.

During the Meeting, it was noted that detecting the involvement of organized crime in pollution crimes could raise the prosecution profile of such crimes and result into more severe penalties for the offenders. Evidence of the OC-PC nexus would also contribute to raise awareness of the seriousness of pollution crime among the law enforcement community.

## **Common challenges in tackling the OC-PC nexus**

### **Limitations of investigative powers**

In many countries, environmental enforcement agencies are the main authority responsible for investigating pollution incidents, but they lack legal mandates to investigate organized crime. They also have limited statutory power to obtain permissions to conduct phone and emails intercepts, which are sometimes necessary to investigate the relationships and transactions among OC-PC suspects. This challenge was reported by almost all of the countries' representatives in the Meeting. Inter-agency coordination among environmental agencies and police authorities responsible for enforcement of organized crime is often limited, resulting into little or non-existent investigative cooperation.

National experts participating in the Meeting further reported a few examples of cases where investigative powers were hindered by the political pressure that arose when OC-PC cases involved public corruption, high ranking executives from the private sector and powerful companies.

### **Detection challenges**

Analytical findings indicate that organized pollution crime can be often profiled as an opportunistic white collar crime: individuals and/or companies seize an opportunity for large profit by entering an illegal market, while using legitimate business structures as a cover. This overlap of legal and illegal businesses makes it difficult for investigators to identify the suspects. Furthermore, when a pollution offence is detected, it can be difficult to prove its organized crime nature, given that the individuals involved are legitimately organized in a company or other business structure.

In addition, financial transactions occurring in the framework of an OC-PC case are usually arranged virtually (especially by phone), making those transactions and the relationships among suspects hard to track without using special investigative techniques, such as phone intercepts, that in most countries are authorized only for crimes defined as "serious crimes".

### Limited prosecutions and insufficient sanctions

Most investigators contributing to this assessment reported that they had encountered difficulties in working with prosecution and judicial authorities, who often have limited awareness of the OC-PC issue and afford a low degree of prioritization to pollution crime cases. This results in few pollution crime cases being brought to justice and weak sanctions (both in terms of financial and custodial measures), often insufficient to deter the crime when compared to the high profits generated by the illegal activities. In many countries the maximum fine applicable to pollution violations would not even cover the recovery costs to rehabilitate to contaminated environment.

### International cooperation challenge

OC-PC cases are sometimes transnational, requiring international law enforcement cooperation. According to the national officers intervening in the Meeting, such cooperation has proven challenging when the distribution of responsibilities among domestic authorities is unclear, hindering the nomination of relevant points of contacts. This seems to happen frequently in pollution enforcement due to the divide between specialized environmental services and international police cooperation departments. National inter-agency cooperation is therefore a prerequisite to a successful international cooperation.

This challenge is often coupled with legal provisions that restrict the capacity to share nominal data of suspects with foreign countries.

Finally, it was reported that there is a shortage of communication among countries with regard to their respective policies and legal frameworks on pollution crimes, particularly when new import/export restrictions or bans of commodities are adopted. Over the last few years, this problem has been felt especially by law enforcement agencies responsible for tackling waste trafficking, who often lacked updated and timely information on new waste import restrictions recently adopted by several countries. These information gaps undermined the officers' capacity to take appropriate action.



*Figure 9: Inspection of an industrial site polluting the surrounding land and rivers in Bosnia and Herzegovina during Operation 30 Days at Sea 2.0, coordinated by INTERPOL*



## Investigative strategies and techniques to address organized pollution crime

The previous sections of this report laid the background for reviewing investigative methods that have been effectively used by law enforcers in several countries to dismantle organized criminal activity related to pollution offences. Pollution offenders are innovative, adaptive, organized and at times sophisticated in their methods of operation. Therefore it is essential for law enforcement agencies to develop targeted and innovative investigative strategies to dismantle organized pollution crime to shift from a reactive to a proactive approach.

During the Meeting, participating national experts compared the methods deployed by their respective agencies that have proven successful to dismantle OC-PC groups. This chapter presents an overview of those identified best practices, coupled with some investigative recommendations from the INTERPOL General Secretariat. The objective of this chapter is to support a discussion among law enforcement leaders and experts on how those investigative best practices can be further developed and tailored to the threat of organized pollution crime.

### Relevant investigative techniques and technologies

National experts who contributed to this assessment strongly voiced the need for advanced and innovative investigative techniques and technologies as an essential tool to keep up the fight against a modern and ever-evolving criminal sector, such as pollution crime. A workshop-style consultation during the Meeting resulted in this non-exhaustive list of key investigative techniques and technologies that countries should consider adopting and/or developing as part of pollution enforcement efforts.

#### Techniques:

Aimed at gathering intelligence and identifying risk indicators:

- Surveillance activities that are both static and mobile;
- Pollution survey sources;
- Compliance monitoring reports from other agencies as a guide to indicate risk;
- Customs inspection documents as a guide to indicate risk;
- Monitoring of companies via social media and other open sources;
- Analysis of shipping manifests for targeted inspections;
- Port data for shipping and port targets.

Aimed at investigating a targeted group:

- Undercover operatives, where legislation allows;
- Controlled deliveries, where legislation allows;
- Scrutiny of all documentation related to transport of commodities, such as way bills;
- Environment Management Plans;
- Quality sampling and forensic analysis techniques.

### **Technologies:**

Diverse remote sensing technologies were identified to increase monitoring of targeted areas, shipments, companies or individuals. They can be instrumental to achieving different and multiple goals: conducting continuous surveillance of a sensitive target, recording volumes or traffic, or identifying specific contaminants. Their use is particularly important when targets are surveillance-conscious and practise anti-surveillance techniques. They include, among other technologies (most of which are subject to legal requirements):

- Tracking devices, such as Global Positioning System (GPS) tracking of vehicles, or Automated Information System (AIS) tracking of ships;
- Satellite imagery for both maritime and land application;
- Drone surveillance;
- Cameras;
- Data Dot Technology, which can be used to track a commodity from point A to point B<sup>22</sup>;
- Telephone intercept and/or call charge records;
- Hand-held hazardous material detectors.

## **Prevention**

### **Workshops**

The prevention phase is paramount to raise awareness among law enforcement agencies and other official stakeholders on how *modus operandi* have evolved in the field of pollution crime. Workshops can help agencies with investigative powers to learn current trends and adapt to changing threat landscapes, in order to conduct targeted controls and investigations. Workshops may be facilitated by INTERPOL in the framework of a cooperative approach among INTERPOL, national enforcement agencies, key international organizations and NGOs with relevant expertise.

### **Preventive inspections and compliance promotion**

In the past, inspections driven by environmental laws have not been common outside operations specifically focused on environmental controls (with the exception of MARPOL<sup>23</sup> inspections which are regularly part of Port State Control inspections). However, recent approaches to the protection of the environment have led to more and more activities being scrutineered from an environmental perspective. Although it is not originally their intention to infringe the environmental laws, some offenders are not sufficiently aware of those laws and therefore of their non-compliance. In this regard, making environmental law enforcement clearly visible might be helpful to deter small-scale offences and reduce the number of illegal operators in the medium term. This would also allow investigators to focus on targets that deliberately infringe environmental laws.

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<sup>22</sup> Data Dot Technology consists of small markers sprayed onto large portions of material and registered in a database with unique number. This allows to track and identify a commodity that does not have other unique identifiers, such as waste. Tracking waste is particularly handy when officers have a suspect collection site and a suspect dump site, and need to prove that it is the same waste being transported from one site to the other.

<sup>23</sup> International Convention for the Prevention of Pollution from Ships.

## Intensive scrutiny to disrupt

As part of this assessment, INTERPOL identified a case of marine pollution crime that was clearly deliberate and organized. The responsible shipping company was identified as well. This led to the question: is the identified crime much wider, spreading throughout this particular company? To answer this question, a proactive investigative method may be the continued and intrusive monitoring of ships attached to that particular company whilst in port, through Port State Control inspections. The ship owner and/or captain shall be informed by the investigating authorities that the monitoring activities include environmental compliance checks. This pressure may change the company's illicit behaviour and halt the incidence of marine pollution originating from this company. When it comes to pollution crime, prevention is a key option: preventive activities should not be discarded by law enforcement when there is not enough evidence to start a criminal case yet.

## Intelligence gathering

### Intelligence gathering tools

The intelligence gathering process is an essential tool for law enforcement officials to deal with uncertainty. It provides timely warning of threats and support operational activities and complex investigations. Intelligence can be gathered from numerous sources including but not limited to informants (criminals, private sector stakeholders, insiders, whistle blowers), community sources, open source websites and databases, national and international databases (such as INTERPOL's criminal databases), relevant international organizations, and NGOs experts operating in the field. Law enforcement agencies who have the mandate and capacity to use special investigative techniques, may also deploy undercover agents to collect intelligence.

### Use of informants or community sources

A proven method of obtaining information is the cultivation of informants or community sources. Human intelligence sources may include individuals that were recently arrested and face prosecution, disgruntled ex-employees, low end members of a criminal organization, or competing companies (illegal activity gaining a commercial advantage over legal activity will often result in valuable information from legal operators). Informants from various groups often provide key information to launch or support major investigations:

- **Criminal informants** are or were previously associated with a criminal group. Some of these informants are suspects or convicted criminals who cooperate with law enforcement in exchange for a reduced charge, sentence, or deferral from prosecution, depending on the judicial system. Other criminal informants turn to the authorities in retaliation against the criminal group they were working for, when fired from the criminal group or when financial compensation for their role in the group has become insufficient. Cases analysed in the present assessment showed that criminal informants are usually involved at the lowest point of the criminal chain of command.

- **Private sector informants and whistle-blowers** are typically employees that notice an illegal activity taking place in their company and decide to report it. Such employees are often at a low point of the chain of command as well. Private sector informants may also include legitimate companies suffering from the unfair competition of a company carrying out illegal operations. Several inspectors recommended interviewing compliant companies as an efficient source of information, as those informants have a good knowledge of the market in which pollution criminals operate and have a keen interest in cooperating with law enforcement agencies.
- **Members of the public** can be informants when they report illegal activities to authorities. The extent to which investigators can use information provided by members of the public depends on national legal frameworks, which vary in defining the possibility to ensure whistle-blowers' anonymity and compensations.

## Trust

The development of a trustworthy network of law enforcement agents and other sources on the ground is an essential component of the intelligence gathering process.

## Task forces

Pollution crimes are usually complex and cannot be easily tackled from the perspective of one single environmental investigative discipline. Police, customs, environmental and maritime authorities, and other competent authorities can all play a key role in the identification and investigation of pollution crimes thanks to their complimentary mandates and competencies.

## Joint analytical teams and databases

All investigators attending the Meeting agreed that continuous intelligence analysis is a key to investigate and disrupt OC-PC cases, particularly financial intelligence analysis. Analysts may also draw on the wide range of information contained in invoices, customs declarations, bills of lading and record books in order to develop the intelligence picture of the *modus operandi* of the criminal enterprise.

The quality and accuracy of intelligence analysis can be enhanced through two measures in particular. On the one hand, establishing joint teams composed of analysts from different relevant national agencies, who might take analysis to a higher level than agencies working in silos. On the other hand, developing centralized pollution crime data bases to support intelligence sharing amongst law enforcement stakeholders.

## Enforcement

### Multi-disciplinary approach

A comprehensive pollution crime investigation may require diverse areas of expertise, such as environmental, financial and organized crime investigations, specialist crime scene examination and forensic analysis.

A multiagency approach can be an effective enforcement strategy to target organized pollution crime. This approach is essential to combine competencies, mandates and statutory powers in order to conduct complex investigations, addressing also crime convergence of pollution crime with fraud, corruption, tax evasion and other financial crimes.

### Task forces

Coordinated enforcement actions from as many competent national agencies as possible (under the correct form of command according to the national laws), are often an asset to investigate pollution crimes effectively. Multi-agency teams might comprise financial investigators, environmental protection officers, police, local councils (planning branches), roads and traffic authorities (heavy vehicle inspections), surveillance teams, customs officers (border inspections), intelligence analysts (to profile network, premises, phone records) and prosecutors – the list can be extensive and far reaching.

The practice of establishing multi-agency task forces has been successfully implemented in a few countries including Australia, where a Waste Crime Task Force was created and became a key success factor in Australia's pollution enforcement. According to some Task Force members, grouping agencies under the same team created common work methods, facilitated communication, and brought trust and credibility.

The establishment of such a task force has different requirements, the first one being a sufficient political interest to invest strategically in waste enforcement. Second, a Memorandum of Understanding between agencies is a best practice to ensure the functioning of such multi-agency teams. Effective inter-agency collaboration also requires skilled leadership with a clear target, facilitating the sharing of intelligence at a central point.

To fulfil its purpose, a multi-agency investigative Task Force should comprise individuals holding diverse and specific skill sets, who can target specific *modus operandi* of the crime group. Each member of that team has the knowledge and skills to remove single spokes in the organized crime wheel, until the wheel collapses. Where possible, Task Forces should be flexible and adaptive to respond to a particular identified crime, and their composition tailor made for the *modus operandi* identified.

The same model can be implemented at the international level in the case of transnational crime.

## Controlled deliveries

The use of controlled deliveries during waste trafficking investigations is challenging in many countries due to both legislative gaps and practical obstacles. Nevertheless, controlled deliveries have proven effective to monitor environmental crimes and uncover criminal networks behind those crimes. Countries whose national legislation and policies allows for the use of controlled deliveries should consider deploying this technique in suitable pollution crime investigations, particularly for cases involving the transport of environmentally sensitive commodities.

## Involvement of prosecution authorities at an early stage of the investigation

National experts contributing to this assessment consistently emphasized the need to enhance specialized knowledge of pollution crime within the judiciary (prosecutors, judges). It is noted that judicial authorities may attribute higher interest and priority to pollution crime cases if gaining greater awareness of the consequences of pollution crimes on human and environmental security, and of the ability of pollution crime to finance other criminal activities. The involvement of prosecutors from the opening of the investigation, in line with national laws, is considered essential for several reasons:

- This approach helps the prosecutor understand the seriousness of the case, which may result in the authorization to deploy **special investigative techniques** that are subject to judicial approval and supervision, such as informant handling, undercover operations, wiretapping, observation, enhanced surveillance (email, social networks, GPS). It may also result in the **criminal prosecution** of the offence. Prosecutors may get more engaged when inspectors highlight corruption and frauds as part of the pollution case, and they may give the case higher priority.
- Prosecutors may advocate to the Court for the **confiscation of assets to halt the cash flow** sustaining the criminal organization, as well as for bail conditions or compliance actions. These measures would hamper the ability of the criminal group to continue operations and may be more impactful than fines in deterring criminal activities in the long term.
- Finally, the result of the trial is often the only information about the case that is made public, revealing names of convicted individuals and companies. In the context of legal entities being involved, this **public divulgation** process puts significant pressure on suspects and is a powerful **deterrent**, as reported by several investigators.

## International cooperation

International cooperation is essential to effectively investigate and prosecute transnational OC-PC cases, as well as to exchange information and intelligence on identified risks such as *modus operandi* used by OC-PC groups across different countries. International cooperation also plays a key role in the field of training and capacity building.

INTERPOL's I-24/7 system may be used as a secured platform to share criminal intelligence globally. Similarly, Europol's SIENA system is available at the European level and the WCO's CENcomm serves the customs' community. INTERPOL Notices and Diffusions are additional instruments to circulate critical information on the crime and the alleged perpetrators internationally (the list of INTERPOL Notices and Diffusions is available in Appendix 4: INTERPOL Notices and Diffusions).

## **INTERPOL Investigative Support**

INTERPOL supports its member countries during complex investigations, upon countries' request, by deploying specialized staff and/or by facilitating information exchange and cooperation among relevant agencies both domestically and internationally.

INTERPOL's National Environmental Security Seminars (NESS) approach is a good example of how to bring all relevant national stakeholders together to address complex crimes through the integration of different skillsets and areas of expertise. Furthermore, Investigative Support Team (ISTs) deployed by INTERPOL and Regional Investigative and Analytical Case Meetings (RIACM) facilitated by INTERPOL can support national authorities in advancing their investigations and/or better connecting with foreign authorities in the course of an investigation.

### **NATIONAL ENVIRONMENTAL SECURITY SEMINARS (NESS)**

A National Environmental Security Seminar brings together national experts and decision makers responsible for environmental compliance and enforcement to forge a multiagency cooperative and coordinated approach to combating environmental crime.

The objectives of INTERPOL-facilitated NESS are to:

- Connect national enforcement and regulatory agencies responsible for environmental compliance and enforcement;
- Develop synergies in the management of environmental information at the national level;
- Collate information through an intelligence-led approach, including using INTERPOL resources;
- Support a multidisciplinary approach towards environmental security;
- Reinforce connections to the INTERPOL network through a task force including the National Central Bureau (NCB); and
- Generate interest in cooperation and structural support from partners.

### **INVESTIGATIVE SUPPORT TEAM (IST)**

At the request of a member country, a team of specialized law enforcement experts can be deployed by INTERPOL to support local law enforcement authorities in their investigations. Available expertise includes inspection procedures support, digital forensics, language and technical support in interviewing suspects, database queries, follow-up criminal intelligence analysis, identification of transnational crime components and advice on how to issue INTERPOL Notices.

### **REGIONAL INVESTIGATIVE AND ANALYTICAL CASE MEETING (RIACM)**

RIACMs bring together investigators from several countries to review case files and share intelligence and analysis to further their investigations, with INTERPOL coordination and facilitation. These meetings help identify criminal network connections or their company structures, and lead to opportunities for further exchange of police information and evidence under international crime cooperation procedures. RIACMs can be arranged at the request of member countries or put forward by INTERPOL and can be supported by INTERPOL law enforcement officers with expertise in relevant crime areas as needed.

## Assets recovery units

Once investigations are concluded, it is often worth involving asset recovery units to freeze and recover assets illegally obtained through pollution crimes. Companies involved in pollution crimes usually have significant economic resources: from a government's perspective, investing in disguising which ones come from criminal activities and which do not might mean millions of dollars in return to the public administration through fines, taxes or administrative penalties.

## Strategy

### Specialized units trained in environmental and financial investigation

Specialized units need to be regularly trained on up-to-date environmental investigations techniques, in order to keep track of this fast-evolving, non-traditional illegal market as well as of the constant reform of environmental legislations.

In addition, financial investigations are crucial to address OC-PC cases, to follow the money flow that underpins every OC-PC network. Therefore it is important to integrate financial investigations in the framework of pollution crime investigations. This can be achieved either by training environmental officers in financial investigations, or by setting up multidisciplinary, inter-agency task forces. Spanish authorities have undertaken to train all environmental enforcement officers in financial crime, to increase the detection and disruption of OC-PC groups, but also to raise the prosecution profile of the offence and allow for more appropriate counter-measures including the confiscation of assets to halt cash flows.

### Integrated waste management systems (IMS)<sup>24</sup>

Waste managed outside the official reporting systems poses the biggest challenge for law enforcement. Since most IMS are designed as non-profit systems, managers of IMS with a vision focused on business might think that it is easier to improve the year accounting balance by underspending in real recycling processes. If appropriate controls are not put in place by environmental authorities or manufacturers integrated in the IMS, money provided by manufacturers or their clients (or by Governments via subsidies) might end up in private bank accounts instead of in measures to reduce the impact of waste on the environment. To avoid this risk, member countries should invest in developing more accurate and comprehensive national integrated management systems for waste. Partnerships between law enforcement agencies, regulatory authorities and private sector entities may be highly beneficial in this regard.

### International working groups

International working groups initiated by INTERPOL are strategic initiatives aimed to jointly study specific crime areas, circulate knowledge and good practices, and explore effective ways to tackle such transnational crimes. INTERPOL working groups are open to the participation of law enforcement

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<sup>24</sup> Integrated Solid Waste Management is a system based on the 3R principle "reduce, reuse and recycle", which aims to manage waste in a way that prevents and minimize the pollution impact of such waste management.



agencies globally. Some working groups' meetings and activities involve also regional and international organizations, non-governmental organizations, academic and private sector stakeholders. For instance, the INTERPOL Pollution Crime Working Group has been bringing together national pollution enforcement experts to identify criminal trends and operational priorities for over 25 years.

## Information and Intelligence gaps

Evidence of the involvement of organized criminal groups in pollution offences remains fragmented at the global scale. This may be due to the different ways in which pollution crime articulates in different regions, but it may also reflect different perceptions and legislative definitions of organized crime across countries. It could also be due to law enforcement capacity gaps and the lack of data collection and analysis in some contexts. Information and intelligence gaps are almost certainly also the consequence of some strategic level decisions: the often low prioritization afforded to pollution crime investigations along with the limited interagency cooperation among agencies mandated and trained on environmental investigations on the one hand, and those responsible for organized crime investigations on the other.

As a result of these factors, most information on the OC-PC nexus available to date concerns waste crimes investigated in European countries. The shortage of detailed information from Africa, the Americas, Asia-Pacific and the Middle East continues to prove challenging for any research into the OC-PC nexus. Due to discrepancies in the level of information and intelligence available across different regions of the world, at this stage it was not possible to determine if specific regional OC-PC patterns exist, and therefore tailored regional strategies could not be drawn.

Moreover, types of pollution crimes other than waste trafficking remain relatively under-investigated from an organized crime perspective, although the recent INTERPOL-coordinated series of Operations 30 Days at Sea have fostered increased OC investigations of marine pollution offences as well.

Some additional limitations impacted the accuracy of the present analysis. This report was based on the comparative analysis of 27 pollution crime cases provided by eleven member countries. Such a sample cannot be regarded as representative of the overall global situation. Seventy per cent of cases were provided by European countries which may reflect a specific regional context over a global pattern. Moreover, there were gaps in information and inconsistencies in the level of details provided for each case, which does not allow for a full comparative analysis of all the aspects addressed in this report.

Still, the cases offer enough information to establish that these pollution crimes and their suspect perpetrators are organized through a variety of structures. Some patterns of *modus operandi* emerge clearly and are consistent across regions. Despite the limited sample size, findings are coherent and conclusive, and were validated by a geographically representative group of experts.

In order to fill the abovementioned information and intelligence gaps, it is recommended to design future data collection strategies focusing on those specific regional contexts where data on the OC-PC nexus are lacking, possibly combining stakeholders mapping and open source intelligence collection with official police data sharing.

## Conclusions

Organized criminal groups are almost certainly involved in pollution crime and this probably represents a global threat facing many, if not most, INTERPOL member countries. Although not all cases of pollution crime are committed by organized criminal groups, the involvement of such groups has been established in numerous cases across different countries in almost all regions of the world. The OC-PC nexus manifests itself in different organizational structures and chains of command, involving either private individuals or companies. The size of the criminal groups can vary considerably and their illicit operations range from local activities to large-scale intercontinental trafficking. Despite organizational variants, similar patterns of *modus operandi* and divisions of roles among the suspects were found across different pollution crime types and regions of the world.

Pollution offenders are innovative, adaptive and at times sophisticated in their methods of operation. In most cases analysed, suspects are organized in the form of flexible groups or networks, with the ability to infiltrate several different industries and markets where environmentally sensitive commodities are involved. By often running a legitimate business as a cover, those criminal groups and networks move swiftly between legal and illegal activities. They also expand and diversify their illegal activities taking advantage of legislative gaps and changes in market value following new policies.

The most common *modus operandi* identified in cases of pollution crime, particularly when committed by organized criminal groups, is the use of various types of frauds and financial crimes as a core component or facilitator of the pollution offence. Document fraud, tax evasion and money laundering are common components of pollution crimes. Corruption is sometimes found as well. These financial flows are significant as pollution crime often involves multi-million dollar businesses. Identifying the specific pollution crime types where most financial flows concentrate may better guide law enforcement agencies in strategically deploy the use of financial investigations to tackle the proceeds of crime, and therefore identify the suspects.

Despite significant data gaps on the OC-PC nexus in several regions of the world, the available information and intelligence deliver coherent and conclusive findings on the existence of such nexus. In particular, findings point to the coexistence of two parallel phenomena: on the one hand, legitimate companies operating in the environmental compliance sector shift towards illegal business practices and commit pollution crime to increase their profits. On the other hand, organized criminal groups expand and/or diversify their illicit business to infiltrate the waste management sector and other profitable markets involving environmentally sensitive commodities.

If not already, law enforcement authorities in INTERPOL member countries should prioritise investigation of pollution offences. Pollution crime often transcends national borders. It threatens legitimate businesses, security and the rule of law through regular convergence with other serious crimes, infiltration in public administrations and the sophisticated professional expertise displayed by many waste criminals. The global challenge of the OC-PC nexus represents an urgent call for increased law enforcement action at the national level and INTERPOL-facilitated international cooperation and capacity building.

## Strategic recommendations

As a result of analysis, it is recommended that national agencies competent for the enforcement of pollution crimes implement strategies and investigative approaches specific to the issue.

Firstly, attribute greater attention to investigations of pollution crime, recognizing the seriousness of such crimes and their significant impacts on the environment, economies, human health and the rule of law. Raising the level of priority of pollution crimes in law enforcement agendas will facilitate a shift from a reactive to a proactive approach in investigating such crimes. This leads to achieving improved results in disrupting criminal activities and the criminal groups behind them.

Secondly, it is essential to integrate tools and techniques of organized crime and financial investigations into environmental crime investigations. This may be achieved either through multi-disciplinary training of investigators, or by establishing permanent multi-agencies task forces where the combination of different specialized skillsets contributes to effective investigations.

Thirdly, national enforcement agencies should consider undertaking systematic and accurate data collection and analysis on the companies and criminal networks charged with pollution crimes. The availability of relevant data is the basis of an intelligence-led approach, which provides efficient tactical solutions through the identification of high-value targets and the consequent deployment of the most suitable forces and techniques.

In this regard, it is particularly relevant to conduct network analysis of entities suspected to be involved in pollution crimes. Law enforcement agencies may bear in mind that pollution crimes often represent an illegal activity within a regulated business industry. Therefore, particular attention must be given to determine the exact role and responsibilities of each actor, with the help of specialized intelligence analysis, in order to uncover organized criminal networks.

In order to operationalise the three recommendations outlined above, managers of national law enforcement agencies may consider implementing a comprehensive approach to pollution crime enforcement, comprising of the following prevention, intelligence gathering, enforcement and strategic pillars.

Prevention:

- Prevention of pollution crimes involves raising awareness among law enforcement agencies on the evolving *modus operandi* of pollution crime.
- Furthermore it involves deterring offences through preventive searches and intensive scrutiny of suspect companies and hotspots, while also informing regulated entities of their legal obligations to avoid non-compliance by ignorance.

Intelligence gathering:

- Intelligence gathering is instrumental to executing intelligence-led enforcement actions. At this end, officers should focus efforts on the development of a trustful network of sources on the ground.
- Once intelligence is collected, multiagency analytical teams are useful in translating data into effective intelligence-led policing.
- Financial intelligence is particularly relevant to OC-PC cases and it should be given particular attention in this process.

#### Enforcement:

- To promote effective enforcement, relevant agencies should take steps to establish multi-agency and multi-disciplinary task forces. Partnerships between law enforcement agencies and regulatory authorities are particularly important in the field of pollution crime enforcement.
- Law enforcement leaders should invest in continuous specialized training in both environmental and financial investigations for frontline officers.
- Specialized investigative tools and techniques, such as controlled deliveries, surveillance technologies and databases of companies, should be explored where relevant and possible.
- Investigators should bear in mind the importance of involving prosecutors from the early stage of an investigation and engage assets recovery units once the investigation is concluded, in line with national laws.
- Channels of international cooperation, particularly through INTERPOL policing capabilities, should be pursued as much as possible when addressing transnational crimes.
- Finally, national agencies may consider involving INTERPOL throughout the investigative cycle of transnational cases.

## Appendices

### Appendix 1: Snapshots of the cases analysed

Case # Country	Snapshot
Case 1 Netherlands	<b>Fraud.</b> An organized criminal group (OCG) set up a company to manage a fraud consisting of issuing false invoices of the transactions between the purchase of CO2 emission allowances on a stock exchange and the sale of the same (VAT fraud). The local companies purchasing the allowances were convinced of the legitimate nature of the (OC) company.
Case 2 Netherlands	<b>Waste trafficking.</b> Four men collected e-waste from retailers in the Netherlands and coordinated with local intermediaries who shipped the e-waste to Ghana. The proceeds of crime were laundered through real estate investments in Türkiye.
Case 3 Netherlands	<b>Waste trafficking.</b> Companies from several European Union countries transported waste to an exporter the Netherlands. The unsorted waste was concealed in containers and shipped to East Asian countries by the Dutch exporter with the cooperation of a broker who made arrangements for the delivery. Exports were sometimes legal and sometimes illegal, missing the necessary prior informed consent documentation.
Case 4 Slovakia	<b>Waste trafficking + waste management/dumping.</b> Individuals from a Roma community based in Slovakia bought and imported near-end-of-life vehicles from Austria. The vehicles were then disassembled by non-authorized personnel in improper conditions in the yards of houses where the suspects lived. Metal and sellable parts were sold to official scrapyards; liquids were released into the environment; rubber and plastic parts were burned in open space. Investigations established the highly organized and well profitable nature of the business, conducted through a clear division of roles among members of the group.
Case 5 Slovakia	<b>Waste management/dumping.</b> An organized group of seven individuals with family bonds operated three landfills without valid permits and disposed of various types of waste in disregard to national waste legislation. This organized group had a very clear division of roles among members encompassing all the stages of the offence, and they were charged with unauthorized waste management, establishment of a criminal group, and money laundering.

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<p><b>Case 6</b> <b>Spain</b></p>	<p><b>Waste management/dumping.</b> Operation Rubbish: a consortium of six companies charged a fee to other companies and individuals for the disposal of mixed waste. However, rather than disposing of the waste in an environmentally sound manner, the waste was illegally dumped in a natural park. The use of the public area as a dump site was approved by the local municipality without any documentation. The local municipality did not take any step to tackle the illegal dumping. The consortium was committing fraud and document falsification at the same time, by charging other companies a fee stating that the waste was legally disposed of (fraud) and issuing false certificates of proper waste treatment (document falsification).</p>
<p><b>Case 7</b> <b>Spain</b></p>	<p><b>Waste management/dumping.</b> Operation Regumato: A waste management facility received hazardous waste without treating it properly. Still, certificates of proper treatment were issued and a fee was charged, generating a financial gain at no cost. The business was managed by Company K (managing the disposal facilities) in cooperation with a group of companies called Group L (providing personnel, materials, transportation, and having close relations with a local politician in charge of environmental matters). Company K lacked licence to run the facility and to treat hazardous waste. The Municipality tolerated the illicit business. Another local politician who ordered site inspections was opposed by the mayor and threatened by a gang.</p>
<p><b>Case 8</b> <b>United Kingdom</b></p>	<p><b>Waste trafficking.</b> Operation Jensen: An OCG set up a number of publically registered waste companies who were carriers of waste licences. However, the waste was never taken to facilities and instead illegally dumped. Documentation was forged (stating that waste was allegedly disposed of legitimately) and funds were transferred to the OCG members through various bank accounts (money laundering). Later the OCG started to broker municipal waste in the United Kingdom and transport it to Poland falsely labelled as bioplastics (plastics derived from non-petroleum sources, such as corn starch) for recycling (waste producers were deceived). The OCG later went on to change its primary business from waste to energy based cryptocurrencies.</p>
<p><b>Case 9</b> <b>United Kingdom</b></p>	<p><b>Waste trafficking.</b> An OCG, cooperating with other OCGs and facilitators in/from various countries, illegally exported and dumped municipal waste from the United Kingdom to Poland falsely labelled as “green plastic” for recycling. Waste producers were deceived to pay a fee for waste management services, being told that waste was legally disposed of in legitimate UK-based sites, with false permit documentation being presented. Brokering often took place in Internet forums. This illegal practice resulted in an estimated 30-40 illegal waste fires in Poland.</p>
<p><b>Case 10</b> <b>United Kingdom</b></p>	<p><b>Waste trafficking + waste management/dumping + fraud.</b> An OCG took control of several waste companies to commit various waste crimes (waste dumping in England and illegal waste export to Poland and Belgium) and seized opportunities to defraud wherever possible (tax evasion, bankruptcy) through these companies.</p>
<p><b>Case 11</b> <b>Germany</b></p>	<p><b>Fraud.</b> Investigators uncovered systematic corruption in connection with community waste incineration plants, which resulted in an increase in waste disposal charges. Certain companies established an extensive network involving political decision-makers. One of these companies used fictitious invoices to channel USD 8.9 million to a Swiss subsidiary to be used for paying bribes to politicians (through trustees located in tax havens abroad) in return for being given preferential treatment when contracts for waste disposal were granted,</p>

	and for receiving confidential information such as evaluation of the bids and price quotations of competitors (through middlemen lobbyists).
<b>Case 12</b> <b>Germany</b>	<b>Waste trafficking + waste management/dumping.</b> This case involved aggravated fraud and serious waste crime. The fraud and financial benefits arose from the receipt of payments for legitimate mercury waste stabilization and disposal, without the provision of such disposal services and with the falsification of the operating diaries of the facilities. Instead, mercury was illegally exported abroad taking advantage of the sharp increase in value following the 2011 European Union mercury prohibition regulation. Sales channels existed via companies in multiple European and Asian countries, and payments occurred in a disguised manner via intermediary companies for the purpose of concealment. Authorities established the case was organized economic, environmental and tax crime.
<b>Case 13</b> <b>Germany</b>	<b>Waste trafficking + waste management/dumping.</b> Under the guise of waste recycling, the perpetrators illegally dumped shredded household and commercial waste containing organic and hazardous substances in a surface mining site and closed dumps meant for re-cultivation. The waste supply chain was organized through accomplices in the waste management industry. Waste originated from Germany and other European states, so waste trafficking was involved. At the site, the suspects were formally operating as a contractor for re-cultivation measures. Permits to use the mining site were obtained through bribery with funds amounting to USD 256.000. This was the biggest waste crime scene in Germany to date, and the case was classified as organized environmental, economic and corruption crime.
<b>Case 14</b> <b>Germany</b>	<b>Waste trafficking.</b> Investigators uncovered a regional and international crime group involved in trafficking waste contaminated fertilizers. Traditional fertilizer was improperly mixed with industrial waste and sold as fertilizers in the agricultural sector through false declaration.
<b>Case 15</b> <b>Germany</b>	<b>Waste trafficking.</b> Operation Enigma III uncovered 14 cases of e-waste trafficking from Germany to West Africa countries. One of the German companies would systematically arrange for foreign buyers to visit Germany. Some African export traders leased spaces on the German company's premises and consigned their own containers for illegal shipments to Africa via Antwerp and Rotterdam ports. The German owner facilitated the entry of African associates by applying for visas at German Embassies around 500 times. On several occasions applicants' particulars and hotel booking were falsified. The African business partners did not have any waste management or other relevant technical credentials, nor could be considered accredited business professionals.



<p><b>Case 16</b> <b>Zambia</b></p>	<p><b>Waste trafficking + waste management/dumping.</b> A group of “businessmen” imported 100,000 tons of almost end of life pesticides from Europe into Zambia. The chemicals had been phased out in European markets for efficacy reasons but were still legal in the Zambian market. The goal was to dispose of those toxic pesticides outside Europe for material benefit. The pesticides expired eight months after their import into Zambia, the chemical distribution company closed and foreign directors disappeared. Whilst in exile, the foreign directors organized the use of such expired pesticides (categorized as hazardous waste) by a local farmer in Zambia as a way of disposal. The farmer was charged in court.</p>
<p><b>Case 17</b> <b>Zambia</b></p>	<p><b>Waste trafficking.</b> An internationally known company imported 18 containers loaded with near end-of-life electronic equipment into Zambia from developed countries. The equipment had been fraudulently declared as ‘transit goods’ destined for the Democratic Republic of Congo but were in fact destined for Zambia. The shipment was intended to be sold for second-hand use and as such was not declared as waste, but shortly after the import the shipment was dumped e-waste as Zambia has no recycling or disposal facilities for this type of waste. The company claimed not to know about the containers’ real content. Two consignees and a local Indian businessman were arrested and charged with offences including false declaration, fraud, illegal import of hazardous waste, and tax evasion. The case was lost in court because the equipment did not qualify as waste being intended for reuse. In fact, end-of-life electronic equipment are not considered as waste under local legislation.</p>
<p><b>Case 18</b> <b>Zambia</b></p>	<p><b>Waste trafficking.</b> The case involved the illegal import of ten tankers carrying 340,000 litres of used oil from the Democratic Republic of Congo into Zambia, without following the international guidelines on transboundary movement of hazardous waste, thus resulting into illegal import. Investigations established that this highly organized illicit trade aimed at diluting diesel with such used oil, hence putting poor quality diesel fuel on the market for sale.</p>
<p><b>Case 19</b> <b>Malawi</b></p>	<p><b>Waste management/dumping.</b> A sun seed oil company was convicted of illegally discharging its pollutants into the maize fields of a nearby village and into a river which became inhabitable due to contamination.</p>
<p><b>Case 20</b> <b>Anonymous country</b></p>	<p><b>Illegal mining.</b> An OCG specialized in the illegal extraction of gold in remote protected areas and subsequent export of gold to European countries and the United States. The illegally extracted gold was first smuggled to major cities within the country through three concealment methods: by hiding it in parcels; via human couriers/mules (citizens contracted to ingest the material or hide it in their luggage by land or air transportation); via commercial pilots (not subject to scans at airports) who transported the gold to its final destination. Once delivered to intermediaries in the cities, the illegal gold was purchased by armed and OC groups, who previously accumulated capital through international drug trafficking. These groups then sold the gold to small retailers for additional profit. Small</p>

	<p>retailers sold the gold to larger marketers who produced fraudulent documents to make the gold appear legal for the purpose of international trade. The gold was then smuggled to Europe and the United States as an allegedly legal trade.</p> <p>The environmental offence (illegal exploitation of mining sites and contamination of soil, water, landscape, flora, fauna, and human bodies, including permanent mercury and cyanide contamination in rivers and local population) was committed in connection with bribery, fraud, insider trading, receiving stolen goods, drug trafficking, illicit trade of explosives, money laundering, extortion, armed violence, and document falsification and manipulation of administrative paperwork.</p>
<p><b>Case 21</b> <b>Anonymous country</b></p>	<p><b>Illegal mining.</b> A criminal organization specialized in international trafficking in illegal gold through a network of accomplices in service stations, hotels and retailers, and generated millions in profit. The gold illegally extracted from rural mining sites was transported to one of the main national cities to “legalize” it with fraudulent documents and trade it to the United States. The trade was coupled with fiscal fraud, taking advantage of national laws providing for returning taxes to exporters. The environmental offence (illegal exploitation of mining sites and contamination of the environment) was committed in connection with fraud, tax evasion, money laundering, and receiving stolen goods.</p>
<p><b>Case 22</b> <b>Australia</b></p>	<p><b>Waste management/dumping.</b> A construction company Z subcontracted company Y to transport approximately 134 trucks loaded with 1,400 tons of asbestos-contaminated waste from a building site to a licenced landfill. The suspect (a waste broker from company Y) arranged for various transport companies to remove the waste from the premises. He also claimed that his company Y had an account with a specific licenced landfill for payments. Therefore, he provided company Z with a contact within the administration of such landfill in order for company Z to pay directly for the disposal. Invoices totalling USD 174,198.37 for the disposal of asbestos waste were produced for payment. These invoices were later found to have been fraudulently produced and the waste to have been unlawfully disposed of on a rural property. The investigation is ongoing with several lines of inquiry relating to fraud and waste crime.</p>
<p><b>Case 23</b> <b>Spain</b></p>	<p><b>Waste trafficking.</b> Operation Rotamm: a company managed an illicit trade in used car tires, more precisely through two companies, one for Spain and one for foreign countries. Waste tires were imported into Spain from various European countries, without declaring them and thus avoiding the payment of the eco-tax. Waste tires were improperly stored in dangerous conditions and were not subject to any proper treatment for waste and second hand tires. Then, the company illegally exported the used tires to several European, African, Caribbean and Latin American countries to be sold as second hand tires, while in fact they were waste. The profits were laundered through real estate, vehicles, jewellery, artefacts and virtual currencies.</p>
<p><b>Case 24</b> <b>Italy</b></p>	<p><b>Waste management/dumping.</b> Municipal authorities seized an illegal landfill used to collect and dismantle stolen vehicles (previously used for waste collection and transportation) and to forge vehicles documents.</p>

<p><b>Case 25</b> <b>Italy</b></p>	<p><b>Waste management/dumping.</b> Municipal authorities seized an illegal landfill corresponding to a cave with a capacity of more than one million cubic metres, located in a hospital area. The cave was filled with mixed hazardous waste, including asbestos-contaminated construction waste.</p>
<p><b>Case 26</b> <b>Italy</b></p>	<p><b>Racket.</b> The investigation uncovered an OCG managing a racket involving non-biodegradable plastic shopping bags (which are illegal under national legislation). The OCG was imposing the purchase of such illegal shoppers to retailers and street vendors through intimidation.</p>
<p><b>Case 27</b> <b>Timor-Leste</b></p>	<p><b>Waste management/dumping.</b> Two cargo ships sailing regularly through Timor-Leste waters to deliver goods to Dili Port, were identified as unlawfully disposing of on-board waste materials in Timor-Leste and Indonesian waters, as opposed to using a legitimate waste reception facility at a port. The illicit disposal occurs through intermediaries: the cargo ships use mobile phones to call small local fishing boats to approach. The cargo ship then offloads waste materials to the smaller fishing boat. A fee is paid in cash to the fishermen to take the waste. Based on the size of the cargo ship and the size of the small fishing vessel, it is likely that hoisting equipment would have to be used to lower materials, and the ship would have to be stationary. This, coupled with the fact that cash is paid, indicates the Captain of the cargo ship would have to be complicit in the actions of the crew. Information received from informants involved in the illegal activity is that the waste that is not of any value to the fishermen is then either dumped at sea, or is dumped on land in either Timor-Leste or in Indonesia.</p>

## Appendix 2: Correlations scheme

Case #	26	25	24	20	21	1	4	5	10	11	13	22	8	12	9	3	7	27	6	15	2	14	23	16	17	19	18	
Reporting region	E	E	E	AM	AM	E	E	E	E	E	E	AS	E	E	E	E	E	AS	E	E	E	E	E	AF	AF	AF	AF	
Type of pollution crime	R	WD	WD	M	M	F	WT+WD	WD	WT+WD+F	F	WT+WD	WD	WT+WD+F	WT+WD	WT	WT	WD	WD	WD	WT	WT	WT	WT	WT+WD	WT	WD	WT	
Type of criminal organization	MAFIA CLAN			CENTRALIZED CRIMINAL GROUP									NETWORK OF CRIMINAL GROUPS CHAIN OF OFFENDERS										UNKNOWN					
Structure of chain of command	UNKNOWN			HIERARCHICAL			CENTRALIZED CELL						HORIZONTAL										UNKNOWN					
Clear division of roles				Yes			Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				Yes		
Individual VS companies		I	I	I	I	I	I	I	I+C	C	C	C	C	C	I+C	C	C	C	I+C	I+C	I	C	C	C	C	C	C	
# individuals involved	na	na	na	10	14	2	na	7	na	na	16	4	2	28	na	na	19	na	26+11	45+203	9	na	12+18	na	3	na	na	
Geographical scale	D	D	D	T	T	T	T	D	T	T	T	D	T	T	T	T	D	T	D	T	T	T	T	T	T	D	T	
Crime convergence	Yes		Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes		Yes			
Infiltration in the public sector				Yes						Yes	Yes						Yes		Yes									
<b>Legend:</b>																												
Reporting region:	E = Europe			AM = Americas					AS = Asia-Pacific					AF = Africa														
Type of pollution crime:	WD	waste disposal		WT+WD	waste disposal+waste trafficking			WT	waste trafficking		M	illegal mining		F	fraud		R	racket										
Individual VS companies	I	individuals			I+C	individuals+companies			C	companies																		
# individuals involved	values in red refer to the number of companies involved																											
Geographical scale	D	domestic		T	transnational																							

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## Appendix 4: INTERPOL Notices and Diffusions

The INTERPOL system of international notices and diffusions supports investigations by law enforcement agencies in all 194 member countries by facilitating the sharing of information instantly with relevant enforcement authorities around the world, through the network of INTERPOL National Central Bureaus (NCBs). The information shared in a notice or diffusion is recorded in INTERPOL's information system and can be accessed by authorized member countries. Officers wishing to request the publication and dissemination of a notice or diffusion should contact their NCB to determine what information will be required. The NCB will then submit the request to the INTERPOL General Secretariat, who will publish the notice in accordance with INTERPOL policy.



### Red Notice

To seek the location and arrest of a person wanted by a judicial jurisdiction or an international tribunal with a view to his/her extradition.



### Blue Notice

To locate, identify or obtain information on a person of interest in a criminal investigation.



### Green Notice

To warn about a person's criminal activities if that person is considered to be a possible threat to public safety.



### Yellow Notice

To locate a missing person or to identify a person unable to identify himself/herself.



### Black Notice

To seek information on unidentified bodies.



### Orange Notice

To warn of an event, a person, an object or a process representing an imminent threat and danger to persons or property.



### Purple Notice

To provide information on *modus operandi*, procedures, objects, devices or hiding places used by criminals.



### INTERPOL–United Nations Security Council Special Notice

To inform INTERPOL's members that an individual or an entity is subject to UN sanctions.

## ► ABOUT INTERPOL

INTERPOL is the world's largest international police organization. Our role is to assist law enforcement agencies in our 195 member countries to combat all forms of transnational crime. We work to help police across the world meet the growing challenges of crime in the 21st century by providing a high-tech infrastructure of technical and operational support. Our services include targeted training, expert investigative support, specialized databases and secure police communications channels.

## ► OUR VISION: "CONNECTING POLICE FOR A SAFER WORLD"

Our vision is that of a world where each and every law enforcement professional will be able through INTERPOL to securely communicate, share and access vital police information whenever and wherever needed, ensuring the safety of the world's citizens. We constantly provide and promote innovative and cutting-edge solutions to global challenges in policing and security.



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